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Nominal Possession in Mandarin Chinese

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Abstract

The present thesis investigates possessive constructions in Mandarin Chinese (MC), with a focus on the peculiarities of the syntactic realisations of kinship, bodypart and property-denoting relationships. These can be expressed grammatically without the appearance of the possessive marker *de*, in contrast to other types of possession. In opposition to the traditional view that these phenomena are derived by deleting the possessive marker *de*, I argue that they have a distinct syntax and semantics.

I defend the idea that a DP is projected in the nominal domain in MC and propose that the noun phrase in MC has the following hierarchy: [DP [DemP [NumP [ClP NP]]]]. I argue that the morpheme *men* is a plural marker bearing a dependency to D, and it follows that instances where a nominal or pronominal is suffixed by *men* are phrasal. On this basis, I examine the syntax and semantics of juxtaposed possessive (JP) expressions where a personal pronoun is juxtaposed with a kinship noun, arguing that the kinship term is a head taking a pro complement, projecting a KinP projection. This KinP is then combined with a D head (a personal pronoun), which agrees in phi-specification with pro. This predicts the absence of proper names and plural pronouns in this construction, and provides the correct semantics without the possessive marker *de* being involved.

I then develop a new analysis of double nominal constructions (DNCs) where the second nominal represents a property of the first. I argue that the second nominal is interpreted as a dimension along which the main predication is made to the subject DP. Also, I re-analyse the obligatory presence of *hen* and other elements in adjectival predication, tying these elements to the focus semantics of the predication. I further extend the dimension analysis and the focus analysis to the BI comparative constructions in MC.

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This thesis is dedicated to my mother. You provide me the most powerful support from thousands of miles away in China. I did not spend much time with you in the past four years, but there was not a single day in which I did not miss you. Thank you for being such a strong and positive person. You make me believe wonders can happen if you never loose hope and try hard enough.

Contents

Chapter 1

Introduction

1.1 Fine-grained mappings between the syntax and semantics of possession

Generally speaking, in Mandarin Chinese (hence MC),[1] nominals can form possessive constructions with the help of the morpheme *de* where *de* appears between the possessor nominal and the possessee nominal (hence *de* possessives) as in (1a). Apart from *de* possessives, there are *de*-less possessives, in which two nominals appear next to each other, without the appearance of *de*, such as in (1b).[2]

(1) a. Wo hen xihuan ta   de baba.
         I   very like   (s)he DE father
         'I like her/his father very much.'

     b. Wo hen xihuan ta   baba.
         I   very like   (s)he father
         'I like her/his father very much.'

---

[1]There are many different Chinese languages, let alone dialects of a particular Chinese language. Examples of Chinese languages are Mandarin, Cantonese, Wu, and Min. For Mandarin, aside from Mandarin Chinese spoken in Mainland China in contrast with Mandarin Chinese spoken in Taiwan and other overseas communities, within Mainland China, there are many dialects of Mandarin Chinese spoken as well. All these varieties of Mandarin are different from each other in one way or another. To minimize dialectal distinctions, this thesis focuses only on one type of Mandarin Chinese (MC) Putonghua, the official language of Peoples Republic of China. Additionally, all my consultants have northern dialectal background rather than southern dialectal background (Putonghua is based on Northern dialects). In this way, I hope I can make sure that the judgements elicited in this thesis constitute a representative and consistent variety of MC. As to the translations for the examples shown in this thesis, it needs to be pointed out that they are not necessarily my own. For those examples taken from the literature, I keep the original translations in general, only improving those in cases they are important to the discussion.

[2]The abbreviations used in glossing for MC examples in this thesis are listed below, some of which are borrowed from Kuo and Yu (2012):

The *de*-less cases are traditionally thought to be the full *de* cases where *de* is absent. One may think that there is only one way of expressing possession in the syntax in MC, which is the *de* possessives where *de* is sometimes deleted. However, I will show that the different fine-grained semantics of possession correlates with different fine-grained syntactic structures, and this reveals something interesting about the way that MC negotiates the syntax-semantics interface in its empirical domain.

Possession is a broad notion, within this category, there are different types of possessive relationship: kinship, body-part, property-denoting (the possessee nominal represents a property of the possessor nominal) and ownership relation, etc. In MC, it is not the case there is one kind of possessive syntax (*de* possessives) that accommodates all these relationships, but rather that these semantic distinctions have different realisations in the syntax. There are the basic *de* possessive constructions, which can accommodate any type of possessive relationship such as the ownership relationship.

(2)   a.   Ta   de shu hen xin.
             (s)he DE book very new
             'Her/his book is very new.'

        b.   Wo hen xihuan ta   de shu.
             I   very like   (s)he DE book
             'I like her/his book very much.'

CL	gloss for classifiers
MEN	MC plural marker *men*
XIE	MC plural marker *xie*
LE	MC perfective marker *le*
GUO	MC experiential marker *guo*
DAO	MC result or direction complement marker *dao*
BA	MC object marker *ba*
BEI	MC passive marker *bei*
GENG	MC comparative marker *geng*
BI	MC preposition *bi*, introducing the standard of comparison in comparative constructions
DUI	MC preposition *dui*, used to introduce an object or a target
DOU	MC universal quantifier *dou*
YOU	MC existential quantifier *you*
DE	MC possessive, modification, resultative complement and adverbial marker *de*
NEG	MC negation marker, gloss for *bu* and *mei(you)*
MA	MC question particle *ma*
SHI...DE	MC focus construction *shi...de*, used for emphasising or referring to the past
JIU	MC particle *jiu*, used to indicate precision and immediacy
YA	MC interjection *ya*

Glosses used for non-MC examples will be introduced independently when needed.

I will argue that a PossP projection is projected in *de* possessives such as *ta de shu* 'her/his book' where *de* is the Poss head. The structure of the phrase *ta de shu* is represented as follows:

(3)

```
                          DP
                     ╱          ╲
                   ta            PossP
                 '(s)he'       ╱      ╲
                            ta         Poss'
                                     ╱      ╲
                                  Poss⁰      nP/DP
                                    │        ╱╲
                                   de       shu
                                          'book'
```
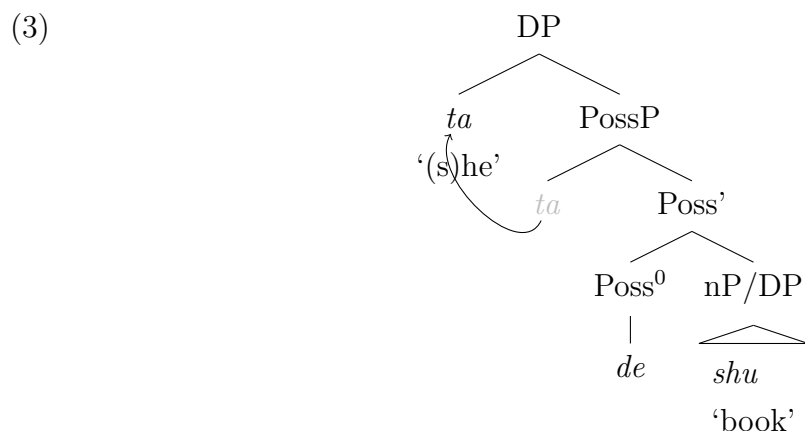
Also, there are the juxtaposed possessives (hence JPs) where a personal pronoun is juxtaposed with a kinship noun, without the appearance of any possessive morpheme.

(4)   a.   Ta   baba hen nianqing.
           (s)he father very young
           'Her/his father is very young.'

      b.   Wo hen xihuan ta   baba.
           I   very like   (s)he father
           'I like her/his father very much.'

Actually, only a singular personal pronoun and a singular kinship noun can from JPs, for which, I will propose that the kinship noun projects a Kin(ship) head and takes a pro as its complement. The pro agrees in phi-features with the pronoun in D (the pronoun is uninterpretable in D). The configuration of the JP phrase *ta baba* 'her/his father' is shown below:

(5)

```
                        DP
                     /      \
                   ∅
                  /    \
                 D      KinP
                 |      /    \
               ta_i   Kin    pro_i
             '(s)he'   |
                     baba
                   'father'
```
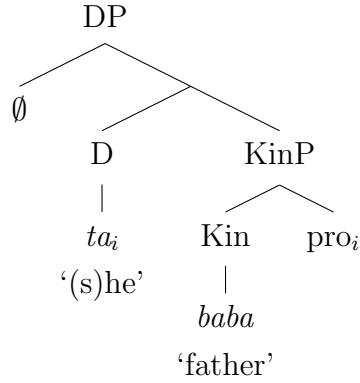
Moreover, there are constructions which include possession as a sub-part, among them are the double nominal constructions (hence DNCs) where two nominals which bear property-denoting (6a) or whole-part relationship (7a) stand right next to each other before the predicate.

(6) a. Ta   xingge   hen wenshun.
         (s)he character very tame
         'Her/his character is very tame.'

     b. Wo hen xihuan ta   *(de) xingge.
         I   very like   (s)he DE   character
         'I like her/his character very much.'

(7) a. Ta   yanjing hen da.
         (s)he eye   very big
         'Her/his eyes are very big.'

     b. Wo hen xihuan ta   *(de) yanjing.
         I   very like   (s)he DE   eye
         'I like her/his eyes very much.'

In fact, the fundamental cause of DNCs is the nature of predication. This is shown by the fact that in the object position, the juxtaposition of a possessor nominal and a property-denoting noun (6b) or a body-part noun is impossible (7b). I will propose that in DNCs, the second nominal, normally a property-denoting noun or a body-part noun, indicates the dimension of the predication relation with respect to the first nominal. Structurally, there is a Dim(ension)P projection above the adjectival/verbal predicate and the second nominal is located at the Spec of DimP. The configuration of (6a) is represented below.

(8)

```
                            TP
                         ╱      ╲
                       ta       T'
                     '(s)he'  ╱    ╲
                            T      PredP
                                 ╱      ╲
                          <ta>         Pred'
                                     ╱      ╲
                                  Pred      DimP
                                          ╱      ╲
                                      xingge     Dim'
                                    'character' ╱    ╲
                                             Dim      AP
                                                    ╱    ╲
                                                hen wenshun
                                                'very tame'
```
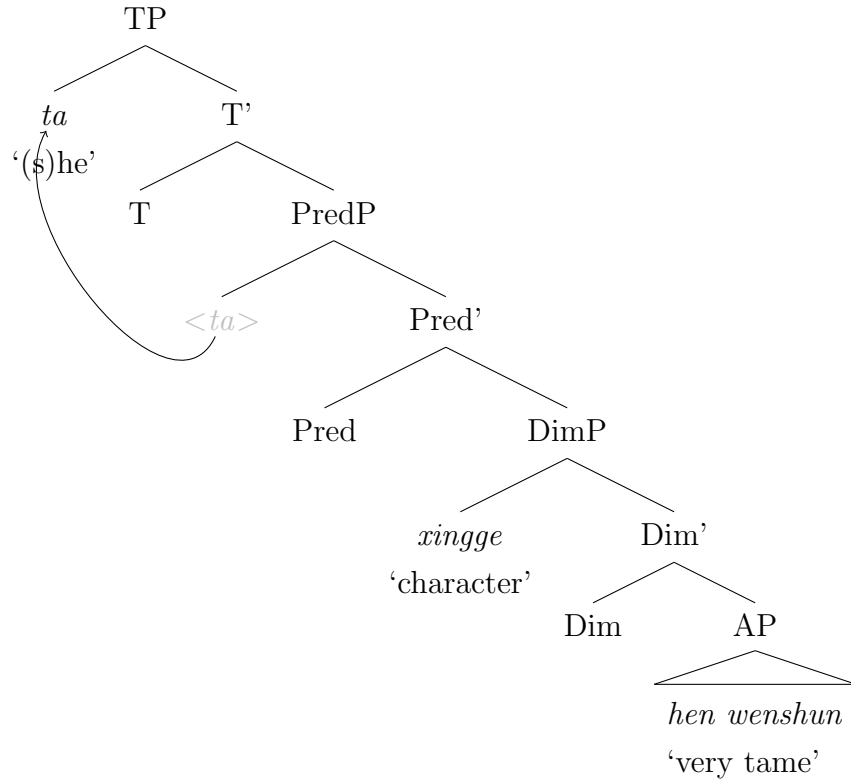
This phenomenon that there is a dimension restriction in the predication is also observed in the BI comparative constructions in MC, for which, I will suggest that a DimP is projected above a Deg(ree)P projection.

To conclude, I argue that in MC, the *de*-less possessives and the *de* possessives are independent constructions. More specifically, different types of possessive relationship, i.e. ownership, kinship, property-denoting and body-part relations are realised in different ways in the syntax. *de* possessives, JPs and DNCs are three separate constructions with distinct syntactic configurations and semantic interpretations.

1.2 Thesis overview

The present thesis takes the position that *de* possessives, JPs and DNCs are three independent constructions with distinct syntactic structures and semantic denotations. The aim of this thesis, therefore, is to explore the syntax and semantics of these three constructions.

I start the exploration with a review of existing discussion on the nominal structure and possession in Chapter 2. I introduce the theoretical literature of the DP hypothesis in general, with a special focus on how the theoretical ideas have been applied to the syntax of the nominal in Mandarin Chinese (hence MC). Two

approaches to the hierarchical structure of MC nominal expressions are discussed in detail: the DP approach and the ClP approach. Also, I briefly run through some of the important proposals on the syntax of adjectival modification configurations, especially the *de* modification constructions in MC. Moreover, I discuss the possessive syntax in MC and claim that *de* possessives, JPs and DNCs are three independent constructions with distinct syntax and semantics. Finally, I look into the syntax of the *de* possessive constructions, where I propose that a functional projection PossP is projected above the possessee nominal. The particle *de* heads the PossP and the possessor nominal is merged at SpecPossP. On top of PossP, a DP is projected and the possessor nominal undergoes movement from SpecPossP to SpecDP, giving rise to the definite reading of *de* possessive phrases.

Chapter 3 re-examines the structure of the noun phrase in MC, as well as the the syntax and semantics of the plural marker *men*. I argue that (i) demonstratives are heads and located at Dem position below D and above Num. Therefore, noun phrases in MC have the following structure: [DP [DemP [NumP [ClP NP]]]]; (ii) pronouns are Ds, while proper names are NPs. Bare proper names undergo N to D movement whereas non-bare ones are merged in SpecDP. As for the morpheme *men*, I propose that it is the syntactic realisation of the Plural feature based in Num. Also, *men* carries a [+definite,+animate] feature bundle, and this determines that the plural feature is only realised as *men* on animate elements that are in D.

In Chapter 4, I explore the syntax and semantics of JP constructions. On the syntactic side, I propose that in JPs, the kinship noun is a head, taking a pro as its complement, projecting a KinP projection. The pronoun, which is merged as the D head, takes the KinP as the complement and agrees with the pro in ϕ-features, projecting a DP. This proposal captures the fact that only singular personal pronouns and bare kinship nouns can form JPs. On the semantic side, I suggest that JPs are directly referential with an aspect of their reference coming from the deictic property of the personal pronoun; this contrasts with *de* possessives which are normal referential expressions.

Chapter 5 is devoted to the investigation of DNCs. I propose a syntactic structure for DNCs in which a functional projection Dim(ension)P is projected above AP/VP. DimP modifies the predication relationship indicated by AP/VP and the second nominal is located at its specifier position. The denotation of DNCs is some individual (represented by the first nominal) is in a state restricted to its property/part (represented by the second nominal). This dimension analysis can be applied to the BI comparative constructions in MC. In order to understand

the *bi* phrase in BI constructions, a separate issue of why degree morphemes such as *hen*, *geng* are obligatory in adjectival predication in MC is also studied. I suggest that this is related to focus interpretation. More specifically, these elements are required to create a set of alternatives to satisfy the [+FOC] feature of the Pred head. On the basis of the above analyses, I further argue that indirect BI constructions (IBCs) are DNCs in disguise. The so-called "point of comparison" in IBCs actually indicates the scalar dimension along which the comparison is made. The morpheme *geng* associated with the *bi* phrase performs the same function as *hen*, creating alternative semantics.

Finally, in chapter 6, I raise residual questions which need further investigation. Then I summarise the main proposals of the thesis and discuss their implications.

Chapter 2

Nominal possession in MC

2.1 Introduction

In this chapter, I will review the theoretical literature on the syntax of the nominal in general, and more specifically, how the theoretical ideas have been applied to the syntax of the nominal in Mandarin Chinese (hence MC). This will lay the foundation for the examination of nominal possession in MC.

Broadly speaking, there are two lines of research within generative grammar on the structure of nominal expressions. The first claims that a nominal phrase has the structure of $[_{DP}$ D $[_{Num}$ Num $[_{NP}$ N $]$ $]$ $]$ (other intermediate functional projections have been proposed) and that all languages have identical nominal structures, regardless of whether they have all the appropriate lexical items to fill the positions (Szabolcsi 1983; Abney 1986, 1987; Horrocks and Stavrou 1987; Longobardi 1994, among others). The second line of research, however, highlights systematic empirical variations among different languages. It argues that there is no need to assume a universal nominal structure for all languages like the previous approach, especially when such projections like a DP or a NumP are not realised morphologically. A language like Chinese may simply represent its arguments as NPs instead of DPs (Chierchia 1998b; Lyons 1999; Bošković 2005, among others). As to Chinese nominal expressions, current research generally follows the first approach, arguing that Chinese noun phrases are DPs (Li 1998b, 1999; Huang et al. 2009, and others).

With this in mind, the organisation of this chapter is as follows. I will begin with a general introduction of the discussion on the structure of noun phrases in Chinese under the DP hypothesis and the Cl(assifier)P hypothesis. A brief summary of studies on modification constructions in DP follows in section 2.3.

Section 2.4 focuses on nominal possession in MC, specifically, the syntax of *de* possessive constructions. Finally, section 2.5 is a brief summary.

2.2 The nominal hierarchy in MC

I will begin this section with a general introduction of the DP hypothesis, and then move on to the different proposals about the syntax of the noun phrase in MC.

2.2.1 The DP hypothesis in UG

Looking back on the research on noun phrases in the last thirty years, a proposal which has had profound influence on subsequent analyses is the idea that D is the head of the noun phrase instead of N, namely the transition from NP to DP.

In a traditional Principles and Parameters framework, noun phrases were commonly seen as maximal projections of a lexical head N^0 (see Coene and D'hulst 2003 and the reference cited therein). A phrase such as *the book* in English was analysed as a Noun Phrase (NP), with the determiner *the* occupying the specifier position of the NP, as in (1).

(1) $[_{NP}$ the $[_{N'}$ book]]

However, in the eighties, Brame (1982) argues that "I think it is a mistake to think of N as the head of an NP. One should think in terms of DPs, i.e. determiner phrases, not in terms of NPs." This is one of the earliest proposals arguing in favour of a functional head in the noun phrase. Following Brame, Szabolcsi (1983, 1987), Abney (1986), Abney (1987), Stowell (1991), Longobardi (1994) and a group of other linguists further develop the DP hypothesis. It is proposed that just as VP is dominated by a number of functional projections such as IP and CP, there are also functional categories projected above the head noun. One of these projections is Determiner (D). Under this assumption, the structure of *the book* is shown in (2) instead.

(2) $[_{DP}$ the $[_{NP}$ book $]$ $]$

Besides D, a series of other functional projections have been proposed, such as

Num(ber), Agr(ee)[1] and Gender.[2] Among these, Num has been supported by evidence from a wide range of languages and there is something of a consensus that it is syntactically present (Ritter 1993, and others).

In addition to these DP internal functional projections, relations between the head noun and other nouns as well as other elements like adjectives have also been examined. Accordingly, positions for possessors (Alexiadou et al. 2007) and adjectival modificational elements (Cinque 2010, 1993, 1994; Kayne 1994, among many others) are also proposed in the DP. In light of the above discussion, the general consensus on the structure of nominal expressions is summarised in the following tree:

(3)

```
                DP
              /    \
           Spec     D'
                   /    \
                  D     NumP
                       /    \
                    Spec    Num'
                           /    \
                         Num     nP
                               /    \
                             AP    nP/PossP
                                   /      \
                                 Spec    n'/Poss'
                                         /      \
                                     n/Poss     NP
                                              /    \
                                            Spec    NP
                                                   /  \
                                                  N    PP
```
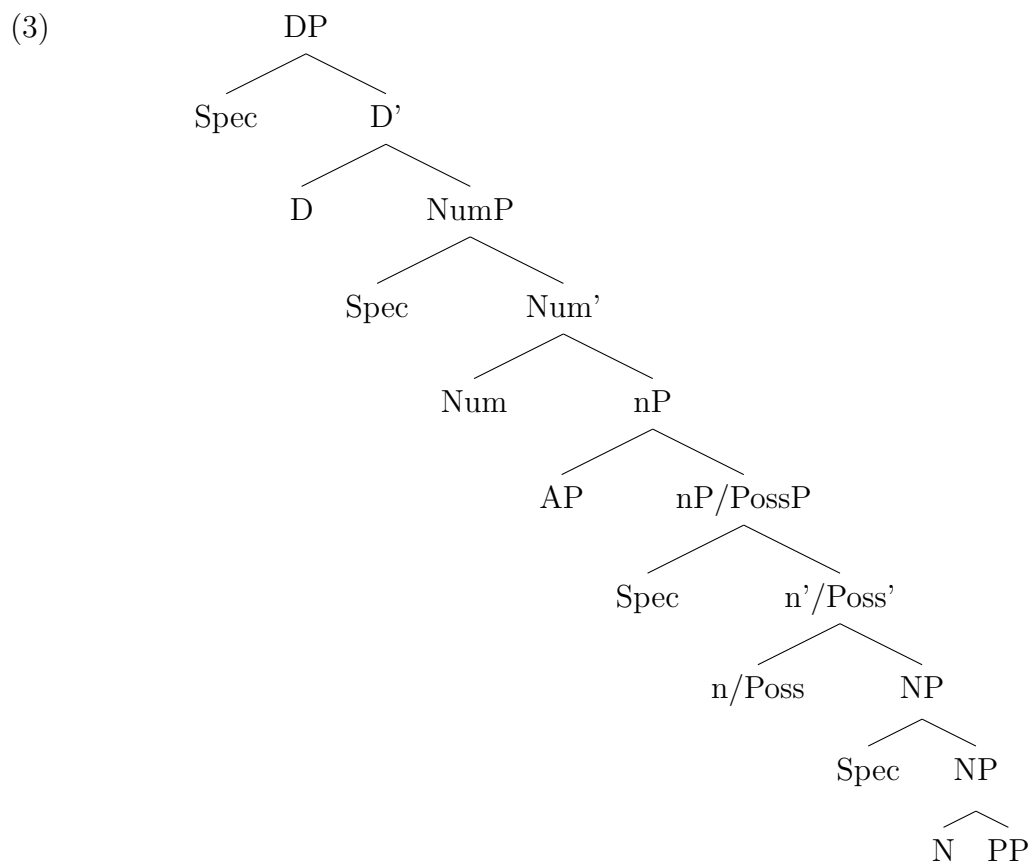
According to Alexiadou et al. (2007), the base position of possessors is SpecPossP, while its surface position may vary from case to case. I will discuss this in section

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[1] In analogy to the clausal domain, Agr has also been proposed in the nominal domain which is related to the case feature. However, because only several languages mark case in noun phrases, Agr is considered to be a language specific projection (Siloni 1997, among others). Thus I will not include it in the general structure of DP.

[2] Although the category gender has also been proposed in some languages (Bernstein 1993; Ritter 1993), Chinese does not display gender. I will therefore ignore it in what follows.

2.4.1.

Generally, there are two approaches towards the function of the D projection. One is Szabolcsi's (1994) syntactic approach, which claims that like a complementizer, D is also a subordinator which enables a nominal to function as an argument. The other one is Longobardi's (1994) syntactic-semantic approach, which assumes that NPs are basically predicates and Ds are operators which bind a variable in the predicate, and thus convert the predicative category N into a referential expression. The functional category D therefore has two types of function: syntactically, it enables the noun to act as an argument; semantically, it is responsible for the referential property of the nominal. As a matter of fact, referentiality is closely related to argumenthood: once a noun has a particular reference, it can function as the agent, patient or theme of an action. "(Syntactic) arguments are entities that have reference." (Higginbotham 1985) For this reason, we can say that reference and argumenthood are actually closely related.

What needs to be noted here is that all the above discussion is based on languages which are typical determiner languages, such as English and Greek. These languages have articles or determiners, and the definite articles and determiners are argued to be in D position. However, in languages like Chinese and Japanese, there are no morphemes in the nominal expression which can be considered as articles (definite/indefinite). This raises the question of whether the noun phrases in this kind of language are NPs or DPs. If they are just NPs, how can they be interpreted as referential? Further, how can they function as arguments if D is what allows an NP to act as an argument? On the other hand, if they are DPs, then which elements perform the role of a subordinator and "reference convertor" as articles/determiners do in English and Greek? In other words, it comes down to whether the functional category D is projected in Chinese or not.

2.2.2 The two characteristics of MC nominal expressions

Mandarin Chinese, as an isolating language, has distinct properties from the European languages. Huang et al. (2009) characterise the Chinese nominal expression as having a lack of articles and being rich in classifiers (the discussion in Huang et al. (2009) is mainly based on MC spoken in mainland China and Taiwan, rather than Cantonese or other dialects of Chinese).

2.2.2.1 Lack of articles

Chinese nouns do not show up with a definite or an indefinite article such as *the* or *a* (Huang et al. 2009). Furthermore, nominal expressions in MC are not inflected for number. The absence of articles does not, however, prevent nominal phrases from acting as arguments; a bare noun in Chinese can be interpreted as indefinite, definite or generic, as illustrated in (4).

(4) a. Wo kandao mao.
     I   saw   cat
     'I saw a cat/cats.'

    b. Mao pao-zou   le.
     cat   run-away LE
     'The cat(s) ran away.'

    c. Wo hen xihuan mao.
     I   very like   cat
     'I like cats very much.'

In the above examples, *mao* in each sentence is interpreted as indefinite (4a), definite (4b) and generic (4c), respectively. It can also be interpreted as singular or plural, as in (4a) and (4b). Without articles and number markers, Chinese nouns or noun phrases can still function as the semantic equivalents of English nominal expressions. In other words, it seems that a bare noun/noun phrase in Chinese can function like a DP in English. The analytical question is whether a Chinese bare noun/noun phrase can be analysed as a DP as well.

2.2.2.2 Rich in classifiers

The other characteristic of Chinese nominals is the obligatory appearance of classifiers when nouns are counted. As is well known, English simply combines a number and a noun directly. The only exception is mass nouns, which require a measure or classifier phrase. For example, *three glasses of milk* or *three pints of milk* but not *three milks*. By contrast, Chinese nouns need the presence of a classifier whenever the noun is counted. For instance, the classifier for *cat*, which is *zhi*, must appear between the number and the noun. The contrast between English and Chinese can be seen in the following example:

(5) a. two cats

    b. liang *(zhi) mao
     two   CL   cat
     'two cats'

What is more, in Chinese, different nouns may have different classifiers. For example, for *shu* 'book', the classifier is *ben*; for *tui* 'leg', it is *tiao*; for *pingguo* 'apple', it is *ge*. It is worth noting that in Chinese, for mass nouns like *jiu* 'wine', the classifier may be *ping* 'bottle', *bei* 'glass' or *xiang* 'box', etc. This is similar to that to what we find in English: in both languages, the classifier plays an essential role in the counting of mass nouns.

2.2.3 Two approaches to the MC nominal structure

Due to the above characteristics, Chinese has drawn the attention of researchers interested in nominal structure since late 1990s. A number of different proposals have been proposed for the syntax of Chinese nominal expressions (Chierchia 1998b; Li 1998b, 1999; Cheng and Sybesma 1999; Huang et al. 2009, and many others). Generally speaking, these proposals fall into two different categories: one is Chierchia's semantic approach; the other one is the syntactic approach, represented by Li (1999), Cheng and Sybesma (1999) and Huang et al. (2009), and others. Both these approaches assume the general principle that predicates are in opposition to arguments, and that a noun or a noun phrase needs to be a referential expression in order to function as an argument.

2.2.3.1 The semantic approach

Before I review the syntactic approach to the general structure of NPs in Chinese, I first introduce Chierchia's (1998) semantic approach briefly.

Chierchia (1998b) argues that there is no necessary correlation between the argument status of NPs and the functional category D. Nominal expressions can either be predicates or arguments and languages vary as to what their nominal constituents denote. In languages like Chinese and Japanese, NPs are argumental and therefore can function as arguments freely. In other languages such as the Romance languages, NPs are essentially predicates and thus cannot act as arguments without the projection of D. However, there are also languages in which NPs can either be predicates or arguments. This is the case for English. This difference can be summarised by the 'Nominal Mapping Parameter' which is implemented by a pair of features [+/-arg] and [+/-pred].

According to Chierchia (1998b), Chinese is an argumental-NP-language with [+arg, -pred] features. In other words, nouns and noun phrases in Chinese are [+arg], therefore of the semantic type <e>, and can thus appear in argument positions by themselves. There is no need to postulate a DP layer with a null D

for Chinese nominal expressions. Accordingly, Chierchia concludes that Chinese nominal expressions are NPs instead of DPs.

2.2.3.2 The syntactic approach

There are two competing syntactic approaches to the structure of the MC nominal phrase. Inspired by Abney (1987), Szabolcsi (1987) and Longobardi (1994), etc, it is argued that Chinese nominals are predicates in nature and that Chinese nominal expressions are not just NPs but rather DPs or ClPs or NumPs. Within this approach, there are two different proposals. The first is that of Li (1998b, 1999) and Huang et al. (2009) which suggest that some nominal expressions in Chinese do contain a DP layer, and that adopting a DP structure for some Chinese noun phrases has more advantages than adopting an NP structure.

Under the second approach, Cheng and Sybesma (1999) argue that in classifier languages like Chinese, classifiers perform the functions performed by D in non-classifier languages like English, which are the individualizing and singularizing functions. Thus, they propose that the correspondents of DPs in English are actually ClPs in Chinese. Therefore, for Cheng and Sybesma, DP is not projected in Chinese.

In the following, I will examine evidence for the DP hypothesis and the ClP hypothesis, respectively.

2.2.3.2.1 The DP hypothesis
Li (1998b), Li (1999) and Huang et al. (2009) claim that the structure of nominal expressions in different types of language is basically identical. Like non-classifier languages such as English and Italian, Chinese nominal expressions are also DPs.

2.2.3.2.1.1 Motivating DP: referential and quantity number expressions
Li (1998b) argues that certain Chinese nominal expressions have a DP layer. The differences in interpretation and distribution between two types of number expression (referential and quantity) provide support for this assumption.

According to Chao (1965), Tsai (1996), Xu (1996), among many others, in Chinese, indefinite NPs are generally not allowed in subject or topic positions, as shown in the following examples.

(6) ??San ge xuesheng hen congming.
      three CL student   very smart

Intended: 'Three students are very smart.'

(7)   *San ge xuesheng, wo zhidao zai xuexiao shoushang le.
        three CL student   I   know at school hurt   LE
        Intended: 'Three students, I know were hurt at school.'

However, the above sentences become grammatical when the existential marker *you* 'have, exist' occurs before the number expression.

(8)   You san   ge xuesheng zai xuexiao shoushang le.
        have three CL student   at school hurt   LE
        'There are three students who were hurt at school.'

What is more, indefinite NPs are not always disallowed in subject or topic positions:

(9)   San ge xuesheng bu gou.
        three CL student   not enough
        'Three students is not enough.'

(10)   Wu ge xiaohai chibuwan   shi wan fan.
        five CL child   eat-not-finish ten bowl rice
        'Five children cannot finish ten bowls of rice.'

Li (1998b) points out that the number expressions in (9) and (10) share a common property: they all involve the notion of 'quantity' rather than the 'existence' of some individuals. In (9), *gou* 'enough' expresses the adequacy of an amount. In (10), the phrase *chi-bu-wan* 'cannot finish' denotes the capacity of a certain number of children to finish a certain amount of food. By contrast, the number expressions in (6) and (7) do not involve 'quantity'.

From these facts, Li (1998b) concludes that number expressions in Chinese should be divided into two categories: "quantity denoting expressions" (9) and (10) and "non-quantity individual denoting expressions" (6) and (7). The former are allowed in subject or topic positions, while the latter are disallowed. The contrast between them is systematic.

Non-quantity individual denoting expressions refer to the entities in the discourse but quantity denoting number expressions do not. Following Longobardi (1994), who assumes that D is responsible for the referential property of noun phrases (i.e. has the function of turning a property into an entity), Li (1998b) proposes that non-quantity indefinite individual denoting number expressions are actually DPs with null Ds, whereas quantity number expressions are NumPs. Individual-denoting expressions as in (6) and (7) have a structure as shown in

(11a), while quantity-denoting expressions in (9) and (10) have the structure illustrated in (11b), respectively:

(11)   a. $[_{DP}$ D $[_{NumP}$ san   ge xuesheng]]
                          three CL student

        b. $[_{NumP}$ san   ge xuesheng]
                      three CL student

In (11a), D is projected even though it is not filled by a lexical item. In this case, it generates an indefinite reading.[3] In (11b), D is not projected at all. The structural difference in turn leads to the interpretational differences between (11a) and (11b): the former denotes individuals, while the latter denotes quantity.

In addition to the interpretational difference, this structural difference provides an explanation for the distributional differences between individual-denoting number expressions and quantity-denoting number expressions. Longobardi (1994) suggests that noun phrases with null Ds are restricted to lexical governed positions. This explains why non-quantity individual denoting expressions are prohibited in subject (6) or topic (7) positions. Because in such positions, the null D in the nominal expressions cannot be lexically governed. More specifically, the subject, which is taken to be in SpecIP, is not lexically governed. No lexical element is available to govern a topic in Chinese, either. Consequently, sentences (6) and (7) are ungrammatical. However, with the presence of the existential marker *you* 'have, exist', the indefinite nominal expression is properly governed, and (8) is acceptable. On the contrary, there is no empty category in the NumPs in (9) and (10), therefore they can appear in subject or topic positions freely.

In brief, the differences between "quantity number expressions" and "non-quantity individual denoting number expressions" provide support for the existence of a category D in Chinese nominal expressions. This also suggests the existence of an independent NumP.

2.2.3.2.1.2 Further evidence

According to Li (1998b), "quantity number expressions" and "non-quantity individual denoting number expressions" also differ with respect to reference, binding and scope properties. This provides further evidence for the structural difference illustrated in (11a) and (11b).

First, "non-quantity individual denoting number expressions" (DPs) can occur with the operators *dou* 'all' and *you* 'exist, have', but "quantity number expres-

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[3]I will further discuss how the indefinite and definite readings are generated in Chapter 3.

sions" (NumPs) cannot. The quantifiers *dou* 'all' "ranges over an entire set of individuals to derive an universal expression", and *you* 'exist, have' "asserts the existence of individuals (an existential expression)" (Li 1998b). Therefore, the number expressions which occur with them must be individual-denoting expressions rather than quantity-denoting ones.

(12) San ge xuesheng dou lai zher le.[4]
      three CL student DOU come here LE
      'Three students all came here.'

(13) You san ge xuesheng lai le.
      have three CL student come LE
      'There are three students who came.'

Sentence (12) can only be interpreted as "each of the three students came". (13) can only be interpreted as "there are three individuals who came".

(14) *You san ge xuesheng bu gou.
       have three CL student not enough

(15) *You san ge baomu jiu zhaogu ni yi ge xiaohai a?
       have three CL babysitter only care you one CL child MA

(16) ??You wu ge xiaohai chibuwan shi wan fan.
       have five CL child eat-not-finish ten bowl rice

However, (14) and (15) are unacceptable, because *gou* in (14) and *jiu* in (15) require a quantity interpretation, which is incompatible with the semantic requirement of *you*. Sentence (16) is acceptable only with an individual-denoting reading of *wu ge xiaohai* 'five children'. It affirms the existence of five children, each of whom is unable to finish five bowls of rice.

The fact that individual-denoting number expressions can occur with the operators *dou* 'all' and *you* 'exist, have', but quantity-denoting expressions cannot, provides further evidence for the assumption that the former contain a D projection, while the latter are just NumPs.

Secondly, an individual-denoting expression can enter into a binding or coreferential relation with a following pronoun but a NumP cannot:

(17) a. Wo jiao liang ge xuesheng$_i$ huiqu ba ta-men$_i$ de chezi kai lai.
          I ask two CL student return BA them DE car drive over
          'I asked two students to go back and drive their car over.'

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[4]According to Li (1998b), the number expression *san ge xuesheng* 'three students' is lexically governed here, because it is in the specifier of a projection headed by *dou* (see Li 1992).

b. Ni ruguo neng zhaodao liang ge bangshou$_i$, jiu   gankuai ba
       you if   can find   two CL helper   then hurry   BA
       ta-men$_i$ qing   lai.⁵
       them   invite come
       'If you can find two helpers, hurry and invite them over.'

In (17a), the indefinite nominal *liang-ge xuesheng* 'two students' binds the pronoun *ta-men* 'them', and in (17b), the expression *liang-ge bangshou* 'two helpers' co-refers with the pronoun *ta-men* 'them' in the following subordinate clause. However, this binding or co-referential relation is impossible with quantity-denoting expressions:

(18)   a. *San ge ren$_i$ tai-bu-qi   liang jia ni gei ta-men$_i$ de gangqin.
          three CL man lift-not-up two   CL you give them   DE piano
          'Three people cannot lift two (of the) pianos that you gave them.'
       b. *Liang ge daren$_i$ bu ru   ta-men$_i$ de san ge xiaohai you
          two   CL adult   not compare they   DE three CL children have
          liliang.
          strength
          'Two adults are not as strong as their three children.'

As pointed out in Li (1998b), a DP refers to entities, thus it can bear a referential index. By contrast, a NumP can only denote quantity rather than an entity. Therefore, it does not have a referential index. This explains why individual-denoting expressions and quantity-denoting expressions have different referential properties. Since a pronoun, as a DP, must be bound by another DP, it follows that it can only be bound by individual-denoting expressions but not quantity-denoting ones.

Finally, quantity-denoting number expressions do not interact with other quantificational expressions with respect to scope, but individual-denoting expressions do:

(19)   Wu ge xiaohai, wo zhidao chi-bu-wan   shi wan fan.
       five CL children I   know   eat-not-finish shi CL rice
       'Five children, I know cannot finish ten bowls of rice.'

The only interpretation for this sentence is that that five people ate 10 bowls of rice altogether, with no indication of how much each person ate. However, for the

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⁵In (17), the individual-denoting expressions *liang ge xuesheng* 'two students', and *liang ge bangshou* 'two helpers' are in object positions. According to Huang et al. (2009), an object position is properly governed by the lexical V.

following sentence, the only reading is 'I let each student eat ten bowls of rice'. There are five students, so the amount of rice consumed is 50 bowls altogether.

(20) Wo rang wu ge xuesheng chi shi wan fan.
      I   let five CL student   eat ten CL rice
      'I let five students eat ten bowls of rice.'

According to Huang (1982), Aoun and Li (1993), among others, in Chinese, a c-commanding indefinite quantificational expression has scope over a lower one in canonical sentences. The fact that (19) cannot have a 50 bowls interpretation suggests that the number expression *wu-ge xiaohai* 'five children' is not a quantificational expression. Conversely, the number expression in a lexically governed position in (20) is an indefinite quantificational expression (Li 1999).

Moreover, on the basis of Li (1998b), Huang et al. (2009) report that in *you* expressions, where the number expression co-occurs with the existential quantifier *you* 'have', the first number expression takes wide scope. This is illustrated in example (21) below:

(21) You san ge ren   chi-de-wan   wu wan fan.
      exist three CL person eat-can-finish five CL rice
      'There exist three people that can finish five bowls of rice.'

Example (21) states that there are three people, each of whom can (individually) finish five bowls of rice. This suggests that the number expression *san ge ren* 'three people' is an indefinite (quantificational) expression, giving further evidence that indefinite number expressions (individual denoting) are DPs.

As further evidence, Huang et al. (2009) suggest that a *wh*-phrase in Chinese is essentially a non-interrogative indefinite expression. A *wh*-element in Chinese can co-index with or bind a pronoun or a reflexive, as in (22), while a quantity-denoting expression cannot, as shown in example (18).

(22) Ruguo ni   kandao shenme ren$_i$,   qing   ba ta$_i$ dai   jinlai.
      if   you see   what   person, please BA him bring in
      'If you see anyone$_i$, please bring him$_i$ in.'

The contrast between a *wh*-phrase and a quantity-denoting expression gives further evidence towards the distinction between the two types of number expression, non-quantity individual denoting expressions (DPs) and quantity-denoting expressions (NumPs).

As shown above, the quantity-denoting and individual-denoting number ex-

pressions have distinct properties in the following aspects: compatibility with *you, dou*, co-referential/binding properties, and scope effects. These contrasts further suggest that they have different structures and accordingly different interpretations: quantity-denoting number expressions are NumPs and do not have referential properties, while individual-denoting number expressions are DPs and have an indefinite interpretation. This conclusion supports the assumption that D has the function of converting the predicative category N into a referential expression.

However, it is worth noting that both types of number expression (DPs and NumPs) can occur in argument positions in Chinese. In comparison, in languages such as English and Italian, only DPs can function as arguments. As noted in Huang et al. (2009), it may be the case that languages like Chinese differ from languages like English with regard to what can function as arguments. It may also be the case that the assumption that arguments are DPs itself is problematic.[6]

To sum up, by comparing number expressions with *wh*-phrases and *you* expressions, Huang et al. (2009) further illustrate the contrast between indefinite non-quantity individual denoting expressions and quantity-denoting expressions. Even though they share the same form [number+classifier+noun], they are completely different kinds of phrase, as shown in (11a) and (11b), respectively. This provides support for the existence of a DP category in Chinese, in addition to the existence of an independent NumP category, not dominated by a DP. The structure for an individual-denoting number expression such as *san ge ren* 'three people' is shown as follows:

(23)

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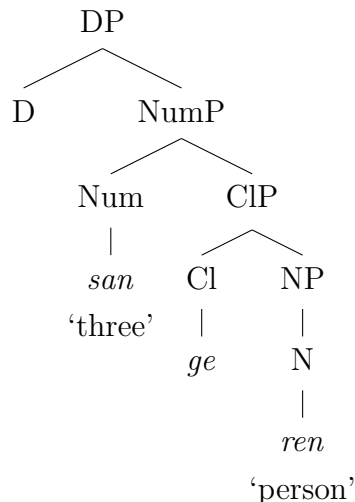
[6]Li (1998b) mentions that in the clausal domain, there are also cases where elements which are not CPs can function as arguments, such as IP (as in ECM and raising cases).

If there is a D position in Chinese, what occupies the D position? Under the general assumption that D is the locus of reference or definiteness, Huang et al. (2009) claim that all the expressions related to reference or definiteness in Chinese are located in D, and this includes demonstratives, pronouns, proper names, and even definite bare nouns. I will return to the positions of these elements in the DP in Chapter 3.

As mentioned earlier, besides D and Num, there is also a Cl projection in Chinese noun phrases. This classifier projection is motivated from comparing the morpho-syntactic properties of the morpheme *men* in Chinese and those of *s* in English. I will discuss this in detail in Chapter 3 as well.

To conclude, in this section, I first introduced the idea that there was a D projection in Chinese nominal expressions. Then I illustrated the arguments provided in Li (1998b), Li (1999) and Huang et al. (2009) for the existence of such a projection. In brief, Li (1998b), Li (1999) and Huang et al. (2009) believe generally nominal expressions in Chinese are DPs with the exception of quantity-denoting number expressions.

2.2.3.2.2 The ClP hypothesis

A different proposal is put forward by Cheng and Sybesma (1999), in which they argue that, in Chinese, Cl^0 performs some of the functions performed by D^0 and Chinese nominal expressions are ClPs instead of DPs.

2.2.3.2.2.1 Motivating the ClP

Chinese is a classifier language with a well-developed classifier system. The second proposal argues that the count/mass distinction of Chinese nouns is reflected at the classifier level. Chinese classifiers are divided into two types: massifiers (mass-classifiers) which create a unit of measure and count-classifiers which simply name the unit of natural semantic partitioning (Cheng and Sybesma 1999). The ClP hypothesis will be discussed in more detail below.

Cheng and Sybesma (1999) attach great importance to the role of classifiers in Chinese noun phrases. First, they argue that numerals require the presence of a syntactic marker of countability: in English, it is number morphology such as *s/es* which performs this role, while in Chinese, it is count-classifiers (cf. Doetjes 1996). Second, they claim that count-classifiers in Chinese have an individuating and singularizing function: they identify singular units and pick one instance of what is denoted by N. As mentioned earlier, D also has an individuating and singularizing function, which can also be referred to as the deictic function. Accordingly,

they conclude that in Chinese the classifier performs some of the functions performed by D^0: (i) converting predicates into arguments, (ii) generating the definite interpretation.

On this basis, Cheng and Sybesma (1999) claim that Chinese nominal expressions are ClPs instead of DPs. Under this general assumption, they examine the syntax of bare nouns and propose that there is a NumeralP projected in Chinese as well.

Bare nouns in Mandarin can have a definite reading and definite bare nouns can appear in subject position (non-lexically governed position), as shown below:

(24)   a.   Gou yao guo malu.
              dog want cross road
              'The dog wants to cross the road.'

              not: 'A dog wants to cross the road.'

    b.   Gou jintian tebie tinghua.
              dog today very obedient
              'The dog/dogs was/were very obedient today.'

Cheng and Sybesma (1999) thus propose that definite bare nouns in MC are ClPs rather than NPs. The fact that they can appear in subject position suggests that the Cl position is not empty. Cheng & Sybesma (following Longobardi 1994) argue that definite bare nouns undergo N-to-Cl movement in MC.[7]

(25)

They further propose, following Chierchia (1998b), that N-to-Cl movement is a necessary step for the use of an ι operator, which is a type-shifter. It changes the NP $<e,t>$ into an individual $<e>$ and is equivalent to a definite article.

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[7]In addition, Cheng and Sybesma (1999) mention that definite bare nouns undergo covert N-to-Cl movement in Mandarin. According to them, this is suggested by the fact that unlike Italian proper names, bare nouns in Mandarin follow adjectival modifiers, as shown by the contrast between the two groups of examples below:

(26)   a.   É venuto il   vecchio Cameresi.
              came   the old   Cameresi
              'The old Cameresi came.'

However, the above proposal is problematic with respect to the compositionality of (25). Specifically, the plural reading of the definite bare noun *gou* in (24b) cannot be derived. According to Cheng and Sybesma, when N to Cl movement happens, an iota operator is triggered, and ClP is of type e. Cl is a singularizer and there is no NumeralP projected (also there is no obvious way that Number can be added to ClP). Consequently, the plural reading of definite bare nouns cannot be derived.[8]

Cheng and Sybesma (1999) point out that definite bare nouns in Mandarin can also act as proper names:[9]

(29) a. Linju   bu lai   le.
          neighbor not come LE
          'Neighbor/The neighbor/Neighbors won't come any more.'

      b. Wo zuotian   peng-shang le   laoshi.
          I   yesterday bump-up   LE teacher
          'Yesterday, I bumped into teacher/the (my/our) teacher/teachers.'

---

      b. É venuto Cameresi vecchio.
          came   Cameresi old

(27) Huangrong de gou jintian tebie tinghua.
      Huangrong DE dog today very obedient
      'Huangrong's dog was very obedient today.'

In (26b), the proper name precedes the adjective after moving overtly from N to D. However, in example (27) given by Cheng and Sybesma, *huangrong* is the possessor of *gou* rather than that it modifies *gou* in a similar way as *vecchio* 'old' modifies *Cameresi* in (26b). The definite interpretation probably comes from the possessive phrase *huangrong de gou*. Thus, this cannot serve as an argument that definite bare nouns undergo covert movement in Mandarin.

Nonetheless, the argument that the movement of definite bare nouns is covert might be supported by the following example:

(28) Huangse de gou jintian tebie tinghua.
      yellow   DE dog today very obedient
      'The yellow dog was very obedient today.'

The phrase *huangse de gou* has a definite reading and the fact that head noun *gou* 'dog' follows the adjective phrase *huangse de* might indicate that the raising of *gou* is covert.

[8]Cheng and Sybesma (1999) mention that since no overt classifier is present in definite bare noun phrases, definite bare nouns can thus be interpreted as singular or plural. However, this is not very convincing as in LF the Cl position is occupied by the raised common noun and therefore it should only generate the singular reading.

[9]According to Huang et al. (2009), a common noun used as a proper name is base-generated in (Spec of) D position. In this case, it can precede the sequence [(pronoun/demonstrative)+number+classifier]:

(30) [Didi   na yi ge hutu   dan] you wang le dongxi le.
      younger-brother that one CL muddled egg again forget LE thing   LE

In the above sentences, the most natural readings of the definite bare nouns *linju*, *laoshi* are singular: one particular neighbour, one particular teacher, respectively. That is, these definite bare nouns are very similar to proper names as they are directly referential. Therefore, Cheng & Sybesma propose that bare nouns acting as proper names in Mandarin are ClPs, where the noun undergoes movement from N to Cl, which is responsible for the definite interpretation:[10]

(31)

```
              ClP
             /  \
           Cl    NP
           |      |
           N      N
           └──────┘
```

Cheng and Sybesma point out that in the above, the N-to-Cl raising of the bare noun which is directly referential does not trigger the ι operator.

As for bare nouns with a generic interpretation, Cheng and Sybesma argue that they also undergo N-to-Cl movement. This is because, like proper names and definite bare nouns, they are also not restricted to lexically governed positions.

(33) a. Xiongmao kuai juezhong le.
          panda   soon extinct   LE
          'The panda will be soon be extinct.'

      b. Hufei hen taoyan mao.
          Hufei very hate   cat
          'Hufei hates cats.'

Again following Chierchia (1998b), they assume that the 'down' function (i.e. the $\bigcap$ operator, which nominalises predicates into individuals), gives rise to the kind

'Younger-brother that muddled head forgot (his) stuff again.'

Here, *Didi* (younger-brother) behaves like a proper name.

[10]Again, according to Huang et al. (2009), a definite bare noun, however, must be generated in N and then move to D. It does not occur with [(pronoun/demonstrative)+number+classifier]:

(32) a. Wo ba xuesheng song hui   jia   le.
          I   BA student   send back home LE
          'I took the students home.'
      b. *Wo ba xuesheng liang ge song hui   jia   le.
          I   BA student   two   CL send back home LE
          'I took the two students home.'

Xuesheng 'student' is interpreted as definite here. The appearance of the numeral and classifier would block the movement of the *xuesheng* from raising from N to D. Consequently, (32b) is bad.

reading (i.e. the totality of all individuals of a certain sort) when plural predicates (common nouns) are involved (see Chierchia 1998b for a detailed discussion).

It can be seen that Cheng and Sybesma (1999) differentiate three types of N-to-Cl movement. The first one is the movement related to bare nouns with a definite reading; the second one is related to proper names and definite bare nouns functioning as proper names; the third one is about generic expressions. In the first type, the ι operator is introduced; the second case dose not involve the ι operator, while the third type triggers the $\bigcap$ operator. However, their proposal for definite bare nouns is not able to generate the plural reading of the bare noun.

2.2.3.2.2.2 Motivating the NumeralP

According to Cheng and Sybesma (1999), indefinite bare nouns and indefinite [Cl+N] phrases share some properties. First, they are both interpreted as non-specific indefinites, thus syntactically, they are not ClP phrases. Second, both of them are restricted to post-verbal/governed positions:

(34)   a.   Wo xiang   kan ben shu.
            I   would like read CL book
            'I would like to read a book.'

        b.   Men-qian you ge ren.
            door-front have CL people
            'There is someone outside the door.'

(35)   *Ben shu   bu hao.
          CL book not good
          'The/A book is not good.'

Examples (34) and (35) show that indefinite [Cl+N] phrases are prohibited in subject position and they can only appear in the post-verbal position. Indefinite bare Ns are similarly restricted.

(36)   a.   Wo kandao gou.
            I   saw   dogs
            'I saw a dog/dogs'

        b.   Gou pao zou   le.
            dog run away LE.
            'The dog(s) ran away.'

        c.   Gou hen congming.
            dog very smart.
            'Dogs are very smart.'

The *gou* 'dog' in the object position in (36a) can be interpreted as indefinite. However, if *gou* 'dog' appears in the subject position, it can only be interpreted as definite (36b) or generic (36c). From this, we can see that indefinite bare nouns are restricted to object position.

Due to the above facts, Cheng and Sybesma (1999) propose that both indefinite bare nouns and indefinite [Cl+N] phrases are NumeralPs, containing an empty category Numeral. In the case of indefinite bare nouns, the category Cl is also null. The structure is in (37):

(37)

```
            NumeralP
            /      \
      Numeral      ClP
                   /  \
                 Cl    NP
                        |
                        N
```
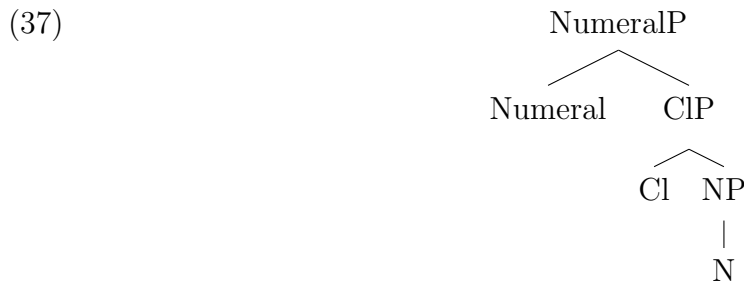
Owing to the existential quantificational nature of numerals, it is assumed that the indefinite interpretation of nominals (including indefinite bare nouns and indefinite [Cl+N] phrases) in Chinese is linked to the presence of NumeralP (the head of which may be overt or covert). The compositionality problem mentioned for definite bare nouns does not exist here. Since the iota operator is not present and ClP is not of type e, number can be added above ClP, generating the plural reading of indefinite bare nouns such as *gou* 'dog' in (36a).

To conclude, in Cheng and Sybesma's view, Chinese nominal expressions are ClPs or NumPs. Again, the schemata are shown in (38) and (39), respectively:

(38)

```
        ClP
        /  \
      Cl    NP
             |
             N
```

(39)

```
            NumeralP
            /      \
      Numeral      ClP
                   /  \
                 Cl    NP
                        |
                        N
```
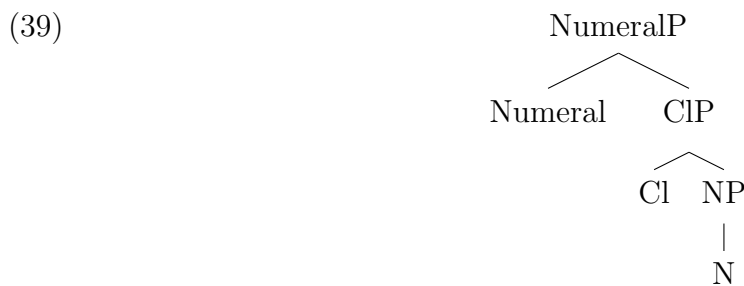
The structure for all the nominal expressions which have a definite or generic interpretation is illustrated in (38). The classifier projection can be either overt or covert. In the cases of indefinite nominal expressions, there is an extra layer NumeralP, which is responsible for the indefinite interpretation, as shown in (39). Again, the Numeral and Cl projections can be either overt or covert.

A potential problem with the ClP analysis is that it cannot capture the difference between individual-denoting number expressions and quantity-denoting number expressions, which is used to motivate the DP projection in the nominal phrase in Huang et al. (2009). The individual-denoting number expressions and quantity-denoting number expressions look exactly the same on the surface. If following the ClP hypothesis, since in both phrases, the ClP and NumeralP projections are occupied, it is hard to see how the differences in interpretation and distribution are derived.

Nonetheless, this problem arises because Cheng & Sybesma attempt to build a more general, cross-linguistically valid theory than Li and Huang et al.. The main point is that in articleless languages, the deictic function is performed by some other elements, such as classifiers in Cantonese, as noted in Cheng and Sybesma (1999):

> We would like to say, then, that this division of labour is a property of Universal Grammar: some entities describe, whereas other entities perform the deictic discourse function of linking the description to some particular object or event in the real world. In languages with articles/determiners, the deictic function in the nominal phrase is taken care of by the article/determiner. ... then if a language has no articles/determiners, some other element in the language must perform the deictic function. We suggest that in Chinese Cl_0 performs some of the functions performed by D_0, including the deictic function (Cheng and Sybesma 1999:518).

As a matter of fact, Cheng and Sybesma point out that there might be other determiners in Chinese in their 2012 paper, but in Cantonese, the classifiers perform some of the functions of determiners. They argue that in the end, whether we name the topmost layer of the nominal projection DP or not is just a matter of terminology and Cl^0 can be understood as the equivalent of D^0 rather than that classifiers are determiners.

Cheng and Sybesma (2014) examine noun phrase in both MC and Cantonese. They propose that noun phrases in Chinese have the structure below:

(40) $[_{FP3[+specific]}$ F3^0 $[_{FP2[+indef]}$ F2^0 $[_{FP1[+def]}$ F1^0 [NP N^0]]]]]

F1 can be labelled as "ClP-u", marking individuality or "unit-hood" and creating the object of the reference of the whole phrase. F2 could be labelled as "ClP-c", facilitating counting. Numerals are assumed to be located in SpecFP2. The demonstrative is positioned in FP3. As indicated above, the presence of the numerals produces an indefinite reading, while the presence of demonstratives creates a definite expression. The DP is simply defined as the outermost layer of the projection, and it does not matter whether it is named as DP (Simpson 2005) or not (Sybesma and Sio 2008 name it as S(pecificity)P).

Here, I would like to point out that the way I discuss DP in this thesis is not what things are called but rather what their functions are, as discussed in section 2.2, D encodes referentiality and turns the nominal into an argument. More discussion on the function of D will be presented in Chapter 3.

Chinese is an articleless classifier language. Under the two fundamental principles (i) predicates describe while arguments designate, (ii) only referential expressions can function as arguments. Two general approaches have been advanced on the syntax of Chinese nominal expressions. In one approach, Chinese noun phrases are analysed as arguments in nature, and bare nouns in Chinese can appear freely in argument positions (Chierchia 1998b). However, in the other approach, Chinese nominals are argued to be intrinsically predicative.

On the issue of what element converts Chinese nominal predicates into arguments, two hypotheses have been proposed. Under the DP hypothesis, it is assumed that D is projected in Chinese, even though there is no overt item to fill the position (Li 1998b, 1999; Huang et al. 2009). Therefore the structure of Chinese nominal expressions are not just NPs but DPs or NumPs (quantity-denoting number expressions). However, under the ClP hypothesis, it is argued that in the absence of articles, Cl performs some of the functions of D. Accordingly, Chinese noun phrases are ClPs or NumPs but not DPs (Cheng and Sybesma 1999).

As already mentioned, the ClP hypothesis does not capture the interpretational and distributional differences between individual-denoting number expressions (41) and quantity-denoting ones such as (42):

(41)   a. *(You) san   ge xuesheng hen congming.
            YOU three Cl student   very smart
            'There are three students who are very smart.'
        b. Lai   le san   ge xuesheng
            come LE three Cl student

'Three students came.'

(42) San ge xuesheng bu   gou.
      three Cl student   NEG enough
      'Three students are not enough.'

If the phrase *san ge xuesheng* 'three students' is a NumP, it is not clear (i) how the quantity-denoting reading and the individual-denoting reading are derived; (ii) why under the individual reading, the phrase *san ge xuesheng* is constrained to lexically governed positions while under the quantity reading, it is not. These differences suggest that there is an empty projection above NumP which is responsible for the indefinite reading shown in (41). This empty layer is argued to be DP in Huang et al. (2009). Moreover, Cheng and Sybesma's proposal cannot explain why the sequence *san ge xuesheng* in (41) is restricted to lexically governed positions, since there is no empty head position (the Numeral head is filled by the numeral *san* 'three').

Furthermore, as pointed out in 2.2.3.2.2.1, the following analysis can not generate the plural reading of definite bare nouns:

(43)   ClP

                              Cl   NP
                              | |
                              N   N

As argued by Cheng and Sybesma, the Cl head is a singularizer. Also, ClP is of type e and there is no NumeralP projected. Consequently, the plural reading of definite bare nouns such as *gou* 'dog' below cannot be captured.

(44) Gou jintian tebie tinghua.
      dog today very obedient
      The dog/dogs was/were very obedient today.'

For reasons discussed above, in the rest of this thesis, I will follow the DP hypothesis, assuming that there is a DP layer projected in the nominal structure in MC. The advantage of this DP analysis will be shown more later as the discussion precedes.

Additionally, it can be seen from the above discussion that it is a shared assumption that a classifier projection is projected in the nominal structure of Chinese, but proposals vary in terms of the function of the ClP (e.g. whether it

encodes definiteness or not), as well as the types of ClP (unit-classifier or counting-classifier or both). Nonetheless, as these differences are not crucial to the analysis in this thesis, I will not enter the discussion of these issues and just assume ClP is projected.

2.3 Adjectival modification in MC

I introduce existing research on the syntax of adjectival modification in this section. I will start with the assumptions about the syntax of adjectives in general. Then I turn to discussions on the *de* modification cases in MC, focusing on the derivation process of adjectives that appear in the "high" position, i.e. preceding numerals or demonstratives and appearing at the left edge of the noun phrase.

2.3.1 Adjectival modification in the DP

In this section, I will provide a brief summary of existing analyses on the syntax of DP-internal adjectives, specifically, the syntactic position of adjectives in the DP as well as the corresponding derivation process. I will first introduce the classifications of adjectives and then turn to Cinque's discussion on direct modification and indirect modification.

2.3.1.1 Prenominal v.s. postnominal modification

As is well known, the linear order of the adjective-noun combination varies across languages. Specifically, in languages like English and Greek, adjectives mainly precede nouns, while in Romance languages such as French and Italian, adjectives normally appear after nouns. This is illustrated by the following examples:

(45)   a.   i   griza gata (Greek)
            the grey cat
    b.   the grey cat (English)

(46)   a.   le   chat gris (French)
            the cat   grey
    b.   la   camicia azzurra (Italian)
            the shirt   blue

However, the above description is not a decisive generalisation because exceptions occur from case to case. For example, in English, some classes of adjectives do follow the noun.

(47)   a.   the proud student

         b.   a student proud of her work

Generally speaking, adjectives are divided into two types: prenominal adjectives and postnominal adjectives. This distinction plays an important role in the discussion of the syntax of adjectives.

Several different proposals have been advanced in regard to the syntactic position of adjectives. One traditional approach claims that adjectives are adjoined to the NP projection of the head N in a similar way that adverbs are adjoined to the VP projection of V. As to cases where adjectives occur after nouns, it is assumed that the noun undergoes leftward movement (cyclically) to a higher functional head (e.g. Number, Gender) in the nominal domain (Longobardi 1994, among others). However, another approach argues that APs are specifiers of functional projections and the N-A word order is derived by (cyclic) leftward movement of the noun to a higher functional head (Cinque 1993, 1994, and others). Kayne (1994), among others, put forward the clausal hypothesis, which assumes that prenominal adjectives are derived from postnominal ones which are parts of relative clauses by predicate fronting.

Generally, all these approaches have both advantages and disadvantages. Alexiadou et al. (2007) propose that a plausible alternative is to combine these various assumptions and develop an 'unified' approach to prenominal and postnominal adjectives:

> The core idea is that postnominal adjectives are in one way or another related to a clausal/predicative structure.... prenominal adjectives in the Romance languages and their English and Greek analogies are related with functional projections intervening between DP and NP (Alexiadou et al. 2007:388).

2.3.1.2   Direct v.s. indirect modification

Cinque (1993, 1994) proposes that attributive adjectives are generated as specifiers of dedicated functional heads, with which the adjectives are semantically related. For instance, an adjective such as *big* is generated as the specifier of the functional projection (FP) that is related to "size", while *white* is generated at the Spec of the FP that is linked to "colour". These functional heads appear in a specific order across languages.

(48) $[_{DP}$ D $[_{FP}$ AP F_{size} $[_{FP}$ AP F_{colour} $[_{NP}$ N $\ldots]]]]$

The adjectives in the specifiers of these functional heads enter into a spec-head agreement relation with the corresponding head F.

(49)

```
                          XP
                         /  \
                 Specifier    X'
                             /  \
                           X⁰    Complement
```
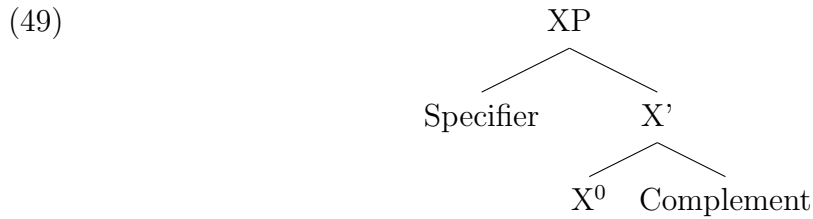
Accordingly, the ordering restrictions on different categories of adjectives are captured below.

(50)   quality < size < shape < colour < nationality

As for postnominal adjectives, Cinque argues that the N-A word order is derived by (cyclic) leftward movement of the noun to a higher functional head, as illustrated in (51):

(51) $[_{DP}$ D $[_{FP}$ AP1 $[_F$ N$_n$] $[_{FP}$ AP2 $[_F$ t$_n$] $[_{NP}$ t$_n$ ...]]]]

   However, there are several problems with the noun movement analysis. Cinque (2010) points out that the crucial problem is that the postnominal adjectives in Romance exhibit the mirror image order of prenominal adjectives in Germanic, and this is not captured under the head-movement analysis. This is illustrated in the English example below, in which the non-predicative adjective *probable* precedes the other non-predicative adjective *main*. The former scopes over the latter.

(52)   The most probable main cause of his death (is this)

In Italian, however, in the postnominal position, *probabile* 'probable' must follow *prima* 'main', even though *probabile* still scopes over *prima*.

(53)   a. La causa prima pi   probabile della sua morte (é questa)
            the cause main most probable of   his death (is this)
            'the most probable main cause of his death (is this)'

        b. *La causa pi   probabile prima della sua morte (é questa)
            the cause most probable main of   his death (is this)

What is more, the head-movement hypothesis meets problems with unexpected scope effects. Under the head-movement hypothesis, the prenominal adjective

should have scope over the postnominal one as it is structurally higher. As shown in (51), AP1 scopes over AP2. However, this is not the case in reality.

(54) É   una giovane promessa sicura
      he is a   young   promise   sure
      'He is a sure young promise.'

As indicated by the interpretation, the postnominal *sicura* 'sure' has wider scope than the prenominal AP *giovane* 'young'. This suggests that the postnominal AP might be higher than the prenominal one, which poses a challenge to the head movement analysis. Furthermore, it seems that noun movement lacks triggers. There are also other problems of the head movement analysis pointed out in Cinque (2010). See more discussion there and the reference cited therein.

Instead of the noun raising analysis, Cinque (2010) argues for the phrasal movement analysis. He claims that adjectives have two sources: they are either "adverbial" modifiers to the noun or predicates of reduced relative clauses. More precisely, in direct modification, adjectives are merged in the specifiers of various dedicated functional projections of the extended projection of the NP, as shown in (48). However, in indirect modification, adjectives are the predicates of reduced relative clauses, and the merge position of reduced RCs is prenominal, specifically in the specifier of a projection above the projections hosting direct modification APs. The schema is roughly represented in (55).

(55)

```
                        DP
                       /  \
                           FP
                          /  \
              (reduced)RC     FP
                             /  \
                          AP₁    FP
                                /  \
                             AP₁   NP
```
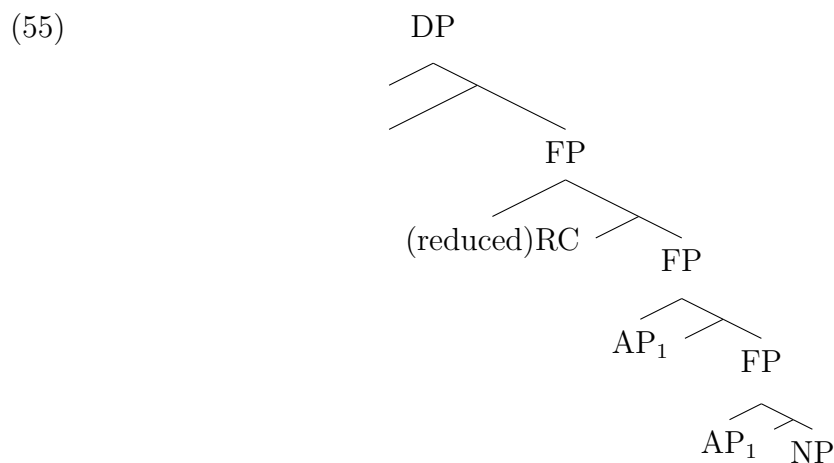
One motivation for the above proposal is the interpretational differences between prenominal and postnominal adjectives in Romance and Germanic languages. More specifically, prenominal adjectives in English are systematically ambiguous while postnominal ones are not. By contrast, in Italian, ambiguity is observed

with postnominal adjectives but not prenominal ones. This contrast in the interpretation of adjectives in English and Italian seems to exist across Germanic and Romance languages. As an illustration, in the following English examples, the *visible* in the postnominal position only has the stage-level reading (56), while in the prenominal position, it is ambiguous between a stage-level reading and an individual-level reading (57):[11]

(56) a. The (only) stars visible are Aldebaran and Sirius (unambiguous)
      b. # 'The (only) stars that are generally visible are Aldebaran and Sirius' (individual-level)
      c. 'The (only) stars which happen to be visible now are Aldebaran and Sirius' (stage-level)

(57) a. The visible stars include Aldebaran and Sirius (ambiguous)
      b. 'The stars that are generally visible include Aldebaran and Sirius' (individual-level)
      c. 'The stars that happen to be visible now include Aldebaran and Sirius' (stage-level)

In comparison, in Italian, the situation is the opposite of that in English: prenominal *invisibili* 'invisible' only has the individual-level reading (58a), whereas postnominal *invisibili* is ambiguous (59a).

(58) a. Le invisibili stelle di Andromeda esercitano un grande fascino
          the invisible stars of Andromeda have   a   great   fascination
          (unambiguous)

      b. 'Andromeda's stars, which are generally invisible, have a great fascination' (individual-level)

      c. # 'Andromeda's generally visible stars, which happen to be invisible now, have a great fascination' (stage-level)

(59) a. Le stelle invisibili di Andromeda sono moltissime (ambiguous)
          the stars invisible of Andromeda are   very many
      b. 'Andromeda's stars, which are generally invisible, are very many' (individual-level)
      c. 'Andromeda's generally visible stars, which happen to be invisible now, are very many' (stage-level)

---

[11]Apart from the ambiguity with respect to stage-level and individual-level readings, there are other interpretational differences between prenominal and postnominal adjectives. See Cinque (2010) for more detailed discussion.

The postnominal *invisible* in the Italian example (59a) is argued to have a predicative source and modify the nominal indirectly. Cinque argues that they are merged as reduced relative clauses based on the fact that (i) only predicate adjectives are allowed in this position and, (ii) the interpretation of these adjectives is similar to that of adjectives inside relative clauses, as shown by the example below:

(60) a. the present editors
      b. the editors present
      c. the editors who are present

The relative clause (60c) can only have the stage-level reading, which is the same as the postnominal adjective in (60b).

By contrast, the prenominal adjective in Italian in (58a) is argued to be a direct modifier of the noun and is therefore merged as a specifier of FP, for example, at AP1 or AP2 in the tree below.

(61)
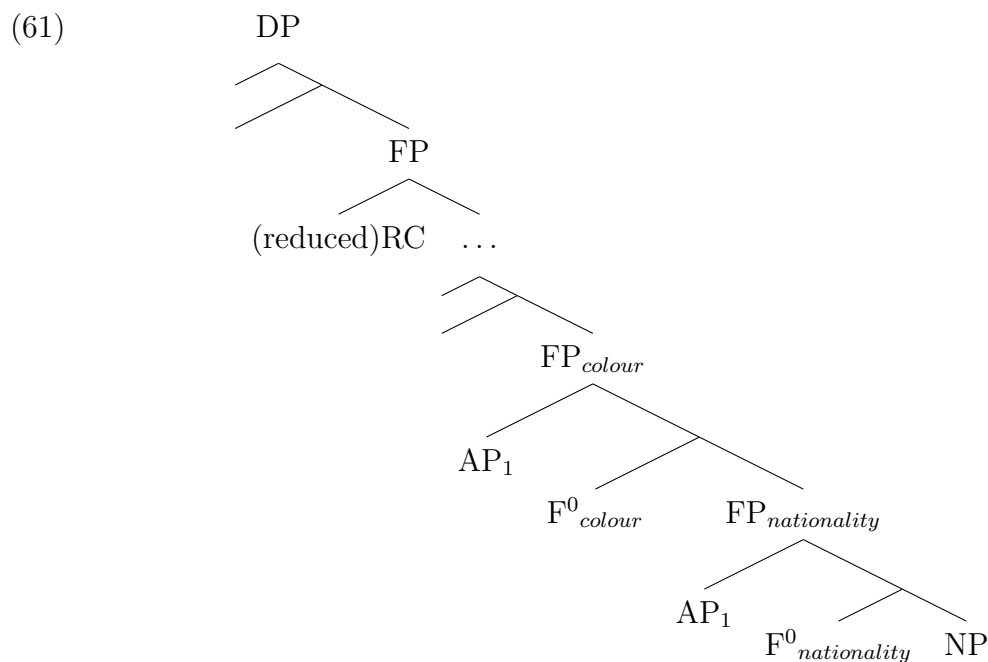
Indirect modifiers are free in order while direct modifiers follow the universal order restrictions. According to Cinque, (61) represents the underlying structure of adjectival modification, and all the other orders are derived by phrasal movement of the NP. For instance, the derivation of the phrase *l'ex presidente americano* 'the former American president' is as follows (Panayidou 2013):

(62)   l'   ex   presidente americano
         the former president   American
         'the former American president'

(63)
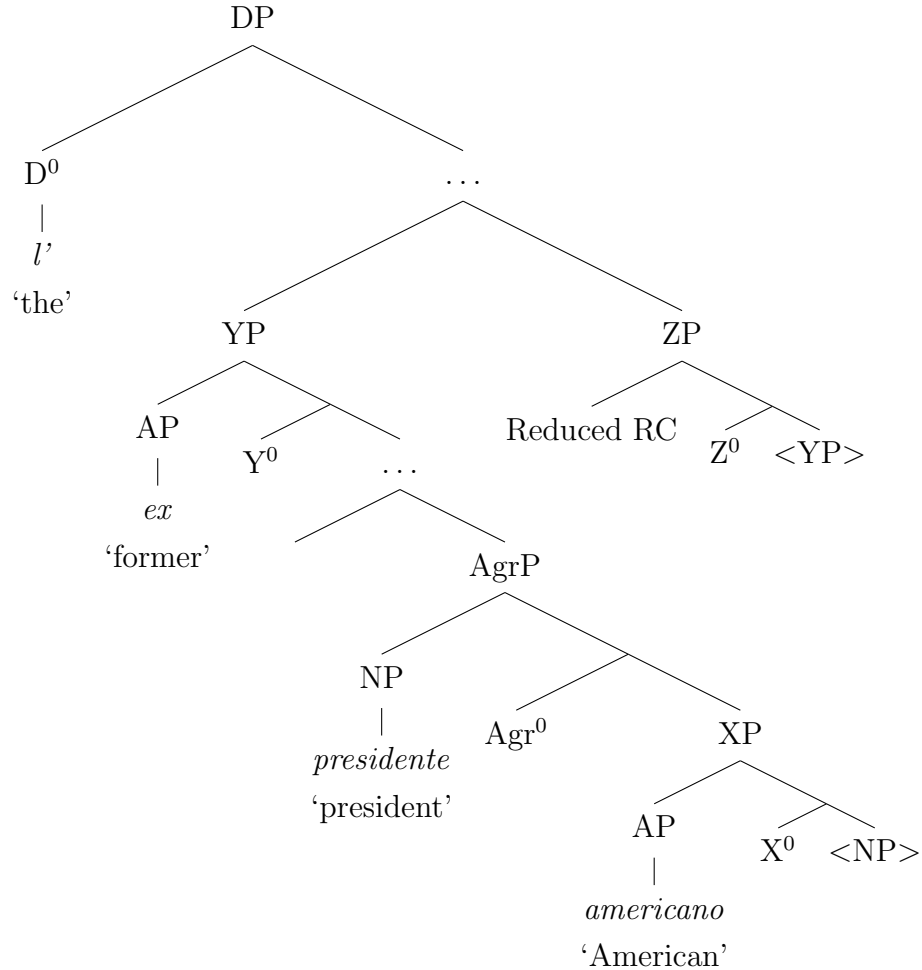
In this derivation, the NP moves past the adjective *americano* 'American' to the Specifier position of AgrP, which is below the adjective *ex* 'former'. The whole phrase YP undergoes phrasal movement above the reduced RC. See Cinque (2010) for more discussion on how the phrasal movement generates the correct word order in various languages. As adjectival modifiers always appear prenominally in MC and it is unlikely that the NP has undergone any movement, I will not explore this issue here.

    What is important for us here is that it is clear that modifiers, either direct ones or indirect ones, are merged in the specifier of various functional projections above the NP. As I will show later, this general assumption is applicable to adjectival modifiers in MC as well.

2.3.2 Adjectival modification in MC

The adjectival modification relation has different syntactic representations in different languages. In most Germanic languages, e.g. English, and most Romance languages, e.g. Italian and French, adjectives appear either before or after nouns/noun phrases. The distinction of prenominal and postnominal adjectives provides important clues for the analysis of the syntax of DP-internal adjectival modifiers. However, in Chinese, adjectives precede nominals uniformly. There is, however, a distinction in how adjectives modify nouns, which is the contrast between *de* modification cases and *de*-less modification ones.

2.3.2.1   *de* v.s. *de*-less modification

Generally speaking, there are two types of adjectival modification phrase in MC: *de*-modification with the form of 'A *de* N' and *de*-less modification with the form of 'A N', as (64) illustrates:

(64) a. yi   tiao hong qunzi
          one CL red   dress
          'a red dress'

      b. yi   tiao piaoliang de   qunzi
          one CL beautiful DE dress
          'a beautiful dress'

It is also worth noting that a large number of adjectives can occur with or without *de* in Chinese.

(65) a. yi   ge congming ren
          one CL intelligent person
          'an intelligent person'

      b. yi   ge congming de ren
          one CL intelligent DE person
          'an intelligent person'

Actually, the presence and absence of the particle *de* plays an important role in Chinese adjectival modification phrases.

To a certain extent, the contrast between *de* modification and *de*-less modification is roughly equivalent to the contrast between the indirect and direct modification in English and Italian (Sproat and Shih 1991; Cinque 2010; Panayidou 2013).

2.3.2.1.1 Sproat and Shih (1991)

Sproat and Shih (1988, 1991) distinguish between two types of modification in Chinese: direct and indirect modification. Adjectives in direct modification must obey the ordering restrictions such as the one below.

(66)   quantification < quality < size < shape/colour < provenance (according to the types of adjective)

(67)   a. xiao lü   huaping
            small green vase

        b. *lü   xiao huaping
            green small vase

They propose that in direct modification, the adjective and the noun simply form a nominal compound and this explains why the adjectives must appear in a fixed order.

However, in indirect modification, multiple APs can violate the restrictions in (66), as shown in the example below

(68)   a. xiao de lü   de huaping
            small DE green DE vase
            small green vase

        b. lü   de xiao de huaping
            green DE small DE vase

In Chinese, *de* also appears between a relative clause and the head noun. By analogy, Sproat and Shih suggest that adjectives followed by *de*, as in (68), should be analysed as relative clauses as well. The relatively free order of adjectives can be ascribed to the free order of relative clauses. Furthermore, Sproat and Shih (1988) point out that indirect modification, namely *de*-modification, may only contain predicative adjectives. Citing Huang (1987), Sproat and Shih suggest that the fact that the adjectives *qian* 'former' and *wei* 'fake' cannot appear as *de* modifiers is correlated to the fact that they cannot be used as predicates:

(69)   a. *qian   de zongtong
            former DE president
            Intended: 'former president'

        b. *wei de yao
            fake DE medicine
            Intended: 'fake medicine'

        c. *zhe ge zongtong qian.
            this CL president former

    d. *na fu yao   wei.
        that CL medicine fake
        Intended: 'That medicine is fake.'

However, the above argument is problematic. It is not only that adjectives *qian* 'former' and *wei* 'fake' cannot appear as *de* modifiers, but also that these two adjectives cannot be *de*-less modifiers, either:

(70)   a. zhe ge qian   zongtong.
          this CL former president
          'this former president'

        b. *na fu wei yao.
          that CL fake medicine
          Intended: 'that fake medicine'

The sequence *wei yao* is impossible in MC. Although the sequence *qian zongtong* is possible, it is very likely that *qian* is a prefix such as English *ex* and *qian-zongtong* is a single word. This is supported by the fact that *qian* can only be used in a very limited range of words such as *qian-qi* 'ex-wife' and *qian-nanyou* 'ex-boyfriend', and cannot co-occur with other nouns productively, for example, *qian-laoshi* 'ex-teacher' and *qian-pengyou* 'ex-friend' are bad. As a result, the validity of the above argument is degraded. More discussion about the argument that non-predicate adjectives cannot enter *de* modification will be shown below.

2.3.2.1.2 Paul (2005) & Paul (2009)

However, Paul (2005, 2009) provide counter-evidence to Sproat and Shih's compound v.s. relative clause dichotomy approach. There are two main arguments for this: (i) some non-predicate adjectives can occur in the *de*-modification structure, contrary to the generalisation that *de*-modification may only contain predicative adjectives; (ii) Chinese adjectives generally cannot function as predicates by themselves and can do so only with the accompany of *'shi . . . de'* or adverbs. However, these elements are not included in the relative clauses proposed for 'A *de* N' sequences.

With respect to the assumption that *de*-modification or indirect modification is actually a relative clause construction which may only contain predicative adjectives, Paul (2005) shows that there are non-predicative (attributive, intensional) adjectives that can be accompanied by *de* when modifying nominals. In some cases, *de* is required. These non-predicative adjectives include *yiqian* 'former', *yuanlai* 'original':

(71) Beijing daxue   yiqian de xiaozhang
      Beijing University former DE president
      'the former president of Beijing University'

(72) benlai   de yisi
      original DE meaning
      'the original meaning'

Unlike adjectives such as *congming* 'smart', it is obvious that adjectives like *yiqian* 'former' or *yuanlai* 'original' cannot function as predicates of the subject nouns they modify, no matter they co-occur with the degree adverb *hen* 'very' or the *shi...de* sequence:[12]

(73) a. congming de xiaozhang
          smart   DE principal
          'smart principal(s)'

      b. Xiaozhang hen congming.
          principal   very smart
          'The principal is very smart.'

(74) a. *Xiaozhang (hen) yiqian.
          principal   very former

      b. *Xiaozhang shi yiqian de.
          principal   SHI former DE

(75) a. *Yisi   (hen) benlai.
          meaning very   original

      b. *Yisi   shi benlai de.
          meaning SHI original DE
          Intended: 'The meaning is (the) original (meaning).'

The ungrammaticality of (74) and (75) poses a challenge to the relative-clause analysis of *de*-modification.

   What is more, there are a large class of adjective which can occur with or without *de* before nouns. A case in point is the adjective *fang* 'square':

(76) yi ge fang (de) panzi
      one CL square (DE) plate
      'a square plate'

---

[12]Bare adjectival predicates are highly restricted in MC. Generally speaking, when appearing as predicates, gradable adjectives need to be accompanied by elements such as the degree adverb *hen*, while non-gradable adjectives normally need to show up with *shi...de*. The fact that *yiqian* 'former' and *benlai* 'original' cannot appear with *hen* or *shi...de* is further evidence that they cannot function as predicates.

This kind of adjective cannot function as a predicate on their own. When appearing in predicate position, they must be accompanied by the *shi...de* sequence or in some context, the degree word *hen*:[13]

(77)   a.   *Zhe ge panzi fang.
             this CL plate square

        b.   Zhe ge panzi *(shi) fang   *(de).
             this CL plate SHI   square DE
             'This plate is square.'

        c.   Zhe ge panzi *(hen) fang.
             this CL plate very   square
             'This plate is very square.'

The crucial point here is that the relative-clause analysis needs to answer the question of why the *shi...de* sequence does not appear in the adjective phrase. This question arises for predicative adjectives too:

(78)   a.   yi   tiao piaoliang de qunzi
             one CL beautiful DE dress
             'a beautiful dress'

        b.   yi   ge congming de ren
             one CL intelligent DE person
             'an intelligent person'

When predicate adjectives like *piaoliang* 'beautiful' and *congming* 'intelligent' function as predicates, they must show up with degree adverbs, such as *hen* 'very':

(79)   a.   *Zhe tiao qunzi piaoliang.
             this CL dress beautiful

        b.   Zhe tiao qunzi hen piaoliang.
             this CL dress very beautiful
             'This dress is very beautiful.'

(80)   a.   *Zhe ge ren   congming.[14]
             this CL person intelligent

        b.   Zhe ge ren   hen congming.
             this CL person very intelligent
              'This person is very intelligent.'

---

[13]As the adjective *fang* 'square' is an absolute adjective (or non-gradable adjective), in predication, it is normally accompanied by the sequence *shi...de* (77b) rather than the degree adverb *hen*. Nonetheless, in some contexts, for example, when comparing the squareness of plates, (77c) is possible.

[14]Sentence (79a) and (80a) are acceptable when they are used in a contrastive context, and

Similarly, these adverbs are not included in the relative clauses in the pre-*de* position. Altogether, the above facts argue against the relative-clause analysis of *de*-modification ('A *de* N').

2.3.2.1.3 Yang (2005)

Following Paul (2005, 2009), Yang (2005) argues that adjectives followed by *de* are phrasal and that *de* is a functional head and the adjective is merged at its specifier position.

(81)

```
            XP
           /  \
        AdjP    X'
               /  \
             X⁰    np/DP
```
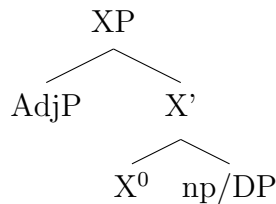
The above structure is from Yang (2005), with a slight change of labels. According to Yang (2005), the function of the X projection is to create a position for the adjective phrase.

The first argument that adjectives accompanied by *de* are phrasal is that the adjective phrase can be modified by adverbs (see also Duanmu 1998). This can be seen in the following example.

(82)   a.   xin de shu
            new DE book
            'a new book' or 'new books'

       b.   hen xin de shu
            very new DE book
            'a very new book' or 'very new books'

Secondly, the nominal phrase after the adjective can be replaced by phrasal elements such as the demonstrative sequence.

(83)   a.   xin de shu
            new DE book
            'a new book' or 'new books'

       b.   xin de na   ben shu
            new DE that CL book
            'that new book'

in that case, the demonstrative *zhe* 'this' will be stressed.

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Finally, [A *de* N] sequences are very productive compared to [A N] sequences. Phrases that are impossible in the [A N] form will become possible once the marker *de* is added:

(84) a. *huaji ren
          funny person

      b. huaji de ren
          funny DE person
          'a funny person' or 'funny persons'

Based on the above evidence, Yang (2005) posits a phrasal analysis of *de* modification constructions in MC. This analysis is in line with the analysis proposed by Cinque (2010).

Even though I agree that *de* modification is phrasal, I doubt that *de* is the functional head in the projection of the nominal. One argument against the claim that *de* in adjectival modification is a head is that phrasal adjectives, that is, adjectives accompanied by *de*, can appear in a pre-N or pre-D position.

(85) [$_{DP}$ na   yi   ben [xin de] shu][15]
          that one CL new DE book
      'that new book'

(86) [xin de] [$_{DP}$ na   yi   ben shu]
      new DE   that one CL book
      'that new book'

Yang does not specify what the pre-D position is, nor does she discuss the derivation of the pre-N or pre-D adjectives. If following Cinque's analysis, adjectives are merged at the Spec of the functional projection above NP, one possibility is that *xin de* in both (85) and (86) is merged above the NP and in the latter, the phrase *xin de* raises across the demonstrative (as will be shown below, Zhang (2006, 2015a) propose a similar analysis).

---

[15]Examples (85) and (86) are taken from Yang (2005), including the square brackets shown. From my understanding, the brackets are provided to show in a clear way that phrasal adjectives can appear pre-N or pre-D, and it does not necessarily represent the constituency structure.

(87)

```
                          XP
                    ┌──────┴──────┐
                  AdjP           X'
                ┌──┴──┐      ┌────┴────┐
                xin          X⁰      np/DP
               'new'          │      ┌──┴──┐
                             de      shu
                                    'book'
```
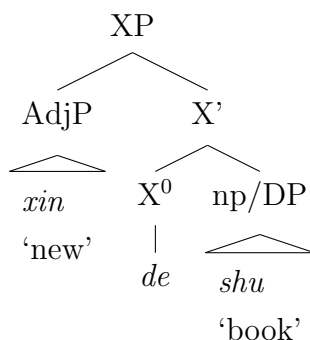
If this hypothesis is correct, however, it would suggest that *de* is not a head, as moving the spec and the head together would be movement of a non-constituent. Therefore, an alternative to the structure in (87) is (88) below:

(88)

```
                          XP
                   ┌───────┴───────┐
                 AdjP             X'
               ┌──┴──┐       ┌─────┴─────┐
              xin de       X⁰_age      np/DP
             'new DE'                  ┌──┴──┐
                                       shu
                                      'book'
```
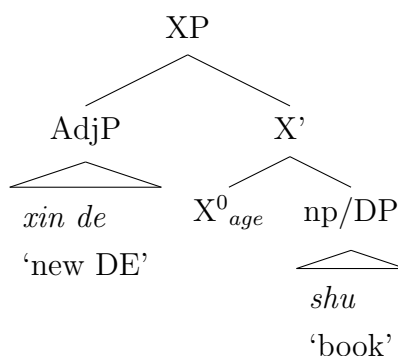
In tree (88), *de* is not a head in the extended projection of the noun, instead, it follows the adjective and the whole AP sits in the Spec position. The functional head is X^0_{age} (old or new), which is parallel to F^0_{colour}, F^0_{size} in Cinque's hypothesis.

As a matter of fact, whether *de* is the head of the adjectival phrase or not is not crucial to the analysis of this thesis. I will not explore further on this issue.

2.3.2.2   "Low" v.s. "high" *de* modification

Phrasal adjectives, that is, adjectives followed by the marker *de*, can appear "low" and "high" in the noun phrase in MC. Yang (2005) notes that within the sequence [1 Demonstrative +2 Numeral + classifier +3 N], the adjective plus *de* sequence can occur in position 1, 2 and 3, whereas bare adjectives (without *de*) can only occur in position 3. In the following, I will refer to position 3 as the "low" position for adjective plus *de* sequences and position 1 as the "high" position.

2.3.2.2.1 Zhang (2006)

Zhang's (2006) discussion is related to the issue of the nominal-internal word order when modifiers appear. She examines two types of Chinese nominal expression with modifiers: "outer modifier nominal" (OMN) with the form of [modifier+ numeral+classifier] and "inner modifier nominal" (IMN) with the form of [numeral +classifier+modifier].

(89)　a.　tebie congming de san　ge xuesheng (OMN)
　　　　　very　smart　　DE three CL student
　　　　　'three students who are very smart'

　　　b.　san　ge tebie congming de　xuesheng (IMN)
　　　　　three CL very　smart　　DE student
　　　　　'three students who are very smart'

In her discussion, the modifiers include not only relative clauses but also APs, NPs and P(reposition)Ps.

According to Zhang (2006), these two types of indefinite nominal (OMN & IMN) differ in distribution and interpretation: (i) OMNs are exclusively presupposed and specific, while IMNs can be either specific or nonspecific or quantity-denoting (Li 1998b); (ii) OMNs can occur as subjects (90a) and shifted objects (90b) but IMNs cannot (91a) and (91b).

(90)　a.　Akiu yiwei xue　wuli　de san　ge xuesheng dao　le.
　　　　　Akiu think study physics DE three CL student　arrive LE
　　　　　'Akiu thought that three students who study physics arrived.'

　　　b.　Baoyu guanyu daici　de si　pian lunwen kan　guo　le.
　　　　　Baoyu about　pronoun DE four CL　paper　read GUO LE
　　　　　'Baoyu has read four papers on pronouns.'

(91)　a.　*Akiu yiwei san　ge xue　wuli　de xuesheng dao　le. (RC)
　　　　　Akiu think three CL study physics DE student　arrive LE

　　　b.　*Baoyu si　pian guanyu daici　de lunwen kan　guo　le. (PP)
　　　　　Baoyu four CL　about　pronoun DE paper　read GUO LE

It can be seen that the IMN is unacceptable in preverbal position, while OMN is acceptable.

Zhang (2006) points out that OMNs are exclusively specific while IMNs can be either specific or non-specific. For example, IMNs can occur to the right of (dis)appearance verbs such as *lai* 'come' whereas OMNs cannot:

(92)　a.　Lai　le san　ge dai　yanjing de　xuesheng. (RC)
　　　　　come LE three CL wear glasses　DE student

‘Three students who wear glasses have come.’

    b. *Lai le dai yanjing de san ge xuesheng.
       come LE wear glasses DE three CL student

(93)   a. Cun-li   si le liang tiao qu-nian chusheng de gou. (RC)
            village-in die LE two   CL last-year bear   DE dog
            ‘Two dogs which were born last year died in the village.’

    b. *Cun-li   si le qu-nian chusheng de liang tiao gou.
       village-in die LE last-year bear   DE two   CL dog

According to Zhang (2006), existential constructions exclude specific nominals. More precisely, (dis)appearance verbs require the argument to their right to be nonspecific. IMNs are non-specific in (92a) and (93a). In contrast, the unacceptance of OMNs to the right of *lai* ‘come’ (92b) and *si* ‘die’ (93b) suggests that they are specific expressions.

On the basis of the above discussion, Zhang (2006) further explores the structural reasons which are responsible for the distributional and interpretational properties of OMNs and IMNs. She proposes that OMNs are DPs and “the exclusive specific reading of OMNs is related to the high position of the modifier (in specifier position of the head D)”.

(94)

```
                    DP
                   /\
                MOD    D'
                      /\
                     D  NP
```

In contrast, the modifier in IMNs is in a low position and the specificity of IMNs is not specified. In fact, Zhang further argues that IMNs can be separated into two parts: individual-denoting IMNs are NPs (95), while quantity-denoting IMNs are NumPs (96).

(95)

```
                NP
               /\
            MOD   N
```

(96)

```
                        NumP
                       /    \
                      ∅     Num'
                           /    \
                         Num     NP
                                /  \
                              MOD  N
```
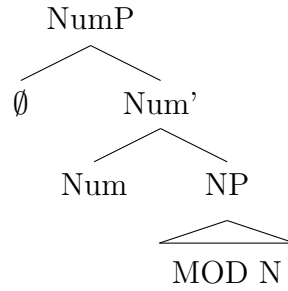
However, the structure in (95) cannot capture the fact that individual-denoting IMNs are not acceptable in the subject position (91a), or between the subject and the verb (91b). Both of these positions are non-lexically governed. This suggests that there might be an empty projection in the outer layer of IMNs, which causes the ungrammaticality of (91a) and (91b).

This restriction on the distribution of individual-denoting IMNs will be better explained by Huang et al.'s analysis. As discussed in section 2.2.3.2.1.1, Huang et al. (2009) argue that there are two kinds of number expression: individual-denoting ones which are DPs with an empty DP layer and quantity-denoting ones which are NumPs. Under this analysis, individual-denoting IMNs would have the structure below:

(97)

```
                        DP
                       /   \
                      ∅    NumP
                          /    \
                        Num    ClP
                              /   \
                             Cl    NP
                                  /  \
                                MOD  N
```
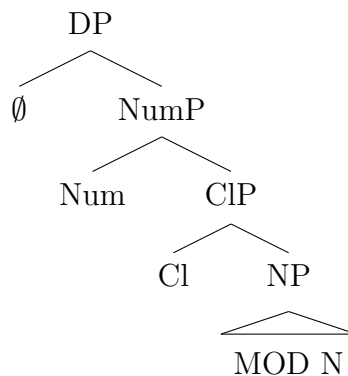
This analysis is supported by the fact that IMNs can appear after the verbal predicates in (92a) and (93a) where they are lexically governed by the verbs.[16]Meanwhile, the distributional and interpretational properties of IMNs provide further support for Huang et al.'s assumption that there is an empty DP layer in individual-denoting number expressions in particular and the DP hypothesis in general.

---

[16]It needs to be pointed out that IMNs are possible in the subject position when the adjective is stressed:

2.3.2.2.2　Sio (2006)

Sio (2006) proposes that the modifier phrase is merged into the tree by adjunction. The low modifier phrases are adjoined to the NP and the high ones are adjoined to the Specificity phrase (SP), as illustrated below:

(99)

```
                        SP(adjunct)
                       /          \
         high modifier phrase      SP
                                  /  \
                                Dem   S'
                                     /  \
                                    S    ClP
                                          \
                                           Cl'
                                          /   \
                                        Cl     NP(adjunct)
                                              /          \
                                   low modifier phrase    NP
```
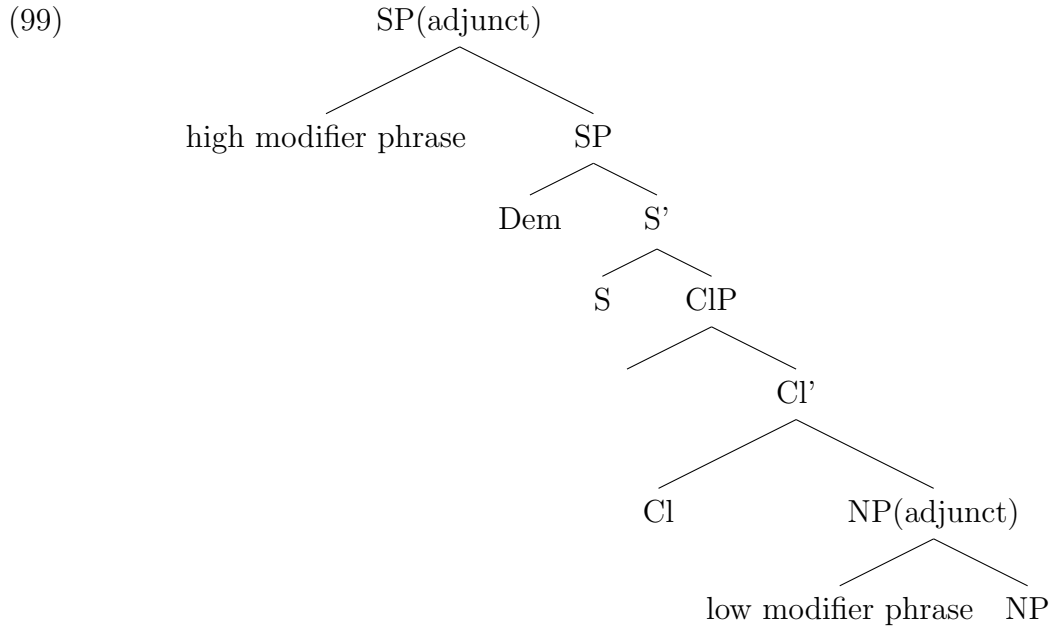
According to Sio, there is no DP in the sense of what Longobardi (1994) argues for in Chinese. Instead, specificity and argumenthood are encoded separately. Instead of a DP, she proposes a SP at the left edge of the nominal projection which is related to referentiality. This idea is shared by Cheng and Sybesma (2014), who argues that DP is simply defined as the outermost layer of the nominal projection, so it does not matter whether it is called the DP or not. As shown below, in the nominal hierarchy proposed in Cheng and Sybesma (2014), the highest functional projection FP3 carries the [+specific] feature.

(100)　　$[_{FP3[+specific]}$ F3^0 $[_{FP2[+indef]}$ F2^0 $[_{FP1[+def]}$ F1^0 [NP N^0]]]]

Sio proposes that SP is locus of specificity, and demonstratives and higher modifiers are located in SpecSP, generating the specific reading. This captures

---

(98)　　San　ge　congming de　xuesheng lai　　le.
　　　　three CL smart　　DE student　　come LE
　　　　'Three SMART students came.'

The adjective *congming* 'smart' is stressed; the meaning of the sentence is that "(the) three smart students came rather than (the) three stupid ones". In this case, it can be assumed that the empty DP is licensed by the Focus operator.

the fact that cases where the modifier appears to the left of the demonstrative are obligatorily specific.

The crucial problem with this adjunction approach is that it predicts that multiple modifiers should be free in order. However, this is not the case. The following example is given in Zhang (2015a).

(101)　　a.　na　ge　jintian meiyou lai　　de　xihuan shige　de　xuesheng
　　　　　　　that CL today　NEG　　come DE like　　poem DE　student
　　　　　　　'the student who did not come today and who likes poem'

　　　　　b.　*na　ge　xihuan shige　de　jintian meiyou lai　　de　xuesheng
　　　　　　　　that CL like　　poem DE today　NEG　　come DE student

The above two low modifiers *jintian meiyou lai de* 'today not come DE' and *xihuan shige de* 'like poem DE' are not free in order, and this suggests that the claim that they are adjoined above the NP is incorrect. Another example given by Zhang (2015) is shown below:

(102)　　a.　Jintian meiyou lai　　de　na　ge　xihuan shige　de　xuesheng
　　　　　　　today　NEG　　come DE that CL like　　poem DE　student
　　　　　　　'the student who did not come today and who likes poems'

　　　　　b.　*xihuan shige　de　na　ge　jintian meiyou lai　　de　xuesheng
　　　　　　　　like　　poem DE that CL today　NEG　　come DE student

If it is simple adjunction, it cannot explain why in the above, the modifier *jintian meiyou lai de* 'today not come' can appear in the pre-demonstrative position but not *xihuan shige* 'like poem'. For these reasons, I will not adopt this adjunction analysis in this thesis.

2.3.2.2.3　Zhang (2015a)

Zhang (2015b) continues to explore the syntax and semantics of IMNs and OMNs in MC. She argues that OMNs are derived from IMNs by nominal internal phrasal movement.

Following the analysis of adjectives in Cinque (2010), Zhang proposes that there are two functional projection zones in the nominal domain for base-generated modifiers. The lower one (FP^L) hosts direct modification adjectives, while the higher one (FP^H) hosts the indirect modification adjectives, as shown below:

(103)　　$[FP^H\ A^{indirect}\ [FP^L\ A^{direct}\ N]]$

In addition, she assumes that *de* is a head, acting as the head of the functional projection and hosting the modifier at its specifier position:

(104)

```
                    FP
                   /  \
                XP    /\
               Spec  F   YP
                    de  complement
```
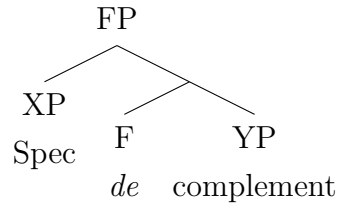
Based on the above assumptions, Zhang suggests that the adjective in OMNs
with demonstratives undergoes movement from SpecFP^H to a functional projec-
tion higher than the demonstrative (demonstratives are assumed to be located in
SpecDP).

(105)   a.   Wo kan   le na yi bu hen duan de dianyin.
             I   watch LE that one CL very short DE film
             'I watched that short film.'

        b.   Hen duan de na   yi bu dianyin hen youyisi.
             very short DE that one CL film   very interesting
             'That short film is very interesting.'

The structure for the OMN *hen duan de na yi bu dianying* 'that film which is very
short' is illustrated below:

(106)

56
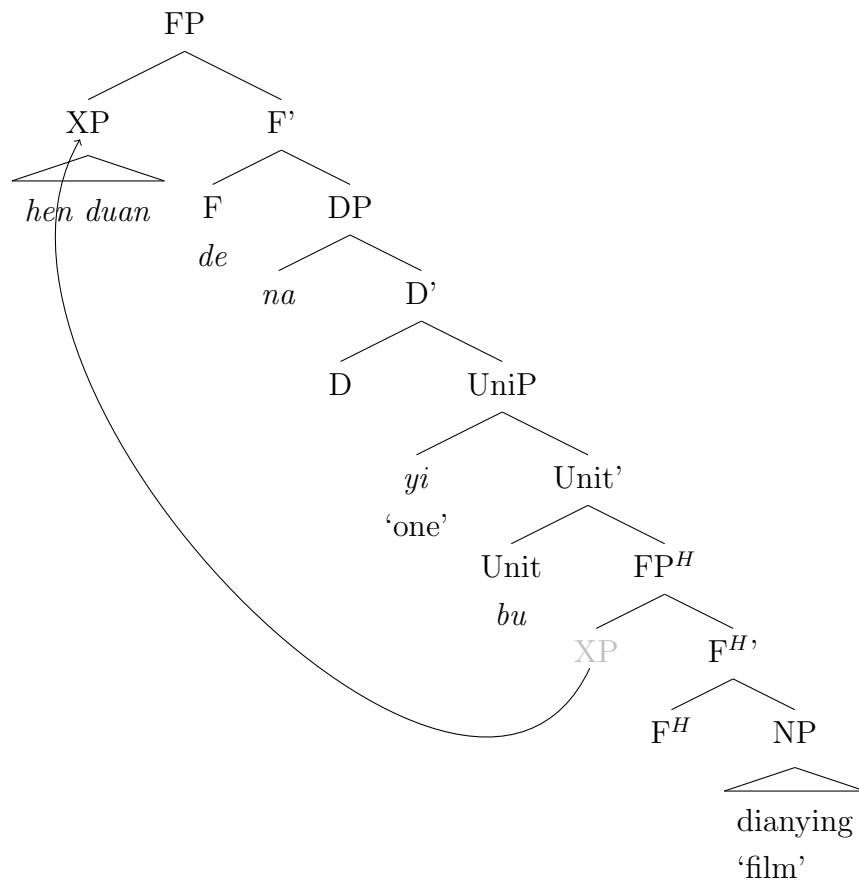
In the lower position of the movement chain, *de* is not present. Zhang suggests that the functional head *de* only appears when its specifier position is occupied. As for the presupposed reading of OMNs, Zhang (2015a) mentions that the fronted XP is focused, therefore, the rest of the OMN becomes the background, generating the presupposed specific reading.

However, a potential problem with this analysis is that it is not clear what the nature of the functional projection above the DP is. Zhang just notes that it is related to focus, but she offers no motivation for the syntactic projection of focus features in this structure.

Also, as will be discussed in the next chapter, the assumption that demonstratives are at SpecDP is problematic, as it cannot account for the cases where a pronoun and a demonstrative co-occur. Zhang's hypothesis cannot capture the contrast between the following two sentences:

(107)   a. *Wo hen xihuan congming de ta   zhe ge xuesheng.
            I   very like   smart   DE (s)he this CL student
            'I like this smart student.'

        b.   Wo hen xihuan congming de zhe ge xuesheng.
             I   very like   smart   DE this CL student
             'I like this smart student.'

If there is a functional projection above DP, there is no reason, at least under Zhang's (2015) analysis, that the adjectival modifier cannot move above the pronoun since the pronoun is within the DP. That is, the ungrammaticality of (107a) is not predicted under Zhang's proposal.

To summarise both Zhang (2006) and Zhang (2015), in the absence of demonstratives, modifiers in OMNs is in SpecDP, but when demonstratives co-occur, modifiers move to SpecFP above the DP from a lower position above the NP.

To conclude this section, following Cinque (1993, 1994, 2010), Yang (2005), Zhang (2006) and Zhang (2015a) share the same view that adjectives accompanied with *de* are merged above the NP as specifiers of dedicated functional heads. Specifically, *de* is a functional head and the adjective is located at its specifier position.

(108)

FP
XP   F   YP
Spec   *de*   complement
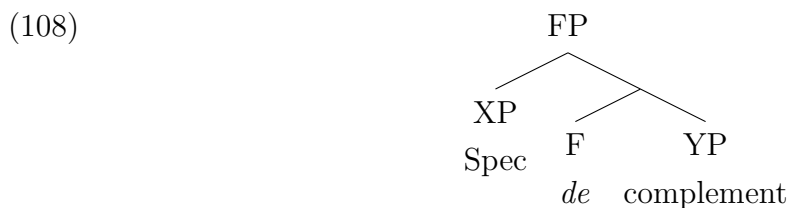
It is noteworthy that the proposal that the particle *de* is a functional head is different from Cinque's assumption where the functional heads are semantically contentful, such as size, colour, nationality.

2.4   Nominal possession in MC

In this section, as a background, I will give a brief summary of the syntax of possession in the generative literature. Then I will separate the traditionally known *de*-less cases apart from *de* possessives in MC, and introduce two constructions, i.e. juxtaposed possessives and double nominal constructions, which will be investigated in Chapter 4 and 5, respectively. The main focus of this section is exploring the syntax of *de* possessive constructions in MC.

2.4.1   Nominal possession in the DP

In this section, I introduce studies on the syntax of the DP internal constituents which are generally recognised as "possessors". This includes prenominal genitive DPs as in (a), (d), (e) in (109), possessive pronouns (b), or postnominal of-PPs (c):

(109)   a.   Mary's T-shirt is white.
         b.   Their house is white.
         c.   The dilapidated London house of a rich property developer was sold for a million pounds last week. (Alexiadou et al. 2007)
         d.   Mary's eyes are blue.
         e.   Mary's father is an engineer.

In (109), the possessive relation in (a), (b) and (c) is alienable, while those in (d) (body-part) and (e) (kinship) are inalienable. Typically, possessive relations can be divided into two types: alienable possession and inalienable possession. Inalienable possession involves an intrinsic dependency between the two entities, possessor and possessum, while in its alienable counterpart, the possessor and possessum are independent of each other. In the following, our discussion will focus on prenominal alienable possessives.[17]

----

[17]As to inalienable possession, it is argued that they have distinct structures from alienable possessive constructions. The standard view is that the inalienable possessed noun takes the possessor nominal as an argument (Guéron 1985, 2006; Vergnaud and Zubuzarreta 1992, among others).

2.4.1.1 The syntactic status of possessor in the DP

It is argued that DP-internal possessors function like the subject of the nominal projection (Alexiadou et al. 2007).

The most telling evidence for this subject-like analysis of prenominal possessors comes from Hungarian. In Hungarian, there are two pronominal possessor positions, as shown in (110) from Szabolcsi (1994).

(110)   a.   a   Mari   kalap-ja
              the Mari-NOM hat-3SG

          b.   Mari-nak   a   kalap-ja
              Mari-DAT the hat-3SG
              Mari's hat

Typically, nominative case is associated with subject-hood. Szabolcsi (1994) assumes that, in the nominative nominal structure, D takes a complement in the same way that C takes an IP complement in clauses. In (110a), the possessor nominal *Mari* is on the left edge of the nominal phrase. By analogy, it is viewed as the subject of the nominal IP and occupies SpecIP like position.

Also, the binding relationship between a thematic argument (*Mike* in (111a)) of the noun (*criticism* in (111a)) and the reflexive in its complement (*his* in (111a)) is similar to that found in the clausal domain.

(111)   a.   Mike$_i$'s criticism to his$_i$ own book
          b.   Mike$_i$ criticised his$_i$ own book during the interview.

This shows that the prenominal DP in (111a) is similar to the subject DP in (111b). Under the general assumption that prenominal possessors normally pattern like prenominal arguments of V, this fact suggests that prenominal possessors function as the subject of the nominal IP.

Szabolcsi (1994) proposes that possessive phrases have the following structure.

(112)

```
                              DP
                           ／    ＼
                       Spec        D'
                                ／    ＼
                              D        IP
                                    ／    ＼
                                  DP        I'
                                  |      ／   ＼
                                John   I       NP
                                       |        |
                                       s       book
```
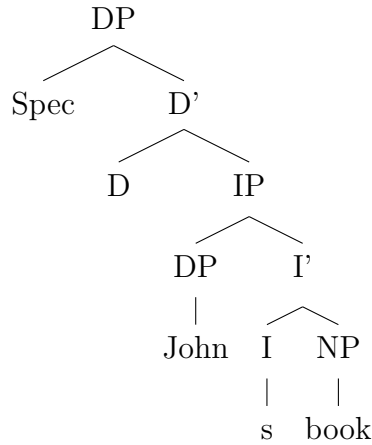
There remains the question of how the possessive relation gets licensed at the subject position. Maybe just like subjects in clauses need not have a semantic relation to the verb, this nominal subject position is not semantic, either. Actually, this subject position is just a derived position and therefore needs not to bear any semantic content. The prenominal DP originates in a lower position and the POSSESSOR relation is licensed there (Alexiadou et al. 2007).

2.4.1.2 The base position of possessor

Under the general assumption that the structure of noun phrases/DPs is parallel to that of verb phrases/CPs, an nP shell structure is proposed for nominal expressions in analogy to the vP shell structure for verbal expressions (Radford 2000). Alexiadou et al. (2007) suggest that the alienable possessor may receive the POSSESSOR role in the specifier of nP and then move to the specifier of a higher functional projection, for instance, IP. The configuration of the possession phrase is shown below:

(113)

```
                    nP/PossP
                  ／       ＼
               DP           n'/Poss'
                          ／       ＼
                      n/Poss        NP
```
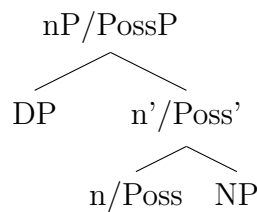
The derivation of *Mary's cup* is shown in (114):

(114) a. Mary's cup

b. $[_{nP}$ Mary's $[_{n}$ cup$_{j}]$ $[_{NP}$ $[_{N}$ t$_{j}]]]$

c. $[_{IP}$ Mary's$_{k}$ $[_{I}$ $]$ $[_{nP}$ t$_{k}$ $[_{n}$ cup$_{j}]$ $[_{NP}$ $[_{N}$ t$_{j}]]]]$

Alternatively, nP can be labelled as PossP:

(115)　　a.　$[_{nP}$ Mary's $[_{Poss}$ cup$_j]$ $[_{NP}$ $[_N$ t$_j]]]$
　　　　b.　$[_{IP}$ Mary's$_k$ $[_I$ $]$ $[_{PossP}$ t$_k$ $[_{Poss}$ cup$_j]$ $[_{NP}$ $[_N$ t$_j]]]]$

Alexiadou et al. (2007) note that even though the possessor DP is outside the projection of the head noun, it still forms a constituent PossP/nP with the noun.

　　However, under the Uniformity of Theta Assignment Hypothesis (UTAH which specifies that certain syntactic configurations have certain thematic interpretations), Adger (2003) points out a crucial problem of the above proposal. Specifically, as the specifier position of nP is reserved for particular theta roles such as agent, the possessor nominal cannot be merged there and get licensed the POSSESSOR role. Alternatively, Adger proposes that there is an optional function category PossP in the nominal projection and the possessor nominal is merged at its specifier position, as illustrated below:

(116)
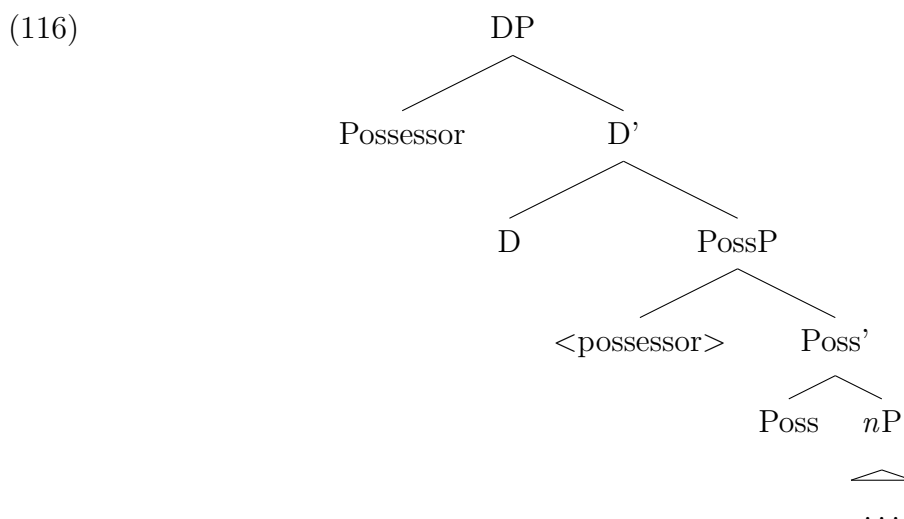
The function of the Poss head is to introduce a relationship, often possession, between its specifier and the nP. Also, as shown by the structure above, the possessor nominal later moves from SpecPossP to SpecDP. This will be the analysis I will follow in analysing possessive constructions in MC.

2.4.1.3　The derived positions of possessor

Possessors normally appear relatively high in nominal expressions. This suggests that they have undergone leftward movement from the base position. As shown in (110) above, in Hungarian, DP possessors can be marked with the nominative case.

In the following examples, the pronominal possessor *én* also receives nominative case:

(117)   a.   az *én*   kalap−om
                  the I(NOM) hat−POSS.1SG
                  'my hat'

           b.   az *én*   kalap−ja−i−m
                  the I(NOM) hat−POSS−PL−1SG
                  'my hats'

Alexiadou et al. (2007) propose that this pronominal possessor occupies the specifier of the highest functional projection dominating NP. This particular projection is labelled as AgrP which encodes possessor agreement.

In some languages, pronominal possessors do not co-occur with determiners.

(118)   a.   mon livre (French)
                  my   book

           b.   *le   mon livre
                  the my   book

           c.   *mon le   livre
                  my   the book

(119)   a.   mijn boek (Dutch)
                  my   book

           b.   *het mijn boek
                  the my   book

           c.   *mijn het boek
                  my   the book

In other languages, pronominal possessors do appear simultaneously with determiners.

(120)   il   mio libro (Italian)
          the my book

(121)   la mi casa (Old Spanish)
          the my house

Giorgi and Longobardi (1991) propose that when functioning as possessors, pronouns in some languages are determiner-like, occupying the D position, while those in others are adjective-like, locating in the specifier position of a projection lower than D. The former cannot occur with determiners while the latter can. The representations for (118a) and (120) are shown in (122a) and (122b), respectively.

(122)   a. $[_{DP}\ [_{D}\ \text{mon}_i]\ [_{IP}\ t_i\ [_{np}\ t_i\ [_{n}\ \text{livre}_k\ [_{NP}\ t_k]]]]]$

         b. $[_{DP}\ \text{il}\ [_{IP}\ \text{mio}_i\ [\ldots\ t_i\ \text{libro}\ ]]]$

In (122a), the pronominal possessor *mon* 'my' undergoes movement from Specnp, the base position, to SpecIP and then to D. In (122b), the Italian pronominal possessor *mio* 'my' moves from Specnp to SpecIP.

To conclude, possessors can appear in a number of positions within DP. Originally, they are generated at SpecnP or SpecPossP, then they may undergo movement to a higher position, either in the functional layer such as AgrP or further up in the DP layer (Alexiadou et al. 2007). This process can be schematised as follows:

(123) $[_{DP}\ \text{derived}\ [_{FP}\ \text{derived}\ [_{nP}\ \ldots\text{Possessors}]]]$

The position in nP is the base/non-derived position of the possessor, while those in FP and DP are its derived positions.

On the basis of the above discussion, Alexiadou et al. (2007) propose the following tree to illustrate the various positions of possessors in English, French, Hungarian and Italian, etc.

(124)

```
                    DP
                  /    \
              Spec      D'
               1       /  \
                      D    AgrP
                      2   /    \
                       Spec    Agr'
                        3     /    \
                            Agr     NumP
                                   /    \
                                Spec    Num'
                                       /    \
                                     Num    nP/PossP
                                           /      \
                                        Spec      n'/Poss'
                                         4       /      \
                                            n/Poss      NP
                                                      /    \
                                                   Spec    N'
                                                          /  \
                                                         N    PP
```
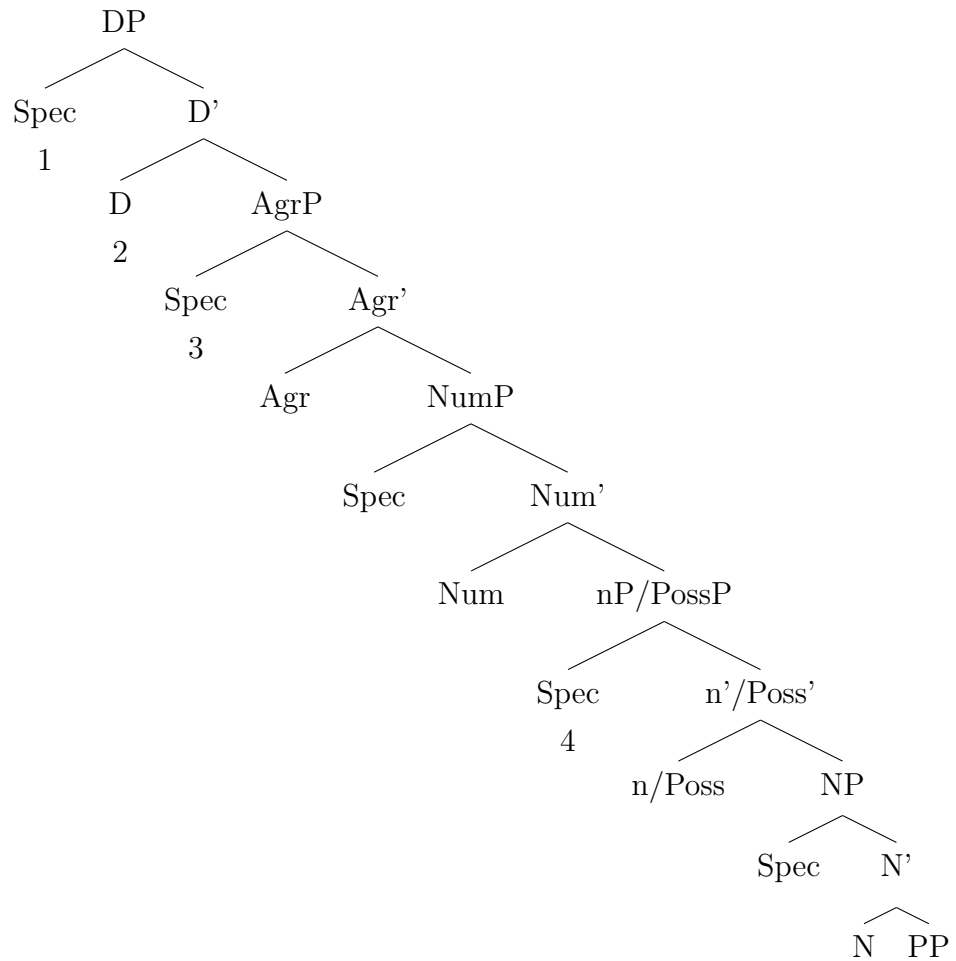
Lexical DP possessors such as *John* in *John's book* in English occupy the position marked by the number 1; clitic possessives such as *mon* in *mon livre* in French (118a) are located in 2, while pronominal possessors in Italian (120) and nominal possessors in Hungarian (117) appear in position 3.

However, as mentioned above, the assumption that possessor nominals are merged in Specnp/PossP violates UTAH. Therefore, I will follow Adger (2003) by assuming that there is an optional function category PossP in the nominal projection and that the possessor nominal is merged at its specifier position, as illustrated below:

(125)

```
                    DP
                  /    \
           Possessor    D'
                       /  \
                      D    PossP
                          /    \
                <possessor>    Poss'
                               /  \
                            Poss   nP
                                   /\
                                  ...
```
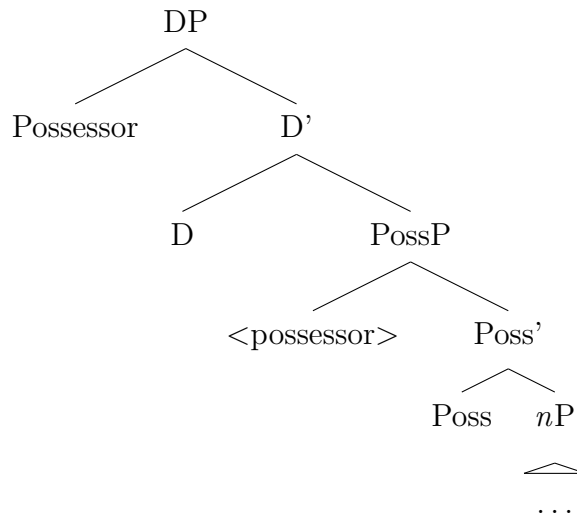
The Poss head introduces a possession relationship to the nominal in SpecPossP and the nP. This will be the assumption I will adopt in analysing MC possessive constructions below.

2.4.2 Nominal possession in MC

2.4.2.1 *de*-less cases are independent of *de* cases

As already mentioned in the Introduction, in MC, nominals can form possessive constructions with the help of the morpheme *de*. More specifically, for two nominals NP1 and NP2 that potentially bear a possessive relationship, they can form the possessive construction where the particle *de* appears between NP1 and NP2, i.e. [NP1+*de*+NP2], which can be termed as *de* possessives. Apart from *de* possessives, there are *de*-less possessives, in which two nominals appear next to each other, without the appearance of *de*. Examples of *de* possessives and *de*-less possessives are given in (126) and (127), respectively:

(126)   Wo xihuan Zhangsan de maoyi.
        I   like   Zhangsan DE sweater
        'I like Zhangsan's sweater.'

(127)   Wo xihuan ta   baba.
        I   like   s(he) father
        'I like her/his father.'

In sentence (126), the proper name *Zhangsan* and the common noun *maoyi* 'sweater' which represents a concrete object form a *de* possessive phrase *Zhangsan de maoyi* 'Zhangsan's sweater'. However, in (127), the personal pronoun *ta* forms a *de*-less

possessive phrase *ta baba* 'her/his father' with the kinship noun *baba* 'father'.

It is worth noting that the personal pronoun *ta* and the kinship noun *baba* 'father' can form a *de* possessive construction as well as a *de*-less one, as shown below:

(128)   Wo xihuan ta   de baba.
         I   like   (s)he DE father
         'I like her/his father.'

The meanings of the two phrases *ta baba* and *ta de baba* are fundamentally the same (though see Chapter 4 for some differences between them), expressing the possessive denotation "her/his father". For this reason, in the literature, it is argued that *ta baba* is derived from *ta de baba* by deleting *de*, i.e. the *de*-less form is derived from the *de* from via deletion of *de*. In other words, there is an invisible *de* in *de*-less possessive constructions (Chao 1965; Li and Thompson 1981; Zhu 1982; Chappell and Thompson 1992; Cui 1992; Lü 1999; Liu 2004; Yang 2005; Zou 2007, among others).

In addition to *ta baba* in the object position in the above, the sequence *zhe zhi mao xingge* in the subject position in the following sentence is also regarded as derived from *zhe zhi mao de xingge* by deleting *de* (Yuan 1996; Li 1998a, inter alia).

(129)   Zhe zhi mao xingge   hen wenshun.
         this CL cat   character very tame
         'The character of this cat is very tame.'

(130)   Zhe zhi mao de xingge   hen wenshun.
         this CL cat   DE character very tame
         'The character of this cat is very tame.'

Chao (1965) and Yang (2005), among others, propose that (129) is derived from (130) by deleting *de*. However, I will argue that this is not true. Sentence (129) and sentence (130) have completely different structures and *de*-deletion analysis does not apply to cases such as (129).

Moreover, I will argue that the traditional *de*-deletion analysis, which simply allows free deletion of *de*, is problematic in itself. For instance, crucially, it cannot explain why the *de* possessive phrase such as *Zhangsan de maoyi* cannot be reduced to the *de*-less form in the object position while *ta de baba* can, as shown below:

(131)   a.   Wo xihuan Zhangsan de   maoyi.
              I   like   Zhangsan DE sweater
              'I like Zhangsan's sweater.'

        b.   *Wo xihuan Zhangsan maoyi.
              I   like   Zhangsan sweater

The *de* phrase *Zhangsan de maoyi* 'Zhangsan's sweater' is acceptable in the object position, while the sequence *Zhangsan maoyi* is not. However, *de* deletion is possible for *ta de baba* in object position:

(132)   a.   Wo xihuan ta   de baba.
              I   like   (s)he DE father
              'I like her/his father.'

        b.   Wo xihuan ta   baba.
              I   like   (s)he father
              'I like her/his father.'

The above data poses a challenge to the *de*-deletion analysis. To sum up, I argue against the traditional view that the *de*-less form is originated from the *de* form by deletion. In other words, it is not the case the *de* form is the original/standard form and *de*-less form is the derived/reduced form. The *de*-deletion analysis can be termed as the 'reductionist' approach. It is in opposition to the 'separationist' approach, where it is believed that *de*-less cases are independent of *de* cases. The 'separationist' approach is the one I am going to take in this thesis.

In the next section, I will introduce two separate *de*-less cases which are traditionally known as deriving from *de* cases: juxtaposed possessives and double nominal constructions. I will point out the problems of the *de*-deletion view with respect to each construction briefly. Then I put forward the idea that the *de*-less possessives are independent of *de* possessives and they are distinct constructions with distinct syntax and semantics.

2.4.2.1.1   Juxtaposed possessives (JPs)

Yang (2005) holds the view that the *de*-less cases are derived from the *de* cases by deletion of *de*. She explores the conditions under which the possessive marker *de* can be silent in possessive phrases and reaches the following generalisation:

de in $[_{PossP}$ XP$_1$ de XP$_2]$ can be silent:

(i) when XP$_1$ is a pronoun and XP$_2$ is a relational noun, or

(ii) when XP$_2$ is headed by a demonstrative (Yang 2005:170).

Here I am only interested in the first condition (I leave the second condition for future research). The following are the supporting examples used in Yang (2005) for the first condition:

(133)   a.   Zhangsan xiang   [ta   (de)   mama]
                  Zhangsan resemble (s)he (DE_{PossP}) mother
                  'Zhangsan looks like her/his mother.'

           b.   Wo bu xihuan [ni   (de)   meimei]
                  I   not like   you (DE_{PossP}) younger-sister
                  'I don't like your younger-sister(s).'

However, there are two situations where the first generalisation is challenged: the first is when the personal pronoun is in the plural form; the second is when the possessed nominal is a body-part noun which is grouped with kinship nouns as relational nouns.[18]

First, Yang's generalisation is true for the 1st, 2nd and 3rd person singular pronouns. All of them can enter into possessive constructions with or without the accompaniment of *de*. However, it is not applicable to the interrogative personal pronoun *shui* 'who'. When *shui* 'who' performs the possessor role, *de* cannot be omitted:

(134)   a.   Zhangsan xiang   [shui *(de)   mama]?
                  Zhangsan resemble who (DE_{PossP}) mother
                  'Whose mother does Zhangsan resemble?'

           b.   Ni bu xihuan [shui *(de)   meimei]?
                  you not like   who (DE_{PossP}) younger-sister
                  'Whose younger-sister do you not like?'

Secondly, when the personal pronoun is in the plural form, *de* needs to appear.

(135)   a.   Wo bu xihuan [ni-men   de meimei].
                  I   not like   you-MEN DE younger-sister
                  'I don't like your younger-sister(s).'

          b. ??Wo bu xihuan [ni-men   meimei].
                  I   not like   you-MEN younger-sister

Lastly, the pronoun *zan* 'our', which is obligatorily inclusive, normally adjoins to relational nouns directly without the intervention of *de*:

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[18]Nonetheless, it is possible that by "relational" nouns, Yang only refers to kinship nouns, which can be seen from the fact that the examples she gives only involve kinship nouns. Body-part nouns are not mentioned in the relevant discussion in Yang (2005).

(136)   a.   zan ba/ma
            our dad/mom
            'our dad/mom'

         b.   *zan de   ba/ma
            our DE dad/mom

The sequence *zan de ma* is bad. This, however, is not captured in Yang's generalisation and the *de*-deletion view in general.

In brief, it can be seen that only singular 1st, 2nd and 3rd person pronouns can form possessive phrases without the appearance of *de*. The *de*-less possessive phrase *ta mama* 'her/his mother' is regarded as a juxtaposed possessive in Deal (2012). Following Deal, in the rest of the discussion of this thesis, I will refer to cases where a personal pronoun appears right next to a kinship noun as juxtaposed possessives (hence JPs). In the following, I will turn to the possessee nominal that forms JPs with these singular personal pronouns.

The term "relational" noun is generally used to refer to both kinship nouns and body part nouns. However, not all relational nouns can form possessive constructions without *de* with singular personal pronouns; actually only kinship nouns can. In the examples given by Yang (2005), the two possessed nominals are kinship nouns *mama* 'mother' and *meimei* 'younger-sister', respectively.

(137)   a.   Zhangsan xiang   [ta   (de)   mama]
            Zhangsan resemble (s)he (DE_{PossP}) mother
            'Zhangsan looks like her/his mother.'

         b.   Wo bu   xihuan [ni   (de)   meimei]
            I   NEG like   you (DE_{PossP}) younger-sister
            'I don't like your younger-sister(s).'

In the above, the possessor nominal and the possessee nominal bears a kinship relationship. In the following, the two bear the social relationship "teacher and student", which can be seen as a broad kinship relation.

(138)   a.   Zhangsan xiang   [ta   (de)   laoshi]
            Zhangsan resemble (s)he (DE_{PossP}) teacher
            'Zhangsan looks like her/his teacher.'

         b.   Wo bu xihuan [ni   (de)   xuesheng]
            I   not like   you (DE_{PossP}) student
            'I don't like your student(s).'

However, body part nouns cannot form possessive phrases with singular personal pronouns in the absence of *de* .

(139) a. Wo xihuan ta   de yanjing.
           I   like   (s)he DE eye
           'I like her/his eyes.'

        b. *Wo xihuan ta   yanjing.
           I   like   her/his eye

(140) a. Lanqiu   za dao le ta   de tou.
           Basketball hit DAO LE (s)he DE head
           'The basketall hit her/his head.'

        b. *Lanqiu   za dao le ta   tou.
           Basketball hit DAO LE (s)he head

Therefore, it can be seen only kinship nouns can form JPs with singular personal pronouns and all the other nouns/pronouns cannot.

I will argue in Chapter 4 that JPs are different from their corresponding *de* possessives both syntactically and semantically: (i) the former involve a KinP projection where the kinship noun takes a pro which shares phi-features with the pronoun as an argument, while the latter involve a PossP projection and there is no direct structural relationship between the two nominals; (ii) JP expressions directly refer within the speech act, whereas their corresponding *de* phrases are normal referential expressions. I will elaborate more on these differences in Chapter 4. As for the second part of Yang's generalisation: the possessive marker *de* can be silent when XP$_2$ is headed by a demonstrative, I will not address it in the current thesis. I will leave it for future research and give a brief introduction of previous analyses on this issue in Chapter 6.

In fact, Yang's (2005) research question "when *de* in [$_{PossP}$ XP$_1$+*de*+XP$_2$] can be silent" is invalid as it stands, no matter what the conclusion is. I will argue that possessive [$_{PossP}$ XP$_1$+*de*+XP$_2$] constructions exist only when *de* is present; when *de* is absent, it is not a possessive construction anymore. Also, Yang's formulations such as "the syntactic configuration that licenses a silent *de* in a possessive phrase", "a silent *de* in a possessive phrase" and "a possessive marker *de* can be phonologically null" are all problematic, because the *de* cases and *de*-less cases are different constructions with distinct syntax and semantics.

2.4.2.1.2 Double nominal constructions (DNCs)

The phenomenon that the absence of *de* results in a different construction other than a possessive construction is also observed in the double nominal constructions in MC. The term "double nominal construction" (hence DNCs) is borrowed from Teng (1974), referring to constructions where two nominals appear right next to

each other before the predicate.

In the following two groups of examples, in (141), there is a particle *de* appearing between the first nominal and the second nominal, while in (142), the two nominals stand next to each other and there is no *de* showing up.

(141)   a.   Ta   de toufa hen chang.
              (S)he DE hair   very long
              'Her/His hair is very long.'

         b.   Ta   de xingge   hen kailang.
              (S)he DE character very enlightening
              'Her/His character is very enlightening.'

(142)   a.   Ta   toufa hen chang.
              (S)he hair   very long
              'Her/His hair is very long.'

         b.   Ta   xingge   hen kailang.
              (S)he character very enlightening
              'Her/His character is very enlightening.'

Even though it is just the difference of a particle *de*, the two groups of sentences have completely different structures. This is shown by the fact that an adverb such as *qishi* 'actually' can appear between the two nominals in (142), but not inside the *de* phrases in (141).

(143)   a.   Ta   (*qishi) de (*qishi) toufa qishi   hen chang.
              (S)he actually DE actually hair   actually very long
              'Her/His hair is actually very long.'

         b.   Ta   (*qishi) de (*qishi) xingge   qishi   hen kailang.
              (S)he actually DE actually character actually very enlightening
              'Her/His character is actually very enlightening.'

In (143a), the adverb *qishi* 'actually' can only be inserted after *toufa* 'hair' but not inside the phrase *ta de toufa* 'her/his hair'. However, in (144a), *qishi* 'actually' can appear between *ta* and *toufa*. This suggests that *ta de toufa* in (143a) is a constituent but the string *ta toufa* in (144a) is not. Similarly, *ta de xingge* 'her/his character' in (143b) is a single unit but *ta xingge* in (144b) is not.

(144)   a.   Ta   qishi   toufa hen chang.
              (S)he actually hair   very long
              'Her/His hair is actually very long.'

         b.   Ta   qishi   xingge   hen kailang.
              (S)he actually character very enlightening

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'Her/His character is actually very enlightening.'

However, traditionally, Yuan (1996) and Li (1998a), and others argue that sentences in (142) are derived from those in (141), respectively, via the deletion of *de*. As shown by the adverb insertion evidence, this is not the case. DNCs are not derived from normal subject-predicate sentences through the deletion of *de*. More discussion of this point will be presented in Chapter 5.

To sum up, all the above discussion clearly suggests that the *de* form and the *de*-less form are distinct expressions with different syntactic structures and semantic interpretations as well as pragmatic functions. Therefore, they need to be examined separately.

2.4.2.2   The terminology

Before I put forward my proposal, I would like to comment on two pairs of terms that are very common in the discussion of possession: relational nouns v.s. non-relational nouns and alienable possession v.s. inalienable possession. Relational nouns are generally regarded as including kinship terms and part-whole nouns. Lin (2011) provides a definition for inalienable and alienable possession, respectively. According to him, inalienable possession "concerns whether a nominal entity holds an intrinsic relation with its possessor", which includes kinship and part-whole. Alienable possession, by contrast, "depicts possessive relations between entities that are relatively independent in terms of their existence".

However, as far as MC is concerned, these distinctions are not fine-grained enough. As introduced above, kinship terms can form JPs with personal pronouns but part-whole nouns cannot. More examples are given below:

(145)   a.   Wo xihuan ta   baba.
                 I   like   (s)he father
                 'I like her/his father.'

         b.   *Wo xihuan ta   yanjing.
                 I   like   (s)he eye

Unlike the kinship term *baba* 'father', the body-part noun *yanjing* 'eye' cannot form JPs with the pronoun *ta* '(s)he'.

Moreover, conversely, part-whole nouns can enter DNCs but kinship nouns cannot. In the following DNCs, *bizi* 'nose' is acceptable but *baba* is not.

(146)   a.   *Zhangsan qishi   baba hen ai.
                 Zhangsan actually father very short

b. Zhangsan qishi   bizi hen ai.
    Zhangsan actually nose very short
    'Zhangsan's nose is actually very short.'

Since kinship terms and part-whole nouns behave differently in important ways, it can be said that the terms relational nouns v.s. non-relational nouns and alienable possession v.s. inalienable possession are not useful distinctions to the MC data in the current thesis. In the following, I may still mention them in reviewing previous literature, but I will not use them in my own analysis. Instead, I will use kinship nouns and body part nouns directly.

In addition to kinship nouns and body part nouns, two other types of noun will be dealt with in this thesis: property-denoting nouns and entity-denoting nouns (also referred to as concrete object denoting nouns in the literature). By entity-denoting nouns, I mean nouns that represent concrete objects, both animate and inanimate, such as *mao* 'cat', *shu* 'book'. By property-denoting nouns, I refer to nouns that denote the property of an entity, such as *gezi* 'height', *zhishang* 'IQ' and *xingge* 'character'. These nouns normally indicate abstract concepts.[19]Other variations of these two terms are also used in this thesis, such as nouns that denote properties and nouns that denote concrete objects.

2.4.2.3   Three independent constructions

"Possession" is a very general term, among which, there are different sub-categories of possessive relationship. Determined by the properties of the nominals involved, different possessive relationship may have distinct syntactic realisations and distributions. For example, the kinship noun can form a constituent with the personal pronoun directly without the appearance of *de*, but entity-denoting nouns cannot. Also, property-denoting nouns and body-part nouns can enter DNCs but kinship nouns cannot. To illustrate this point more, in the following, I give four groups of examples to show how the behaviours of different types of noun vary in sentences.

1. Ownership and the entity-denoting noun *shu* 'book':

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[19]The way I use the term 'entity' and 'property' is different from that in Huang et al. (2009). Here, the former refers to practical objects in the real world, and the latter represents the properties of these concrete objects. The two bear inalienable possession. However, in Huang et al. (2009), they are used in a syntactic sense, and they refer to argument and predicate, respectively. An NP is a property-denoting expression and a DP is an entity-denoting expression, for example, 'enemy' itself is a predicate while 'the enemy' is an argument. In DNCs, 'property-denoting' does not mean predicate, but rather indicating an inalienable possessive relationship of the second nominal with respect to the first nominal.

(147)   a.   Ta   *(de) shu   hen xin.
                (s)he DE   book very new
                'Her/his book is very new.'

        b.   Wo hen xihuan ta   *(de) shu.
                I   very like   (s)he DE   book
                'I like her/his book very much.'

2. Part-Whole relation and the body-part noun *yanjing* 'eye':

(148)   a.   Ta   yanjing hen da.
                (s)he eye   very big
                'Her/his eyes are very big.'

        b.   Wo hen xihuan ta   *(de) yanjing.
                I   very like   (s)he DE   eye
                'I like her/his eyes very much.'

3. Subject-property relationship and the property-denoting noun *xingge* 'character':

(149)   a.   Ta   xingge   hen wenshun.
                (s)he character very tame
                'Her/his character is very tame.'

        b.   Wo hen xihuan ta   *(de) xingge.
                I   very like   (s)he DE   character
                'I like her/his character very much.'

4. Kinship relationship and the kinship noun *baba* 'father' :

(150)   a.   Ta   baba hen nianqing.
                (s)he father very young
                'Her/his father is very young.'

        b.   Wo hen xihuan ta   baba.
                I   very like   (s)he father
                'I like her/his father very much.'

In each of the four groups of sentences above, sentence (a) is supposed to be a DNC. According to Teng (1974), in DNCs, the predicates are normally stative or predicative and they denote the temperament and physical condition of the first nominal. As shown above, unlike *yanjing* 'eye' in (148a) and *xingge* 'character' in (149a), *shu* 'book' in (147a) cannot perform this function, thus, it is not acceptable in DNCs (*de* is obligatory in (147a)). Shi and Zhao (2009) provide a semantic

explanation to this contrast between part-whole nouns, property-denoting nouns on the one hand and entity-denoting nouns on the other hand. They state that ownees are usually not used to describe their owners, as they are external to the owner. However, properties and body-parts are used to describe or sub-categorise the possessor, as they bear an intrinsic relationship to the possessor. This contrast teases apart ownership relation from body-part and property relations.

What is more, *ta baba* in (150b) contrasts with the rest of the combinations by being able to appear in the object position in the absence of the morpheme *de*. This suggests that the sequence *ta baba* 'her/his father' is a single constituent but not the others. This is supported by the fact that the adverb *qishi* 'actually' is not allowed to appear between *ta* and *baba* in (150a):[20]

(151)   *Ta   qishi   baba hen nianqing.
         (s)he actually father very young
         'intended: Her/His father is actually very young.'

_____

[20]The following example is pointed out to me by Prof. Dingxu Shi from Hongkong Polytechnic University, to argue against the above claim that adverbs such as *qishi* cannot be inserted between the possessor nominal and a kinship term:

(152)   Ta kanqilai hen nianqing, qishi   nü'er   yijing hen da le.
         she looks like very young   actually daughter already very old LE
         'She looks very young, (but) actually her daughter is very old.'

However, the above example does not stand against my claim. This is because in example (152), what is talked about is *ta* 'she', what is contrasted is her young look and the fact that her daughter is very old. By contrast, in (153), what the sentence talks about is *ta nü'er* 'her daughter' rather than her. When *ta nü'er* is the subject, it is impossible to insert the adverb *qishi* 'actually' between *ta* and *nü'er*.

(153)   a.   Dajia   yiwei ta nü'er   hen xiao, qishi   ta nü'er   yijing   hen da
              everyone think she daughter very small, actually she daughter already very old
              le.
              LE
         b.   Dajia   yiwei ta nü'er   hen xiao, ta nü'er   qishi   yijing   hen da
              everyone think she daughter very small, she daughter actually already very old
              le.
              LE
         c.   Dajia   yiwei ta nü'er   hen xiao, ta (*qishi) nü'er   yijing   hen da
              everyone think she daughter very small, she actually daughter already very old
              le.
              LE
              'Everyone thinks her daughter is very small, actually her daughter is already very old.'

In (152), it could be argued that *ta* 'she' is the topic of the sentence and there is a pro which is co-indexed with *ta* 'she' before *nü'er* 'daughter'. Since pro is generally regarded as behaving in a similar way as pronouns, I will argue that *pro nü'er* has the same structure as *ta nü'er*, so there

In comparison, the adverb *qishi* 'actually' can be inserted between *Zhangsan* and *yanjing* in (148a), as well as *Zhangsan* and *xingge* in (149a).

(155)   Zhangsan qishi   yanjing hen da.
                Zhangsan actually eye   very big
                'Zhangsan's eyes are actually very big.'

(156)   Zhangsan qishi   xingge   hen wenshun.
                Zhangsan actually character very tame
                'Zhangsan's character is actually very tame.'

This indicates that *Zhangsan* and *yanjing* in (148a) do not form a constituent, neither do *Zhangsan* and *xingge* in (149a). In brief, in both subject and object positions, *ta baba* is a constituent but not *Zhangsan yanjing* and *Zhangsan xingge*. This shows *ta baba* is syntactically different from the rest.

Therefore, I separate the possessive relationship into three types: (i) ownership relation and entity-denoting nouns, (ii) property-denoting relation and property-denoting nouns & part-whole relation and body-part nouns, (iii) kinship relation and kinship terms. These three different semantic types have distinct realisations in the syntax. For example, according to Cheng and Ritter (1988), only part whole nouns such as *pi* 'skin' can appear in constructions such as the BA construction, and kinship terms and concrete object nouns are not allowed. For instance, as shown by the contrast between the following two sentences, *pi* 'skin' is a part of *juzi* 'orange', but *juzi* is not a part of *ta* 'him'. The former can enter BA constructions but the latter cannot.

(157)   a. Ta ba juzi   bo le pi.
                (s)he BA orange peel LE skin
                '(S)he peeled the skin from the orange.'

        b. *Wo ba ta   bo le juzi.
                I   BA (s)he peel LE orange
                Intended: 'I peeled her/his orange.'

---

is no *de* involved in the pro case. Also, *ta* in (152) can be replaced by a proper name such as *Zhangsan*, as it is pro rather than the proper name that is combined with *nü'er*, the obligatory appearance of *de* between a proper name and a kinship term does not apply here (this will be discussed in Chapter 4). The sentence below is completely fine:

(154)   Zhangsan kanqilai hen nianqing, qishi   nü'er   yijing hen da le.
                Zhangsan looks   very young   actually daughter already very old LE
                'Zhangsan looks very young, (but) actually her/his daughter is very old.'

Also, Chappell and McGregor (1996) mention that abstract nominals have the highest incidence of using *de*, however, in DNCs, they constitute the largest percentage of the nominals appearing in the second position (in DNCs).

To conclude, JP expressions and DNCs are independent constructions of *de* possessive constructions. Almost all kinds of nominal can appear in *de* possessive constructions, but only kinship nominals can appear in JPs, and only property-denoting nouns and part-whole nouns can appear in DNCs. The special features of JPs and DNCs are determined by the distinct properties of kinship nouns and property-denoting nouns and part-whole nouns, respectively.

The *de* possessive constructions will be analysed in the next in this chapter. The syntax and semantics of JP expressions and DNCs will be investigated in Chapter 4 and Chapter 5, respectively.

2.4.3 The syntax of *de* possessive constructions

For MC *de* possessive constructions, I will argue that there is a functional projection PossP projected in the nominal projection. More precisely, the particle *de* heads the PossP and the possessor nominal is merged at SpecPossP position. The schema of a possessive phrase [NP1+*de*+NP2] is therefore as follows:

(158)
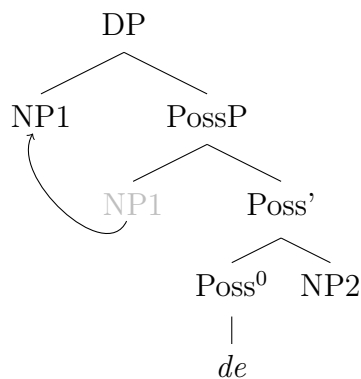
A DP is projected above PossP and the possessor nominal moves from SpecPossP to SpecDP, generating the definite reading of possessive phrases.

2.4.3.1 *de* as a possessive head

Following Yang (2005), I take the view that the marker *de* is a possessive head (assuming that *de* in possession is different from that in modification cases, see discussion below and also discussion in section 2.4.3.3) and that the possessor

nominal is combined with the possessee nominal via *de.* Yang (2005) argues that *de* is a possessive head based on the following examples:

(159)   a.   Zhang xiansheng he   Zhang taitai de haizi
                Zhang Mr.   and Zhang Mrs. DE child(ren)
                'Mr. and Mrs. Zhang's child(ren)'

          b.   Zhang xiansheng de he   Zhang taitai de haizi
                Zhang Mr.   DE and Zhang Mrs. DE child(ren)
                'Mr. Zhang's (child(ren)) and Mrs. Zhang's child(ren)'

As indicated by the interpretation, in (159a), *Zhang xiansheng* 'Mr Zhang' and *Zhang taitai* 'Mrs Zhang' are a couple and the child(ren) belong(s) to both of them. However, in (159b), there are two groups of child(ren); one group belongs to *Zhang xiansheng* and the other belongs to *Zhang taitai.* Yang (2005) reports that in (159a), it could be that there is only one child, i.e. Mr and Mrs Zhang's child. This, however, is not possible in (159b); there must be at least two children. One is Mr Zhang's but not Mrs Zhang's; the other one is Mrs Zhang's but not Mr Zhang's.

On the surface, the only difference between (159a) and (159b) is that in the latter, there is a *de* after *Zhang xiansheng.* Yang suggests that the appearance of *de* indicates there is an elided nominal *haizi* 'child(ren)' after *Zhang xiansheng* in (159b). That is to say, there are two possessives phrases *Zhang xiansheng de (haizi)* 'Mr Zhangsan's child(ren)' and *Zhang taitai de haizi* 'Mrs Zhang's child(ren)' being coordinated in (159b). By contrast, in (159a), there is no *de* after *Zhang xiansheng*; there is no elided *haizi* after it. In other words, there is only one possessive phrase in (159a) where the possessor nominal is a coordination phrase *Zhang xiansheng he Zhangsan taitai* 'Mr and Mrs Zhang'. As suggested by the meaning, *Zhang xianshen* and *Zhang taitai* are coordinated by the coordinator *he* 'and' before they form a *de* possessive construction with *haizi* 'child(ren)'. This intuition is supported by Li (2014) which argues that when *de* is a head, it can license the ellipsis of the nominal following it.

(160)   Wo bu   xihuan ta de gege,   wo xihuan ni de.
          I   NEG like   he DE elder-brother, I   like   you DE
          'I don't like his elder-brother, I like yours.'

According to Li (2014), the ellipsis of *gege* 'elder-brother' in the second clause is licensed by the head *de.* By contrast, in the following example, it cannot be the case that *gege* 'elder-brother' is elided, as the 'yours' meaning is not available:

(161)   Wo bu   xihuan ta gege,   wo xihuan ni.
         I   NEG like   he elder-brother, I   like   you
         *'I don't like his elder-brother, I like yours.'
         'I do not like his elder-brother, I like you.'

In (162) below, *ta gege* 'his elder-brother' and *ni de* 'yours' are semantically parallel (both denoting a possessive relationship), but not syntactically identical. Specifically, the former can be a head-argument construction, while the latter is a *de* possessive construction, and the part that is elided, i.e. *gege* 'elder-brother', is shared in both cases.

(162)   Wo bu   xihuan ta gege,   wo xihuan ni   de.
         I   NEG like   he elder-brother, I   like   you DE
         'I don't like his elder-brother, I like yours.'

The syntax and semantics of the morpheme *de* has been studied extensively in the literature. According to Cheng and Sybesma (2014), it is generally agreed that the morpheme *de* is a head, but opinions differ as to what kind of head it is.[21] In the following, I will follow Yang (2005), arguing that *de* is a possessive head in possessive constructions of the form [NP1+*de*+NP2].

One more piece of evidence that *de* is a possessive head is the following:

(163)   Zhangsan de fangjian he Lisi de fangjian dou   hen zang.
         Zhangsan DE room   and Lisi DE room   DOU very dirty
         'Both of Zhangsan's room and Lisi's room are very dirty.'

The possessee nominal *fangjian* 'room' can be absent in the above sentence, as shown below:

(164)   (Fangjian), Zhangsan de he Lisi de dou   hen zang.
         room   Zhangsan DE and Lisi DE DOU very dirty
         '(As for room), Zhangsan's and Lisi's are both very dirty.'

---

[21]It needs to be mentioned that other analyses of *de* have also been proposed. For instance, Cheng and Sybesma (2009) propose that *de* is an underspecified classifier, performing the function of marking count nouns as count, i.e. bringing out the unithood. Also, den Dikken (2006), Joy (2012) and others claim that *de* is a linker, which is a semantically vacuous element that links a noun phrase with any kind of phrase dependent, such as modifiers and possessors. Nonetheless, Joy (2012) notes that just like subordinating complementisers and relative clause markers, linkers in the noun phrase belong to the class of functional heads. The difference is that linkers only mark the presence of a dependent of a nominal and does not contribute to the semantic composition of the phrase, whereas a possessive head in the discussion in this thesis initiates the possessive relationship between the possessor and the possessee.

When *de* appears after *Zhangsan* and *Lisi*, respectively, the interpretation of the sentence is that there are two rooms, Zhangsan's room and Lisi's room, and both of them are dirty, as indicated by the fact that the quantifier *dou* 'both' can appear. However, when there is a *de* after *Lisi* but not after *Zhangsan*, the whole sentence can only denote a singular reading and *dou* is disallowed:

(165)   Zhangsan he   Lisi de fangjian (*dou) hen zang.
         Zhangsan and Lisi DE room   DOU   very dirty
         'Zhangsan and Lisi's room is very dirty.'

The denotation of the above sentence is that Zhangsan and Lisi share one room. This suggests that *Zhangsan* and *Lisi* form a coordination phrase before combining with the possessive marker *de*.

The contrast between (164) and (165) suggests that the appearance of *de* indicates the existence of the possessive phrase. In (164), there are two instances of *de*, so there are two possessive phrases: *Zhangsan de* and *Lisi de*. However, in (165), when *de* is absent, *Zhangsan* do not form a possessive phrase with *fangjian* 'room' independently. Li (2014) argues that when *de* is a head, it can license a null nominal following it. This above facts provide support to the assumption that *de* is a possessive head and introduces the possessive relation to the nP/DP and the nominal in SpecPossP.

2.4.3.2   [NP1+*de*+NP2] possessive constructions

I agree with Yang (2005) that the *de* possessive construction [XP_1+*de*+XP_2] has the structure below:

(166)

```
                    PossP
                   /     \
                XP_1     Poss'
                        /    \
                    Poss^0   XP_2
                      |
                      de
```
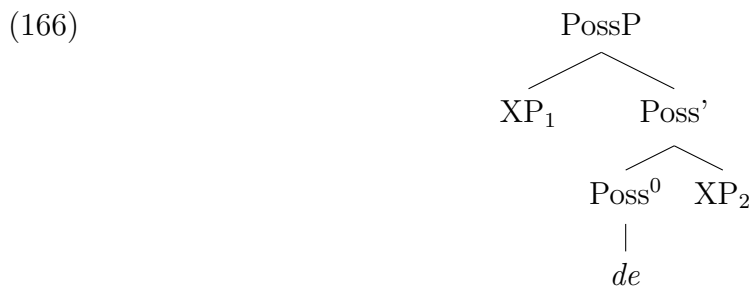
This structure is parallel to the base structure proposed for possessive constructions in Romance and Germanic languages by Szabolcsi (1994) and also the one proposed by Adger (2003) illustrated in section 2.4.1.2. There is a possessive projection above the noun phrase XP_2 which holds the possessed nominal XP1. The

article *de* functions as the possessive head and the possessor nominal is located at SpecPossP position.

Following this analysis, a possessive phrase such as *Zhangsan de maoyi* 'Zhangsan's sweater' will include the structure below:

(167)

PossP
Zhangsan   Poss'
Poss⁰   nP/DP
|
de   maoyi
'sweater'
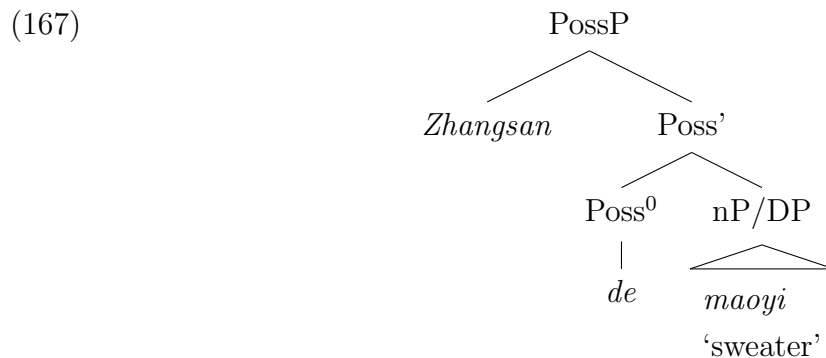
More importantly, a possessive phrase on its own such as *Zhangsan de maoyi* 'Zhangsan's sweater' is a definite phrase, as shown by the fact that it can show up in the subject position and it does not co-occur with the existential quantifier *you*:

(168) a. Zhangsan de maoyi   zai zher.
           Zhangsan DE sweater at here
           'Zhangsan's sweater is here.'

       b. *You Zhangsan de maoyi   zai zher.
           You Zhangsan DE sweater at here

Following the structure proposed in Adger (2003):

(169)

DP
Possessor   D'
D   PossP
<possessor>   Poss'
Poss   nP
. . .
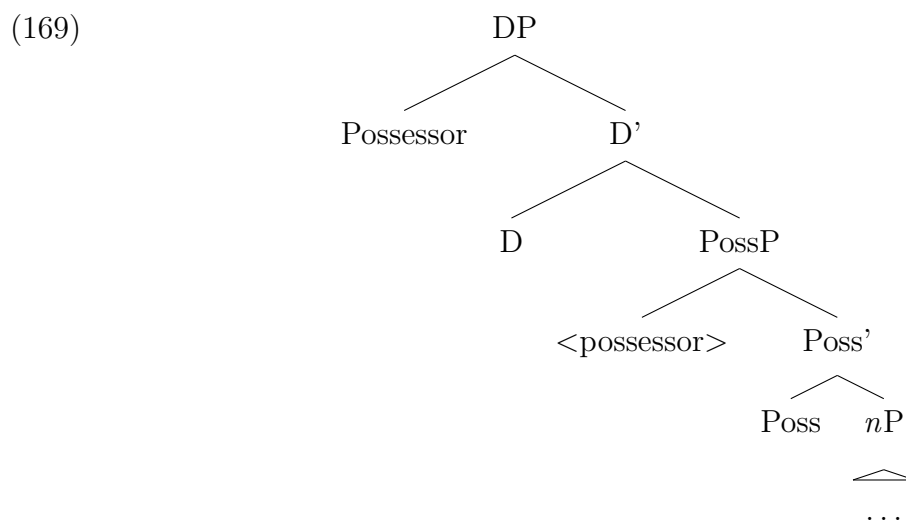
I propose in simple possessive constructions such as *Zhangsan de maoyi* 'Zhangsan's sweater', there is a DP projection above PossP and the possessor nominal moves from SpecPossP to SpecDP, generating the definite reading.

(170)
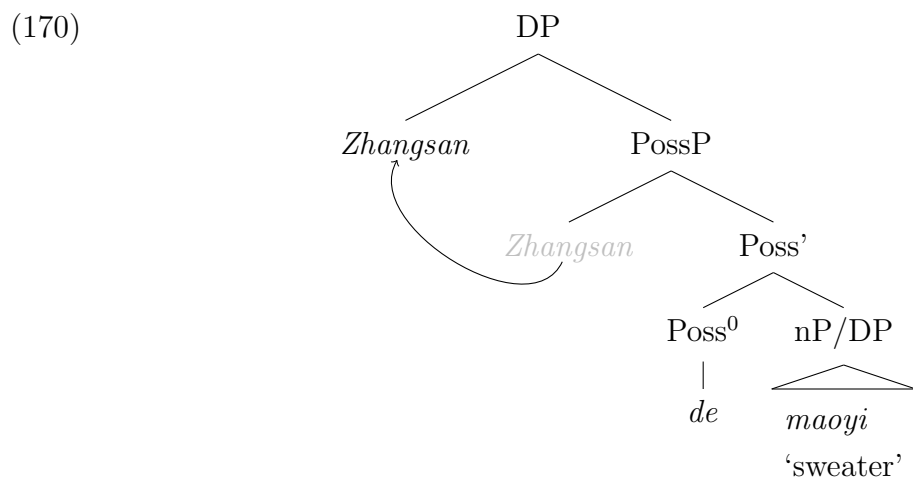
This explains why the possessive phrase *Zhangsan de maoyi* is incompatible with *you* (168b). Also, as SpecDP is filled, the phrase *Zhangsan de maoyi* can act as an argument in the subject position, as shown in (168a). As for the reason why *Zhangsan* moves and how the definite reading is generated, this will be studied in detail in Chapter 3.

Yang (2005) claims that XP_2 in $[XP_1+de+XP_2]$ must be either nP or DP.

(171)   *zhe Zhangsan de san   jian maoxianyi
          this Zhangsan DE three CL sweater

According to Yang, the sequence *san jian maoxianyi* is a NumP in the above phrase, and the fact that the whole phrase *zhe Zhangsan de san jian maoxianyi* is impossible suggests that NumP is not allowed as XP_2 in possessive constructions.

(172)   Zhangsan de san   jian maoxianyi
          Zhangsan DE three CL sweater
          'Zhangsan's three sweaters'

As for why the number phrase *san jian maoxianyi* is acceptable in the possessive construction in (172) but not in (171), Yang (2005) notes the following:

> However, the ungrammaticality of (22b) is not anticipated since a pos-
> sessor phrase generally can precede a phrase headed by a numeral,
> as shown in (14). The example in (22b) suggests that a NumeralP,
> like ClP, is not a legitimate syntactic category for a possessee phrase

(XP2). Recall the structure proposed in Chapter 2. An indefinite DP like *san ben shu* [three CL book] 'three books' that looks like a NumeralP/NumP is in fact a DP with an empty D head. Due to this empty D head that needs to be licensed in a certain configuration, a DP headed by a numeral cannot appear in the subject position in Mandarin. Therefore, we can conclude that XP2 can only be N (= nP) or DP (Yang 2005:166).

The (22b) and (14) mentioned above are exactly the examples in (171) and (172). Following Yang's assumption, the phrase in (172) will have the structure below:

(173)

'three sweaters'
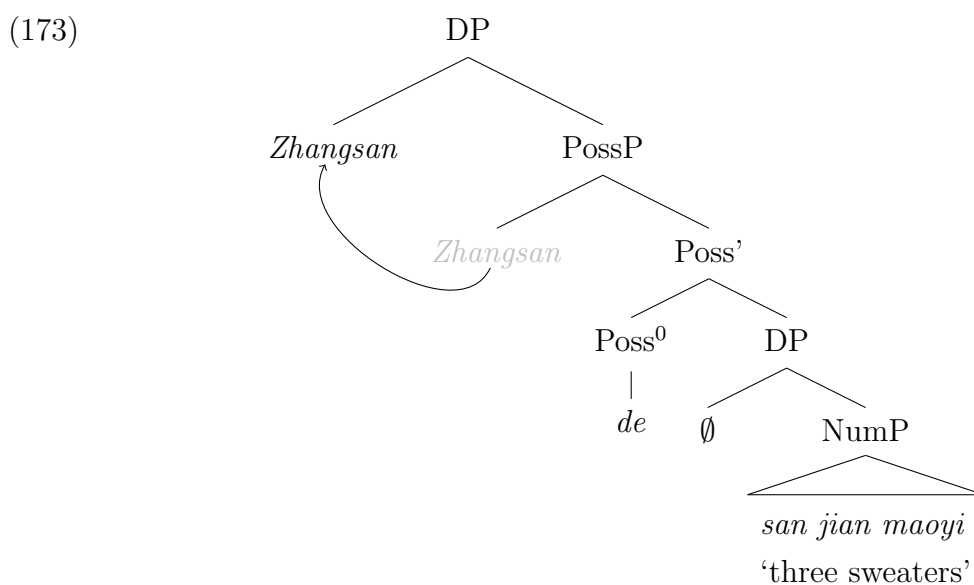
2.4.3.3 "Low" and "high" possessor phrases

The possessor phrase can appear in different positions in the noun phrase. For example, in (174a), it appears between the demonstrative sequence and the common noun *maoyi* 'sweater', while in (174b), it precedes the demonstrative.

(174) a. zhe san   jian Zhangsan de maoyi.
           this three CL Zhangsan DE sweater
           'these three Zhangsan's sweaters'

       b. Zhangsan de zhe san   jian maoyi.
           Zhangsan DE this three CL sweater
           'these three Zhangsan's sweaters'

       c. *zhe Zhangsan de san   jian maoxianyi.
           this Zhangsan DE three CL sweater

Borrowing the terms from Yang (2005), the former case (174a) can be named as "low" possessor phrase, while the latter (174b) is named as "high" possessor phrase.

Modifiers can appear high and low as well. Adjectives and relative clauses are argued to be merged above the NP and can undergo movement to a higher position inside the noun phrase (Zhang 2006, 2015a, among others). Therefore it is possible that the possessor phrase is merged above the NP, and for cases where they appear at the front of the phrase (before the demonstrative), the possessor phrase has raised to a higher position. The above hypothesis can be summarised in the following way: "low" possessor phrase is merged above the NP (175a) and then it can move to the left edge of the nominal phrase, generating the "high" possessor phrase (175b).

(175)   a.   Wo xi   le san   jian Zhangsan de maoyi.[22]
             I   wash LE three CL   Zhangsan DE sweater
             'I washed three sweaters of Zhangsan's.'

        b.   Wo xi   le Zhangsan de san   jian maoyi.
             I   wash LE Zhangsan DE three CL   sweater
             'I washed three sweaters of Zhangsan's.'

However, it is unlikely that the possessor nominal has moved. As argued earlier, the morpheme *de* is a possessive head; it is unreasonable to assume that the possessor nominal and the head undergo raising together. For example, in (175b), it could not be the case that both *Zhangsan* and *de* raise above the numeral *san* 'three'. Instead, since *de* is the possessive head, it is more plausible to assume that the sequence *Zhangsan de* is based generated above the numeral sequence. As an illustration, following the structure in (170), I propose the phrase *Zhangsan de san jian maoyi* 'Zhangsan's three sweaters' has the structure in (173) above.

A "Low" possessive construction *san jian Zhangsan de maoyi* 'three sweaters of Zhangsan' in (175a) has the structure in the following.

---

[22]4 out of 7 of my consultants think both sentences are equally good. Two of them think the "high" possessive in (175b) is better than the "low" possessive in (175a), while one of them think (175a) is better than (175b).

(176)

```
                    DP
                   /  \
                  ∅    NumP
                      /    \
                   san     ClP
                  'three'  /   \
                        jian   PossP
                         CL   /     \
                         Zhangsan   Poss'
                                   /    \
                                 de     NP
                                        /\
                                     maoyi
                                    'sweater'
```
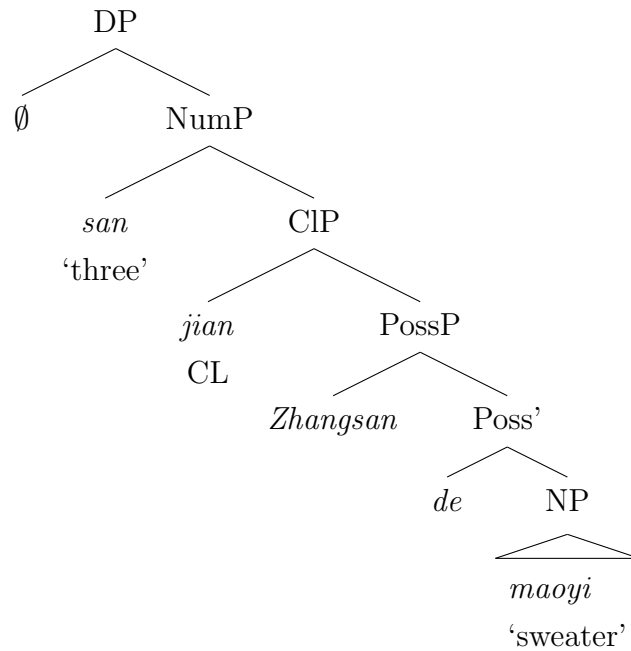
As can be seen, in this case, the DP layer is empty. The possessor nominal does not move for two reasons: one is that one has to make the unusual assumption that the possessive head *de* moves with the possessor nominal, since *de* always follows the possessor noun immediately; the other one is that the appearance of Num and Cl head would block the raising of the head *de* and that the movement of the possessor phrase across the numeral violates the Minimality principle (Rizzi 1990). Thus, the DP is empty in "low" possessive phrases where demonstratives are not present.

The above analysis is supported by the fact that both the phrases *Zhangsan de san jian maoyi* and *san jian Zhangsan de maoyi* are acceptable in the object position (177) but only the former can appear in the subject position.

(177) a. Wo xi   le san   jian Zhangsan de maoyi.
           I   wash LE three CL   Zhangsan DE sweater
           'I washed three sweaters of Zhangsan's.'

       b. Wo xi   le Zhangsan de san   jian maoyi.
           I   wash LE Zhangsan DE three CL   sweater
           'I washed three sweaters of Zhangsan's.'

(178) a. *San   jian Zhangsan de maoyi   zai zher.
           three CL   Zhangsan DE sweater at here

       b. Zhangsan de san   jian maoyi   zai zher.
           Zhangsan DE three CL   sweater at here
           'Zhangsan's three sweater are at here.'

If following the assumption that only DPs can function as arguments (Szabolcsi 1994; Longobardi 1994, among others), the fact that *Zhangsan de san jian maoyi* and *san jian Zhangsan de maoyi* can appear in the object position suggests that they are both DPs. This is captured by my proposed structures (173) and (176). The D head is empty in *san jian Zhangsan de maoyi* and it is lexically governed in the object position in (177a). However, in the subject position, this empty D cannot be licensed and this explains why sentence (178a) is bad. Following this logic, the fact that the phrase *Zhangsan de san jian maoyi* can appear in the subject position suggests that the DP is not empty. This provides support to my assumption that *Zhangsan* occupies the SpecDP position in *Zhangsan de san jian maoyi* (173).

As cited by Yang (2005), Huang (1982) points out that "high" possessive phrases and "low" possessive phrases are semantically different: the former denote a definite and specific interpretation, while the latter denote an indefinite reading. One piece of evidence he provides is that "high" possessive phrases can appear in the subject position but "low" possessive phrases cannot, as shown in (178).

Another piece of evidence offered in Huang (1982) is that the phrase *san jian Zhangsan de maoyi* can appear with the existential quantifier *you*, but *Zhangsan de san jian maoyi* cannot.

(179)   a. *You   Zhangsan de san   jian maoyi zai zher.
            YOU Zhangsan DE three CL book   at here

        b. You   san   jian Zhangsan de maoyi zai zher.
            YOU three CL Zhangsan DE book   at here
            'There are three books here belonging to Zhangsan.'

This seems to indicate that the "low" possessive phrase *san jian Zhangsan de maoyi* behaves like an indefinite noun phrase; it cannot appear in the subject position (177a) and can be accompanied by the existential quantifier *you* (179b). In contrast, the "high" possessive phrase *Zhangsan de san ben shu* shows the distribution of a definite expression: it can show up in the subject position and is incompatible with the indefinite-denoting existential quantifier *you*.

Since the "high" possessive phrase is a full DP, while the "low" possessive phrase has an empty DP projection, the semantic contrast between the definite *Zhangsan de san jian maoyi* and the indefinite *san jian Zhangsan de maoyi* is captured.

To summarise, in Mandarin *de* possessive constructions, the possessive marker *de* is a head, projecting a PossP projection, and the possessor nominal is located at SpecPossP. Both the "low" possessor phrase and the "high" possessor phrase are base-generated. When the possessor phrase appear at the left edge of the noun phrase, the possessor nominal undergoes movement from SpecPossP to SpecDP, generating the definite interpretation. This analysis is different from the general analysis of possessive constructions summarised in Alexiadou et al. (2007), which suggests that possessor nominals are based generated at SpecnP or SpecPossP, then they may undergo movement to a higher position, either in the functional layer or further in the DP layer. The main reason for discarding this movement approach is that the possessive marker *de* is a head and it is unreasonable to assume that both the Poss head and the nominal at its specifier position move.

Before I finish this section, I would like to point out that the different interpretations of "high" possessor phrases and "low" possessor phrases are similar to what happens with adjectives. Recall that in 2.3.2.2, "high" adjective phrases, that is, phrases where the adjective appears before the numeral, has a specific reading such as (180a), while "low" adjective phrases, that is, phrases where the adjective follows the numeral plus classifier sequence, are non-specific such as (180b).

(180) a. tebie congming de san ge xuesheng (OMN)
      very smart DE three CL student
      'the three students who are very smart'

    b. san ge tebie congming de xuesheng (IMN)
      three CL very smart DE student
      'three students who are very smart'

Both "low" possessor phrases and "low" adjective modifiers are merged above the NP; one at SpecPossP and the other one at SpecFP. "High" possessor phrases and "high" adjective phrases, however, are derived from different sources: the former are based generated high, while the latter are derived from the "low" adjective modifier via Spec to Spec raising.

Moreover, interestingly, when possessor phrases and adjectives co-occur, the possessor phrase always precedes the adjective. Specifically, as shown below, only the order shown in (181a) is acceptable; the order in (181b) is possible when the adjective *hongse* 'red' is stressed; and the sequence in (181e) is marginally acceptable:

(181) a. Zhangsan de na san jian hongse de maoyi
      Zhangsan DE that three CL red DE sweater

'those three red sweaters that belong to Zhangsan'

b. ?Zhangsan de hongse de na san jian maoyi
   Zhangsan DE red DE that three CL sweater

c. *hongse de na san jian Zhangsan de maoyi
   red DE that three CL Zhangsan DE sweater

d. *hongse de Zhangsan de na san jian maoyi
   red DE Zhangsan DE that three CL sweater

e. ??na san jian Zhangsan de hongse de maoyi
   tha three CL Zhangsan DE red DE sweater

f. *na san jian hongse de Zhangsan de maoyi
   that three CL red DE Zhangsan DE sweater

All the other cases where the adjective show up before the possessive phrase *Zhangsan de* are unacceptable, as can be seen in (181c), (181d) and (181f). The above facts suggest that possessor phrases behave differently from adjectival modifiers. However, I will not delve into the issue of whether *de* in possessive phrases is the same as the one in modification phrases. I will leave it for future research.

To sum up, I agree with Yang (2005) that the morpheme *de* is a possessive head and *de* possessive constructions have the structure below:

(182)

```
              PossP
             /     \
          XP_1      Poss'
                   /    \
               Poss^0    XP_2
                 |
                de
```
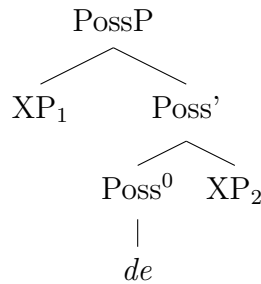
Based on the fact that possessive phrases such as *Zhangsan de maoyi* 'Zhangsan's sweater' are normally definite expressions, I propose that there is a DP projected above PossP and the possessor nominal undergoes movement from SpecPossP to SpecDP, deriving the definite reading. The schema is shown in the following:

(183)

```
                          DP
                        /    \
                      XP₁    PossP
                       ↑    /     \
                     XP₁         Poss'
                               /      \
                            Poss⁰     XP₂
                              |
                              de
```
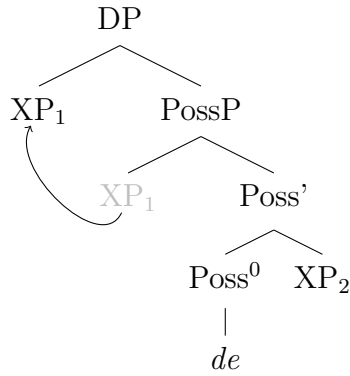
Moreover, I argue that both the "low" possessor phrase and the "high" possessor phrase are base generated, rather than that the "high" one is derived from the "low" one by raising the possessor nominal and the possessive marker *de*. And the definite interpretation of the "high" possessives (the possessor phrase is at the left edge of the noun phrase) is derived because the possessor nominal undergoes movement to SpecDP position.

So far, I have not dealt with phrases that denote kinship relationship. I have mentioned earlier that kinship relationship can be expressed either by a *de* phrase such as *ta de baba* 'her/his father' or by a *de*-less phrase such as *ta baba* when the possessor nominal is a personal pronoun. However, this is not possible for other types of possessive relationship such as ownership relation exemplified by *Zhangsan *(de) maoyi* 'Zhangsan's sweater'.

I will assume that the phrase *ta de baba* 'her/his father' has the same structure as *Zhangsan de maoyi*, as shown below.

(184)

```
                          DP
                        /    \
                      ta     PossP
                    '(s)he'  /    \
                      ↑    ta     Poss'
                                /      \
                            Poss⁰      baba
                              |       'father'
                              de
```
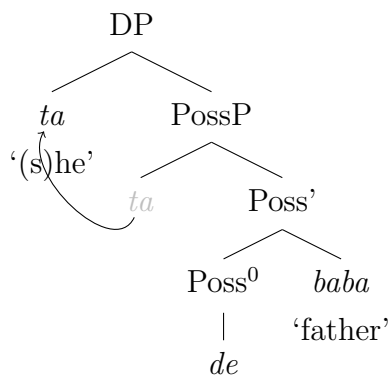
As for the phrase *ta baba* 'her/his father', it is argued that kinship nouns are verb-like, and they take the possessor nominal as a complement (Barker 1995; Alexiadou 2003; Vikner and Jensen 2003; Partee and Borschev 2003; Guéron 1985, 2006; Vergnaud and Zubuzarreta 1992, among others). In Chapter 4, I will propose an

analysis of *de*-less constructions denoting kinship relationship along these lines.

2.5 Chapter summary

To conclude, in this chapter, I introduce the dominant views on the structure of the noun phrase as well as the syntax of modification and possession in the literature. I review the main literature on three issues in the nominal domain in MC: (i) the nominal hierarchy; (ii) the syntax of modifiers; (iii) the syntax of possession.

In section 2.2, I illustrate the key arguments of the DP hypothesis (Huang et al. 2009) and the ClP hypothesis (Cheng and Sybesma 1999), respectively. I show that the DP hypothesis is more plausible for MC, because it better captures the syntactic and semantic differences between individual-denoting and quantity-denoting number expressions, and the syntactic positions of modifier and possessor phrases. I conclude that there is a DP projected in Mandarin nominal expressions, and that D is the locus of reference and performs the function of turning predicates into arguments.

In section 2.3, I summarise existing research on the syntax of adjectives in general, with a focus on Cinque's (2010) proposal on direct modification and indirect modification, specifically, his adjectives as specifiers of functional heads analysis. Then I review analyses on *de* modification in MC and show that a Cinque-style analysis in preferable: *de* modifiers are merged at SpecFP above NP. As for "high" modifiers, Zhang (2006, 2015a) and others argue that adjectives undergo phrasal movement to a higher position (SpecFP) in the nominal phrase. Contrary to Zhang (2015a), in Chapter 3, I will propose that they move to SpecDP assuming that demonstratives are merged in a projection lower than the DP.

The main focus of section 2.4 is the syntax of *de* possessive constructions in MC. I start with a brief summary of general assumptions on the base position and various derived positions of possessor nominals in the literature and then turn to studies on MC. Following Adger (2003) and Yang (2005), I propose that *de* is a possessive head, projecting a PossP projection above the NP and the possessor nominal is situated at SpecPossP position. On this basis, I further argue that both "high" and "low" possessor nominals are both based generated, rather than that the former are derived from the latter by movement.

The introduction of the nominal structure of MC in section 2.2 and its interaction with modifiers, especially adjectival ones, in section 2.3, provides important background information for the study of the syntax of demonstratives, pronouns,

proper names and the morpheme *men*. On the basis of these, I develop a new proposal of the nominal hierarchy in MC, which is [DP [DemP [NumP [ClP NP]]]] in Chapter 3.

Chapter 3

Definiteness and plurality in the NP

3.1 Introduction

This chapter develops in some new directions on Huang et al.'s (2009) DP analysis of nominal structure in MC. This line of analysis captures a wide range of data of the noun phrase in MC. Nevertheless, there are some problems with it in regard to some important issues. This includes (i) the position of demonstratives in the DP; (ii) the syntax of the proper name; (iii) the properties of the morpheme *men* and the so-called "collective" reading associated with it. In this chapter, I will follow the general assumption that a DP is projected in the nominal domain and provide an updated analysis of the stucture of the nominal expressions in MC. Compared with Huang et al.'s (2009) analysis, the proposed analysis tackles more data in MC in an elegant fashion.

The hypotheses developed in this chapter will have implications for the understanding of [personal pronoun+kinship noun] juxtaposed possessives (hence JPs) in MC. For example, the distinction between pronouns and proper names will give us a better understanding of why proper names are not allowed in JP expressions but pronouns are. Also, a better understanding of the syntax and semantics of the morpheme *men* will help us to answer the question of why the pronoun and the kinship noun cannot be suffixed with *men* in JPs. I will discuss these issues in Chapter 4 where the syntax and semantics of JP expressions are investigated in detail.

3.2   Interpreting D

It is generally assumed that arguments are universally DPs and D performs the function of turning predicates into arguments (Szabolcsi 1994; Longobardi 1994, and others). Longobardi (1994) makes the following generalisation.

> A "nominal expression" is an argument only if it is introduced by a category D. DP can be an argument, NP cannot (Longobardi 1994:613).

Apart from its syntactic function, Longobardi (1994) also examines the function of the category D from a semantic perspective, taking the basic function of D to be the conversion of the predicative category N into a referential expression, giving rise to the various interpretations of noun phrases. Longobardi (1994) summarises the semantics of the category D/determiners as follows.

> Determiners are semantically understood as operators binding a variable, whose range is always the extension of the natural kind referred to by the head noun: in the plural form of common nouns such a range is constituted by members of the extension; in the singular it is the choice of the determiner that decides whether the range is constituted by members of the extension of the kind (count interpretation) or by parts of its members (mass interpretation). Actually, the empty determiner in the Romance and Germanic languages always selects the latter option (Longobardi 1994:633).

He proposes that the logical translation of the syntactic structure [D [N]] can be represented as follows:

(1) D_x, such that x belongs to the class of N.

According to Longobardi, in (2a), the only possible understanding of *lion* is a mass interpretation "lion meat". In (2b) and (2c), however, the phrases *a lion* and *lions* quantify over the set of individual "lions", picking out just one or an indefinite number of them, respectively.

(2)   a.   I ate lion.
       b.   I ate a lion.
       c.   I ate lions.

He argues that there is actually an 'empty determiner' projected ($[_{DP}$ null $[_{NP}$ lion]]) in the bare singular pronoun *lion* in (2a).

Under the above conjecture, the denotation of *a lion* in (2b) can be represented as the one below:

(3) a_x, such that x belongs to the class of lions.

The indefinite determiner *a* binds a variable whose range is constituted by members of the kind "lion", thus, it ranges over individual lions, generating the singular reading "a lion". The definite noun phrase *the lion* can be interpreted in a similar fashion (4).

(4) The_x, such that x belongs to the class of lions.

Instead of picking out any single "lion", the definite determiner *the* picks out a particular "lion" from the members of the kind "lion", deriving the definite reading "the lion".

Likewise, the bare *lion* in (2a) can be interpreted as in (5).

(5) $null_x$, such that x belongs to the class of lions.

In this case, however, the variable bound by the null determiner is constituted by parts of the kind "lion", giving rise to the mass reading "lion meat".

3.2.1   D can be lexically filled or null

Longobardi (1994) argues that the functional head D is present syntactically even when it is absent phonologically. For instance, there is a null D present in Italian and other Romance languages. One piece of evidence for this is that bare NPs in Romance can only appear in lexically-governed positions.

(6)   a. *Acqua viene giu   dalle   colline.
             water   comes down from the hills
       b. Ho preso acqua dalla   sorgente.
           I   took water from the spring
       c. Viene giu   acqua dalle   colline.
           comes down water from the hills

As shown above, *acqua* 'water' is excluded from preverbal subject position (6a), but admitted in internal argument position (6b), and to a certain extent, also acceptable as inverted subjects of unaccusative predicates (6c). Moreover, in all the above cases, the interpretation of the bare nouns seems to be roughly similar to that of an indefinite, existentially quantified NP.

According to Longobardi (1994), both the interpretation and distribution of the bare nouns above suggest that there is necessarily an empty category D in bare nouns. This empty functional head requires some kind of lexical government. Consequently, they are banned from the sentence-initial position as shown in (6a). Also, the empty D could instantiate some sort of existential operator, which is responsible for the indefinite, existential interpretation of the bare noun.

Another case which is used to motivate the null D is the distribution of proper names in Italian. As shown below, there is no overt article co-appearing with the proper name *Gianni* in (7c); the fact that *Gianni* appears in the sentence-initial position and has a definite reading suggests that N moves to D.

(7) a. Il   mio Gianni ha finalmente telefonato.
        the my Gianni   finally   called up

    b. *Mio Gianni ha finalmente telefonato.
        my Gianni   finally   called up

    c. Gianni mio ha finalmente telefonato.
        Gianni my   finally   called up

    d. Il   Gianni mio ha finalmente telefonato.[1]
        the Gianni my   finally   called up

Specifically, from the comparison between (7a), (7c) and (7d), it appears that the lack of article *il* 'the' drives the raising of the proper name *Gianni* in (7c). According to Longobardi (1994), the above phenomenon can be explained if we assume that a functional category D is projected and this D^0 position cannot be empty since the phrase *Gianni mio* is in the non-lexically governed position. More specifically, in (7a) the definite article occupies the D^0 position, while in (7c) in the absence of the article *il* 'the', the head noun moves form N^0 to D^0 to fill this position.

As can be seen from the above discussion, apart from the apparent cases where determiners show up overtly, D also exists covertly. That is to say, the D position can be either filled or null. When D is filled, the nominal can appear in different positions freely; when it is empty, the noun phrase is restricted to lexically governed position. Moreover, as mentioned above, Longobardi suggests that empty D instantiates some sort of existential operator, which is responsible for the indefinite reading of nominals. I will discuss this point in more detail in what follows.

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[1]Example (7d) is special. It can only be understood with a contrastive interpretation, which is not necessary to sentence (7a) and (7c), see Longobardi (1994:623) for more details.

3.2.2 Empty D triggers indefiniteness

Longobardi (1994) proposes the following universal constraints on empty determiners.

(8) a. $[_D \text{ e}]$ = default existential interpretation
     b. an empty head must be lexically governed.

Specifically, he suggests that a D head which does not have overt lexical content will always be interpreted as an existential operator. The application of the existential operator generates an indefinite reading.

> They receive an indefinite interpretation corresponding to an existential quantifier unspecified for number and taking the narrowest possible scope (default existential) (Longobardi 1994:633).

It can be seen that the existential operator associated with null D gives rise to an indefinite reading. This provides an account for the indefinite reading of individual denoting number expressions discussed in Chapter 2.

(9) *San   ge xuesheng, wo zhidao zai xuexiao shoushang le.
      three CL student   I   know at school hurt   LE

(10)   You san   ge xuesheng zai xuexiao shoushang le.
       have three CL student   at school   hurt   LE
       'There are three students who were hurt at school.'

According to Huang et al. (2009), the expression *san ge xuesheng* 'three students' in (10) is an indefinite individual-denoting expression and has the structure $[_{DP} \text{ D}$ $[_{NumP} \text{ san ge xuesheng}]]$. Following the discussion above, the empty D is an existential operator, generating the indefinite reading of the phrase *san ge xuesheng*. Also, this operator needs to be lexically governed, so it determines that *san ge xuesheng* cannot appear in non-lexically governed position, such as in (9). Contrastively, in (10), the existential quantifier *you* governs the empty D in $[_{DP} \text{ D}$ $[_{NumP} \text{ san ge xuesheng}]]$.

By contrast, according to Longobardi, proper names and pronouns are interpreted in a different fashion. Specifically, he notes that a DP like *Gianni* or *him* will not normally be understood in the following way:

(11) D_x, such that x belongs to the class of Giannis/hims

Rather, pronouns and proper names directly designate the entity represented by them. This semantic property of pronouns and proper names is likely to be responsible in turn for their syntactic distributions: they are not restricted to lexically governed positions and can appear in all argument positions. Longobardi (1994) proposes that proper names undergo N-to-D movement and pronouns are merged in D.

> Of all kinds of head noun throughout the Romance and Germanic languages, only two can apparently be argued to occupy the D position at PF: certain proper names in Romance, and pronouns more generally (Longobardi 1994:635).

It is noteworthy that Longobardi's above proposal relies heavily on the assumption of lexical government, that is, a null element needs to be lexically governed. I will take the findings about lexical government as true generalisations, though I will not delve deeply into why they hold. As an alternative, however, one way to rethink the issue of lexical government is that the null D is purely a variable, and cannot be interpreted in topic/subject position.

3.2.3 D needs to be filled to license definiteness

The idea that D needs to be filled in order for the definite reading to be licensed has been mentioned in a number of works (Longobardi 1994; Simpson 2005; Cheng and Sybesma 2012; Hall to appear, inter alia). In the following, I will start from Longobardi's (1994) discussion on proper names which are assumed to move to fill D to avoid the indefinite reading, and then turn to research on MC which argues that either D or SpecDP needs to be lexically occupied to license definiteness.

Very importantly, Longobardi (1994) points out that the N to D movement of proper names is not just driven by syntactic factors, but also there is a genuine semantic reason for the movement, i.e. to generate the definite reading. This claim is supported by the following examples.

(12)   a.   E' venuto il   vecchio Cameresi.
             came   the older   Cameresi

    b. *E' venuto vecchio Cameresi.
          came   older   Cameresi

    c.   E' venuto Cameresi vecchio.
          came   Cameresi older

    d.   E' venuto il   Cameresi vecchio.
          came   the Cameresi older

As can be seen from all the above examples, the nominal sequence headed by the proper name acts as the inverted subject of unaccusative predicate *E' venuto* 'came', so it is already in the governed position. Therefore, the syntactic motivation for the raising of the proper name in (12c) does not apply here. Thus, the only explanation is that in the absence of the definite article, the proper name moves to fill the D position to license the definite interpretation. As noted in Longobardi (1994):

> ...filling the empty D by means of the raised proper name is necessary not just for syntactic reasons but also and primarily for semantic ones, namely, to avoid an inappropriate quantified interpretation of the latter position (which would result in a mass and indefinite reading for the whole nominal) (Longobardi 1994:626).

With regard to MC, the idea that to license definiteness, the functional projection which encodes definiteness needs to be filled is also expressed in Cheng and Sybesma (1999). Under the assumption that Cl^0 is the locus of reference, Cheng and Sybesma (1999) claim that to express definiteness, either the Cl position is filled by a classifier (Cantonese) or the iota operator is used (Mandarin). As already introduced in section 2.2.3.2.2 in Chapter 2, Cheng & Sybesma argue that N to Cl movement is a necessary step for the use of ι operator, which generates the definite reading.

Therefore, Cheng & Sybesma's claim can be put in the following way: definiteness can only be generated when Cl is filled, either by a base generated classifier (as in Cantonese [Cl+N] phrases) or by a raised element (as in definite bare nouns in MC) triggering the ι operator. Similar ideas that the syntactic projection which encodes reference must be lexically occupied to license definiteness can also be found in Simpson (2005) and Hall (to appear). The difference is that Simpson and Hall take D to be the locus of the reference rather than Cl (see also Wu and Bodomo 2009).

Simpson (2005) reports that when an indefinite [Num+Cl+N] phrase is accompanied by a demonstrative, a definite reading is resulted, as shown by the following Cantonese and Nung (a northern Thai language) examples, respectively.

(13)   goh saam bo sue
        dem three CL book
        'those three books '

(14)   slong ahn sleng   le
        two   CL province Dem

'those two provinces'

Based on these facts, Simpson draws the assumption that there should be another functional layer above NumP in the nominal projection and it is DP. He further proposes that the locus of reference should be D^0 and that it is the appearance of a particular morpheme in either D^0 or SpecDP that gives rise to the definite interpretation of DP.[2] More specifically, Simpson (2005) notes the following:

> It can be suggested that in the languages in question either the D^0 or SpecDP must be overtly instantiated by some lexical element in order for the definite interpretation to be triggered/signalled, and that otherwise the DP will be interpreted as having a default indefinite value (Simpson 2005:14).

Following Cheng and Sybesma (1999) and Simpson (2005), Hall (to appear) proposes that when D is merged, the noun phrase is interpreted as definite only if the structure meets some licensing conditions on definiteness. Specifically, the idea is that in order to license definiteness, either D or the specifier of D needs to be filled. Hall's main argument for this proposal is that high modifier nominals (HMNs, also see section 2.3.2.2 in Chapter 2), that is, noun phrases in which the modifiers appear in a pre-numeral position, are necessarily definite and this definite reading is licensed by the fact that SpecDP is occupied by the "high" modifier.

As already discussed in section 2.3.2.2 in Chapter 2, MC adjective modifiers can appear low and high in a nominal configuration. When a numeral and a classifier appear, the canonical position of adjective modifiers is between the classifier and the common noun (Numeral-Cl-Adj-N), as shown in (15a), which can be termed as "low modifier nominals" (LMNs). The adjective phrase can also appear before the numeral (Adj-Numeral-Cl-N), as show in (15b), which is called "high modifier nominals" (HMNs).

(15) a. *San   zhi huangse de gou hen keai.
          three CL yellow   DE dog very cute

      b. Huangse de san   zhi gou hen keai.
          yellow   DE three CL dog very cute
          'The three yellow dogs are very cute.'

---

[2]Simpson (2005) claims that demonstratives are in D^0. However, as will be pointed out in the next section that demonstratives are not the equivalents of definite articles (Cheng and Sybesma 2012) and I will argue that demonstratives head an independent projection Dem(onstrative)P in MC.

Hall (to appear), et al. report that LMNs are necessarily indefinite while HMNs are obligatorily definite, as shown by the contrast between (15a) and (15b) above.[3] Specifically, the phrase *san zhi huangse de gou* 'three yellow dogs' in (15a) is indefinite and also cannot appear in the subject position, which suggests that there is a null D projected. By contrast, the HMN *huangse de san zhi gou* 'the three yellow dogs' in (15b) has a definite reading and appears in the subject position.

According to Hall (to appear), the fact that HMNs must be definite follows naturally from the licensing conditions proposed. To be more precise, it is assumed that the adjective phrase in HMNs is located in Spec D, licensing the D head.[4] D introduces the iota operator which binds a variable introduced by a Num head, deriving the definite reading. By contrast, in the LMN *san zhi huangse de gou*, the adjective in merged above NP and the D head is not filled; as a result, D is not licensed; therefore, it denotes an indefinite reading.

Because Hall argues against the head movement analysis for definite bare nouns in MC, he proposes a separate condition for bare nouns interpreted as definite which assumes a syntax-phonology mapping, which makes use of the notion of morphological "spans" (see e.g. Svenonius 2012, among others). In the current thesis, I still adopt the head movement analysis, I will not discuss Hall's exact proposal here (see Hall (to appear) for a detailed discussion). Under the head movement analysis, it is assumed that definite bare nouns undergo N to D movement. Since D is occupied by the common noun, the definite interpretation is licensed.

In brief, Longobardi (1994), Cheng and Sybesma (1999), Simpson (2005) and Hall (to appear) assume that the the position that encodes definiteness needs to be occupied in order for it to be interpreted as definite. In Hall's term, there has to be some kind of morphological "flagging" for D to be interpreted (the morpho-syntactic structure needs to be phonologically realised). In languages which have definite articles, normally it is the articles that occupy this position. In MC, as there is no article, other elements need to move to fill D for it to be interpreted as definite. This could be proper names or definite bare nouns moving from N to D, "high" modifiers occupying SpecDP (possibly via movement) or other elements raising from a lower specifier position to SpecDP. For instance, recall that in Chapter 2, I argue that in *de* possessives, the possessor nominal undergoes

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[3]However, Zhang (2015b) points out that both HMNs and IMNs can be indefinite. The difference is that HMNs can only be specific whereas LMNs can be either specific or non-specific.

[4]However, it is not discussed whether the adjective phrase is based generated in Spec D or moves there from a lower position in Hall (to appear).

movement from SpecPossP to SpecDP to license the definiteness of the possessive phrase:

(16)

$$
\begin{array}{c}
\text{DP} \\
\diagup \quad \diagdown \\
\text{XP}_1 \qquad \text{PossP} \\
\qquad \diagup \quad \diagdown \\
\text{XP}_1 \qquad \text{Poss'} \\
\qquad \diagup \quad \diagdown \\
\text{Poss}^0 \quad \text{XP}_2 \\
\mid \\
de
\end{array}
$$
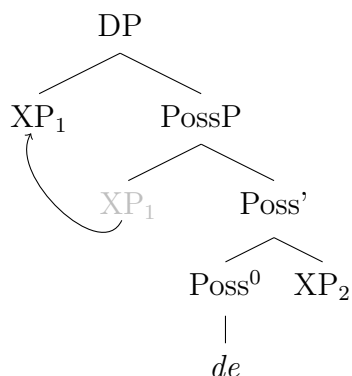
Additionally, as will be pointed out in the next section, the demonstrative also moves up to license definiteness.

To conclude, it is a shared assumption that the DP (either D or SpecDP) needs to be filled morphologically in order for the definite/specific interpretation to be generated. This is the fundamental assumption which the rest of the analyses in this thesis will be built on.

3.3 Demonstratives, pronouns and proper names

3.3.1 Previous analyses

In Chapter 2, I introduce two major hypotheses on the syntax of the noun phrase in MC: the DP hypothesis represented by Huang et al. (2009) and the ClP hypothesis led by Cheng and Sybesma (1999). In the next, I will review the analyses of demonstratives, pronouns and proper names under these two approaches, respectively.

3.3.1.1 Huang et al. (2009)

Under the general assumption that D is the locus of reference or definiteness, Huang et al. (2009) claim that all the expressions related to reference or definiteness in Chinese are located in D, and this includes demonstratives, pronouns, proper names, and even definite bare nouns.

3.3.1.1.1 Demonstratives

Huang et al. (2009) propose that demonstratives are in D, because we can find expressions of the form [demonstrative+number+classifier+noun] in Chinese:

(17)   zhe/na   san   ge   xuesheng
      this/that three CL student
      'these/those three students'

The interrogative demonstrative *na* 'which' is also in D position, as shown below:

(18)   na   san   ge   xuesheng
      which three CL student
      'which three students'

It is also pointed out that a demonstrative may be followed by a classifier directly, without a number:

(19)   zhe/na   ge   xuesheng
      this/that CL student
      'this/that student'

It is possible that in this case, the category Num is not projected.

3.3.1.1.2 Pronouns

As argued in Longobardi (1994), pronouns are base-generated in D position, this is also argued to be the case in Chinese. Huang et al. (2009) show that a pronoun can be followed by a number, or a noun in Chinese and that these expressions can occur in all argument positions.[5]

(20)   Ta-men   liang ge (xuesheng) hen congming.
      (s)he-MEN two   CL (student)   very smart
      'These/Those two (students) are very smart.'

(21)   Ta-men   xuesheng bu   hui xihuan gongke   de.
      (s)he-MEN student   NEG will like   homework DE
      'Them students will not like homework'

In the above, the expressions *ta-men liang ge (xuesheng)* 'these/those two students' and *ta-men xuesheng* 'them students' appear in the subject position. In (22), the former appears after the preposition *dui*; in (23), the latter is fronted to the

---

[5]The common noun *xuesheng* in (20) can be covert. When it is absent, the meaning 'student' will be provided by the context.

sentence-initial position, showing that the pronoun is in constituency with the numeral phrase or common noun following it.

(22) Wo dui ta-men   liang ge (xuesheng) hen you haogan.
      I   to (s)he-MEN two CL student   very have good-feeling
      'I have good feelings toward these two students.'

(23) Ta-men   xuesheng, wo zhidao bu   hui you shenme qian   de.
      (s)he-MEN student   I   know   NEG will have what   money DE
      'These students, I know they will not have much money.'

The fact that these expressions can appear in all argument positions and denote a definite reading indicates that the pronoun is in the D position in Chinese. The structure of the [pronoun+(number)+(classifier)+noun] sequence, such as *ta-men liang ge xuesheng* 'these/those two students', is shown as follows.

(24)
```
                            DP
                           /  \
                          D    NumP
                          |    /   \
                       ta-men Num   ClP
                      '(s)he-MEN' |   /  \
                             liang Cl   NP
                             'two' |    |
                                   ge   N
                                        |
                                    xuesheng
                                    'student'
```
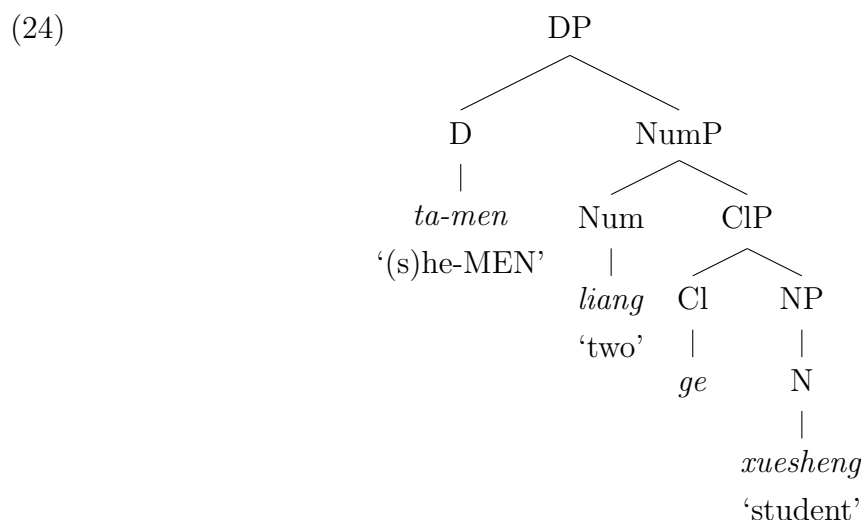
However, a question for the above proposal is how to deal with cases where demonstratives and pronouns co-occur, if they are both in D. For instance, what is the structure of the sentence below?

(25) Wo bu   xihuan ta-men   na-xie   xuesheng.
      I   NEG like   (s)he-MEN that-XIE student
      'I do not like those students.'

More interestingly, a proper name, a pronoun and a demonstrative sequence can show up together in MC such as in the sentence below.

(26) Wo hen   xihuan Zhangsan ta   zhe ge xuesheng.
      I   NEG like   Zhangsan (s)he this CL student

'I like the student Zhangsan.'

The sequence *Zhangsan ta zhe ge xuesheng* has the meaning of 'the student Zhangsan' or 'Zhangsan who is a student'.

Huang et al. (2009) suggest that when a proper name, a pronoun and a demonstrative sequence co-occur, the demonstrative is in D, the pronoun is adjoined to D and the proper name would be in Spec D. Their argument is based on the following four syntactic properties of the sequence [proper name+pronoun+demonstrative]. First, the order [proper name+pronoun+demonstrative] is fixed. Secondly, nothing can intervene between any two of these expressions. Thirdly, a proper name cannot be suffixed by *men* when a pronoun or a demonstrative appears.

(27)   a. *Xiao Qiang-men zhe/na   san ge langutou
            Xiao Qiang-MEN this/that three CL lazybones

        b. *Xiao Qiang-men ta-men   san ge
            Xiao Qiang-MEN (s)he-MEN three CL

Finally, the pronoun and the demonstrative must agree in number but the proper name needs not to. *xie* is considered as a plural marker in Huang et al.. As shown in (28) below, both the pronoun *ta* '(s)he' and the demonstrative *na* 'that' need to be suffixed by the plural marker (*men* and *xie*, respectively), but not the proper name *Zhangsan*.

(28)   a. Zhangsan ta-men   na-xie   xuesheng
            Zhangsan (s)he-MEN that-XIE student
            'those students such as Zhangsan'

        b. *Zhangsan ta   na-xie   xuesheng
            Zhangsan (s)he that-XIE student

On the basis of these facts, Huang et al. (2009) note the following:

> Thus, we suggest that the form [proper name+pronoun+demonstrative] has the structure below, where the demonstrative occupies the D position, the pronoun is adjoined to D, and the proper name is in Spec of D (Huang et al. 2009:299):[6]

(29)

```
                        DP
                    ╱        ╲
                Spec           D'
                 │          ╱      ╲
               Name        D        D
                           │        │
                        pronoun  demonstrative
```
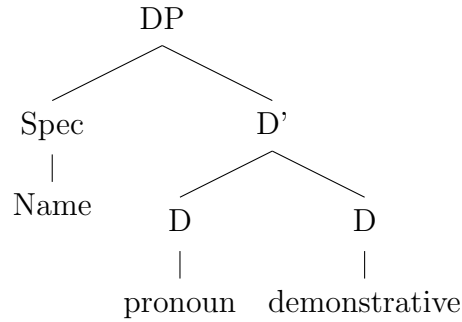
However, there is a problem with this proposal. That is, if *men* is the spell-out of a plural feature, and needs to attach to some elements, then how can the plural feature be realised as *men* on the pronoun which is adjoined to D but not on the demonstrative? As shown below, the demonstrative *na* 'that' is singular.

(30)　　Wo xihuan Zhangsan, Lisi ta-men　　na　ji　　ge guai haizi.
　　　　I　like　　Zhangsan, Lisi (s)he-MEN that several CL good child(ren)
　　　　'I like Zhangsan, Lisi those good children.'

(31)

```
                              DP
                        ╱            ╲
                    name              D'
                     │            ╱        ╲
              Zhangsan, Lisi    D            NumP
                             ╱    ╲       ╱       ╲
                       pronoun   Dem   Spec       Num'
                          │       │     │       ╱     ╲
                        ta-men    na    ji    Num      ClP
                      '(s)he-MEN' 'that' 'several' │   ╱    ╲
                                              Plural feature Cl  NP'
                                                        │   ╱   ╲
                                                        ge  AP    NP
                                                            │     ╱╲
                                                          guai  haizi
                                                          'good' 'children'
```

---
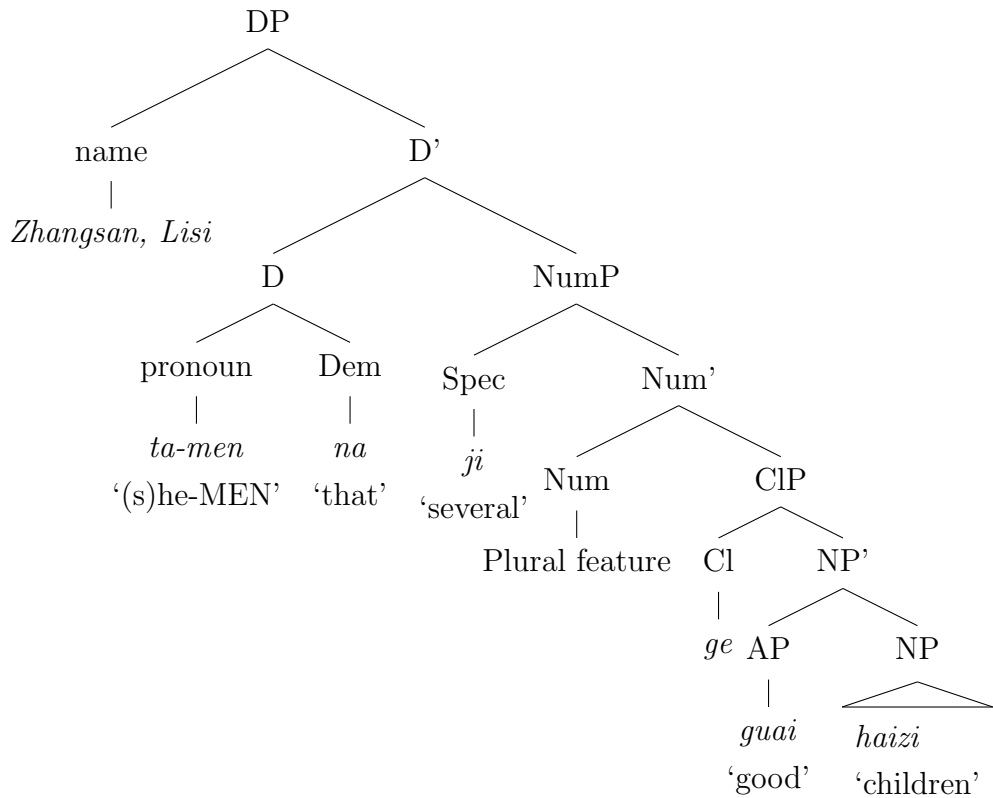
⁶There may be a typo in Huang et al. (2009). As argued above, demonstratives occupy the D position, but in the tree in Huang et al. (2009:316), the node above the demonstrative is NumP. Also, the above structure is problematic: the specifier position of D is not available unless D takes a complement.

The explanation provided by Huang et al. (2009) is that a demonstrative, morphologically, does not take the *men* suffix. Instead, the plural feature is realised on the pronoun that is also in D. However, this explanation is not convincing; there might be genuine syntactic reasons why the morpheme *men* is affixed to the pronoun but not the demonstrative. I will discuss this in more detail in section 3.4.1. Moreover, this proposal cannot capture the different distributions of pronouns and demonstratives: for instance, the fact that an adjectival modifier can precede a demonstrative but not a pronoun goes unexplained (this will be discussed in section 3.3.2.1). As a matter of fact, the proposed syntactic relation between the pronoun and the demonstrative (a D head adjoins to another D head) itself is not compelling. These issues will be discussed in section 3.3.2.

3.3.1.1.3 Proper names

Summarising the discussion on proper names in Huang et al. (2009), it can be seen that they assume proper names can be merged in three positions: (i) bare proper names are merged in D; (ii) proper names co-occurring with pronouns/demonstratives are base-merged in Spec of D; (iii) proper names used as common nouns when appearing with *men* are base generated in N.

First, Huang et al. (2009) suggest that proper names in Chinese occupy (the Spec of) D position. Both pronouns and proper names denote designated entities. Based on the assumption that D is the locus of reference and definiteness, Huang et al. suggest that it should host proper names and definite noun phrases, as well as pronouns and demonstratives.

However, unlike pronouns, proper names cannot precede common nouns or number expressions directly:

(32) a. Wo xihuan ta-men   xuesheng.
          I   like   (s)he-MEN student
          'I like the students.'

      b. *Wo xihuan Zhangsan/Zhangsan he   Lisi xuesheng.
          I   like   Zhangsan/Zhangsan and Lisi student

(33) a. Wo xihuan ta-men   liang ge hao xuesheng.
          I   like   (s)he-MEN two   CL good student
          'I like the two good students.'

      b. *Wo xihuan Zhangsan he   Lisi liang ge hao xuesheng.
          I   like   Zhangsan and Lisi two   CL good student

Normally, a pronoun or a demonstrative needs to show up after the proper name and before the number expression:

(34) Wo xihuan Zhangsan, Lisi ta-men   ji   ge guai haizi.
      I   like   Zhangsan, Lisi (s)he-MEN several CL good children
      'I like Zhangsan, Lisi and a few other good kids.'

(35) Wo dui Zhangsan zhe ge xuesheng mei   you shenme yinxiang.
      I   DUI Zhangsan this CL student   NEG have what   impression
      'I do not have much [of an] impression of the student Zhangsan.'

If both proper names and pronouns are base-merged in D, their different distributions would not be captured. Contrastively, it could be that the proper name is not base-merged in D. I will return to this issue in section 3.3.3.

Also, as mentioned earlier, Huang et al. propose that when co-occurring with a pronoun and a demonstrative, the proper name occupies SpecDP.

(36) Wo xihuan Zhangsan ta   zhe ge yonggong de xuesheng.
      I   like   Zhangsan (s)he this CL diligent   DE student
      'I like the diligent student Zhangsan.'

Moreover, when discussing the fact that proper names are allowed to be suffixed with *men* when used as a common noun, Huang et al. mention that proper names are base-generated in N. However, no syntactic trees are given for this configuration in Huang et al. (2009). Additionally, Huang et al. comment that "a true proper name" is base-generated in Spec of D. I will come back to these issues in 3.4.1.

To conclude the discussion above, there are a number of complications of the analysis proposed in Huang et al. (2009). First, the claim that demonstratives are generated in D is debatable, as it could be argued that it is located at an independent Dem(onstrative) head, which actually captures the behaviours of demonstratives and pronouns better. Secondly, the different syntactic behaviours of pronouns and proper names cannot be explained if they are both merged in D. Moreover, the proposal that bare proper names affixed with *men* are in N is problematic (see section 3.4.1 for detailed discussion).

In section 3.3.2 and 3.3.3, I will propose a modified analysis for demonstratives and proper names, respectively. The updated analyses aim to solve the problems laid out above. On the basis of the new analyses, I will re-examine the syntax and semantics of the morpheme *men* in section 3.4.1.

3.3.1.2 Cheng and Sybesma (1999)

As introduced in Chapter 2, Cheng and Sybesma (1999) claim that Chinese nominal expressions are ClPs instead of DPs. Under this general assumption, they

examine the syntactic positions of proper names and pronouns in Chinese. In the following, I will present their discussion of pronouns and proper names, respectively.

3.3.1.2.1 Pronouns

Cheng and Sybesma (1999) argue that pronouns in Chinese are base-generated as Ns and undergo movement to Cl. This is based on the facts that (i) they are definite and (ii) they can occur freely in argument positions. This assumption is also supported by the fact that pronouns in Chinese can follow [number+classifier] combinations:

(37)   Cong nei ge jingzi, wo keyi kandao wu ge wo.
        from that CL mirror I   can see   five CL I
        'From that mirror, I can see five copies of myself (five mes).'

Cheng & Sybesma suggest that in this case the pronoun is in N. When the pronoun is used alone, it moves from N to Cl.

However, example (37) is an exceptional case. More crucially, there are cases where pronouns precede common nouns and [(demonstrative)+numeral+classifier] sequences, such as the following two examples:

(38)   Ta-men   xuesheng bu   hui xihuan gongke   de.
        (s)he-MEN student   NEG will like   homework DE
        'Them students will not like homework.'

In the phrase *ta-men xuesheng* 'them students', it is impossible that both the common noun *xuesheng* 'student' and the pronoun *ta-men* are merged in N.

(39)   Wo xihuan ta-men   liang ge (xuesheng).
        I   like   (s)he-MEN two   CL (student)
        'I like these/those two (students).'

If the pronoun *ta-men* is merged in N, it is not obvious why and how it moves across both Num and Cl to the phrase-initial position. Consequently, the order in (39) cannot be generated. Again, in the sentence below, a demonstrative *zhe* appears, and it is impossible that the pronoun *ta-men* undergoes N to Cl movement.

(40)   Wo xihuan ta   zhe ge xuesheng.
        I   like   (s)he this CL student
        'I like this student.'

Considering the fact that pronouns show up alone freely most of the time and also can be followed by [(demonstrative)+numeral+classifier+common noun] sequences, denoting a definite interpretation, it is more plausible to assume that they are base generated in the position which is the locus of reference and also performs the function of turning a predicate into an argument. This position is argued to be the Cl position under Cheng and Sybesma's ClP analysis or the D position under Huang et al.'s DP analysis of the nominal structure in MC. This is the analysis I will adopt for pronouns in this thesis.

As for the pronoun *wo* in (37), I suggest that it is used as a common noun. Thus, as an N, it can be preceded by the numeral plus classifier sequence, as in *san ge wo* 'three mes'. This is supported by the fact that in English, similar to common nouns, when the accusative *me* is pluralised, it is also suffixed by the morpheme *s*. This indicates that *me* in this case is a common noun. Nonetheless, it needs to be pointed out that when *I*, *you*, *he/she* are pluralised, they adopt the irregular forms *we*, *you* and *they*, respectively. I will return to this issue later.

3.3.1.2.2   Proper names

As also mentioned in Chapter 2, Cheng and Sybesma (1999) note that in Mandarin, proper names can occur after the [demonstrative+numeral+classifier] sequence:

(41)   a.   Guojing shuo ta kandao le   liang ge Hufei.
            Guojing say   he see   LE two   CL Hufei
            'Guojing said that he saw two Hufei.'

      b.   Nei ge Hufei zhen bu   xianghua.
            that CL Hufei truly NEG decent
            'That Hufei is really unreasonable!'

Thus, they propose that proper names in Mandarin are generated in N, denoting a kind interpretation. Moreover, proper names can be used alone (without the co-occurrence of classifiers) freely, and they can appear in the beginning of a sentence, as in the sentence below:

(42)   Hufei mai shu   qu le.
       Hufei buy book go LE
       'Hufei went to buy a book/books.'

In analogy to Longobardi (1994), which assumes that proper names have undergone N-to-D movement in Romance languages considering their relatively free

distribution, Cheng and Sybesma (1999) propose that in Chinese proper names have also moved from N to Cl.

The fact that proper names cannot precede a common noun and that they can only be preceded but not followed by [numeral+classifier] sequences indicates that the proposal that proper names are base generated in N is correct.

(43)   a.   Wo dui ta-men   xuesheng hen you naixin.
                I   DUI (s)he-MEN student   very have patience
                'I am very patient with these students.'
    b. *Wo dui   Zhangsan xuesheng hen you naixin.
                I   DUI Zhangsan student   very have patience

Unlike the pronoun *ta-men* which can precede the common noun *xuesheng*, the proper name *Zhangsan* cannot. This suggests that *Zhangsan* is based in N and it conflicts with the common noun *xuesheng* which is also in N.

In the following, the pronoun *ta-men* can be followed by the sequence *liang ge (xuesheng)*, but the proper name *Zhangsan* cannot.

(44)   a.   Wo xihuan ta-men   liang ge (xuesheng).
                I   like   (s)he-MEN two   CL (student)
                'I like these/those two (students).'
    b. *Wo xihuan Zhangsan liang ge (xuesheng).
                I   like   Zhangsan two   CL (student)

The ungrammaticality of the string *Zhangsan liang ge (xuesheng)* indicates that in contrast to pronouns which are high in the structure, the position of the proper name is low. As argued above, pronouns are located in D, it follows that *ta-men* can be followed by the numeral sequence *liang ge (xuesheng)*. However, proper names are in N; as a result, *Zhangsan* cannot be followed by the sequence *liang ge (xuesheng)*.

To sum up, it is reasonable to argue that proper names are generated in N and then undergo raising to a higher position (either Cl or D), when they are used alone. As argued in Chapter 2, in this thesis, I will adopt the DP hypothesis of the nominal structure in MC, and thus I propose that bare proper names are base generated in N and then undergo N-to-D movement. More details of this argument will be given in section 3.3.3.

It is worth noting that Cheng and Sybesma (1999) suggest that Chinese demonstratives are basically locative elements and there is no reason to assume that they necessarily occur in D. This assumption is drawn following the discussion in Bernstein (1997), which claims that demonstratives are generated in a specifier position

of an XP lower than DP based on the facts in Arabic, Greek, Spanish and other European languages. Cheng & Sybesma give no explicit explanation for this. I will discuss the syntax of demonstratives in the next section.

3.3.2 Demonstratives as Dem heads

I agree with previous analyses that pronouns are merged in D. As for demonstratives, however, I will argue that they are merged at an independent Dem head, and there is a DemP projection in the nominal hierarchy, which is located below the DP projection and above the NumP projection. When a pronoun and a demonstrative co-occur, the pronoun is located in D while the demonstrative is in Dem. This is illustrated by the following example.

(45)   Wo hen xihuan ta   zhe ge xuesheng.
         I   very like   (s)he this CL student
         'I like her/him who is a student.'

The phrase *ta zhe ge xuesheng* means "(s)he who is a student" and *ta* as a student is considered as proximal to the speaker. This is a bit different from the demonstrative phrase *zhe ge xuesheng* which simply means "this student". The structure of *ta zhe ge xuesheng* can be represented as follows:

(46)
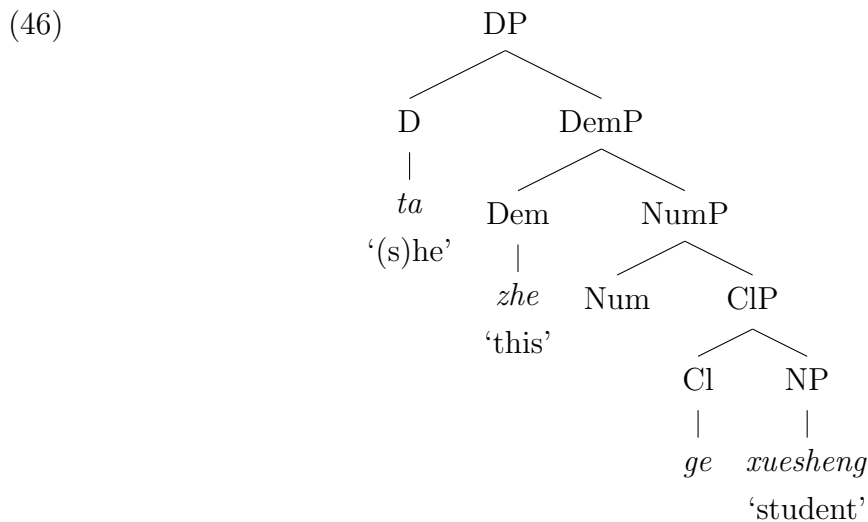
However, the structure of *zhe ge xuesheng* is below.

(47)

DP
├─ D
│ └─ zhe 'this'
└─ DemP
   ├─ Dem
   │ └─ zhe
   └─ NumP
      ├─ Num
      └─ ClP
         ├─ Cl
         │ └─ ge
         └─ NP
            └─ xuesheng 'student'
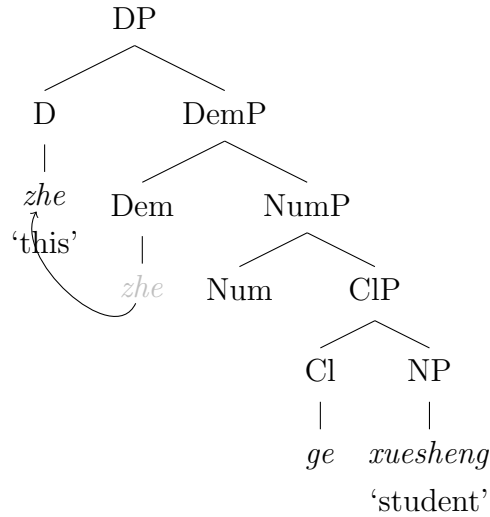
The details of the above proposals will be presented in what follows.

3.3.2.1 Motivating DemP

The motivation for the above analysis comes from the distribution of adjectives with respect to [pronoun+demonstrative+numeral+classifier] sequences and [demonstrative+numeral+classifier] sequences, respectively.

(48) a. *Wo hen xihuan congming de ta zhe ge xuesheng.
         I very like smart DE him this CL student

      b. Wo hen xihuan congming de zhe ge xuesheng.
         I very like smart DE this CL student
         'I like this smart student.'

Out of my 7 consultants, 3 think sentence (48b) is completely fine, 2 think it is acceptable, while 2 think it is unacceptable. However, none of them thinks (48a) is acceptable. Yang (2005) also gives a similar example, which suggests that the order in (48b) is generally acceptable.

(49) xin de na yi ben shu
      new DE that one CL book
      'that new book'

As shown by the contrast between (48a) and (48b) (for the majority who accepts (48b) as a grammatical sentence), the string *congming de* 'smart DE' can show up before the sequence *zhe ge xuesheng* but not *ta zhe ge xuesheng*. This stands against Huang et al.'s argument that both the pronoun and the demonstrative are in D. Specifically, if the combination of *ta* and *zhe* (as argued by Huang et

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al. that *ta* is adjoined to the demonstrative which is in D, giving a D) is syntactically equal to *zhe* (both are Ds), the contrast of (48a) and (48b) would not follow. Conversely, the above examples indicate that the position of the demonstrative is lower than that of the pronoun which is D.

A straightforward option is to assume that there is an independent DemP projection below the DP and the demonstrative is located at the Dem head position.

(50)   [DP [DemP [NumP [ClP NP]]]]

Support for the proposal that demonstratives are not in D but rather projecting an independent DemP projection can be gained from Cheng and Sybesma (2012). Cheng & Sybesma argue that demonstrative noun phrases have different distribution and interpretation from definite noun phrases in Mandarin (also in Cantonese). Specifically, in Mandarin, the equivalents of the *the* definite phrases in English are bare nouns rather than demonstrative phrases. For instance, according to Cheng and Sybesma (2012), in a context where a book and a journal are on the table, to express the meaning 'the book is mine', the bare noun *shu* 'book' is much preferred than the demonstrative phrase *na ben shu* 'that book', as shown by the contrast between (51a) and (51b) below:

Situation 1: a book and a journal

(51)   a.   Shu   shi   wo de.
              book SHI I   DE
              'The book is mine.'

        b.   #Na ben shu   shi   wo de.
              that CL book SHI I   DE
              'That book is mine.'

Sentence (51b) is suitable in a situation in which there are two books on the table, as the main function of demonstratives is to provide the spatial reference of objects.

Situation 2: two books

(52)   a.   #Shu shi   wo de.
              book SHI I   DE
              'The book is mine.'

        b.   Na   ben shu   shi   wo de.
              that CL   book SHI I   DE
              'That book is mine.'

As can be seen from the contrast between the above two groups of examples, definite bare nouns have the similar function as *the* definite phrases in English, while demonstratives primarily have a deictic function.

Another example given by Cheng and Sybesma (2012) is from English.

(53)   a.   That boy is tall and that boy is not tall.
        b.   *The boy is tall and the boy is not tall.

Sentence (53b) is incorrect because it leads to a contradictory statement while sentence (53a) is not necessarily contradictory (it is fine when referring to two boys that are both far away from the speaker). Thus, it can be seen that demonstratives do not have the same distribution and interpretation as determiners. This indicates that the assumption that demonstrations are not base generated in D is on the right track.

Another piece of argument for the assumption that demonstratives are located at a separate head other than D is that demonstratives can co-occur with definite articles in languages such as Greek.

(54)   afti i   ghata (Greek)
        this the cat
        'this cat'

This example suggests that the demonstrative *afti* 'this' in Greek does not contribute to the definite interpretation of the whole phrase, since the definite article *i* 'the' already encodes definiteness.[7]

Giusti (1997) argues that demonstratives are universally base-generated in relatively low Spec position rather than directly in D^0 and that when they occur initially, this should be taken to be the result of movement from the lower base position. Simpson (2003) suggests that this mobility is also what accounts for the multiple possible positions of demonstratives in Chinese:

---

[7]However, according to Longobardi (1994), in Italian, in cases where a definite article precedes a proper name, the definite article does not contribute to the referentiality of the phrase, as it is already encoded in the proper name inherently.

(55)   Der Peter kommt.
        the Peter comes
        'Peter is coming.'

Longobardi claims that in such cases, the definite article is just an expletive. It is possible that in the Greek example, the definite article *i* 'the' is just an expletive. In that case, this would not serve as an argument for the assumption that demonstratives are not Ds.

(56) a. wo mai de nei ben shu
          I   buy DE that CL book
          'that book which I bought'

      b. ?[nei ben]$_i$ [wo mai] de t$_i$ shu
          that CL   I   buy DE   book
          'that book which I bought'

Simpson reports that (56b) is possible but a bit less acceptable than (56a). He proposes that the demonstrative in (56b) originates in a lower position and then undergoes raising to the higher surface position.

Therefore, it can be seen from the above discussion that the assumption that demonstratives are merged in a separate Dem head is reasonable. Similar proposals can also be found in Adger (2013) for Gaelic and Julien (2005) for Scandinavian languages, etc.[8]

3.3.2.2 Demonstratives move from Dem to D

Since in order to license definiteness, either D or SpecDP needs to be filled, it can be assumed that when pronouns are not present, demonstratives undergo Dem to D movement. This is indeed the case, as [demonstrative+classifier+common noun] sequences can function as arguments in both subject and object positions.

(59) Wo hen xihuan zhe ge xuesheng.
      I   very like   this CL student
      'I like this student.'

(60) Zhe ge xuesheng lai   le.
      this CL student   come LE

---

[8]Nonetheless, Julien (2005) proposes that in Scandinavian languages Dem is above D, as suggested by the following Norwegian example:

(57) denne min   ny-est-e   artikkel
      this   my.M.SG new-SUP-DEF article
      'this newest article of mine'

Julien assumes that the prenominal possessor *min* 'my' is in SpecDP, thus, she argues that the demonstrative *denne* 'this' is above DP. However, this could not be the case for MC, as unlike Norwegian, demonstratives do not precede possessor nominals in MC.

(58) a. wo de zhe pian wenzhang
          I   DE this CL   article
          'this article of mine'
      b. *zhe wo de pian wenzhang
          this I   DE CL   article
      c. *zhe pian wo de wenzhang
          this CL   I   DE article

'This student came.'

It is noteworthy that the demonstrative sequences are not acceptable in post-verbal subject position in which only indefinite nominals are acceptable (see e.g. Li 1990, among others). The following sentence is ungrammatical:

(61) *Lai le zhe ge xuesheng
 come LE this CL student
 Intended: 'This student comes.'

This indicates that the demonstrative sequence *zhe ge xuesheng* 'this student' is a definite expression. The structure of the sequence *zhe ge xuesheng* is shown as follows:

(62)
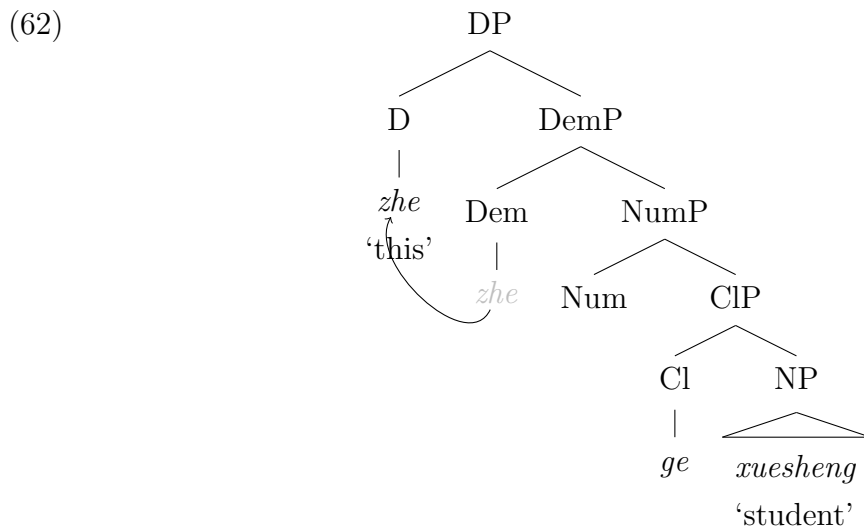
My assumption is that when both D and SpecDP is empty, the demonstrative moves up to fill the D position. However, when either of these positions is occupied, the demonstrative stays in situ. This proposal captures the fact that "high" adjective phrases can appear before the demonstrative sequences but not the pronoun sequences mentioned earlier.

As discussed in the last chapter, phrasal adjectives are argued to be merged at the specifiers of functional heads above NP (Paul 2005; Zhang 2006, 2015a, among others). With respect to the position of the "high" adjective phrase, such as *congming de* in the following example:

(63) Wo hen xihuan congming de zhe ge xuesheng.
 I very like smart DE this CL student
 'I like this smart student.'

I will follow Zhang (2006) by proposing that it undergoes raising from a position above the NP to SpecDP, as shown below:

(64)

```
                        DP
              _____
            /                 \
      congming de              D'
                          _____
                         /              \
                        D              DemP
                                  _____
                                 /            \
                               Dem          NumP
                                |        _____
                               zhe      /          \
                              'this'  Num          ClP
                                             _____
                                            /            \
                                           Cl            FP
                                           |        _____
                                           ge      /          \
                                                  AP          F'
                                              _____      _____
                                             /       \     /      \
                                        congming de  F⁰    NP
                                         'smart DE'      _____
                                                        xuesheng
                                                        'student'
```
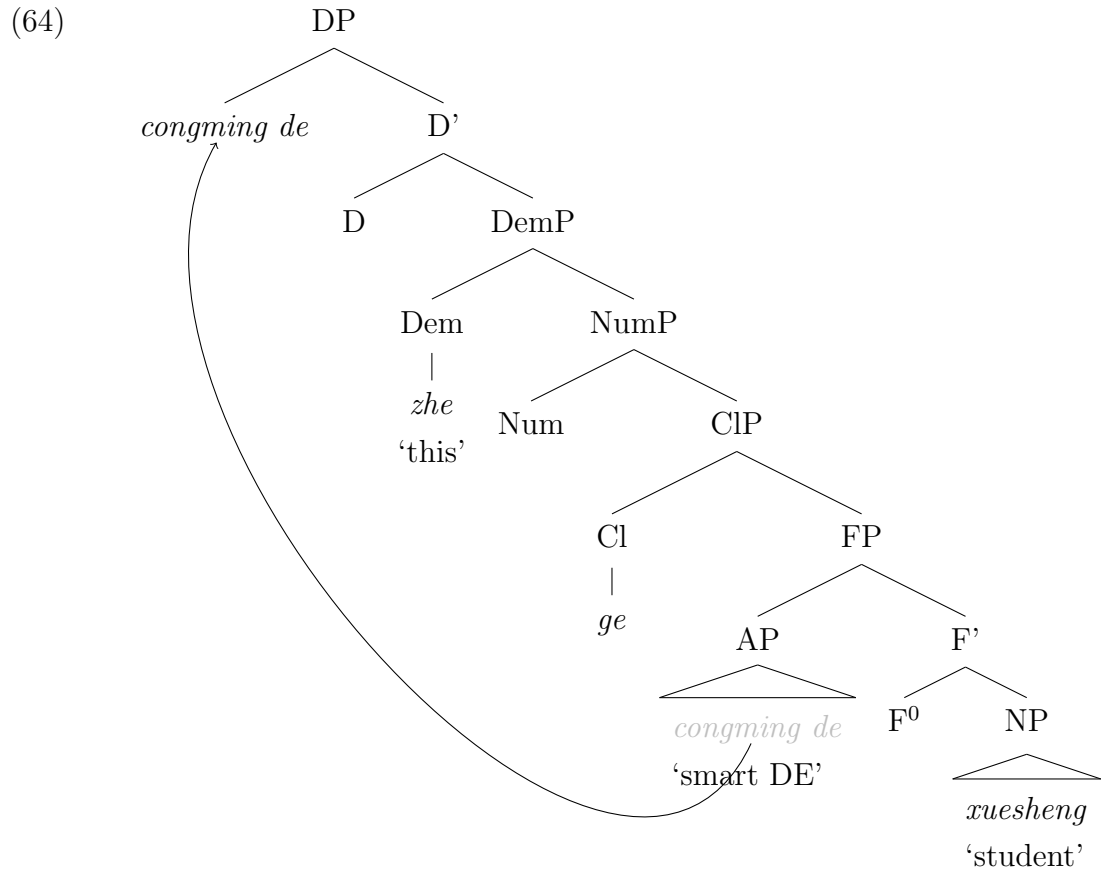
In this case, the demonstrative *zhe* 'this' stays in Dem. As argued in Hall (2015), the motivation of the raising of the adjective phrase is to license the definiteness of D, under the assumption that DP must be lexically occupied in order to generate the definite interpretation. This is backed up by the sentence below:[9]

(65)   Congming de zhe ge xuesheng lai   le.
       smart   DE this CL student   come LE
       'The smart student came.'

The phrase *congming de zhe ge xuesheng* appears in the subject position and refers to a definite individual.

_____

[9]It needs to be pointed out that the following sentence also has a definite reading:

(66)   Zhe ge congming de xuesheng lai   le.
       this CL smart   DE student   come LE
       'This smart student came.'

By contrast, in the sequence *congming de ta zhe ge xuesheng*, the pronoun *ta* occupies the D position already, that is, the definiteness of D is already licensed. As a result, there is no motivation for the adjective phrase to move up. Therefore, the phrase *congming de ta zhe ge xuesheng* is ruled out.

However, its structure is different from (64).

(67)

As mentioned earlier, the demonstrative moves from Dem to D, generating the definite reading of the phrase.

By contrast, in the sequence *congming de ta zhe ge xuesheng*, the pronoun *ta* occupies the D position already, that is, the definiteness of D is already licensed. As a result, there is no motivation for the adjective phrase to move up. Therefore, the phrase *congming de ta zhe ge xuesheng* is ruled out.

However, its structure is different from (64).

(67)

```
                        DP
                  ┌─────┴─────┐
                  D          DemP
                  │      ┌─────┴─────┐
                 zhe    Dem        NumP
                'this'   │      ┌────┴────┐
                        zhe    Num       ClP
                                     ┌────┴────┐
                                     Cl        FP
                                     │     ┌───┴───┐
                                     ge    AP      NP
                                           │       │
                                      congming de  xuesheng
                                       'smart DE'  'student'
```

As mentioned earlier, the demonstrative moves from Dem to D, generating the definite reading of the phrase.

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(68)   *

```
                          DP
                 _____/_____
          congming de            D'
                          _____/_____
                         D              DemP
                         |          ____/\____
                         ta       Dem        NumP
                       'him'       |      ___/\___
                                  zhe    Num     ClP
                                 'this'       ___/\___
                                             Cl       FP
                                             |      __/\__
                                             ge    AP     F'
                                                  /__\   _/\_
                                              congming de F⁰  NP
                                               'smart DE'    /__\
                                                           xuesheng
                                                           'student'
```
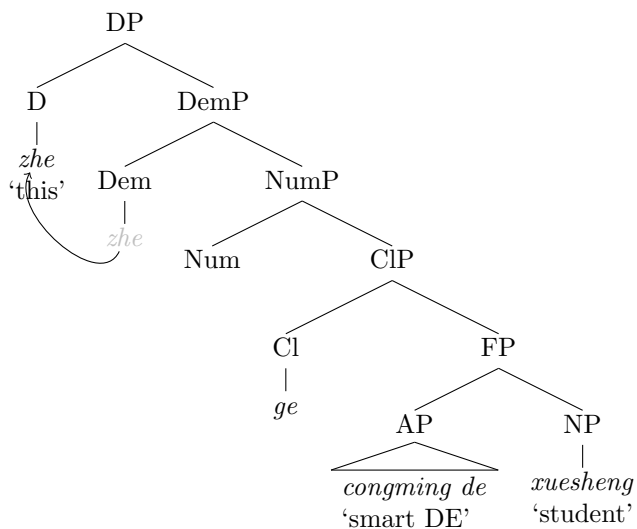
To sum up, I motivate the assumption that there is an independent DemP projection in MC. This analysis successfully captures the different behaviours of demonstratives and pronouns with respect to "high" adjectival modifiers, as well as the different interpretation and distribution of demonstratives and definite articles. Moreover, I propose that when the DP is empty, the demonstrative moves to D, while when either the D or SpecDP is filled, the demonstrative stays in Dem.

3.3.2.3   Previous analyses

Before I leave this section, I would like to comment on Simpson's (2005) and Sybesma and Sio's (2008) analyses on demonstratives.

Simpson (2005) proposes that there is a DP projection in Chinese and demonstratives are located at D^0. However, he does not discuss the position of pronouns in the nominal projection. Since it is a very robust assumption that pronouns are based generated in D cross-linguistically, Simpson would need to answer the question of what is the position of demonstratives when they co-occur with pronouns. An adjunction analysis such as that in Huang et al. (2009) does not work, as it cannot capture the position of adjectives with respect to demonstrative phrases and pronoun phrases. Examples are given below again.

(69)   a.   *Wo hen xihuan congming de ta   zhe ge xuesheng.
            I   very like   smart   DE him this CL student

         b.   Wo hen xihuan congming de zhe ge xuesheng.
            I   very like   smart   DE this CL student
            'I like this smart student.'

Sybesma and Sio (2008) explore the position of the demonstratives in the nominal domain in Chinese and Zhuang. They argue that there is a D related projection DetP above NP and demonstratives are at SpecDetP position. The schema is shown below:

(70) $[_{SP}\ [_{NumP}\ [_{ClP}\ [_{DetP}\ [_{NP}\ ]\ ]\ ]\ ]\ ]$

They also propose that in Chinese, demonstratives are phrasal and they undergo phrasal movement to the specifier position of the specificity phrase (SP), where definiteness/specificity is encoded (see also Sio 2006).

The only evidence they provide for the argument that demonstratives are merged low is related to relative clauses.

(71)   a.   dai   yanjing de na   san   ge xuesheng
            wear glasses   DE that three CL student
            'those three students who wear glasses'

         b.   na   san   ge dai   yanjing de xuesheng
            that three CL wear glasses   DE student
            'those three students who wear glasses'

Sybesma and Sio (2008) believe that the phrase *dai yanjing de* in (71b) has a non-restrictive reading. Following the assumption that non-restrictive RCs are merged at D(em)P (no arguments are given for this claim), it is proposed that the base position of the demonstrative in (71b) is lower than its surface position, i.e. immediately preceding the common noun *xuesheng* 'student'.[10] However, this argument is not compelling. At most, it might indirectly indicate that the demonstrative is low, but it cannot serve as an evidence that the demonstrative is actually merged low. Also, it cannot exclude the possibility that the whole sequence *na san ge* is merged below the modifier phrase *dai yanjing de* and then moves above it. Thus there is still no evidence that demonstratives are merged below classifiers as that in (70).

---

[10]It is not specified in Sybesma and Sio (2008), what the D(em) represents, but it is very likely that it represents DP or Dem(onstrative)P.

Most crucially, Sybesma and Sio (2008) do not discuss why the proposed analysis is better than previous analyses. Actually, they acknowledge that "In contrast to our current proposal, the other proposals take as the base order one in which the demonstrative is generated in phrase-initial position, more particularly, in a position generally labelled as 'D'. For Chinese-type languages, not much more needs to be done in terms of derivation". This indicates that they are aware that the assumption that demonstratives are generated high has more advantages in capturing the word order fact that demonstratives normally appear in the phrase-initial position in MC. Their main argument for the low generated demonstratives are from Zhuang (a language spoken in Guangxi Province and other parts of Southern China, which belongs to the Tai-language family). Therefore, it can be seen that the argument that demonstratives are merged low in Chinese is far-fetched.

In addition, there is no evidence that demonstratives in Chinese are XPs. As noted in the same paper,

> Although so far we have found no evidence for the phrasal status of the demonstrative in Chinese (but see Sio (2006) for discussion), there seems to be some evidence for the head status of the demonstrative in Zhuang (Sybesma and Sio 2008:463).

If the phrasal status of demonstratives cannot be justified, there is no way the word order [demonstrative+numeral+classifier] in MC can be derived, as head movement will be immediately blocked by the classifier dominating the DetP.

These problems do not exist in our proposed analysis where demonstratives are located in Dem. In the following, I will apply this proposal to the analysis of other elements in the noun phrase in MC.

3.3.3 Proper names are NPs

In this section, following Cheng and Sybesma (1999) and Huang et al. (2009), I will propose that proper names in MC have two merging positions: bare proper names, including those suffixed with the morpheme *men*, are base generated in N and then undergo N to D movement; proper names co-occurring with pronouns or demonstratives are merged at SpecDP.

3.3.3.1 Bare proper names undergo N to D movement

Cheng and Sybesma (1999) argue that bare proper names are base generated in N and then undergo raising to Cl under the ClP hypothesis. Under the general

assumption that D is the locus of reference or definiteness, Huang et al. (2009) claim that proper names, as well as pronouns are located in D. However, as I will show later, these proposals are problematic. In what follows, I will compare the semantic and syntactic differences between proper names and pronouns and then I will propose that bare proper names are merged in N and then undergo N-to-D movement, while pronouns are D heads and are generated in D.

3.3.3.1.1 Proper names are Ns, while pronouns are Ds

Even though both pronouns and proper names are definite expressions (Elbourne 2005) in most contexts, it is generally assumed that they are different in nature: (i) pronouns are directly referential while proper names are not (Heller and Wolter 2010); (ii) pronouns are arguments while proper names are predicates (Matushansky 2006; Fara 2015).

Borer (2005) argues that there are no proper names as such listed in the lexicon; proper names are like common nouns. Semantically, there is no real difference between proper names and common nouns. It is just that for proper names, it happens to be that there is only one object in the relevant world that fits the description rather than many. In fact, the proper name *David* in English is hardly unique and frequently requires the extra context to be interpreted, for example, *the David who is a professor* versus *the David who is a PhD student.* Also, in the context of the UK, the reference of the phrase *the Queen* is unique while that of *David* is not. On the other hand, any so-called common noun can become a proper name, for instance, in the sentence *Computer made me a cup of tea, computer* is interpreted as a "proper name" and it is the only possible interpretation that *computer* can have in this case. Borer (2005) holds the view that proper names undergo N to D movement.

Elbourne (2005) also notes that names are just like common nouns, and they are predicates (Burge 1973). For example, as can be seen from the following examples, a proper name such as *Alfred* can co-occur with quantifiers, articles and demonstratives, etc.:

(72)   There are relatively few Alfreds in Princeton.

(73)   An Alfred Russell joined the club today.

(74)   The Alfred who joined the club today was a baboon.

(75)   Do you mean this Alfred?

(76)   Which Alfred do you mean?

(77)   Every Alfred I ever met is crazy.

In the following, the proper name *Alfred* is suffixed by the plural marker *s*:

(78)   Some Alfreds are same.

(79)   Most Alfreds are crazy.

(80)   There are two Alfreds.

Also, Longobardi (1994) provides evidence from Italian that proper names behave as common nouns:

(81)   a. La sola Maria si e presentata.
            the only Maria showed up
            'Only Maria showed up.'

        b. ?La Maria sola   si e presentata.
            the Maria alone showed up
            'The Maria who is (notoriously) alone showed up.'

The adjective *sola* 'only' normally occurs prenominally, for example, before the proper name *Maria* in (81a). When it appears after the nominal, it denotes the meaning 'alone' instead, as in (81b). This is observed in some common nouns as well such as *ragazza* in (82):

(82)   a. La sola ragazza presente era antipatica.
            the only girl   present   was dislikable

        b. La ragazza sola   presente era antipatica.
            the girl   alone present   was dislikable

The parallel between (81) and (82) suggests proper names in Italian act similarly to common nouns.

    Moreover, in the following example, when the definite article is absent, only the order *Maria sola* is possible, while *sola Maria* is incorrect. According to Longobardi (1994), this indicates that the proper name *Maria* raises to the D position previously occupied by the article *la*. This is actually one of the strong arguments for the proposal that proper names undergo N-to-D movement in Italian.

(83)   a. *Sola   Maria si e presentata.
            only(FEM) Maria showed up

        b. Maria sola   si e presentata.
            Maria only(FEM) showed up

These examples suggest that proper names in Italian are common nouns, which provides support for the hypothesis that proper names are NPs.

As for the difference between proper names and pronouns, Longobardi (1994) notes the following.

> We have recognised, in fact, that pronouns, being base-generated in D, never appear in the N position, that proper names occur in D at least in some languages, like Italian, and that common nouns do not normally raise to D at S-Structure, even in languages like Italian. (Longobardi 1994:637)

It can be concluded that pronouns are base-generated in D, while bare proper names are base-generated in N and then undergo N to D movement.

Following the above discussion, I will propose that in MC, proper names are Ns. This is supported by the fact that proper names can show up with numeral sequences:

(84) Wo renshi liang ge Zhangsan.
      I   know two   CL Zhangsan
      'I know two Zhangsans.'

In this case, the proper name *Zhangsan* is based in N and it is preceded by a classifier and a numeral. Moreover, proper names can follow modifiers and demonstrative sequences:

(85) Wo renshi na   ge lao de Zhangsan.
      I   know that CL old DE Zhangsan
      'I know that old Zhangsan.'

Following the proposal on demonstratives above and the analysis of *de*-modifiers mentioned in Chapter 2, the structure of the phrase *na ge lao de Zhangsan* 'that old Zhangsan' is shown as the one below:

(86)

```
                    DP
                  /    \
                 D      DemP
                 |     /    \
                na   Dem    NumP
              ↗ 'that' |    /    \
            na       na  Num     ClP
                              /      \
                            Cl        FP
                            |        /   \
                           ge      AP     NP
                                   /\     /\
                                lao de  Zhangsan
                                'old DE'
```
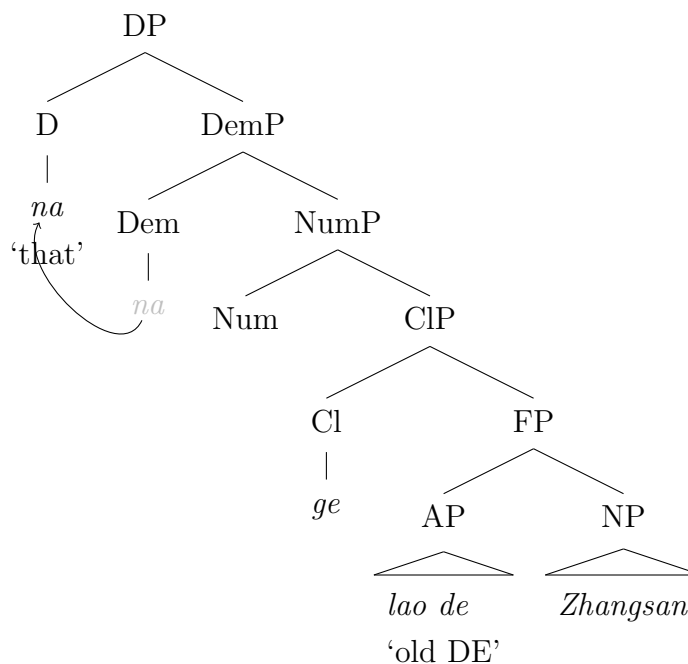
As shown above, the adjective phrase *lao de* is base generated above the NP, the proper name *Zhangsan* in (85). To sum up, proper names are common nouns in MC and they act as NPs when preceded by other elements.[11]

3.3.3.1.2 Bare proper names raise from N to D

Based on the assumption that a DP is projected in MC, I propose that bare proper names undergo N to D movement. By "bare", I mean proper names that appear on their own, that is, they function as arguments on their own. More specifically, I propose that a proper name such as *Zhangsan* has the structure in (88):

---

[11]Nonetheless, it needs to be mentioned that there are still some differences between proper names and common nouns. For instance, in MC, proper names can precede pronouns but common nouns cannot, as shown by the contrast between the following two sentences:

(87) a. Wo xihuan Zhangsan ta   zhe ge xuesheng.
          I   like   Zhangsan (s)he this CL student
          'I like the student Zhangsan.'
      b. *Wo xihuan nanhai ta zhe ge xuesheng.
          I   like   boy   he this CL student
          Intended: 'I like the boy who is a student.'

I will suggest that these differences are caused by semantic or pragmatic factors, and I will not explore this issue in the current thesis.

125

(88)

$$
\begin{array}{c}
\text{DP} \\
\diagup \quad \diagdown \\
\emptyset \qquad \text{D'} \\
\diagup \quad \diagdown \\
\textit{Zhangsan} \qquad \text{NP} \\
| \\
\textit{<Zhangsan>}
\end{array}
$$
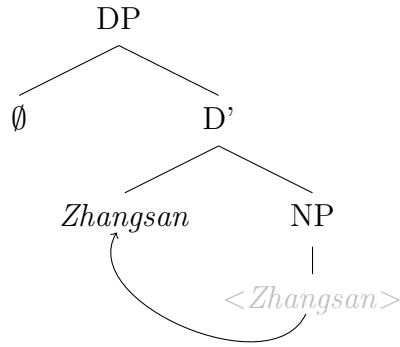
Following the discussion in 3.2.3, since the D position is lexically filled by the raised proper name, the definite reading of proper names is generated.

By contrast, a pronoun *ta* '(s)he' is based generated in D:

(89)

$$
\begin{array}{c}
\text{DP} \\
| \\
\text{D} \\
| \\
\textit{ta} \text{ '(s)he'}
\end{array}
$$

This different structures of pronouns and proper names given above reflect the assumption that pronouns are arguments and proper names are predicates (Burge 1973; Longobardi 1994; Elbourne 2005; Borer 2005, among others). Even though both of them are definite descriptions (Elbourne 2005), they reach the DP status via different mechanisms: base generation and movement. Intrinsically, proper names are like common nouns, in the same way that definite bare nouns undergo N to D movement, proper names also raise to D. It is just that it happens there is only one reference (not always the case) in the context for proper names.

The above analysis captures the fact that proper names cannot precede common nouns directly, while plural pronouns can.

(90)   a.   Wo dui [ta-men   xuesheng] hen bu   fangxin.[12]
            I   DUI (s)he-MEN student   very NEG rest assured
            'I am very worried about the students.'

       b.   *Wo dui [Zhangsan he   Lisi xuesheng] hen bu   fangxin.
            I   DUI Zhangsan and Lisi student   very NEG rest assured

Since the proper name *Zhangsan he Lisi*, by hypothesis, is merged in NP position, it conflicts with the common noun *xuesheng* 'student' which is also in NP. As a

---

[12]It needs to be pointed out that a singular pronoun cannot be followed by common noun immediately (91a), instead a [demonstrative+classifier] sequence needs to appear in between (91b).

result, the sequence *Zhangsan he Lisi xuesheng* is impossible (90b). The pronoun, however, is directly generated in D, therefore, it can be followed by an NP, as in (90a).

Likewise, in the following, since the pronoun is in D, it can be followed by the number phrase *liang ge hao xuesheng* (94a). By contrast, as the proper name sequence *Zhangsan he Lisi* 'Zhangsan and Lisi' is an NP, they cannot appear before the numeral and the classifier (94b).

(94) a. Wo xihuan ta-men liang ge hao xuesheng.
     I like (s)he-MEN two CL good students
     'I like the two good students.'

   b. *Wo xihuan Zhangsan he Lisi liang ge hao xuesheng.
     I like Zhangsan and Lisi two CL good students

The phrases *ta-men xuesheng* in (90a) and *ta-men liang-ge hao xuesheng* 'the two good students' in (94a) have the structures below, respectively.[13]

_____

(91) a. *Wo dui [ta xuesheng] hen bu fangxin.
    I DUI (s)he student very NEG rest assured
    'I am very worried about the students.'

   b. Wo dui [ta zhe ge xuesheng] hen bu fangxin.
    I DUI (s)he this CL student very NEG rest assured
    'I am very worried about this student.'

This may be in relation to the fact that in MC, common nouns normally need to co-occur with classifiers. However, in *ta-men xuesheng*, because it is plural, the classifier is not obligatory, thus the [demonstrative+(numeral+classifier)] sequence is not needed.

(92) a. Wo dui [ta-men (zhe-xie) xuesheng] hen bu fangxin.
    I DUI (s)he-MEN this-XIE student very NEG rest assured
    'I am very worried about these students.'

   b. Wo dui [ta-men (zhe liang ge) xuesheng] hen bu fangxin.
    I DUI (s)he-MEN this-XIE two CL student very NEG rest assured
    'I am very worried about these two students.'

By contrast, a number expression and a pronoun or a demonstrative is required to appear between the proper name and the common noun even when it is plural:

(93) Wo dui [Zhangsan he Lisi *(ta-men/zhe liang ge) xuesheng] hen bu
   I DUI Zhangsan and Lisi (s)he-MEN/this two CL student very NEG
   fangxin.
   rest assured
   'I am very worried about Zhangsan and Lisi these two students.'

I will discuss these cases where a proper name co-occurs with a pronoun or a demonstrative or both in a noun phrase in section 3.3.3.2.

[13]The two trees below are temporary. I will discuss these structures, especially the syntactic status of the morpheme *men*, in more detail later in section 3.4.1.

(95)

```
                        DP
                       /  \
                      ∅    D'
                          /  \
                         D    NP
                         |     ╱╲
                      ta-men  xuesheng
                    '(s)he-MEN'  'student'
```

(96)

```
                    DP
                   /  \
                  ∅    D'
                      /  \
                     D    NumP
                     |    /   \
                  ta-men liang  ClP
                '(s)he-MEN' 'two' /  \
                               ge    NP
                                     ╱╲
                                 hao xuesheng
                                 'good student'
```
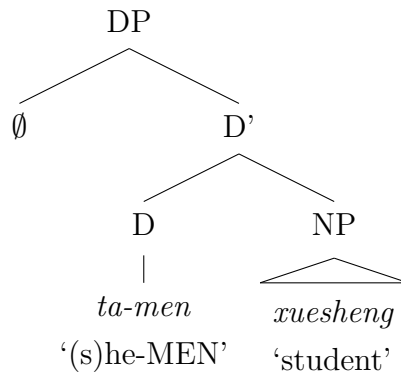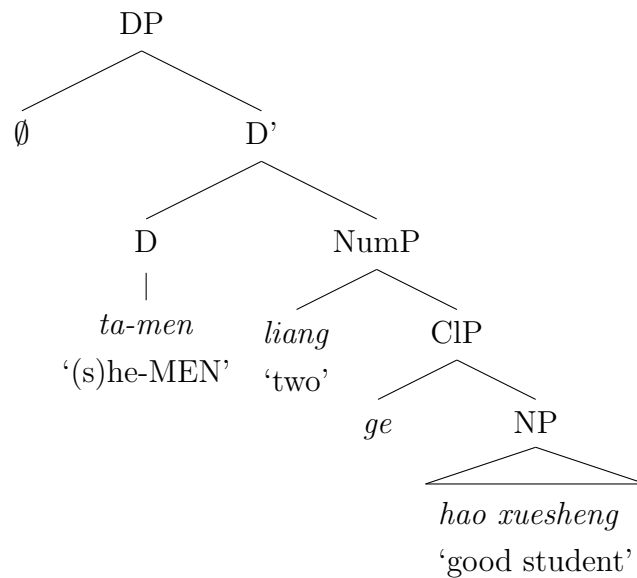
If we follow Huang et al.'s analysis that both proper names and pronouns are based in D, the above contrast between proper names (90b) and pronouns (90a) would not be captured.

In summary, pronouns are merged in D, so they can precede common nouns and number phrases immediately. By contrast, bare proper names are merged in N and this leads to the fact that they cannot appear before common nouns or number phrases directly because N is already occupied by common nouns. Instead, a pronoun or a demonstrative is required to shown up between the proper name and the numeral sequence. However, in cases where proper names co-occur with pronouns or demonstratives, proper names are merged in SpecDP, as will be argued in the next section.

3.3.3.2 Non-bare proper names are merged at SpecDP

Here, I use the term "non-bare" proper names to refer to cases where proper names are followed by pronouns or demonstratives or both. As mentioned in the last section, unlike pronouns, proper names cannot precede number expressions directly:

(97)   a.   Wo xihuan ta-men   liang ge hao xuesheng.
              I   like   (s)he-MEN two CL good student
              'I like the two good students.'

        b. *Wo xihuan Zhangsan he Lisi liang ge hao xuesheng.
              I   like   Zhangsan and Lisi two CL good student

Instead, a pronoun or a demonstrative or both must appear between the proper name and the number expression.

(98)   a.   Wo xihuan Zhangsan he Lisi ta-men   liang ge hao xuesheng.
              I   like   Zhangsan and Lisi (s)he-MEN two CL good student

        b.   Wo xihuan Zhangsan he Lisi zhe liang ge hao xuesheng.
              I   like   Zhangsan and Lisi this two CL good student

        c.   Wo xihuan Zhangsan he Lisi ta-men   zhe liang ge hao
              I   like   Zhangsan and Lisi (s)he-MEN this two CL good
              xuesheng.
              student
              'I like Zhangsan and Lisi these two good students.'

One more example is given below, where there is only one proper name and the pronoun is singular.

(99)   Wo hen xihuan Zhangsan ta   zhe ge xuesheng.
           I   very like   Zhangsan (s)he this CL student
           'I like the student Zhangsan.'

As I have argued that the pronoun is in D and the demonstrative is in Dem. Following Huang et al. (2009), I argue that the proper name is base-merged at SpecDP.[14] The structure of (99) is illustrated below:

---

[14]Alternatively, it is possible that the proper name forms an appositional structure with the pronoun, as proposed in Lekakou and Szendroi (2012) for Greek polydefinites. However, this oppositional analysis could not capture the fact that only proper names can precede a pronoun or a demonstrative, but other (in)definite expressions can not.

(100)

```
                        DP
                    ╱       ╲
               Zhangsan      D'
                          ╱      ╲
                         D        DemP
                         |      ╱      ╲
                        ta    Dem      NumP
                      '(s)he'  |      ╱    ╲
                              zhe   Num    ClP
                             'this'      ╱    ╲
                                        Cl     NP
                                        |      ╱╲
                                       ge   xuesheng
                                            'student'
```
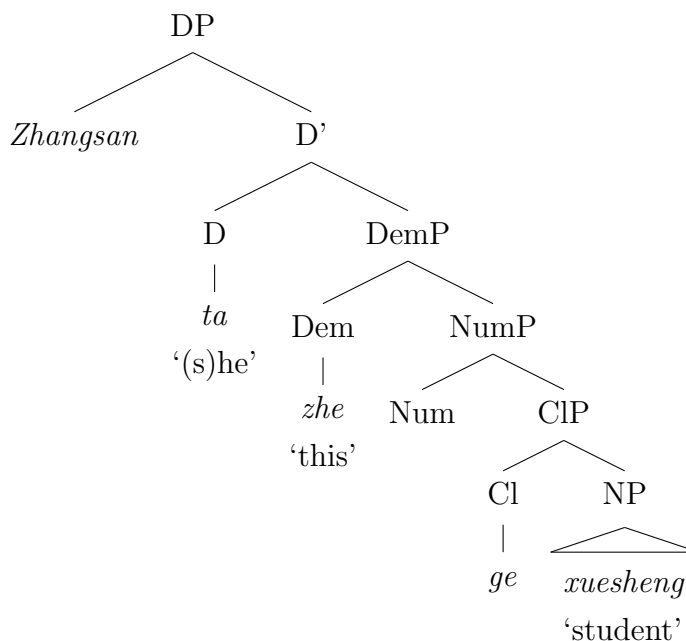
It seems that only proper names are allowed in this SpecDP position. *Zhangsan* cannot be replaced by the definite expression such as *zhe ge haizi* 'this child'.

(101) *Wo hen xihuan [zhe ge haizi] (ta)   zhe ge xuesheng.
        I   very like   this CL kid   (s)he this CL student
        Intended: 'I like this kid who is a student.'

It cannot be replaced by the sequence *ni didi*, either.

(102) *Wo hen xihuan [ni   didi]   (ta) zhe ge haizi.
        I   very like   you younger-brother (s)he this CL kid
        Intended: 'I like your younger-brother who is a kid.'

As to the reason why only proper names can appear in SpecDP, I will argue later in Chapter 4 that only proper names are good candidates as the index of the pronoun or demonstrative in the D position.

Let us now turn to Huang et al's main argument for the claim that non-bare proper names are located in SpecDP. They report that when a proper name and a pronoun precede a number phrase, such as in (103), the pronoun needs to agree with the numeral in number, whereas the proper name do not need to:

(103) Wo xihuan Zhangsan ta-men   (na) san   ge.
        I   like   Zhangsan (s)he-MEN that three CL
        'I like Zhangsan them (those) three (students).'

Huang et al. argue that the above example suggests that the pronoun is in head agreement with the numeral but the proper name is not, and this suggests that proper names are not in head position but rather at the Specifier of DP.

(104)

```
                          DP
                    ／          ＼
              Zhangsan          D'
                            ／        ＼
                          D            DemP
                          |         ／      ＼
                       ta-men    (na)      NumP
                     '(s)he-MEN'         ／      ＼
                                      san       ClP
                                    'three'      |
                                                ge
```
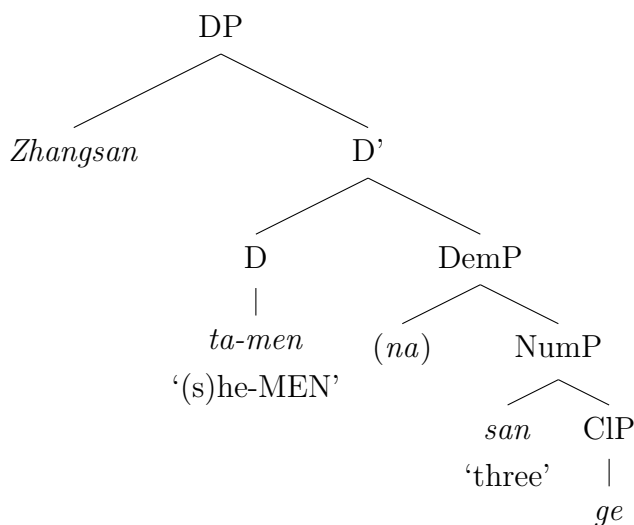
However, this argument is not strong, as it cannot exclude the possibility that the proper name enter spec-head agreement with the pronoun and therefore also takes the marker *men*. Nonetheless, this possibility can be ruled out for an independent reason. I will argue in the next chapter that the plural marker *men* is only realised on elements in D, it follows that the proper name at specifier of DP does not carry the morpheme *men*. Therefore, the claim that proper names are in SpecDP still holds.

As for cases in (98) and (99) where a pronoun or a demonstrative or both is/are required to appear between the proper name and the numeral, it can be proposed that proper names can be merged at SpecDP only if D is filled. This constraint is a pure stipulation. As for the semantics of cases where a proper name co-occurs with a pronoun or a demonstrative, I will discuss this in section 3.5.4.2.1 later.

It is noteworthy that the assumption that proper names can be merged at SpecDP only if D is filled is not contradictory to the previous assumption that nothing can moves to D (or SpecDP) if D (or SpecDP) is filled in section 3.3.2.2. The former is pure merge while the latter involves movement.

3.3.3.2.1   [Proper name+demonstrative+numeral+classifier+noun]
A proper name can be followed by a demonstrative sequence directly, as shown in the example below:

(105)   Wo hen xihuan Zhangsan zhe ge xuesheng.
         I   very like   Zhangsan this CL student
         'I like the student Zhangsan.'

In this case, the pronoun is absent. Since D is empty, the demonstrative moves up to D, licensing the definiteness of the phrase. Thus, the phrase *Zhangsan zhe ge xuesheng* 'the student Zhangsan' in (105) has the structure below.

(106)

```
                        DP
                       /  \
                 Zhangsan   D'
                          /   \
                        D      DemP
                        |     /    \
                       zhe  Dem    NumP
                     'this'  |    /    \
                           zhe  Num     ClP
                                       /   \
                                     Cl     NP
                                     |      |
                                     ge   xuesheng
                                        'student'
```
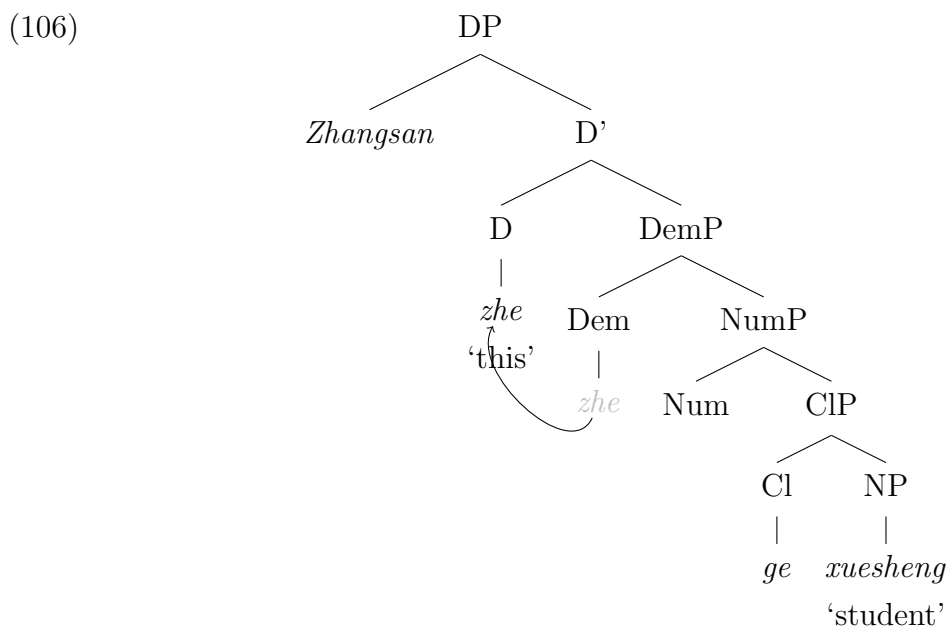
The demonstrative moves to D and then the proper name *Zhangsan* is base-merged in SpecDP, satisfying the condition that D must be filled for the proper name to be merged.

3.3.3.2.2   *[Proper name+pronoun]

As pointed out in Huang et al. (2009), the sequence [proper name+pronoun] is very common in spoken MC.

> This may also be related to the fact that the sequence [proper name+pronoun],
> occupying the Spec of D and the D positions, is very commonly used
> in colloquial speech (Huang et al. 2009:317).

The examples given by Huang et al. (2009) are shown below.

(107)   Zhangsan ta   shenme shihou lai?
         Zhangsan (s)he what   time   come
         'When is Zhangsan coming?'

(108)   Wo gen Zhangsan ta   chao   le yi jia.
        I   with Zhangsan (s)he quarrel LE one CL
        'I had an argument with Zhangsan.'

Even though it is not shown explicitly, following Huang et al.'s description, the string *Zhangsan ta* would have the structure below:

(109)

However, as shown by the ungrammaticality of the following sentence, *Zhangsan ta* cannot appear in the object position.

(110)   *Wo mei   kan-dao Zhangsan ta.
        I   NEG see-DAO Zhangsan (s)he
        Intended: 'I did not see Zhangsan.'

This suggests that *Zhangsan ta* is not a single constituent. As a matter a fact, the sequence *Zhangsan ta* is not valid syntactically. The structure in (109) is invalid. The ungrammaticality of this structure can be explained using Bare Phrase Structure (BPS). A pronoun is just a D, but a D can be a head or a phrase under BPS. If merging to a head, the first merge is the complement, so it follows that in BPS, a specifier cannot be merged alone, as that in (109) above. As a result, there is no position available for the proper name to be combined.

However, one possibility that Huang et al could adopt is that the D takes the proper name as a noun complement which then raises, as shown below:

(111)

However, as D is already occupied by the pronoun *ta*, there is no motivation for the proper name to move up.

Consequently, the sequence *Zhangsan ta* as a constituent can not be generated. In English, the following expressions are bad, too.

(112)   a. *John him
        b. *old him

It can be said that pronouns are full DPs, therefore, they cannot be modified or show up with proper names.

In fact, the sentence (108) above given by Huang et al. (2009) is not totally acceptable to my 7 consultants. Three consultants think it is unacceptable; two think it is fine; two think it is understandable, but suggest that they would say it without the pronoun *ta*.

(113)   Wo gen Zhangsan (*ta) chao   le yi jia.
              I   with Zhangsan (s)he quarrel LE one CL
              'I had an argument with Zhangsan.'

As *Zhangsan* and *ta* do not form a single constituent, there are two unrelated noun phrases following the preposition *gen* in (108), and this is not allowed.

Moreover, in (107), it is likely the case that *Zhangsan* is the topic of the sentence and the pronoun *ta* which is the subject, co-refers with *Zhangsan*:

(114)   Zhangsan$_i$ ta$_i$ shenme shihou lai?
              Zhangsan (s)he what   time   come
              'When is Zhangsan coming?'

This is supported by the fact that the sequence 'you said' can be inserted between *Zhangsan* and *ta*:

(115)   Zhangsan$_i$ ni   shuo ta$_i$ shenme shihou lai?
              Zhangsan you say (s)he what   time   come
              'Zhangsan, you said, when (s)he is coming?'

In brief, it can be seen that the sequence [proper name+pronoun] is not a legitimate phrase both syntactically and semantically. Later in section 3.5.3, I will compare it with the sequence [proper name+pronoun-*men*], which is a grammatical phrase, where the appearance of the morpheme *men* introduces extra structure to the proper name and pronoun combination.

To conclude, in this section I made two independent claims: (i) there is a functional projection DemP between NumP and DP and demonstratives are merged in Dem. Therefore, noun phrases in MC have the following hierarchy [DP [DemP [NumP [ClP NP]]]]. This analysis captures the different behaviours of pronouns and demonstratives with respect to adjectival modifiers. (ii) Following Huang et al. (2009) and Cheng and Sybesma (1999), I propose that proper names have two merging positions in MC: bare proper names are base-generated in N and then undergo N-to-D movement; non-bare ones are merged at SpecDP. The dis-

tributional and interpretational differences between pronouns and proper names follow from this proposal. Meanwhile, it also predicts the ungrammaticality of the sequence [proper name+pronoun]. These two proposals can be schematised as the two structures below, respectively:

Bare proper names undergo N to D movement:

(116)

```
                        DP
                       /  \
                      ∅    D'
                          /  \
                 proper name   NP
                        ↑       |
                        ⌣_____<proper name>
```
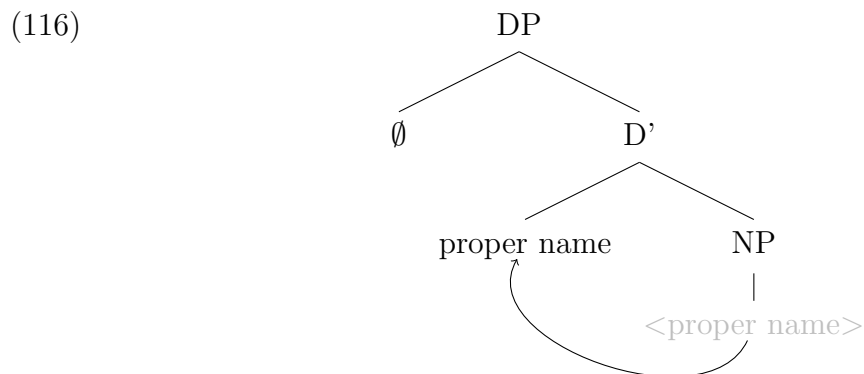
The above movement of the proper name is an instance of head movement, as it moves to the D head position.

Non-bare proper names are merged at SpecDP:

(117)

```
                  DP
                 /  \
        proper name  D'
                    /  \
                   D    DemP
                   |    /  \
              pronoun  ∅    Dem'
                           /  \
                         Dem    NumP
                          |     /  \
                    demonstrative numeral Num'
                                        /  \
                                      Num    ClP
                                       |    /  \
                                       ∅    Cl'
                                           /  \
                                          Cl    NP
                                          |    /  \
                                      classifier common noun
```

135
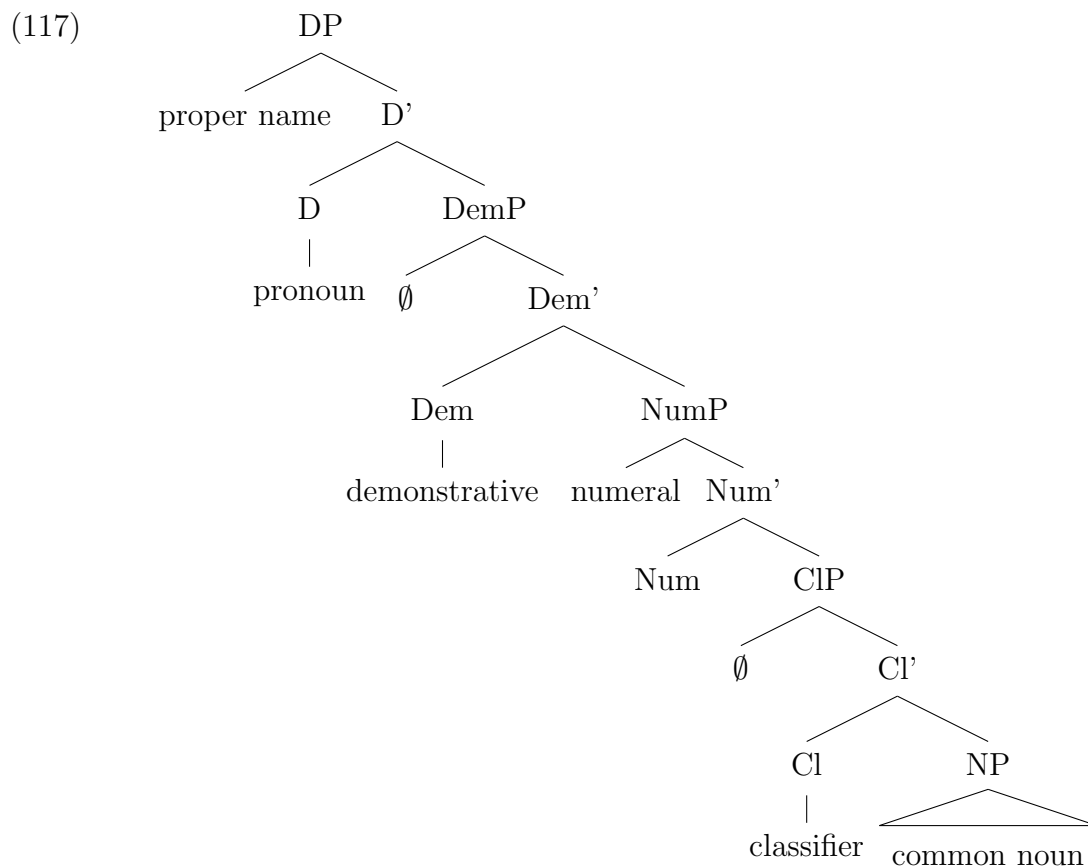
In the next section, I will examine the semantic and syntactic properties of the morpheme *men* under the general structure of noun phrases illustrated above.

3.4 The morpheme *men*

In this section, I will propose a new analysis of the syntactic derivation of the morpheme *men*. Also, I will discuss how the so-called "collective" reading associated with *men* is derived. The structure of phrases such as *Zhangsan ta-men*, in comparison with the ungrammatical *Zhangsan ta* will be studied as well.

The morpheme *men* exhibits some characteristics that are not captured by previous analyses. In this section, I will first summarise previous analyses and redefine the properties of *men*. I argue against the the idea that *men* is a "collective" marker and propose that it is a plural marker with some special features. Following this, I put forward my modified analysis of *men*: the definite plurality analysis. Specifically, *men* is a syntactic realisation of the plural feature (hence Pl) at Num, but the Pl can only be realised as *men* on animate elements in D to satisfy the [+definite,+animate] features of *men*. This analysis is advantageous to previous ones in better capturing the syntactic distribution of *men*. It is not the intervention of the classifier that blocks the Pl from being realised on the common noun, but rather that the Pl can only be realised on elements in D. More importantly, this analysis combined with the discussion in Iljic (1994) on *men* gives us a better understanding of where the "collective" reading associated with *men* originates: it originates from the special features of pronouns rather than *men*.

3.4.1 The syntax of *men*

The morpheme *men* normally attaches to pronouns (*ta-men* 'they') or proper names (*Zhangsan-men*) or some common nouns (*xuesheng-men* 'students') (Chao 1965; Li and Thompson 1981; Zhu 1982; Yang 2005; Huang et al. 2009, among others). The semantic and syntactic behaviours of *men* are summarised as follows in Huang et al. (2009):

> (118) a. P1: *men* is suffixed to pronouns, proper names, and some common nouns.
>
> b. P2: Common nouns with *men* must be interpreted as definite.
>
> c. P3: Attachment of *men* to proper names yields two different interpretations, "plural" or "collective".

d. P4: A pronoun/proper name with *men* can be followed, but not preceded, by a number phrase. In the cases with proper names, only the"collective" reading is possible when followed by a number phrase. Common nouns with *men* do not occur with a number phrase (Huang et al. 2009:310).

I agree with P1 and P2 but not P3 and P4. As I will argue below, attachment of *men* to a proper name only yields the plural reading. Also, my data suggests that when followed by a number phrase, a proper name cannot be suffixed by *men* directly. Instead, a pronoun plus *men* sequence should be inserted between the proper name and the number phrase, denoting a "collective" reading.

Therefore, I will identify the properties of *men* as follows:

(119) a. P1: *men* is suffixed to pronouns, proper names, and animate common nouns.
b. P2: Nominals suffixed with *men* must be interpreted as definite.
c. P3: Attachment of *men* to nominals only yields a plural reading, the same interpretation represented by the English plural marker *s*.
d. P4: Proper names or common nouns accompanied by *men* can only appear alone; pronouns accompanied by *men* can be followed by the [(demonstrative)+numeral+classifier] sequence.
e. P5: The "collective" reading is only possible when *men* is suffixed to a pronoun. The term "collective" refers to the meaning of "a group of people represented or anchored by the referent of the pronoun".

In the next, I will first argue against the idea that *men* is a "collective" marker in section 3.4.1.1. I will propose that *men* is a plural marker. However, I will point out that *men* is not a plural marker in the traditional sense (unlike the English plural marker *s*): (i) it only attaches to animate nominals (P1 in (119)); (ii) N-*men* are definite expressions (P2); (iii) it has distinct distributions as summarised in P4 in (119). These properties of *men* will be discussed in section 3.4.1.2. When and how the "collective" reading can be derived (P5 in (119)) is shown in section 3.5.4.

3.4.1.1 *men* is not a "collective" marker

The discussion of the morpheme *men* has centered on the issue of whether it is a plural morpheme or a "collective" morpheme (Iljic 1994; Li 1999; Cheng and

Sybesma 1999; Yang 2005; Huang et al. 2009, and others). Intuitively, it seems that it is similar to the plural marker *s* in English.

However, Iljic (1994) argues that it is a "collective" marker. As an illustration, he notes that *Xiaoqiang-men* below denotes *Xiaoqiang* and others in the group, i.e. the group of people anchored by Xiaoqiang.

(120)　　Xiaoqiang-men　shenme shihou lai?
　　　　　Xiaoqiang-MEN　what　　time　　come
　　　　　'When will Xiaoqiang and other people come?'

This is partially agreed with in Yang (2005). She claims that the string [proper name+*men*] has two possible interpretations: one is the "associative plural reading", which is equivalent to the "collective" reading; the other one is the normal plural reading, referring to a group of people who have the same name *Xiaoqiang* or share the same characteristics with *Xiaoqiang*.

However, as noted in Huang et al. (2009) and also acknowledged in Iljic (1994), the preferred interpretation for *Xiaoqiang-men* is 'people with the same name as Xiaoqiang or the same characteristics as Xiaoqiang'.

(121)　　Xiaoqiang-men　shenme shihou lai?
　　　　　Xiaoqiang-MEN　what　　time　　come
　　　　　*'When will Xiaoqiang and other people come?'
　　　　　'When will all the Xiaoqiangs come?'

Indeed, this is the only interpretation reported by all my consultants. This interpretation is similar to *Edisons* in *I have met three Edisons in my life*, meaning there are three people who all have the name 'Edison', or *Hamlets* in the sentence *There are lots of Hamlets in real life*, meaning people who share the same characteristics with the "Hamlet" in Shakespeare's novel "Hamlet". In this case, *men* is equivalent to the English *s*. Another example of this is the phrase *A'Q-men* in MC. A'Q is a famous character in works by the Modern Chinese writer Lu Xun, mainly in the novel "The true story of A'Q". A'Q is well-known for his "A'Q mentality", which is "rationalizing every single actual failure he faces as a psychological triumph (spiritual victory)" (wikipedia). Thus the phrase *A'Q-men* refers to the kind of person that shares this "A'Q mentality".

Based on my consultant's judgements, as well as the points made in Huang et al. (2009) and Iljic (1994), I will argue that *Xiaoqiang-men* can only have the plural reading: people that have the same name as *Xiaoqiang* or the same characteristics as *Xiaoqiang*, and the so-called "collective" reading is not available.

To express the "collective" reading "Xiaoqiang and others (in the group)", the plural pronoun *ta-men* needs to follow the name *Xiaoqiang*. As pointed out in Iljic (1994), for the intended "collective" meaning, there is a preference for the expression *Xiaoqiang ta-men* than *Xiaoqiang-men*.

(122) Xiaoqiang ta-men   shenme shihou lai?
      Xiaoqiang (s)he-MEN what   time   come
      'When will Xiaoqiang and others come?'

(123) Xiaoqiang-men   shenme shihou lai?
      Xiaoqiang-MEN what   time   come
      'When will all the Xiaoqiangs come?'

To sum up, *Xiaoqiang ta-men* is not equivalent to *Xiaoqiang-men*. As discussed above, one has a "collective" reading while the other one has a plural reading.

Moreover, according to Huang et al. (2009) (cf. Li 1999), when a proper name with a number expression occurs with *men*, it only generates the "collective reading", the example given is taken from Li (1999).

(124) Wo qing Xiaoqiang-men/xiaozhang-men san ge (ren) chifan.
      I   invite Xiaoqiang-MEN/Principal-MEN three CL person eat
      'I invited Xiaoqiang/the Principal and two others (in the group) for a meal.'

To my consultants and me, however, the above sentence is unacceptable. The phrase *Xiaoqiang-men san ge* cannot mean 'Xiaozhang and two others in the group', i.e. a "collective" reading; it cannot mean 'Xiaoqiang and two other people who have the same name or characteristics as Xiaoqiang', i.e. a plural of Xiaoqiang, either. Similarly, *xiaozhang-men (principal) san ge* is bad, too. To express the meaning 'Xiaoqiang and two others', the pronoun *ta-men* should appear after Xiaoqiang:

(125) Wo qing Xiaoqiang ta-men   san ge (ren) chifan.
      I   invite Xiaoqiang (s)he-MEN three CL person eat
      'I invited Xiaoqiang and two others (in the group) for a meal.'

Similarly, to express the meaning "the principal and two others", *ta-men* is required after the title *xiaozhang*:

(126) Wo qing xiaozhang ta-men   san ge (ren) chifan.
      I   invite principal (s)he-MEN three CL person eat
      'I invited the principal and two others (in the group) for a meal.'

In brief, *Xiaoqiang-men san ge* in (124) is unacceptable; *Xiaoqiang-men* in (123) only has the plural reading; the collective meaning is only possible when the plural pronoun *ta-men* follows the name/title immediately, as in the sequence *Xiaoqiang ta-men* in (122) and (125). This makes me doubt the claim that *men* itself is a "collective" marker. It is likely that semantically speaking, *men* just denotes plural meaning and the "collective" reading comes from other sources: the special properties of pronouns. I will elaborate more on this point later in section 3.5.4.

As a matter of fact, as noted in Huang et al. (2009), the claim that *men* is a "collective" marker is challenged by the fact that N-*men* expressions can co-occur with the distributive marker *dou*. According to Huang et al., the distributive marker *dou* quantifies over individuals. An example given by them is as follows:

(127)   Ta-men   liang ge dou   jiehun le.
        (s)he-MEN two   CL DOU marry LE
        'Both of them are married.'

Crucially, in the context of the above sentence, there must be two marriages: each individual corresponds to one marriage event. It could not be the case that the two of them are married to each other. It can be said that *dou* quantifies over individual marriage events. The fact that *dou* co-occurs with pronoun-*men* expressions such as in the example (127) above and common noun-*men* as in (128) below suggests that the argument that *men* is a "collective" marker is problematic, as a "collective" meaning is incompatible with individuals.

(128)   Xuesheng-men dou   zou   le.
        student-MEN   DOU leave LE
        'Students (definite) have all gone.'

To sum up, the above facts all argue against the claim that *men* is a "collective" marker. I will therefore conclude that *men* is not a collective marker without arguing whether it is a plural marker or not for now.

3.4.1.2   *men* is not a regular plural marker

It is possible that *men* is a plural marker. However, as pointed out in Huang et al. (2009), *men* has some properties that are different from a regular plural morpheme.

3.4.1.2.1 *men* only attaches to animate nominals

First, unlike English *s* which can be suffixed with nouns productively, *men* can only be attached to pronouns, proper names and animate common nouns. For example, *xuesheng-men* 'students' and *haizi-men* 'children' are fine, but *zhuozi-men* or *qiche-men* are not.[15]

(129)   *zhuozi-men
         table-MEN
         Intended: 'tables'

(130)   *qiche-men
         car-MEN
         Intended: 'cars'

Inanimate common nouns such as *zhuozi* 'table' and *qiche* 'car' cannot be attached by *men*, but the animate nominal *dongwu* 'animal' can.

(131)   Dongwu-men dou   shuijiao le.
         animal-MEN DOU sleep   LE
         'All the animals are asleep.'

It can be concluded that the morpheme *men* only attaches to nominals that denote living things, mostly pronouns, proper names and animate common nouns.

3.4.1.2.2 N-*men* expressions are definite

When a noun is suffixed with *men*, it becomes definite. As shown by the contrast of the interpretations of the following two sentences, which are given in Huang et al. (2009):

(132)   a.   Wo qu zhao haizi-men.
               I   go find child-MEN
               'I will go and find the children.'

         b.   Wo qu zhao haizi.
               I   go find child
               'I will go and find the/some child/children.'

This is further supported by the fact that N-*men* expressions cannot occur with the existential quantifier *you* or be negated (Iljic 1994; Li 1999).

(133)   a.   you ren
               have person

---

[15]However, in an imagined world, such as that in Disney films, when tables and cars are anthropomorphised, *zhuozi-men* or *qiche-men* can become possible.

'there is/are some person(s)'

    b. *you ren-men
       have person-MEN

(134)   a. meiyou ren
          not have person
          'there is/are not any person(s)'

    b. *meiyou ren-men
       not have person-MEN

This behaviour of *men* is different from that of the English *s*, which can be combined with both definite and indefinite nominals.

(135)   a. I like cats.

         b. I like some cats.

         c. I like the cats.

Therefore, as summarised by Huang et al. (2009), common nouns accompanied with *men* are definite.

3.4.1.2.3 Proper name/common noun-*men* must be bare, but pronoun-*men* can be followed by other elements

In English, nominals accompanied by the plural marker *s* can be preceded by numerals (136). By contrast, common noun/proper name-*men* expressions in MC cannot be preceded or followed by the [numeral+classifier] sequence (137a).

(136)   three students

(137)   a. *san ge xuesheng-men
          three CL student-MEN
          Intended: 'three students'

    b. *xuesheng-men san ge
       student-MEN three CL
       Intended: 'three students'

According to Huang et al. (2009), a [numeral+classifier+common noun] quantity expression denotes the quantity of individuals, that is, it quantifies over individuals. However, a "collective" morpheme refers to a group as a whole. Obviously, the 'individual' and the 'whole' interpretations are incompatible and this causes the ungrammaticality of the phrases in (137a). However, since I have argued that *men* does not denote the "collective" reading on itself, the above explanation for why (137a) and (137b) are bad is not plausible. Alternatively, I will argue in

section 3.5 that it is bad due to syntactic reasons.

In comparison to proper names or common nouns, pronouns accompanied by *men* can be followed but not preceded by the [numeral+classifier] sequence.

(138)   a. *san ge ta-men
            three CL (s)he-MEN

        b. ta-men   san ge
            (s)he-MEN three CL
            'they three'

Again, this contrast between pronouns on the one hand and proper names and common nouns on the other hand is caused by their distinct syntactic positions. I will return to this distinction in section 3.5.

In summary, on the one hand, I disagree with the claim that *men* is a "collective" marker. On the other hand, I agree that *men* is not a regular plural marker and has distinct syntactic distributions. In the next, I will discuss two analyses of the morpheme *men* in the literature, before I turn to section 3.5 where I propose an alternative analysis of *men*.

3.4.2   Previous analyses

3.4.2.1   Huang et al. (2009)

Huang et al. (2009) examine the properties of *men* from a structural perspective. As mentioned in Chapter 2, they propose that the nominal hierarchy in MC is as below.

(139)

```
              DP
             /  \
            D   NumP
                /  \
              Num   ClP
                   /  \
                  Cl   NP
                       |
                       N
```
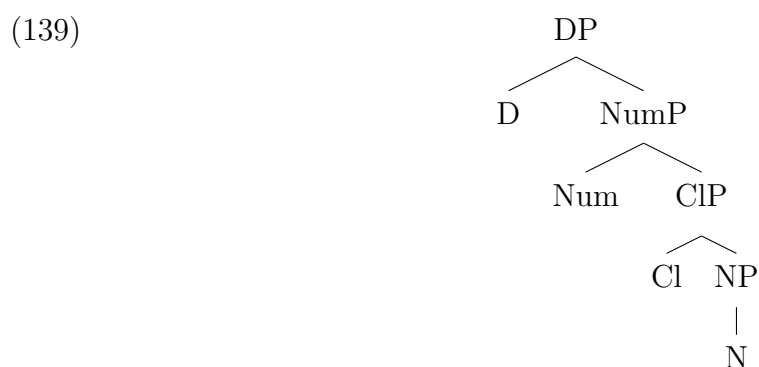
Based on the the syntactic behaviours of *men* summarised in (118), Huang et al. (2009) (mainly base on Li's (1999) analysis) propose that there is a Pl at Num when *men* appears.

(140)

```
                        DP
                      /    \
                    D       NumP
                          /      \
                        san      Num'
                               /      \
                             Num       ClP
                              |       /    \
                             Pl      ge     NP
                                            |
                                         xuesheng
```
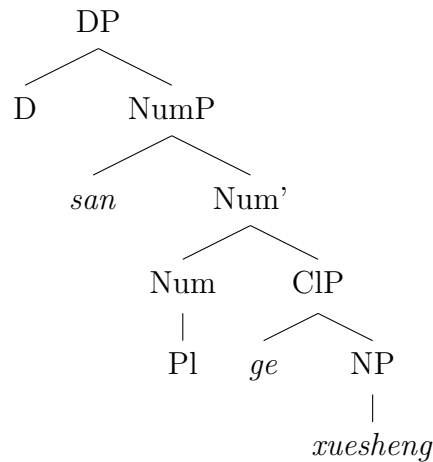
According to Li (1999), a Pl appears as the Num head and it needs to be realised (or checked). In the structure above, however, the classifier head intervenes between NP and Num. As a result, the Pl cannot be realised in NP, as this will violate the Head Movement Constraint (HMC). This captures the ungrammaticality of the phrase *san ge xuesheng-men* in (137a) above.

An English nominal expression with *s* such as *those three students* has the structure below:

(141) [16]

```
                        DP
                      /    \
                  those     NumP
                          /      \
                       three     Num'
                               /      \
                             Num       NP
                              |         |
                             Pl      student
```
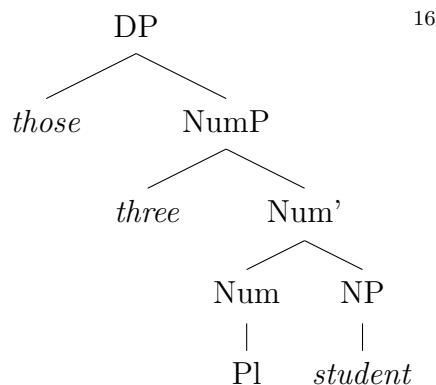
There is nothing between the head Num and N, so the Pl is realised on NP directly.[17]

Even though not explained explicitly, it can be seen that *men* is treated as representing the Pl in Huang et al. (2009). That is to say, the Pl is realised

---

[16]The original example used in Huang et al. (2009) is *them three students*. However, according to native speakers of English, this expression is not standard English, so for the sake of formality, I changed it to *those three students*.

[17]As acknowledged in Huang et al. 2009, this analysis could not exclude the possibility of the Pl being realised on the elements in D. However, they mention that the fact that the possibility is not borne out in English may be because of the morphological feature of the morpheme *s*: it needs a host that is an N but not elements in D.

on other elements such as the pronoun *ta* as *men*. In (142), the classifier head intervenes between N and Num, and as a result the Pl cannot be realised in N. Instead, it is realised on D.

(142)　　Wo dui ta-men　　san　ge (ren)　tebie　　hao.
　　　　I　to　(s)he-MEN three CL person especially good
　　　　'I am especially nice to them three.'

Pronouns are argued to be merged in D position, so the Pl can be realised on them as *men*, generating *ta-men san ge (ren)* in (142), as shown below:

(143)
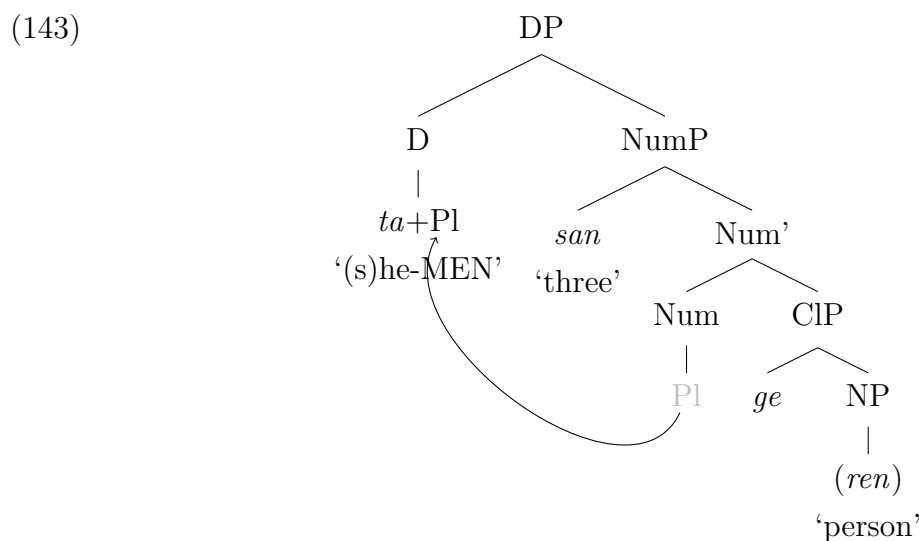
The arrow above is added by me. Huang et al. (2009) do not specify how the realisation process works; whether the Pl moves up or the pronoun moves down or there is no movement involved and the Pl just gets realised morphologically. However, as we will see immediately below, their analysis requires a movement analysis.

By contrast, in (137a), *xuesheng* 'student' is in N. As mentioned above, due to the intervention of the classifier head (head movement constraint), *men* cannot be realised on *xuesheng* 'student', and as a result the sequence *san ge xuesheng-men* in (137a) is ruled out.

(144) *

$$
\begin{array}{c}
\text{NumP} \\
\diagup \quad \diagdown \\
\textit{san} \qquad \text{Num'} \\
\text{`three'} \\
\end{array}
$$

NumP
- *san* 'three'
- Num'
  - Num
    - | *xuesheng*+Pl
  - ClP
    - *ge*
    - NP
      - | *xuesheng* 'student'
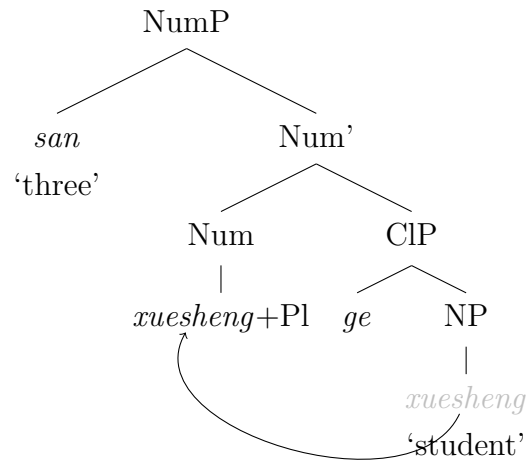
The order *xuesheng-men san ge* in (137b) is not possible for similar reasons. Huang et al. (2009) note that *xuesheng* cannot move to Num due to the intervention of the Cl head. Here, it can be seen that Huang et al. do not hold the morphological realisation view, instead, they think it is the common noun that moves to the Pl rather than the other way round. Actually, the word order *xuesheng-men san ge* cannot be derived anyway as the common noun cannot precede the numeral and the classifier.

In the discussion follows, I will adopt Huang et al.'s core assumption that there is a Pl at Num and it can be realised on other elements as *men*. However, I will propose a new analysis as to where this Pl can be realised as *men* and how it is realised in section 3.5.

3.4.2.1.1 Does the plural feature (Pl) move?

As mentioned in Huang et al. (2009), "a common noun is base-generated in N, with number and classifier preceding it. Such a noun cannot be affixed by *men* because neither of them can move to the other, due to the intervening classifier." It can be seen that it is possible that both head-raising and head-lowering are considered in Huang et al. (2009). For example, in the phrase *ta-men (san ge)*, if it is assumed that the Pl feature does not move, the only option is to say that the pronoun moves down to Pl.

(145)   ?

```
                         DP
                      ╱      ╲
                    D          NumP
                    |         ╱    ╲
                   ta      san      Num'
                 '(s)he'  'three'  ╱    ╲
                                 Num     ClP
                                  |     ╱   ╲
                                ta+Pl  ge    NP
                                             |
                                           (ren)
                                          'person'
```
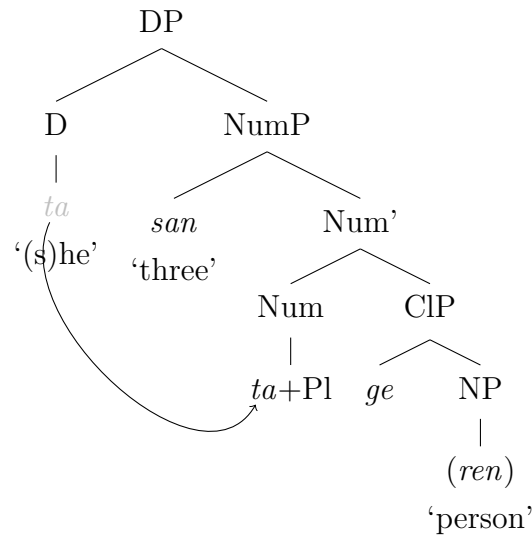
However, if head lowering is not allowed and the assumption is that the Pl fea-
ture moves up, how the definite phrase *xuesheng-men* is derived will be a problem.

(146)   *

```
            NumP
          ╱      ╲
        Pl        NP
                  |
             xuesheng+pl
               'student'
```
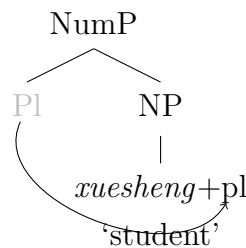
Since head-lowering is not possible, it cannot be the case that the Pl moves to the
common noun. As I will argue later, Pl can be realised as *men* only in D. I will
assume that the Pl moves up to D and exclude other possibilities.

3.4.2.1.2   Common nouns and names undergo N-Num-D movement?

Li (1999) and Huang et al. (2009) do not give the syntactic structure for the definite
expression *xuesheng-men*, but note that when a classifier is not present, a common
noun can move to D and take *men* as a suffix. Nonetheless, it is impossible for
the common noun to move to D directly, due to the intervention of the Num head
where the Pl locates (this is also pointed out in Yang 2005 to argue against Li
1999):

(147) *

DP

D   Num'

Num   NP

Pl   xuesheng

'student'
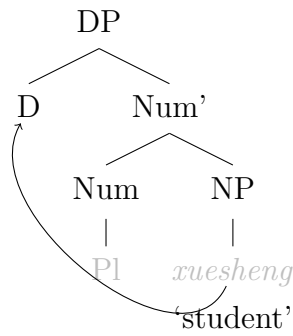
The common noun can be a head or a phrase. As it moves to D, this suggests the movement chain is a head chain. Consequently, the movement will be blocked by the Num head under HMC. This is consistent with the previous assumption that bare proper names and definite bare nouns undergo N-to-D movement, which is a head-movement.

However, it is possible to assume that *xuesheng* moves to Num, picks up the Pl and then moves to D along with Pl.

(148)

DP

D   Num'

xuesheng-men   Num   NP

xuesheng+Pl   xuesheng

'student'
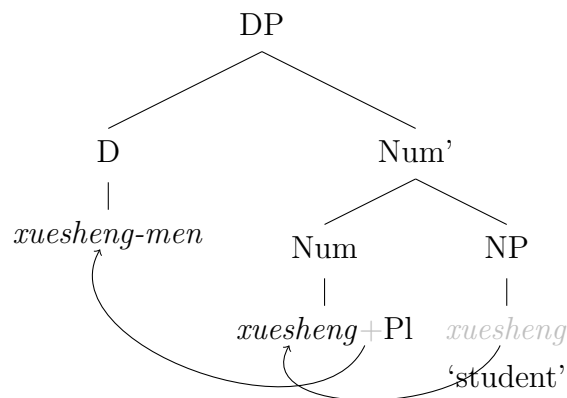
As I proposed in Chapter 2, proper names undergo N to D movement in MC, so similar to *xuesheng-men*, the string *Xiaoqiang-men* is also derived via N to Num then to D movement of the proper name *Xiaoqiang*.

(149)

DP
├─ D
│ │
│ *Xiaoqiang-men*
└─ NumP
   ├─ Num
   │ │
   │ <*Xiaoqiang*+Pl>
   └─ ClP
      ├─ Cl
      │ │
      │ ∅
      └─ NP
         │
         <*Xiaoqiang*>

To generate the definite interpretation, the common noun or proper name needs to move up to D and it picks up the Pl on the way. Thus the assumption is that the Pl moves up to D where it gets realised. I will develop an analysis of *men* along these lines in section 3.5.

3.4.2.1.3 *men* affixes to the pronoun but not N

Furthermore, there is an important phenomenon that is not captured by Huang et al.'s above analysis. When the classifier is absent and a pronou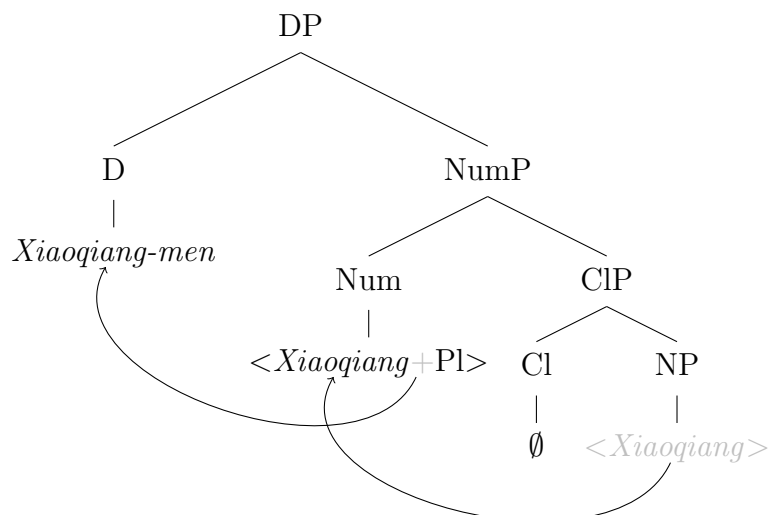n (possibly also a demonstrative) appears with a common noun, the Pl is realised on the pronoun but not on the common noun.

(150)   a.   Wo dui ta-men   xuesheng hen you xinxin.
             I   DUI (s)he-MEN student   very have confidence
             'I have confidence in these/those students.'

        b.   Wo dui ta-men   zhe-xie   xuesheng hen you xinxin.[18]
             I   DUI (s)he-MEN this-XIE student   very have confidence
             'I have confidence in these/those students.'

For instance, the structure of the phrase *ta-men xuesheng* 'these/those students' is illustrated below:

---

[18]It has been argued that the morpheme *xie* is a plural marker (Iljic 1994), a classifier (Borer 2005), or quantifier such as *several* in English (personal communication with Prof. Hagit Borer). I will not discuss *xie* in this thesis.

(151)

```
                        DP
                      /    \
                ta+Pl       NumP
                ta-men      /    \
            '(s)he-MEN'   Pl      NP
                                  |
                              xuesheng
                              'student'
```
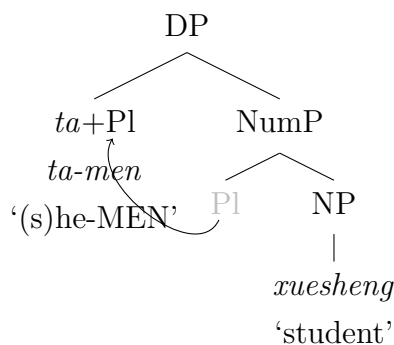
Under Huang et al.'s analysis, technically speaking, Pl can be realised on either the common noun *xuesheng* 'student' or the pronoun *ta*. However, this leaves the ungrammatical sentence below unexplained.

(152)　　*ta　　xuesheng-men
　　　　　(s)he student-MEN

It is not obvious why the Pl can not be realised on the NP *xuesheng* as *men* since there is no intervention between Pl and NP. An assumption that Pl can only be realised as *men* in D captures the above facts straightforwardly.

　　I will summarise the main points in this section as follows:

(153)　　a.　　The plural feature (Pl) moves to D.

　　　　b.　　Proper names and common nouns accompanied by *men* undergo cyclic movement from N to Num (picking up the Pl) and then to D. This is because (i) proper names and common nouns accompanied by *men* are definite. (ii) as argued in Chapter 2, proper names and definite bare nouns undergo movement to D to license definiteness. (iii) cyclic movement avoids violating the HMC.

　　　　c.　　*men* is realised on elements in D. This is based on the facts that (i) when a pronoun and a common noun co-occur, *men* appears on the pronoun but not on the common noun; (ii) *men* only affixes on elements that normally sit in D: pronouns, bare proper names and definite bare nouns; (iii) again, elements accompanied by *men* are always definite.

To conclude, in English, the plural marker *s* appears on most nominals, while in MC, *men* only attaches to pronouns and proper names and some animate common nouns. To capture the contrast between English and MC, the following parametric principle can be drawn:

(154)   In English, the plural morpheme is marked on all nominals, while in MC, it is only marked on a limited range of elements.

As a well-known fact, MC, as an isolating language, lacks inflection in general, thus, it is not unreasonable to propose that it also lacks plural markings in the nominal domain. Therefore, my assumption is that only a minority of elements are marked for plurality morphologically in MC. I will develop an analysis of *men* along these lines in section 3.5 below.

3.4.2.2   Yang (2005)

Yang (2005) points out an important problem relevant to Li's (1999) analysis shown above. According to Yang, if the Pl in Num head position needs to be realised, it should be able to be realised on the closest element, which is the element in SpecNumP. However, this is not possible, the sequence *san-men ge xuesheng* is ungrammatical:

(155)   *san-men   ge xuesheng
          three-MEN CL student

There is no reason why it is impossible since the Pl can be realised on the numeral via specifier-head agreement. Meanwhile, according to Yang, the fact that numerals cannot be suffixed with *men* may indicate that the Num head is incompatible with the Pl. As suggested by Yang, when numerals appear, the feature under Num is [Singular], rather than [Plural].

   Also, Yang points out that *men* cannot be suffixed to demonstratives which she argues to be in D position:

(156)   *zhe-men   san   ge xuesheng
          this-MEN three CL student

What is more, in the example below, the classifier is not present, but *men* cannot appear on the common noun, either.

(157)   *zhe-xie   xuesheng-men
          this-XIE student-MEN

These facts are not explained by Li (1999). Though Li does mention that the use of *men* is not available when D contains a demonstrative, she does not explain

why this is the case.[19]

Furthermore, Yang points out that nominals that co-occur with *men* must denote human beings (Iljic 2001). This is not mentioned in Huang et al. (2009) or Li (1999) and the proposed analysis does not capture this feature of the morpheme *men*.

Yang (2005) proposes that there is a single morpheme *men* in MC and it can generate both the "collective" reading and the definite plural reading. She analyses *men* as the little n head, picking out pluralities from the set denoted by the nP. The function of the little n is taking a concept-denoting noun (individual) and returning a predicative object (property). *men* and the little n have distinct semantic functions and are processed independently. Also, *men* is assumed to carry an uninterpretable [human] feature, which will be checked by human nominals c-commanded by n. The configuration is illustrated below:

(158)

$$nP_{men}$$

n   NP
| |
men[~~u~~human]   N[+human]

In addition, it is proposed that the [+def] feature is present in D whenever *men* is present.

Take the phrase *xuesheng-men* as an illustration, its structure can be represented as follows (modified from the structure in Yang 2005):

---

[19]Actually, in Yang (2005), the phrase (157) is judged as grammatical. However, this sentence is unacceptable to me and my consultants.

(159)

DP
├─ D[+def]
│   │
│   *xuesheng-men*
│   'student-MEN'
└─ NumP
     ├─ Num[Number:Pl]
     └─ nP$_{men}$
          ├─ n
          │   ├─ N
          │   └─ n
          │   │
          │   *<xuesheng>+<men>*[u̶h̶u̶m̶a̶n̶]
          └─ NP
               └─ N
                    │
                    <xuesheng>[+human]
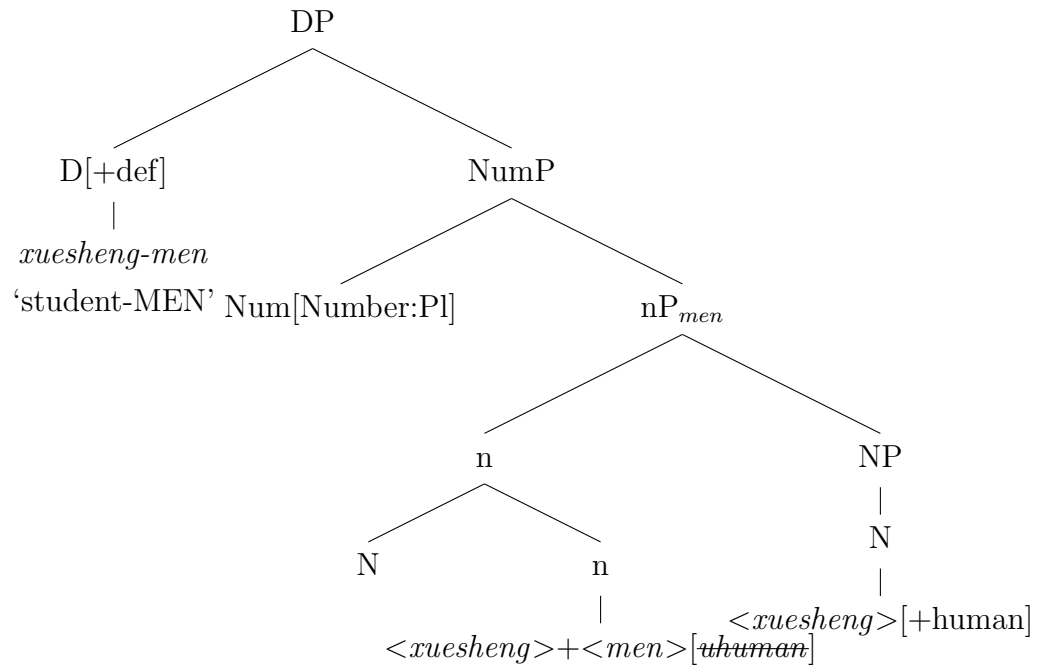
The common noun *xuesheng* undergoes cyclic movement from N to little n, taking the morpheme *men*, and then moves to Num, taking the Pl, and at last moves to D. N-to-n movement is triggered by the suffixal nature of *men*, while n-to-Num-to-D movement is motivated by [+def] feature of D.

According to Yang (2005), the reason why the sequence *san ge xuesheng-men* is bad is semantic.

(160)

NumP
├─ *san*
└─ NumP
     ├─ Num[Number:Pl]
     └─ ClP
          ├─ *ge*
          └─ nP$_{men}$
               ├─ n
               │   ├─ N
               │   └─ n
               │   │
               │   *men*[u̶h̶u̶m̶a̶n̶]
               └─ NP
                    └─ N
                         │
                         xuesheng[+human]
                         'student'
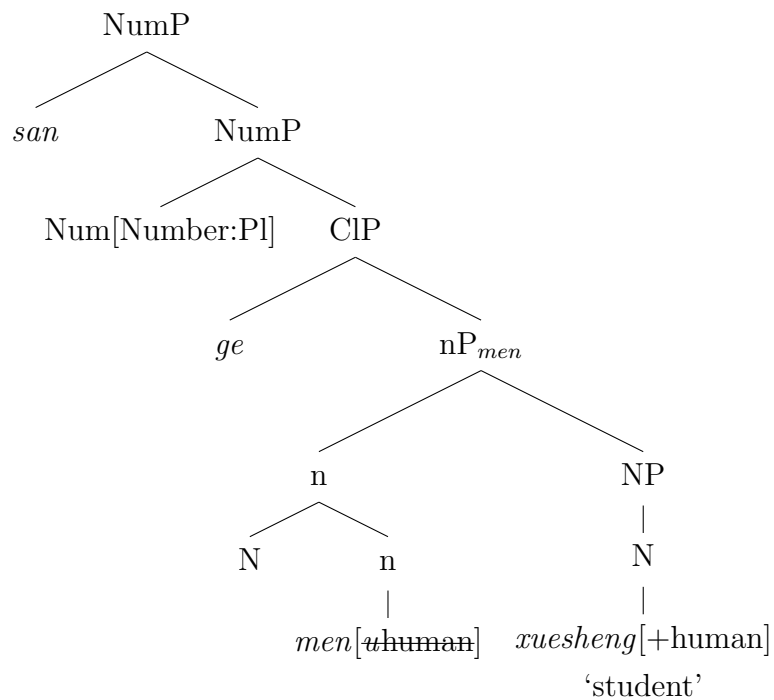
The above structure is created based on the discussion in Yang (2005). According to her, nP$_{men}$ denotes a set of pluralities, but classifiers only pick out singularities, so the combination of ClP and nP$_{men}$ is an empty set. As a result, ClP cannot be combined with NumP as numerals require a set of singularities, and the sequence *san ge xuesheng-men* is ruled out.

However, there are several problems with the above analysis. First, the proposal that a [+def] feature is present in D whenever *men* shows up is not straightforward. It is not clear why and how the presence of *men* at little n head induces the presence of the [+def] feature on D. A straightforward alternative is to say that *men* itself carries a [+def] feature (more discussion on this point will be shown in section 3.5). Also, it is not specified how the [+def] feature triggers the movement of n-to-Num-to-D. It would have to make the assumption that the common noun *xuesheng* carries a [+def] feature and checks off the one in D. Moreover, if the reason that the sequence *san ge xuesheng-men* 'these/those three students' is bad is because the combination of *ge* (singularity) and *men* (plurality) is an empty set, and as a result cannot be selected by NumP, it will predict that the sequence *ta-men san ge xuesheng* (the position of the pronoun *ta* is higher than the numeral *san* 'three') is bad as well, as the classifier and the morpheme *men* co-occur. However, this is incorrect. The phrase *ta-men san ge xuesheng* is completely fine.

To sum up, due to the reasons listed above, I will not adopt Yang's analysis of *men* in this thesis. Instead, I will propose a new analysis of *men* on the basis of the properties I identified in (119) at the beginning of this section and the initial assumptions in (153) drawn at the end of section 3.4.2.1.

3.5 The definite plurality analysis

Combining the discussion on *men* in (119) and (153), I summarise the main properties and assumptions about *men* as follows:

(161)   a.   P(roperty)1: *men* is suffixed to pronouns, proper names, and animate common nouns.

        b.   P2: Proper names or common nouns accompanied by *men* can only appear alone; pronouns accompanied by *men* can be followed by the [(demonstrative)+numeral+classifier] sequence.

        c.   P3: The "collective" reading is only possible when *men* is suffixed to a pronoun.

        d.   A(ssumption)1: The plural feature (Pl) moves to D to get realised.

e. A2: Proper names and common nouns accompanied by *men* undergo cyclic movement from N to Num (picking up the Pl) and then to D together with the Pl.

f. A3: *men* is realised on elements in D.

3.5.1   The motivations

I will follow Huang et al. (2009) by arguing that the Pl represented by *men* (and possibly other elements as well, such as *xie*), is merged in Num head position. Based on the fact that *men* only attaches to animate nominals, denoting a definite interpretation, I will propose *men* carries a [+definite, +animate] ([+def,+ani]) feature bundle. The Pl can be realised as *men* only when these two features are satisfied.

The [+def] feature determines that the Pl can be realised as the form *men* only on elements that are in D. This explains why elements suffixed with *men* are all definite.[20]

Also, the [+animate] feature determines that the Pl surfaces as *men* only when the nominals in D are animate, assuming that pronouns are always animate. In brief, only animate elements that appear in D can be suffixed with *men*. As an illustration, the structure of the plural pronoun *ta-men* '(s)he-MEN, they' is shown as follows:

---

[20]It needs to be noted that Prof. Lisa Cheng pointed out to me that the following expressions where *men* appears with an indefinite expression could be found on Google search:

(162)   mou-xie   xuesheng-men
        certain-XIE student-MEN
        'certain students'

(163)   ji   ge xuesheng-men
        several Cl student-MEN
        'several students'

However, these expressions are not acceptable to me and my consultants. Nonetheless, it is possible that they are grammatical in some dialects of Chinese. In that case, my analysis that *men* carries a [+def] feature and needs to be realized in D will need to be revised. This calls for a more comparative investigation of *men* in different dialects in the future. In addition, an examination tracing back to the historical source of *men* could also be conducted.

(164)
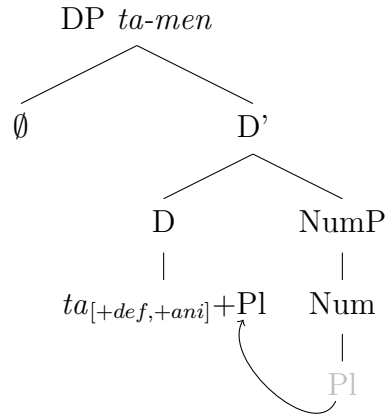
The Pl moves to D and gets realised as *men*, producing the phrase *ta-men*.

Since my analysis is based on Huang et al. (2009), it can capture all the data their analysis can capture. For instance, when classifiers appear, *men* cannot be attached to common nouns, as the common noun cannot move to Num (and then to D) due to the intervention effect of the classifier. Therefore, the following two sentences are ruled out.

(165)   *Wo dui san   ge xuesheng-men tebie   hao.
        I   to three CL student-MEN especially good
        Intended: 'I am especially nice to three students.'

(166)   *Wo dui xuesheng-men san   ge tebie   hao.
        I   to student-MEN three CL especially good
        Intended: 'I am especially nice to three students.'

san ge xuesheng-men in (165) is bad because either the D projection is not projected at all (167) or it is projected but is null (168).[21]Consequently, the Pl cannot be realised in D as *men*.

---

[21]According to Huang et al. (2009), the phrase *san ge xuesheng* can be a quantity-denoting expression or an indefinite expression. In the former case, only NumP is projected, while in the latter, a null D head is projected.

(167) *
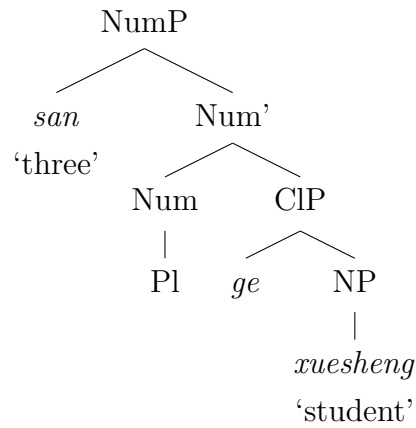
There is no D position available for the Pl to be realised. In the following, the D position is null and *xuesheng* cannot move to Num in the first place due to the obstruction of the Cl head (consequently, cyclic movement cannot take place).

(168) *
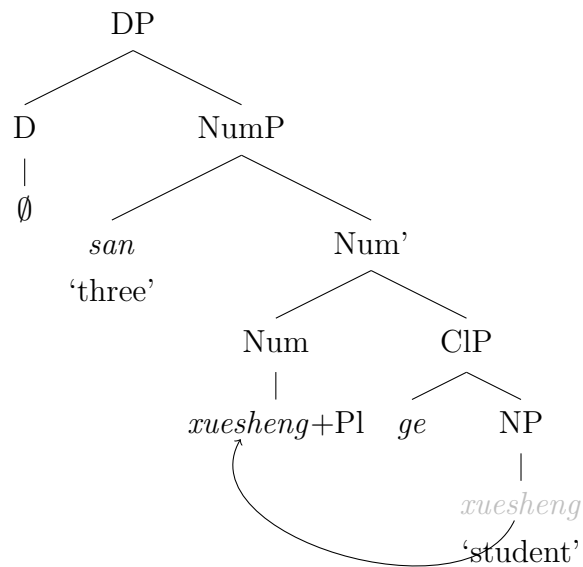
Because D is empty, the Pl simply cannot be realised as *men*. As for (166), the word order of *xuesheng-men san ge* is impossible, as the Cl projection blocks the common noun *xuesheng* from moving up to D.

By contrast, the phrase *ta-men san ge xuesheng* 'these/those three students' is completely fine.

(169)   Wo dui ta-men   san ge xuesheng tebie   hao.
         I   to (s)he-MEN three CL student   especially good
         'I am especially nice to these/those three students.'

Its structure is shown as follows:

(170)
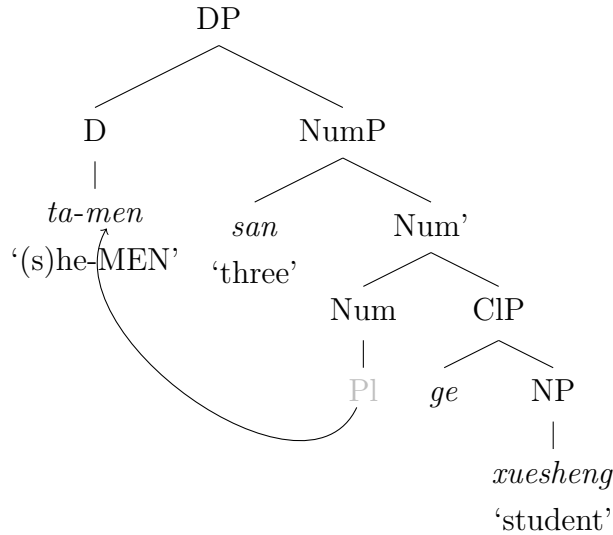
The Pl moves up to D and is realised on the pronoun *ta* as *men*, generating the phrase *ta-men san ge xuesheng* 'these/those three students'.

As already pointed out in (161e), I will adopt the hypothesis that the phrase *xuesheng-men* has the structure below:

(171)
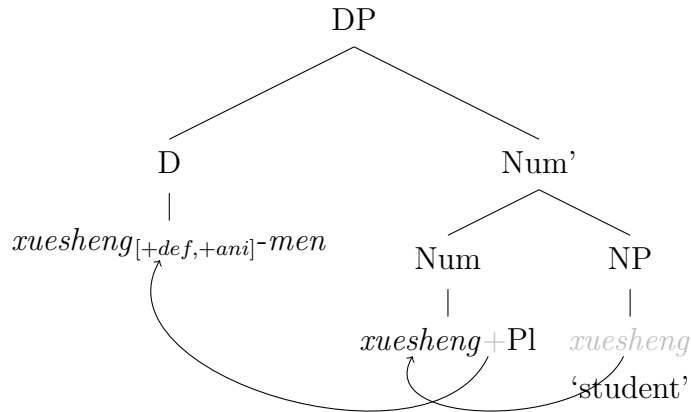
The common noun *xuesheng* undergoes cyclic movement from N to Num, and then to D. The motivation of this movement is to fill the D position and license the definiteness of the whole DP (see discussion in section 3.2.3 at the beginning of this chapter). The Pl moves to D with *xuesheng*; since *xuesheng* represents animate entities, the Pl is realised as *men*.

The following evidence suggests that this analysis is on the right track.

(172)   a.   Wo xihuan congming de xuesheng
              I   like   smart   DE student
              'I like smart student(s).'

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b. *Wo xihuan congming de xuesheng-men
   I   like   smart   DE student-MEN

As already mentioned in Chapter 2, it is proposed that adjectives are merged as specifiers of functional heads above the nominal inside the DP (Cinque 1994, 2010; Paul 2005, 2009; Zhang 2006, 2015a, and so forth). Thus, the phrase *congming de xuesheng* 'smart student(s)' has the structure below:

(173)

```
                    DP
                   /  \
                  ∅    FP
                      /  \
                    AP    F'
                   /\    /  \
          congming de  F⁰   NP
           'smart de'       /\
                          xuesheng
                          'student'
```
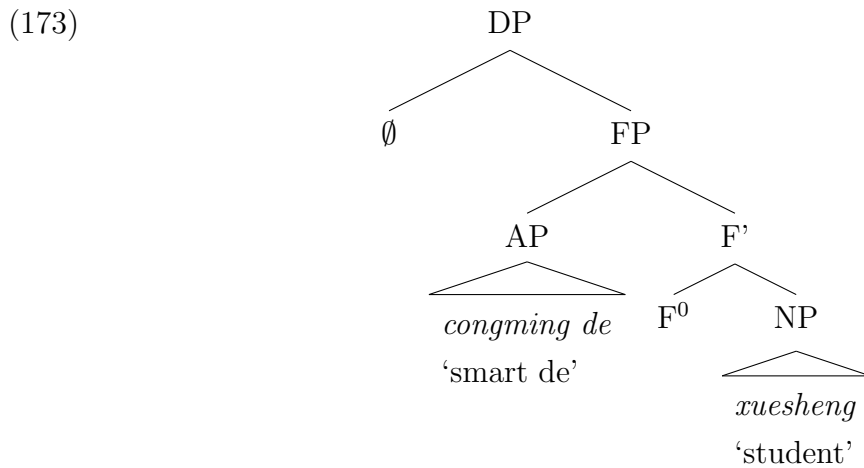
The above phrase has an indefinite reading as the DP is empty. As can be seen clearly, the presence of the functional head F⁰ blocks the common noun *xuesheng* from moving to the Num head position. Consequently, the phrase *congming de xuesheng-men* in (172b) cannot be derived.

(174)   *

```
                    DP
                   /  \
                  D    NumP
                      /    \
                    Num     FP
                     |     /  \
              xuesheng+Pl AP   F'
                         /\   /  \
                congming de  F⁰  NP
                 'smart de'       |
                              xuesheng
                              'student'
```

159
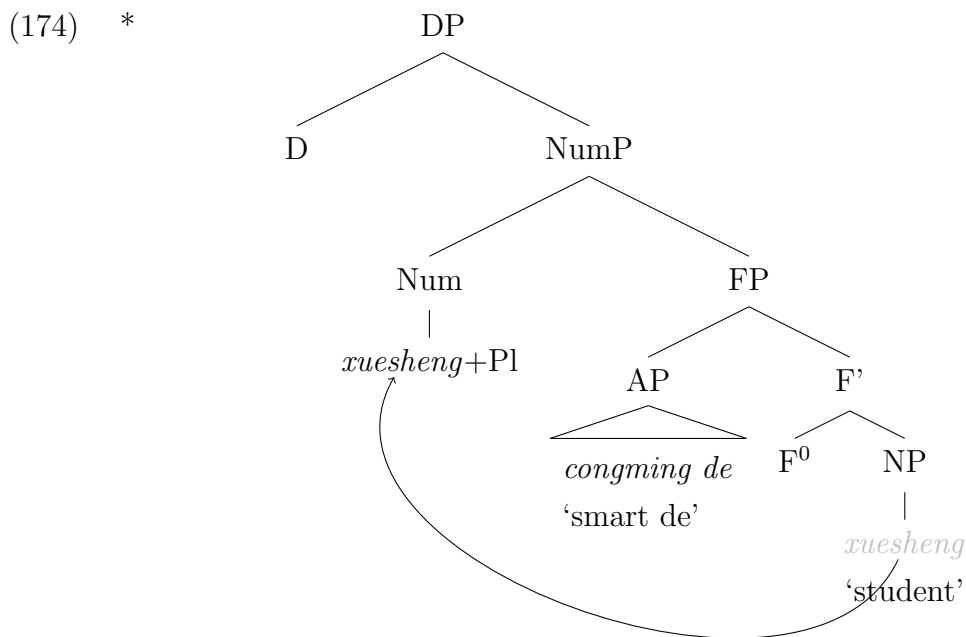
This supports the proposal that NP in NP-*men* constructions undergo N to Num to D movement.

However, it could be argued that the adjective in *congming de xuesheng-men* is not in the base position, but rather that it is a "high" adjective (normally stressed) and has undergone movement from SpecFP to SpecDP (Zhang 2006; Hall to appear). However, this does not pose a challenge to the proposed analysis. The "high" adjective phrase *congming de xuesheng* has a definite reading and it has the structure below:

(175)

```
                      DP
                  /        \
         congming de        D'
          'smart de'      /     \
                         D       FP
                              /       \
                            AP         F'
                          /    \      /    \
                   congming de  F⁰    NP
                                    xuesheng
                                    'student'
```
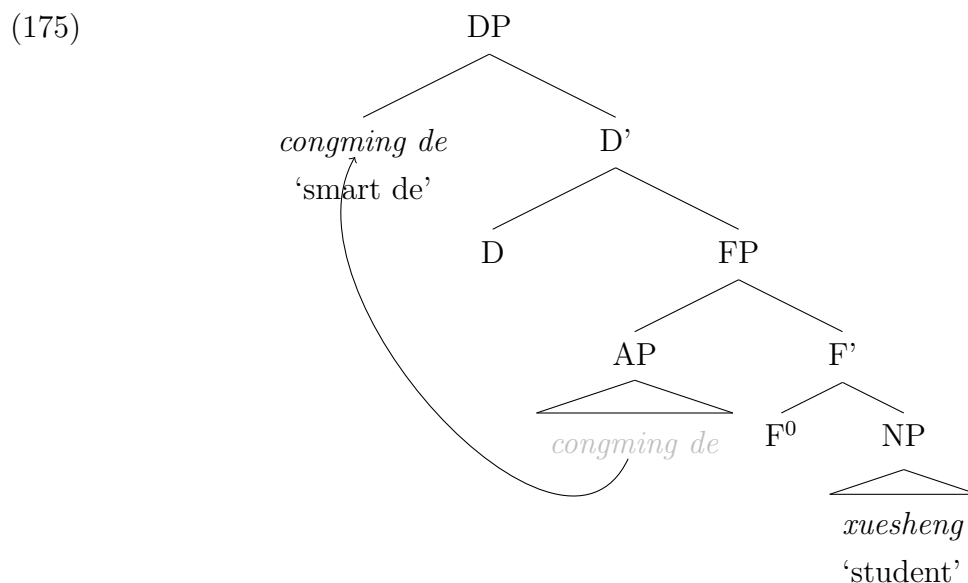
Since the SpecDP is already occupied, i.e. the definiteness of the phrase *congming de xuesheng* is licensed, there is no motivation for the NP *xuesheng* 'student' to move to D (see the discussion on the licensing conditions on definiteness in section 3.2.3) and be affixed with *men*, consequently, the sequence *congming de xuesheng-men* in (172b) can never be generated.

Similar to the analysis for the definite phrase *xuesheng-men*, the expression *Zhangsan-men* has the structure below:

(176)

```
                   DP
                /        \
               D          Num'
               |         /     \
        Zhangsan-men   Num      NP
                        |        |
                  Zhangsan+Pl  Zhangsan
```

160
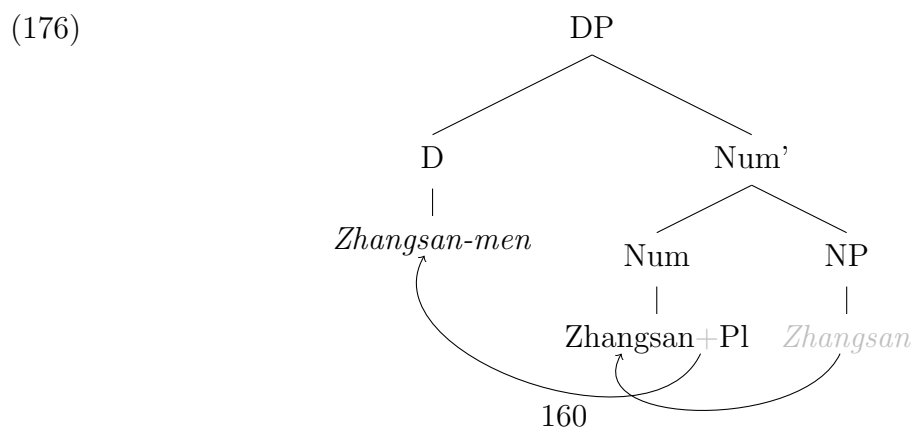
Therefore, it can be concluded that in cases such as *xuesheng-men* and *Zhangsan-men*, the animate common noun or the proper name undergoes N-to-Num-to-D movement, picking up the Pl on the way and realizing it as the suffix *men* in the surface.

3.5.2   The advantages

The current analysis has a range of advantages over the previous ones. First, since the Pl is realised as *men* only on elements in D, this captures the fact that when a nominal is suffixed with *men*, it is necessarily definite. Secondly, it captures the fact that all the nominals that co-occur with *men* are animate, such as the animal *niao'er* 'bird' in the following example:

(177)   Niao'er-men dou   fei hui   nanfang qu le.
        bird-MEN   DOU fly back south   go LE
        'All the birds have flown back to the south.'

Also, as I argue that *men* is a plural marker, denoting a plurality of individual birds rather than a "collective" marker, there is no problem of it co-occurring with the distributive quantifier *dou*.

Thirdly, as the Pl can only be realised as *men* on animate elements in D, it is consistent with the fact that nominals that are most commonly suffixed with *men* are pronouns, as they are base generated in D position.

Moreover, the following ungrammatical form is ruled out under the current analysis, because *men* can only attach to elements in D.

(178)   *san-men   ge xuesheng
        three-MEN CL student

Conversely, this analysis predicts when D is not available or D is not occupied, the plural marker *men* cannot appear at all, as shown in (167) and (168) earlier for the ungrammatical phrase below:

(179)   *Wo dui san   ge xuesheng-men tebie   hao.
        I   to   three CL student-MEN   especially good
        Intended: 'I am especially nice to three students.'

Furthermore, whenever D is occupied by animate nominals, the Pl will be realised on them as *men*. Thus, in the following sentence, the Pl is realised on the element in D, which is the pronoun *ta*.

(180)   Wo dui ta-men   xuesheng hen you xinxin.
        I   DUI (s)he-MEN student   very have confidence
        'I have confidence in these/those students.'

The structure of the phrase *ta-men xuesheng* 'these/those students' can be illustrated below:

(181)
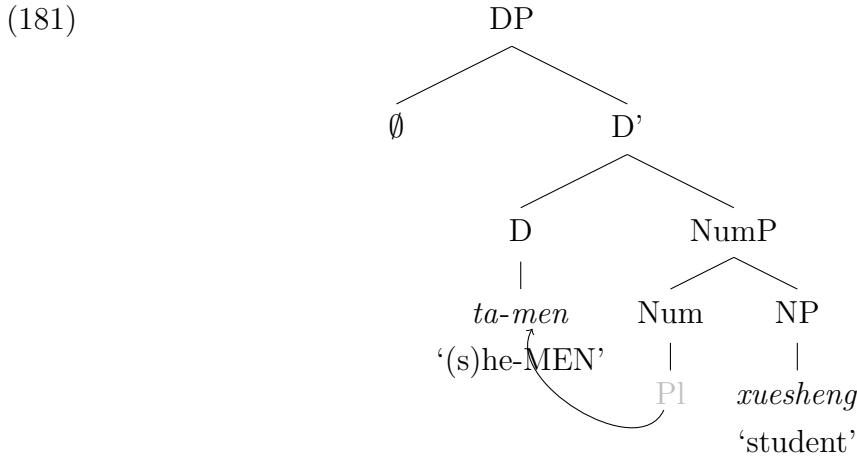
Even though there is no intervention effect from classifiers, the Pl still cannot be realised on the common noun *xuesheng*.

In summary, in this section, I put forward a definite plurality analysis of the morpheme *men* in MC, arguing that it is the phonological realisation of the plural feature (Pl) which is based in Num. This Pl can be realised as *men* only on animate elements in D. The realisation rule can be represented as follows:

(182)   Pl → *men* iff [+def,+ani] is satisfied.

This captures the fact that *men* can only appear on pronouns, proper names and some animate common nouns, denoting a definite reading. The proposed analysis is advantageous to Huang et al.'s and Yang's analyses in that it better captures the properties of *men* mentioned above. Also, it captures the contrast that proper name/common noun-*men* sequences can only appear bare, while pronoun-*men* phrases can be followed by number phrases. It is consistent with previous assumptions that bare proper names and definite bare nouns undergo N-to-D movement whereas pronouns are base generated in D.

Based on the above discussion, the parametric rule proposed in (154) can be revised to the following:

(183)   In English, the plural morphology is realised on the noun, while in MC,

it is realised in the D domain.

This parametric difference is observed in other languages as well. Bouchard (2002) suggests that in English, the number is on the noun, but in French it is on the article. This claim is supported by the comparison between the following English and French sentences:

(184) a. The secretary of John and collaborator of Paul is/?are at the station.

   b. La secretaire de Jean et   collaboratrice de Paul est/*sont *à* la
       the secretary of Jean and collaborator   of Paul is/*are   at the
       gare.
       station

The commonality between (184a) and (184b) is that they both contain one article and two nouns, while the difference is that plural verb is grammatical in English but not in French. According to Bouchard (2002), plural verb is possible in English because number is carried on the noun. Since there are two nouns, they can denote two individuals. By contrast, the number is encoded on the article in French. There is one article *la* 'the' in (184b), thus it only denotes one individual. Therefore, it can be concluded that it is a cross-language parameter that in some languages the number feature is realised in the NP, while in some others, it is realised in D.

3.5.3 *Zhangsan ta* v.s. *Zhangsan ta-men*

In this section, I am going to investigate an issue that is left out in section 3.5.4.2.1, which is related to the fact that the phrase *Zhangsan ta* is impossible, while *Zhangsan ta-men* is completely fine.

3.5.3.1 *Zhangsan ta-men* is a constituent but *Zhangsan ta* is not

Unlike *Zhangsan ta*, the sequence *Zhangsan ta-men* is a single constituent and can function as the subject of the sentence. It denotes a group of people with Zhangsan as the representative.

(185) Zhangsan ta-men   shenme shihou lai?
       Zhangsan (s)he-MEN what   time   come
       'When are Zhangsan and others coming?'

This is supported by the following sentence, in which *Zhangsan ta-men* appears in the object position, suggesting that it is a single unit.

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(186)   Wo mei   kan-dao Zhangsan ta-men.
          I   NEG see-DAO Zhangsan (s)he-MEN
          'I did not see Zhangsan and other people.'

The syntactic structure of *Zhangsan ta-men* 'Zhangsan and others' can be represented as follows:

(187)
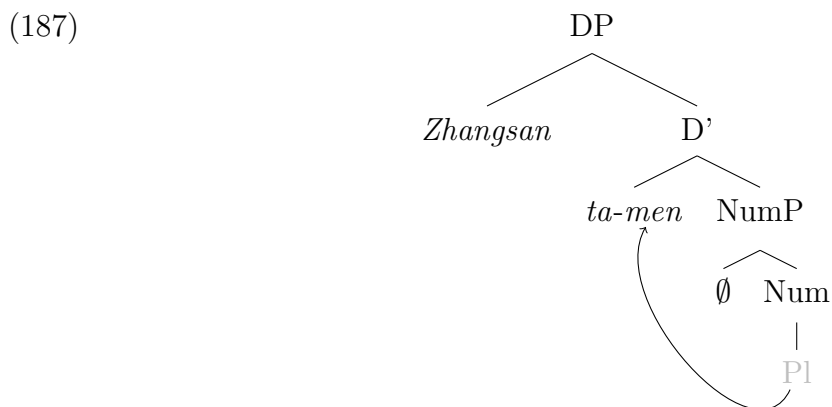
I have already argued that proper names can be merged in SpecDP, hence in (187), Zhangsan is merged in the Spec of *ta*. *Ta* is both definite and animate, so Pl moves to D and is spelled out as *men*. Contrastively, as argued in Chapter 2, in *Zhangsan ta*, as the D head does not take a complement, the specifier position is not available. As a result, *Zhangsan* cannot be merged and the sequence *Zhangsan ta* as a constituent is ruled out.

3.5.3.2 Further evidence

Recall that I concluded that possessive *de* takes a possessor phrase in its Spec. With this in mind, we can test the constituency of *Zhangsan ta* v.s. *Zhangsan ta-men* by seeing whether either can act as the Spec of PossP. We look at cases where the whole DP is a complement of a preposition (or verb) to ensure that there is no interpretation of Zhangsan and the pronoun as a topic construction. I will start with the phrase *Zhangsan ta*.

(188)   a. *Wo dui Zhangsan ta   de baba hen you xinxin.
            I   DUI Zhangsan (s)he de father very have confidence

        b. Wo dui Zhangsan ta-men   de baba hen you xinxin.
           I   DUI Zhangsan (s)he-MEN DE father very have confidence
           'I have confidence in Zhangsan and others' father(s).'

As shown in the tree in (190), the sequence *Zhangsan ta* is not a constituent. Consequently, it cannot appear in the specifier position of PossP, thus, the sequence

Zhangsan ta de baba is not possible after the preposition *dui* which requires a constituent in (188a).[22]

(190)   *

$$
\begin{array}{c}
\text{PossP} \\
\diagup\quad\diagdown \\
\text{\textit{Zhangsan ta}}\qquad \text{Poss} \\
\diagup\quad\diagdown \\
\textit{de}\qquad \text{NP} \\
\diagup\diagdown \\
\textit{baba} \\
\text{`father'}
\end{array}
$$
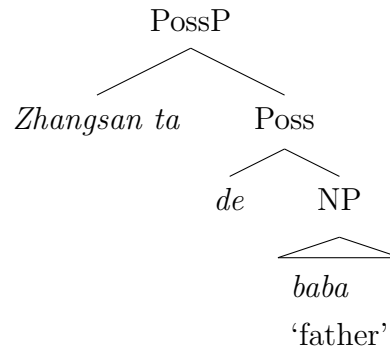
In comparison, in (188b), the phrase *Zhangsan ta-men* 'Zhangsan and others' is a single constituent, denoting a "collective" reading. Thus, the unit *Zhangsan ta-men* can appear in SpecPossP position, forming a *de* possessive with *baba*, as shown in (191).

(191)

$$
\begin{array}{c}
\text{PossP} \\
\diagup\qquad\qquad\diagdown \\
\text{DP}\qquad\qquad\qquad \text{Poss} \\
\diagup\diagdown\qquad\qquad \diagup\diagdown \\
\textit{Zhangsan}\quad \text{D'}\qquad \textit{de}\quad \text{NP} \\
\diagup\diagdown\qquad\qquad \diagup\diagdown \\
\textit{ta-men}\;\;\text{NumP}\qquad \textit{baba} \\
\mid\qquad\qquad \text{`father'} \\
\text{Pl}
\end{array}
$$
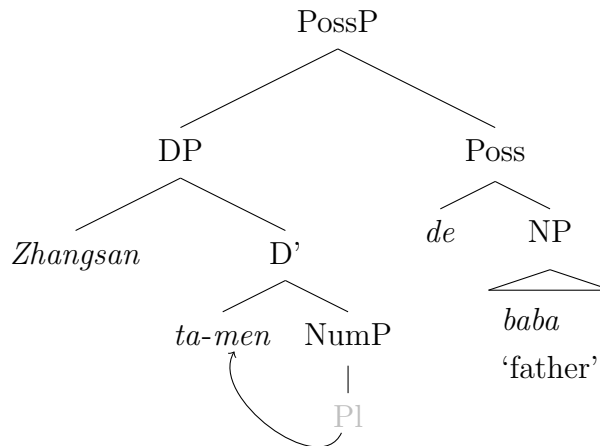
3.5.3.3 *Zhangsan he Lisi ta-men*

More interestingly, when there is more than one proper name before the pronoun, the pronoun needs to be plural and the [proper name+pronoun] sequence can have

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[22]However, the sequence *Zhangsan ta de baba* is acceptable in the subject position where *Zhangsang* and *ta* co-refer. For instance, in the following sentence,

(189)   Zhansan$_i$ ta$_i$ de baba shi Yingguoren, ta$_i$ de mama shi Zhongguoren.
         Zhangsan (s)he DE father is   English   he DE mother is   Chinese
         'Zhangsan, her/his father is English, her/his mother is Chinese.'

Zhangsang co-refers with the pronoun *ta* in both possessive phrases *ta de baba* 'his father' and *ta de mama* 'his mother'.

two interpretations. For instance, in the sentences below, the phrase *Zhangsan he Lisi ta-men* has two readings. One is the group of people with Zhangsan and Lisi as representatives (192); the other one is both Zhangsan and Lisi (193).

(192)   a.   Zhangsan he   Lisi ta-men   shenme shihou lai?
                Zhangsan and Lisi (s)he-MEN what   time   come
                'When are Zhangsan, Lisi and other people coming?'

             b.   Wo mei   kan dao   Zhangsan he   Lisi ta-men.
                I   NEG see DAO Zhangsan and Lisi (s)he-MEN
                'I did not see Zhangsan, Lisi and other people.'

(193)   a.   Zhangsan he   Lisi ta-men   shenme shihou lai?
                Zhangsan and Lisi (s)he-MEN what   time   come
                'When are Zhangsan and Lisi coming?'

             b. *Wo mei   kan dao   Zhangsan he   Lisi ta-men.
                I   NEG see DAO Zhangsan and Lisi (s)he-MEN
                Intended: 'I did not see Zhangsan and Lisi.'

Interestingly, under the group meaning, the phrase *Zhangsan he Lisi ta-men* 'Zhangsan, Lisi and other people' can appear in object position, as shown in (192b); but under the second meaning, where there are only two people Zhangsan and Lisi, the sequence *Zhangsan he Lisi ta-men* cannot act as an object (193b). This suggests *Zhangsan he Lisi* and *ta-men* do not form a constituent in the latter case.

    In the sentence initial position in (193a), *Zhangsan he Lisi* is the topic and *ta-men* is the subject and they co-refer with each other.

(194)   [Zhangsan he   Lisi]$_{iTOP}$ ta-men$_{iSUB}$ shenme shihou lai?
             Zhangsan and Lisi   (s)he-MEN what   time   come
             'When are Zhangsan and Lisi coming?'

This is supported by the fact that there is normally a pause after *Zhangsan he Lisi* in the above sentence. When they co-refer, *ta-men* and *Zhangsan and Lisi* can appear in the object position independently but not at the same time.

(195)   Wo mei   kan dao   Zhangsan he   Lisi.
             I   NEG see DAO Zhangsan and Lisi
             'I did not see Zhangsan and Lisi.'

(196)   Wo mei   kan dao   ta-men.
             I   NEG see DAO (s)he-MEN
             'I did not see them (Zhangsan and Lisi).'

In summary, in Chapter 2, I argue against the assumption that *Zhangsan ta* is a constituent and show that it is not legitimate structurally. In comparison, in this section, I show that the sequence *Zhangsan ta-men* forms a DP phrase with a "collective" reading. By contrast, the string *Zhangsan he Lisi ta-men* is ambiguous; it can denote a "collective" reading where *Zhangsan he Lisi* and *ta-men* from a constituent, or it can denote a plural reading where *Zhangsan he Lisi* and *ta-men* are independent constituents and co-refer with each other.

To conclude this section, first, I propose that the morpheme *men* in MC is a plural marker, and it is the syntactic realisation of the Pl located at Num head position (based on the analysis of Huang et al. 2009). Secondly, I propose that *men* carries the [+definite, +animate] feature, which determines that it only attaches to animate elements in D. This analysis captures all the syntactic and semantics properties of *men*.

So far, I have not discussed the "collective" reading associated with *men*. In the next section, I will focus on explaining how the "collective" reading is derived and when it can happen.

3.5.4   The "collective" reading

As pointed out in (119) in section 3.4.1, the "collective" reading is only possible when *men* is suffixed to a pronoun and the term "collective" refers to the meaning "a group of people represented or anchored by the referent of the pronoun". Specifically, contrary to the claim in Huang et al. (2009), proper name/common noun-*men* expressions on their own do not have a "collective" reading. These expressions have to be followed by plural pronouns before they combine with numeral phrases and in these cases, the "collective" reading is possible.

Up to this point, I have not really discussed the interpretation of pronoun-*men* phrases. Very importantly, contrary to traditional views, I would like to argue here that they denote a "collective" reading rather than a plural reading. In fact, the plural pronoun *we* does not mean a multiple instances of 'I', the speaker, but rather refers to the person or persons that are considered by the speaker as within a group with him/her.

3.5.4.1   Plural pronouns are not plural but "collective"

Plural pronouns are not plural. Instead, plural pronouns *wo-men* 'I-MEN, we', *ni-men* 'you-MEN, you' and *ta-men* '(s)he-MEN, they' denote a "collective" reading.

Iljic (1994) questions the concept of plural personal pronouns; he notes the following:

> The grammatical category of person is essentially a topology or a structuring of space. The function of personal pronouns is to "calculate" a position relative to the subjective origin, respectively through identification with (first person), differentiation (second person), and disconnection from (third person) the speaker. The so-called "plural" of personal pronouns is not an addition or a multiplication of elements, but a grouping of entities into one whole according to their position relative to the origin. *We* does not amount to several *I*'s nor even to two or more *I*'s expressing themselves simultaneously, but to the group in the name of which I speaks (Iljic 1994:97).

According to Iljic (1994), *we* refers to a collective grouping of the individuals assimilated to the speaker; the plural *you* refers to a collective grouping of those individuals constructed opposite to the speaker, while *they* assembles those excluded from the sphere of the "subject-locator". Thus, Iljic claims that the alleged "plural" personal pronouns are actually the products of an "grouping" operation: a grouping relative to a subject locator. Therefore, he terms the plural pronoun as the "personal collective".

3.5.4.2 Deriving the "collective" reading

Huang et al. (2009) argue that proper names have two merging positions: one is in D, referring to a designated entity; the other one is in N. If the former kind of proper name is suffixed with *men*, it generates a "collective" reading, while if the latter kind is suffixed with *men*, a plural reading is produced. They also note that when the proper name is in N, the appearance of numerals and classifiers is forbidden.

(197) a. ??Wo dui A'Q-men san/mei   ge (dou) you pianhao
          I   to A'Q-MEN three/every CL all   have preference
          'I especially like A'Q them three/all.'

      b. ??Wo dui Aiyinsitan-men san/mei   ge (dou) hen jingzhong.
          I   to Einstein-MEN three/every CL all   very respect
   'I am very respectful of Einstein them three/all.'

I agree that the sequence of [numeral+classifier] is not allowed, because the classifier head would block the movement of N to Num where the Pl resides. If the

[numeral+classifier] sequence is taken away, *A'Q-men* and *Aiyinsitan-men* only have a plural reading.

However, Huang et al.'s above assumptions are problematic. It is not clear how a "collective" reading is generated when *men* is attached to a proper name in D. Moreover, the proposal that proper names are based-merged in D is problematic (see section 3.3.3). Most importantly, however, as argued in section 3.4.1.1, my consultants and I all disagree that bare proper name/common noun-*men* expressions can be interpreted as "collective". Therefore, I will conclude by quoting the discussion held in section 3.4.1.1 and the assumption made in (119) that the "collective" reading only exists when *men* is attached to pronouns (P5).

Iljic (1994) notes that "the speaker resorts to *men* whenever he has grounds to view several persons as a group, either relative to himself or relative to a third part". According to this, the plural pronouns can be viewed as referring to a group of persons relative to the speaker. For instance, the first person plural pronoun *wo-men* can be interpreted as the speaker plus the several people that are related to the speaker.

(198)

DP *wo-men*

∅   D'

D   NumP

$wo_{[+def,+ani]}$-*men*   Num

'I-MEN'   Pl
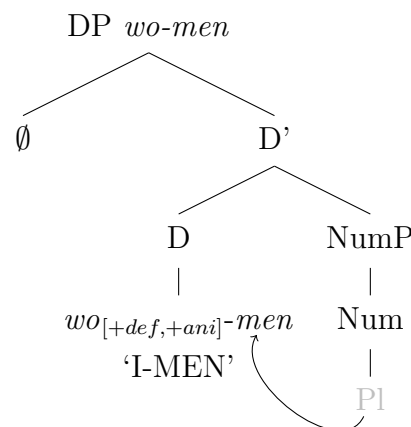
The interpretation of *wo-men* is composed of *wo* 'I', the speaker and other people that are associated with the speaker indicated by the plural morpheme *men*.

Thus, my proposal is that the "collective" reading comes from the special features of pronouns, and *men* itself is just a plural marker. Specifically, unlike the inanimate nominal *apple* or the animate *student*, pronouns (*I, you* and *he/she*) cannot be counted, that is, *two Is* and *three hes* are impossible.[23] In other words, pronouns cannot be pluralised in the same way *apple* and *student* are, i.e. by simply multiplying the same kind of object. As a result, when they co-occur with the plural marker *men* which requires a plural semantics, they have to adopt a

---

[23]As mentioned in section 3.3.1.1.3, nonetheless, accusatives such as *me(s)* are fine.

different mechanism: by including other person(s) depending on their relationship with the speaker. That is to say, the pluralisation of common nouns and pronouns is realised in different ways: the former is done by simply multiplying the same kind of object and the latter is done by including individuals relative to the subject locator.

In English, the plural forms of the pronouns *I*, *you* and *he/she* are the irregular forms *we*, *you* and *they*, respectively, rather than *I-s*, *you-s* and *he/she-s*. This backs up the claim that pronouns and common nouns differ with respect to the ways they are pluralised.

The above analysis provides an account for the fact the "collective" reading is only available when *men* is suffixed to pronouns and the fact that proper names suffixed by *men* can only have a plural reading: since there is no subjective origin, and as a result the "collective" reading cannot be generated.

3.5.4.2.1 [proper name+pronoun-*men*] sequences

Following the discussion above, it can be said that in the case of *wo-men*, the anchor of the plural reading is the first person pronoun *wo*; in the case of *Zhangsan ta-men*, the anchor is the third pronoun *ta*. Because *Zhangsan* and *ta* co-refer, it can be said that *Zhangsan ta-men* denotes a group of people anchored by *Zhangsan*. The speciality of *Zhangsan ta-men* is that the reference of the pronoun *ta* is present, which is *Zhangsan*. This makes the "collective" reading easier to be be detected.

(199)
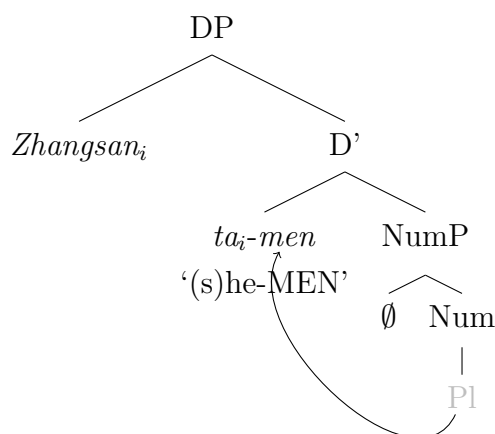
As shown above, *Zhangsan* is co-indexed with the pronoun *ta* '(s)he'. The denotation of *Zhangsan ta-men* is (s)he (Zhangsan) plus the group of people that is associated with *ta*, i.e. Zhangsan. "Zhangsan and others" represents the group of people that are excluded from the sphere of the "subject interlocutor", i.e. the speaker.

It is worth pointing out that only the third person pronoun *ta* can appear after the proper name to denote a "collective" reading ([proper name+*ta-men*]). This is because the references of the 1st and 2nd person pronouns are already present in the context, i.e. the speaker and the listener, respectively. Thus, there is no need for them to appear in the syntax. As argued in Elbourne (2008), pronouns are definite descriptions and have the structure [pronoun [R_1 i_2]]. The pronoun is like a definite article such as *the* in English; i represents the index of the pronoun and R is a variable that constraints the relationship between the index and the reference.

As can be seen, every pronoun involves an index variable, it can be said that in *Zhangsan ta-men*, the index of the pronoun *ta* is Zhangsan. The structure of *Zhangsan ta-men* can be re-represented as the following:

(200)
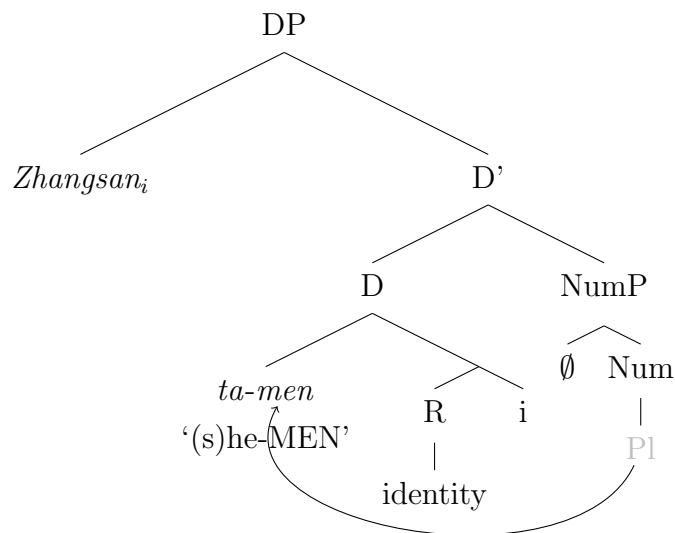
However, in *wo* or *wo-men*, the index of *wo* is the speaker, which does not show up.

(201)

171
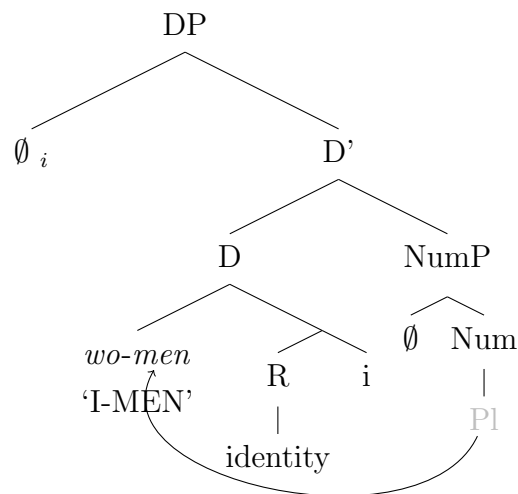
More discussion on the proposal that the proper name functions as the index of the pronoun when they co-appear will be presented in Chapter 4.

It can be concluded that the "collective" reading originates from the properties of pronouns. Therefore, my claim that *men* is a plural marker holds.

3.5.4.2.2 [Proper name+pronoun-*men*+demonstrative] sequences

As mentioned earlier, the following sentence is not good:

(202) ??Wo dui Zhangsan zhe-xie   xuesheng hen you xinxin.
       I   DUI Zhangsan this-XIE student   very have confidence
       'I have confidence in Zhangsan and other students. '

It can be improved by insertion of *ta-men* after *Zhangsan*:

(203)   Wo dui Zhangsan ta-men   zhe-xie   xuesheng hen you xinxin.
       I   DUI Zhangsan (s)he-MEN this-XIE student   very have confidence
       'I have confidence in Zhangsan and other students.'

Interestingly, when expressing the singular meaning, the proper name *Zhangsan* can be followed by the demonstrative directly:

(204)   Wo dui Zhangsan zhe ge xuesheng hen you xinxin.
       I   DUI Zhangsan this CL student   very have confidence
       'I have confidence in Zhangsan (who is a student).'

The contrast between (202) and (203) supports the claim that a plural pronoun is necessary for the "collective" interpretation, which originates from the unconventional pluralisation mechanism of plural pronouns.

To sum up the possible readings when a proper name co-occurs with *men*, a proper name can be suffixed by *men* on its own, or it can be followed by a pronoun suffixed with *men* and then a [(demonstrative)+number+classifier+ common noun] sequence. In the former case, the proper name undergoes N to Num to D movement, taking the Pl to D where it is realised as the morpheme *men*, generating the definite plural interpretation. In the latter case, the proper name is at the specifier of D, and the Pl is realised on the pronoun which is in D, denoting a "collective" reading. The proper name acts as the index of the pronoun, deriving the reading "a group of people anchored by the referent of the proper name".

In conclusion, *men* is a plural marker. The "collective" reading associated with *men* actually is induced by the special properties of pronouns. This is why the "collective" reading is only available when *men* attaches to pronouns, either

in pronoun-*men* expressions or [proper name+*ta-men*+(...)] expressions.

3.6   Chapter summary

I discuss two main issues in this chapter: the nominal hierarchy of MC and the syntax and semantics of the plural marker *men*. Contrary to Huang et al. (2009), Cheng and Sybesma (1999) and Sybesma and Sio (2008), I argue that demonstratives are heads and located at Dem position below D and above Num. Proper names have two merging positions: base generated at N as common nouns or at SpecDP as full DPs. Therefore, the structure of the noun phrase [proper name+pronoun+demonstrative+numeral+classifier+noun] in MC can be represented as follows:

(205)

```
                        DP
                   ╱         ╲
           Proper name        D'
                          ╱        ╲
                        D           DemP
                        │        ╱        ╲
                     pronoun   Dem          NumP
                               │        ╱        ╲
                        demonstrative  numeral    Num'
                                                ╱      ╲
                                             Num         ClP
                                              │        ╱    ╲
                                              Pl      Cl      NP
                                                      │
                                                  classifier
```
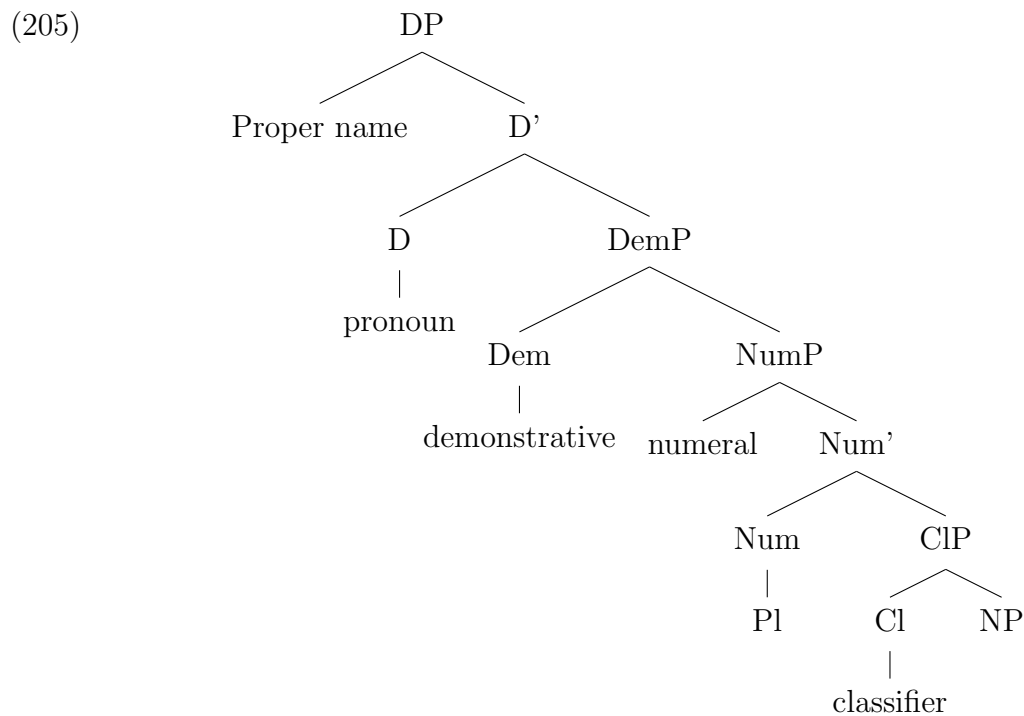
On the basis of the above hypothesis, I examine the morpheme *men*. Following Huang et al. (2009), I argue that it is the syntactic realisation of the Pl based in Num. Also, *men* carries a [+definite,+animate] feature bundle; it determines that the Pl is only realised as *men* on animate elements that are in D. This captures the fact that *men* never attaches to demonstratives, since demonstratives are not animate. As for the so-called "collective" reading associated with *men*, following Iljic (1994), I propose that it originates from the special properties of pronouns rather than *men*. Pronoun-*men* phrases denote a group of people collected with

the speaker as the "subject interlocutor". This correctly captures the fact the "collective" reading is available only when the pronoun-*men* phrase appears, either alone or accompanied by other elements.

With respect to the syntax and semantics of the plural maker *men*, two generalisations can be drawn from the discussion in this chapter.

(206)   a.   In English, the number feature is realised on the noun, while in MC, it is realised in the D domain.

          b.   The pluralisation of common nouns and pronouns are realised in different ways: the former is done by simply multiplying the same kind of object represented by the common noun, whereas the latter is done by collecting individuals depending on their relationship with the "subject interlocutor", i.e. the speaker.

Moreover, I argue that pronoun-*men* expressions are phrasal and they are DPs with the structure below:

(207)
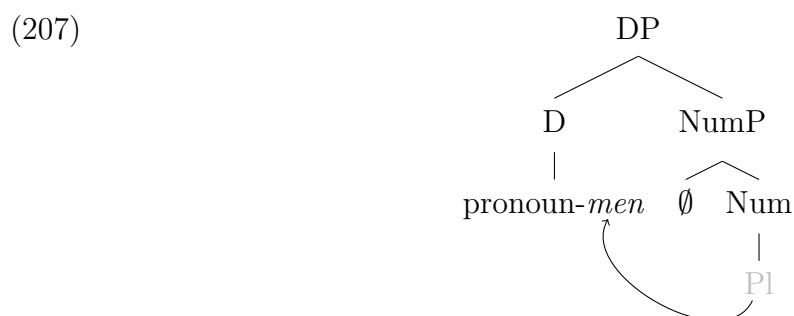
This assumption has important implications for the analysis of juxtaposed possessives ([personal pronoun+kinship noun] expressions) that I will turn to in the next chapter.

Chapter 4

Juxtaposed possessives in MC

4.1 Introduction

It is traditionally assumed that there are two types of possessive construction in MC, the *de* possessive construction and the *de*-less possessive construction. It is argued that the former is the "canonical" form and the latter is derived from the former by phonological deletion of *de*. Following from this, there is a large amount of literature which discusses the presence and absence of *de* in possessive constructions in Chinese (Chao 1965; Li and Thompson 1981; Zhu 1982; Chappell and Thompson 1992; Cui 1992; Lü 1999; Liu 2004; Yang 2005; Zou 2007, inter alia).

In Chapter 2, I argue, along with Zhang (1998) and Lin (2011), that first, there is no derivational relationship between the *de*-less form and the *de* form. Secondly, even under the same *de*-less form, there are different types of construction. Specifically, the surface *de*-less form comes from distinct sources: some exist because of the nature of the bigger structure to which they belong, such as the DNCs; some are derived because of the special properties of a certain class of nouns, such as juxtaposed possessives (JPs), which is the topic of this chapter.

As argued in Chapter 2, JPs, that is, constructions where a personal pronoun and a kinship noun appear right next to each other ([personal pronoun+kinship noun]) are different from their corresponding *de* forms ([personal pronoun+*de*+ kinship noun], hence kinship *de* possessives) both syntactically and semantically. On the basis of the discussion of the nominal hierarchy in MC and the morpheme *men* in Chapter 3, in this chapter, I am going to explore the syntax and semantics of JP expressions in MC. On the syntactic side, I will develop an analysis of the structure of JP constructions, aiming to capture the following two facts (i)

only singular kinship nouns are permitted in JPs but not other kinds of noun; (ii) only singular personal pronouns are allowed in JPs but not proper names or plural pronouns. On the semantic side, I will compare the referential features of JPs with their corresponding *de* possessives. The semantic configuration of each construction will be shown as well.

The organisation of this chapter is as follows. I will start by looking at the properties of JPs in MC in section 4.2, focusing on the special features of kinship nouns which make them the only type of nominal that can enter JP constructions. In section 4.3, the structure of JP expressions will be examined. Its semantic properties will be discussed in section 4.4. Then section 4.5 is devoted to two remaining issues (i) non-syntactic factors that effect whether a JP or a *de* possessive or both can be formed; (ii) how a kinship noun can enter both JPs and *de* possessives these two distinct configurations. Section 4.6 is the chapter summary.

4.2   The properties of JP expressions

According to Deal (2012), JPs,[1]that is, the possessive form in which the possessor nominal stands right next to the possessed noun, exist in a wide range of languages such as Semitic languages and MC, Creek (a Muskogean language spoken by Creek and Seminole people, Martin (1993)), Nez Perce, some of which will be mentioned in the next section. Cross-linguistically, kinship nouns and pronouns are the two crucial factors in JPs. Deal (2012) makes the following "juxtaposition generalisation":

> If a language allows both juxtaposed possessives and possessives with overt possessor/possessum marking, the juxtaposed possessive is possible with (i) kinship terms and (ii) local pronominal possessors (Deal 2012:1).

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[1]Many languages have more than one way of expressing possession in a nominal. According to Deal (2012), there are three main forms of possessive constructions across languages:

1. Juxtaposed possessives.

2. Possessive constructions with possessive morphemes. These morphemes can be of the same form as morphemes in other constructions such as relative clauses and modification constructions.

3. Headlike pronominal possessors.

According to Deal, juxtaposed possessives exist in Chinese, Nez Perce and Semitic languages, etc. and they obligatorily involve relational nouns and pronominal possessors. As to possessive phrases with possessor markings, Deal mentions that the possessive marker can appear in more than one place. For instance, the genitive marker *'s* in English can appear in four contexts:

By 'local', Deal means 1st and 2nd person pronouns. She also mentions that there are some variations of the syntactic form of the combination of pronouns and kinship terms: (i) some pronoun plus kinship noun combinations cannot have the juxtaposed form, such as the 3rd person pronoun or plural pronouns in Nez Perce, as well as plural pronouns in MC; (ii) some can only have the juxtaposed form, such as kinship nouns in Tiwi (Nichols and Bickel 2011); (iii) most of them can have both the juxtaposed form and the one with possessive marking. This is the case in MC where almost all the *de*-less possessive constructions have the corresponding *de* form.

In MC, strictly speaking, only singular kinship nouns and singular personal pronouns can form JPs (Li and Thompson 1981; Cui 1992; Chappell and McGregor 1996; Zhang 1998; Lü 1999; Yang 2005, among others), such as the one below:

(2)   a.   Ta   jian guo   wo de baba.
             (S)he meet GUO I   DE father
             '(S)he has met my father.'

        b.   Ta   jian guo   wo baba.
             (S)he meet GUO I   father
             '(S)he has met my father.'

If any of the above requirements is not satisfied, JPs would not be possible.

First, when the possessed nominal is not a kinship noun, the possessive marker *de* must appear.

(3)   a.   Ta   kan guo   wo de shu.
             (S)he read GUO I   DE book
             '(S)he has read my book.'

        b. *Ta   kan guo   wo shu.
             (S)he read GUO I   book

As shown in (3b), the juxtaposition of *wo* 'I' and the entity-denoting noun *shu* 'book' is impossible.

Secondly, when the possessor is a proper name (4) or a definite expression (5), the juxtaposition of the possessor nominal and the kinship term is unacceptable

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(1)   a.   John's book
        b.   a children's book
        c.   a book of that child's
        d.   This book is John's

In terms of headlike pronominal possessors, Deal does not provide any direct examples. She indicates there might be a link between clitic pronouns in the clause with headlike possessors in the DP.

too.

(4) a. Ta   jian guo Zhangsan de baba.
         (S)he meet GUO Zhangsan DE father
         '(S)he has met Zhangsan's father.'

     b. *Ta   jian guo   Zhangsan baba
         (S)he meet GUO Zhangsan father

(5) a. Ta   jian guo na   ge xuesheng de baba.
         (S)he meet GUO that CL student   DE father
         '(S)he has met that student's father.'

     b. *Ta   jian guo na   ge xuesheng baba
         (S)he meet GUO that CL student   father

Thirdly, in JPs, the possessor nominal cannot be quantifiers or *wh*-words:

(6) a. *Meigeren fumu   dou   hen yanli.
         everyone parents DOU very strict

     b. Meigeren de fumu   dou   hen yanli.
         everyone DE parents DOU very strict
         'Everyone's parents are very strict.'

(7) a. Ta   jian guo shui de baba?
         (s)he meet GUO who DE father
         'Whose father has (s)he met?'

     b. *Ta   jian guo   shui baba?
         (s)he meet GUO who father

Furthermore, when the pronoun is in the plural form, the phrase *wo-men baba* is much less acceptable than *wo baba* 'my father'.

(8) a. Ta   jian guo wo-men de baba.
         (S)he meet GUO I-MEN DE father
         '(S)he has met our father.'

     b. ??Ta   jian guo   wo-men baba
         (S)he meet GUO I-MEN   father

Finally, kinship nouns cannot be plural, either.

(9) a. Ta   jian guo ta   de didi-men.
         (S)he meet GUO (s)he DE younger-brother-MEN
         '(S)he has met her/his younger-brothers.'

     b. *Ta   jian guo   ta   didi-men
         (S)he meet GUO (s)he younger-brother-MEN

All the above facts provide further support to the claim that *de*-less possession is not derived from *de* possession by free deletion of *de*, as this deletion analysis could not explain why *de* can only be deleted in [singular pronoun+singular kinship noun] cases such as (2), but not in others such as examples (3) to (9). The syntactic reasons why JPs in MC show the above properties will be explored in the next two sections.

4.2.1 Only kinship nouns are allowed

In this section, I will focus on investigating the special properties of kinship nouns which make them the only type of nominal acceptable in JPs in MC.

4.2.1.1 A cross-linguistic phenomenon

"Possessive split" is a term advanced by Haspelmath (2008) which refers to the phenomenon that different classes of noun require or prefer different possessive constructions. Among the different classes of noun that normally act as the possessee, the contrast between kinship terms and entity-denoting nouns is the most evident. These two types of noun often appear in different nominal possessive constructions. This division is shown in a variety of languages, among them are Mesa Grande Diegueʹno (Yuman; California), Warndarang (Maran; Northern Territory, Australia) and Nez Perce (Sahaptian; northwestern United States) (see Nichols and Bickel 2011 and the reference cited therein):

Mesa Grande Diegueo:

(10)   a.   ʔ-ətal^y
              1SG-mother
              'my mother'

        b.   ʔə-n^y-ewa:
              1SG-ALIENABLE-house
              'my house'

The kinship noun for 'mother' appears with a prefix ʔ-, forming a juxtaposed possessive (10a). By contrast, the nominal 'house' appears with two prefixes ʔə and n^y. As shown in the glosses in (10b), n^y is considered to be an alienable possessive marker, and it helps to connect the possessor and the possessee. According to Nichols and Bickel (2011), depending on the possessive prefixes they take, nouns in Mesa Grande Diegue can be divided into two groups: those that behave like 'mother' in possessive constructions and those that behave like 'house'.

Warndarang:

(11) a. ng-baba
          1SG-father
          'my father'/'our father'

      b. wu-radburru   ngini
          NCM-country 1SG.GEN
          'my country'

In Warndarang, while the kinship term 'father' takes the prefix *ng-* to form a possessive phrase (11a), the common noun 'country' needs a separate genitive case marker *ngini* (11b). The former is a pronominal/juxtaposed possessive while the latter is a morphemic possessive (Nichols and Bickel 2011).

Nez Perce:

(12) a. na'-tóot
          1SG-father
          'my father' (prefix paradigm 1)

      b. 'in'm-é:ks
          1SG-man's.sister
          'my sister' (man speaking) (prefix paradigm 2)

      c. 'i-nim   titóoqan
          1SG-GEN people
          'my people'

As shown in (12a) and (12b), the kinship terms for 'father' and 'sister' are combined with their prefix possessors directly, although the forms of the prefixes are different. By contrast, in (12c), the noun 'people' needs to be connected to the possessor 'my' by the possessive marker *nim*. Essentially only kinship terms can form JPs in Nez Perce. Non-relational nouns are not acceptable, as shown below:

(13) *ne-muu   /*ne-picpic /*ne-'ipeex /*na-tamtaynaat
       1SG-cow /1SG-cat   /1SG-bread /1SG-preacher

It can be seen that like Warndarang, in Nez Perce, kinship terms form JPs while entity-denoting nouns appear in possessive constructions with possessive morphemes.

Another piece of data in favour of the argument that kinship terms are special nouns comes from Tiwi (Deal 2012), a language spoken in Australia. In Tiwi, most of the nouns can appear in both JP constructions and constructions with possessive markers, but kinship nouns can only appear in juxtaposed possession

(no examples are given for kinship nouns in Nichols and Bickel 2011.)

(14) a. jərəkəapai tuwaɻa
          crocodile tail

      b. jərəkəapai ngara tuwaɻa
          crocodile he   tail

4.2.1.2 Kinship nouns have an argument position

Kinship nouns (also body-part nouns) are generally regarded as relational nouns, and possession involving these nouns is classified as inalienable possession.[2] Other types of noun such as entity-denoting nouns are considered as non-relational nouns and possession involving these nouns is classified as alienable possession. It is generally considered that the relationship between the possessor and possessee is not intrinsic and can be transferred or removed in alienable possessives.

4.2.1.2.1 Barker (1995)

The term "relational" noun is most explicitly defined by Barker (1995) as referring to those nominals which denote relations over pairs of entities. According to Barker, kinship nouns are prototypical examples of relational nouns. For example, the kinship noun *grandmother* entails the existence of a person who she is the grandmother of. That is to say, in a similar way that transitive verbs entail the existence of their internal objects, relational nouns such as *grandmother* obligatorily entail some other entities. On the basis of this semantic property, Barker (1995) proposes that kinship nouns are two-place predicates. For instance, the denotation of *grandmother* can be represented as the following:

(15) ⟦ *grandmother*⟧ (x,y) will hold just in case x is the mother of a parent of y.

It can be seen that kinship nouns are parallel to transitive nouns: they are both relational and take arguments. The contrast between a relational noun and a non-relational one is shown as follows:

(16) a. ⟦*grandmother*⟧ $= \lambda x \lambda y$ [*grandmother*(x,y)]
      b. ⟦*human*⟧ $= \lambda y$[*human*(y)]

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[2]However, see discussion in section 2.4.2.2 of Chapter 2 that this classification is not refined enough for MC, as it cannot capture the different behaviours between kinship nouns and body-part nouns in MC.

As shown above, the kinship noun *grandmother* takes two arguments while the non-relational noun *human* takes one argument. According to Barker, the second argument (y) of the *grandmother* relation is the same as the only argument of the *human* relation. Thus, it can be said that the argument structure of the kinship noun has an extra "slot", which introduces the relevant entity x that bears the particular kinship relationship to y.

4.2.1.2.2 Partee and Borschev (2003)

The contrast between relational nouns and non-relational nouns has its syntactic realisations in genitive constructions. Partee and Borschev (2003) argue that there are two kinds of genitive construction: the argument-genitive and the modifier-genitive. The former normally involves a relational relationship: if there is a relational nominal x, the other nominal y is needed to fill the argument position of x, and the relation is a part of the lexical meaning of x. In other words, x takes y as an argument and y fulfils the meaning of x. Examples of this kind are kinship phrases such as *my father* and part-whole relation phrases such as *Mary's eyes*.

On the contrary, in modifier-genitives, the two noun phrases x and y are independent of each other. It is the genitive construction itself that brings about the relation between the two nominals. For instance, in the phrase *Mary's book*, the genitive construction links *Mary* and *book*, and the relation between Mary and book is provided by the variable R_{POSS} of the possessive genitive.

4.2.1.2.3 Vikner and Jensen (2002, 2003)

In a similar vein, Vikner and Jensen (2003) propose that genitives fall into two primary groups: inalienable and alienable. The former kind of relation depends crucially on the nature of the head nominal, while the latter is more of a control relation between the two nominals. To be more precise, Vikner and Jensen (2002) assign four types of lexical interpretation to genitive constructions: the inherent relation, part-whole relation, agentive relation and the control relation. An example of each of these semantic interpretations is given below:

(17)   a.   the girl's teacher
         b.   the girl's eye
         c.   the girl's poem
         d.   the girl's car

For the control relation, for instance, *the girl's car*, the interpretation comes neither from the girl nor the car, but the structure, i.e. the genitive marker *'s*.

Contrastively, for the rest three kinds of relation, the interpretation comes from the head noun, i.e. the possessed nominal such as *teacher*, *eye* or *poem*. Thus, in contrast to the control relation, the inherent, part-whole, agentive relation are grouped as the inalienable relation.

Similar to Barker (1995), Vikner and Jensen (2002, 2003) note that kinship nouns are the most typical relational nouns; as shown by their argument structure, they are two-place predicates in the lexical entry:

(18)   a.   *sister*: $\lambda y[\lambda x[\text{sister'}(y)(x)]]$
       b.   *teacher*: $\lambda y[\lambda x[\text{teacher'}(y)(x)]]$

However, contrary to Barker and Partee & Borschev, Vikner and Jensen argue that nouns such as *eye* and *poem* are not "relational" in the lexical entry, they are one-place predicates.

(19)   a.   *eye*: $\lambda x[\text{eye'}(x)]$
       b.   *poem*: $\lambda x[\text{poem'}(x)]$

According to Vikner and Jensen (2002, 2003), these nouns can be coerced to relational ones by a relational variable R and thereby forming inalienable genitives. However, in control relation, there is a variable Q which determines that nouns such as *car* have to be one-place predicates and the genitive morpheme *'s* instead performs the role of receiving the arguments (see Vikner and Jensen 2002 for more detailed discussion).

This division between inalienable genitives and alienable genitives is parallel to Partee and Borschev's differentiation of argument-genitives and modifier-genitives. In MC, JPs are comparable to the argument genitive while the *de* possessive cases are parallel to the modifier genitive and the particle *de* signifies the possessive relationship between the two nominals.

What is more interesting is the proposal that unlike kinship nouns, part-whole nouns are not relational. Specifically, Vikner and Jensen (2002) differentiate two types of part-whole noun: dependent-part nouns such as *edge* and *surface* and autonomous-part nouns, e.g. *wheel* and *engine*. The former type is defined in terms of the specific ways it relates to the whole it belongs to and therefore is inherently relational. However, the latter is defined by function or properties of the nouns such as structure, appearance and material. Accordingly, they are fundamentally sortal nouns, that is, nouns that apparently denote simple predicates rather than relations and thus have only one argument (Adger 2013).

(20)   a.   *edge*: λy[λx[edge'(y)(x)]] (relational)
        b.   *wheel*: λx[wheel'(x)] (sortal)

This is supported by the fact that it is very odd to have dependent-part nouns appear alone, while autonomous-part nouns are much less restricted in this respect, as shown by the contrast of the following two groups of examples:

(21)   a.   ?A brother is lying in the yard.
        b.   ?An edge is lying in the yard.

(22)   a.   A car is lying in the yard.
        b.   A wheel is lying in the yard.

Therefore, it can be seen that only a subsection of part-whole nouns are relational, i.e. two-place predicates. Body part nouns such as *eye* and *hand* are not relational, as they can represent independent entities. For instance, *hand* can refer to the entity "hand" which has fingers and palm as its parts, as shown in (23a). However, as mentioned above, they can be coerced into relational nouns by the relational variable as shown in (23b).

(23)   a.   *hand*: λx[hand'(x)]
        b.   *hand*: λy[λx[part-of'(y:BODY)(x)]]

The body-part nouns that are of interest in the current thesis are those autonomous-part nouns and, as discussed above, they are one-place predicates in nature. In brief, it can be seen from the above discussion that kinship nouns, as well as dependent-part nouns, are different from all other types of noun by being inherently relational and two-place predicates.

To conclude this section, relational nouns and other types of noun combine with their possessors in different ways. The former take the corresponding possessor nominal as an argument while the latter cannot be combined with the possessor nominal directly. They either need the help of the genitive construction, i.e. the genitive marker, or undergo type-shifting into relational nouns and then combine with the possessor nominal. The case of *Mary's cake* suggests that, in English genitive constructions, the relationship between the possessor and possessee can be very loose; almost every kind of possessive relationship can be realised as *'s* genitives. For example, *Mary's cake* could mean the cake that for which Mary invented the recipe. This is the same in MC, *de* possessives can represent a variety of possessive relationship. For instance, the phrase *wo de shu* 'my book' has several

meanings, as shown below.

(24) wo de shu
      I   DE book
      'book(s) that is/are owned by me'
      'book(s) that is/are written by me'
      'book(s) that is/are edited by me'

4.2.1.2.4 Support from Daakaka

The division between argument genitives and modifier genitives is supported by data from an Oceanic language Daakaka.[3]

According to von Prince (2011), there is a transitivity morpheme *(a)ne* in Daakaka, which transitivises noun phrases (as well as verbs), normally denoting a part-whole relation:

(26) yes   *(ane) apyang ente
      smoke TRANS fire   that
      'the smoke of that fire'

In the above example, the common noun *yes* 'smoke' is transitivised.

Despite denoting inalienable relation in its lexical meaning, *bosi* 'bone' is not a transitive noun in Daakaka. As a result, it needs to be transitivised to form a possessive construction denoting an inalienable body-part relation.

(27) bosi ane   vyanten ente
      bone TRANS man   that
      'that man's bone' (which is part of his body)

Alternatively, *bosi* 'bone' needs the help of the linker to form a possessive con-

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[3]von Prince (2011) points out that in Daakaka there is a class of lexically transitive nouns which require the appearance of another nominal to form a syntactic constituent and this requirement is determined by their lexical meanings. Examples of these transitive nouns are as follows:

(25) a. ung   *(baa)
          flower of hibiscus
          'hibiscus flower
      b. ye   *(vis)
          leaf of banana
          'banana leaf

In these phrases, the nominal arguments of the transitive nouns 'flower' and 'leaf' cannot be omitted. The possessors are normally non-human, mostly plants, and the possessees often refer to plant parts. However, it seems to me that the combinations in (25) are compounds rather than possessive phrases, as indicated by their meanings 'hibiscus flower' and 'banana leaf'.

struction.

(28) bosi ø-e   vyanten ente[4]
      bone CLF2-LINK.S man   that
      'that man's bone' (which he has taken from a dead animal or similar)

As can be seen from the meaning, when the transitive morpheme appears, (27) denotes an inalienable relation, while in the linker construction in (28), an alienable relation is expressed: the bone is owned by the man rather than being a part of him. The former can be viewed as an argument-genitive construction while the latter can be seen as a modifier-genitive construction.

The existence of transitive morphemes in Daakaka provides support for the arguments of Partee and Borschev, as well as for those of Vikner and Jensen, for argument-genitives. Some nominals can take an argument and this is made possible either by the lexical properties of the nominals itself or by an external transitive morpheme such as *(a)ne* in Daakaka, which can be viewed as the syntactic and morphological realisation of the R_{poss} and R variable. On the other hand, some nouns are not transitive themselves and cannot be transitivised either. As a result, they form modifier genitives with the help of possessive markers or linkers.

It is noteworthy that in Daakaka, counter-intuitively, unlike the body part noun *bosi* 'bone', kinship terms are intransitive and they cannot appear with the transitivising marker; they always form possessive constructions with the help of linkers:

(29) naana s-e/   *ne   temeli ente[5]
      mother CLF3-LINK.S TRANS child   this
      'the mother of this child'

According to von Prince (2011), the reason intransitive kinship terms cannot be transitivised is that they are semantically transitive (two-place predicate) already, even though they are syntactically intransitive. The transitive marker requires nouns that are semantically intransitive (one-place predicate). Body-part nouns such as *bosi* 'bone' are intransitive both syntactically and semantically, therefore, they can appear with the transitivizing marker.

Even though it is unusual that kinship terms in Daakaka can only appear in possessive constructions with linkers, the sheer fact that they behave differently

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[4]In the glossing, CLF means classifier, 2 means second person, LINK means linker and S means singular.

[5]In the glossing, 3 means third person.

from other nouns suggests that kinship nouns are very special. Syntactically, kinship nouns require the appearance of an argument; and semantically, they are two-place predicates. This is exactly the reason why only kinship terms are possible in JPs in MC. The fact that they differ from body-part nouns in particular indicates that Vikner and Jensen's proposal that body-parts are sortal nouns is on the right track.

To summarise, the choice between JPs and other forms of possession is determined by the lexical properties of the possessed nominal. Following the above discussion, I will propose that in MC, kinship terms are like transitive nouns, which have an argument position in the lexical entry and therefore can take the possessor nominal directly. Body-part nouns, property-denoting nouns and entity-denoting nouns, on the other hand, do not have this argument position. As a result, they cannot form JP constructions, and the possessive marker *de* is needed to compose possessive constructions.

4.2.2 Proper names are not allowed

The phenomenon that proper names cannot form possessive constructions with kinship terms without the appearance of *de* is reported by Zhang (1998). Zhang (1998) points out that the phrase *ta baba* 'her/his father' is fine while *Zhangsan baba* is bad and explores the reason why this is the case from a cognitive linguistic perspective. I will discuss Zhang's analysis in more detail below.

Yang (2005) also notes that the morpheme *de* can be omitted only when the possessor is a pronoun and the possessee is a relational noun (30). When the possessor noun is a proper name, *de* has to be phonologically present even when the possessee nominal is a relational noun such as *meimei* 'sister' in (31).

(30) a. Zhangsan xiang   ta   (de) mama.
          Zhangsan resemble (s)he DE mother
          'Zhangsan looks like her/his mother.'

      b. Wo bu   xihuan ni   (de) meimei
          I   NEG like   you DE younger-sister
          'I do not like your younger-sister.'

(31) a. Wo bu   xihuan Zhangsan de meimei.
          I   NEG like   Zhangsan DE younger-sister
          'I do not like Zhangsan's younger-sister.'

      b. *Wo bu   xihuan Zhangsan meimei.
          I   NEG like   Zhangsan younger-sister

There are two points that need to be made here. One is that only kinship terms can form JPs with pronouns. This is impossible, however, for body part nouns, even though they are also classified as relational nouns, as shown below:

(32)   a. *Wo bu   xihuan ta   shou.
              I   NEG like   (s)he hand
              Intended: 'I do not like her/his hands.'

        b. *Wo bu   xihuan Zhangsan yanjing.
              I   NEG like   Zhangsan eye
              Intended: 'I do not like Zhangsan's eyes.'

Therefore, it can be seen that Yang's description is slightly too broad. It should be that *de* can be phonologically null only when pronouns co-occur with kinship terms but not with other types of noun.

The other point is that, in (31b), *Zhangsan meimei* is possible under one interpretation, in which, *Zhangsan* co-refers with *meimei* 'younger-sister', i.e. a younger-sister whose name is Zhangsan. However, this is impossible with *ni meimei* in (30b), as *ni* does not co-refer with *meimei*, and *ni meimei* can only denote the possessive relationship 'your younger-sister'.

Other previous research, such as Li and Thompson (1981), Cui (1992), Lü (1999), Liu (2004) and Lin (2011), does not mention this issue directly. However, when summarizing the conditions where *de* can be absent in possessive constructions (they all hold the view that *de*-less possession is derived from *de* possession), they note that when pronouns show up with kinship terms, *de* can be null. Indirectly, this can be seen as an indication that they agree that proper names cannot co-occur with kinship nouns without the appearance of *de*.

4.2.3   The personal pronoun must be bare

The phenomenon that plural personal pronouns are not allowed in JPs is observed in both MC and Nez Perce, two distinct languages.

According to Deal (2012), only 1st and 2nd person singular pronouns can form JP constructions with relational nouns in Nez Perce, as can be seen from the examples below:

(33)   a. 1SG 'iin-im   pike   / ne-'iic
              1SG-GEN mother / 1SG-mother

        b. 2SG 'im-im   pike   / 'im-'iic
              2SG-GEN mother / 2SG-mother

    c. 3SG 'ip-nim   pike   / –
             3SG-GEN mother

    d. 1PL nuun-im pike   / –
             1PL-GEN mother

    e. 2PL 'imee-m pike   / –
             2PL-GEN mother

    f. 3PL 'imee-m pike   / –
             3PL-GEN mother

She points out that the first and second person singular pronouns *ne* in (33a) and *'im* in (33b) are not clitics, as the synthetic genitive marker *im* cannot be doubled:

(34)   *'iin-im   ne-'iic
        1SG-GEN 1SG-mother
        Intended: 'my mother'

Apart from plural pronouns, the third person singular pronoun *'ip* is banned from juxtaposed possession as well (33c).

    Generally speaking, plural pronouns are not allowed in JPs in MC.

(35)   a. Ni jian guo ta   de baba ma?
           you meet GUO (s)he DE father MA
           'Have you met her/his father?'

        b. Ni jian guo ta   baba ma?
           you meet GUO (s)he father MA
           'Have you met her/his father?'

(36)   a. Ni jian guo ta-men   de baba ma?
           you meet GUO (s)he-MEN DE father MA
           'Have you met their father?'

        b. ??Ni jian guo ta-men   baba ma?
           you meet GUO (s)he-MEN father MA

As shown in (36b), the plural pronoun *ta-men* cannot be juxtaposed with *baba* 'father'. Instead, the possessive marker *de* needs to be inserted in between. This restriction on plural pronouns is first reported in Yang (2005).

    However, as pointed in Yang (2005), native speakers' judgements in this part vary. All of my consultants judge *ta baba* as perfect, and 5 out of 7 find *ta-men baba* unacceptable while two people think it is fine. In Yang (2005), the two sentences below are considered to be unacceptable to all her consultants:

(37)   *Ni renshi ta-men   a'yi ma?
        you know (s)he-MEN aunt MA

Intended: 'Do you know their aunt?'

(38)   *Ni jian guo wo-men baba ma?
          you meet GUO I-MEN father MA
          Intended: 'Have you met our father?'

The following, however, is regarded as acceptable to all of Yang's consultants:

(39)   Wo bu   renshi ni-men   a'yi.
          I   NEG know you-MEN aunt
          'I do not know your aunt.'

5 out of 7 of my consultants agree with the above judgements. However, the people who think (37) and (38) are acceptable agree that they are not as perfect as the corresponding *de* possessives.

Thus it can be seen that when it comes to the combination of plural pronouns and kinship nouns, native speakers' judgements vary as to whether the JP cases are possible or not (a majority think they are not acceptable). However, what is agreed upon, is that the juxtaposed cases are less acceptable than the *de* cases. However, this is not the case when the pronoun is singular, the juxtaposed form is equally good as the *de* form.

Also, there is one case where everyone agrees that a plural pronoun is unacceptable, which is when both a proper name and a pronoun appear with the kinship noun.

(40)   a. *Wo jian guo Zhangsan ta   de baba.
              I   meet GUO Zhangsan (s)he DE father

        b. Wo jian guo Zhangsan ta   baba.
              I   meet GUO Zhangsan (s)he father
              'I have met Zhangsan's father.'

The fact that the sequence *Zhangsan ta baba* can appear in the object position in (40) suggests that it is a single constituent. It is interesting why the *de* form *Zhangsan ta de baba* is unacceptable. I will return to this issue later in section 4.3.3.1.

(41)   a. Wo jian guo Zhangsan ta-men   de baba.
              I   meet GUO Zhangsan (s)he-MEN DE father
              'I have met Zhangsan and others' father.'

        b. *Wo jian guo Zhangsan ta-men   baba.
              I   meet GUO Zhangsan (s)he-MEN father

However, what is important here is that, as shown in (41b), when the pronoun is affixed with the morpheme *men*, the string *Zhangsan ta-men baba* is bad (while the phrase *Zhangsan ta-men de baba* is good).

To sum up, to all of my consultants, JPs with plural pronouns are definitely worse than the corresponding *de* forms and JPs with singular pronouns. They are normally not acceptable to a majority of my consultants. Also, when a proper name appears, JPs with plural pronouns are ungrammatical, as opposed to JPs with singular pronouns which are fine. Considering these, I intend to say that plural pronouns are not permitted in juxtaposed possession with kinship nouns in general.

Yang (2005) does not discuss the reasons why some direct combinations of plural pronouns and relational nouns are fine while most of them are bad. In this chapter, I will try to examine the syntactic reasons why [plural pronoun+kinship noun] combinations are not possible in MC. I will also look at the exceptional cases where the combinations are possible (suggesting that they may be driven by semantic and pragmatic reasons in section 4.5.1).

4.2.4   The kinship noun must be bare

The kinship noun in JPs must be bare as well. As shown below, when *didi* 'younger-brother' is accompanied by the plural marker *men*, juxtaposition is not possible; instead, *de* needs to appear, as shown in (42a).

(42)　a.　Wo jian guo ta   de didi-men.
　　　　　I   meet GUO (s)he DE younger-brother-MEN
　　　　　'I have met her/his younger-brothers.'
　　　b.　*Wo jian guo ta   didi-men.
　　　　　I   meet GUO (s)he younger-brother-MEN

What is more, when the possessed nominal is a coordination phrase such as *didi he meimei* 'younger-brother and younger-sister', the JP is not possible, either.

(43)　a.　Wo jian guo ta   de didi   he meimei.
　　　　　I   meet GUO (s)he DE younger-brother and younger-sister
　　　　　'I have met her/his younger-brother(s) and younger-sister(s).'
　　　b.　*Wo jian guo ta   didi   he meimei.
　　　　　I   meet GUO (s)he younger-brother and younger-sister

Furthermore, when the kinship noun is preceded by the numeral plus classifier sequence, *de* must appear.

(44) a. Wo jian guo ta   de liang ge didi.
          I   meet GUO (s)he DE two   CL younger-brother
          'I have met her/his two younger-brothers.'

      b. *Wo jian guo ta   liang ge didi.
          I   meet GUO (s)he two   CL younger-brother

6 out of 7 of my consultants report that the phrase *ta liang ge didi* is not as good
as the *de* case *ta de liang ge didi* 'her/his two younger-brothers'. By contrast, all
of them agree that the following sentences where the demonstrative appears, both
the juxtaposed form and the *de* form are fine:

(45) a. Wo jian guo ta   de na   liang ge didi.
          I   meet GUO (s)he DE that two   CL younger-brother
          'I have met her/his (those) two younger-brothers.'

      b. Wo jian guo ta   na   liang ge didi.
          I   meet GUO (s)he that two   CL younger-brother
          'I have met her/his (those) two younger-brothers.'

As pointed out in Yang (2005), the presence of the demonstrative somehow makes
the *de*-less case acceptable: "*de* in possessive phrases can be silent when XP_2 is
headed by a demonstrative". However, as suggested in 6.1.3 in Chapter 2, it might
be the case that the demonstrative licenses the absence of *de*. Alternatively, it
could be that the complement of the pronoun must be a definite expression itself,
so *na liang ge didi* 'those two younger-brothers' can follow *ta* immediately in (45b),
but *liang ge didi* 'two brothers' cannot in (44b). As already noted in Chapter 2,
I will leave this issue for future exploration.

4.3   The syntax of JP expressions

Following the assumption that kinship nouns have an intrinsic argument position
(Barker 1995; Vikner and Jensen 2002, 2003; Partee and Borschev 2003, among
others) and that pronouns are D heads (Longobardi 1994; Huang et al. 2009 and
so forth, also see discussion in Chapter 2), I will argue that JP expressions in MC
have the structure below:

```
                              DP
                        _____
                       /            \
                      ∅             /\
                                   /    \
                                  D      KinP
                                  |      /  \
                             pronounᵢ  Kin   proᵢ
                                       |
                                  kinship noun
```
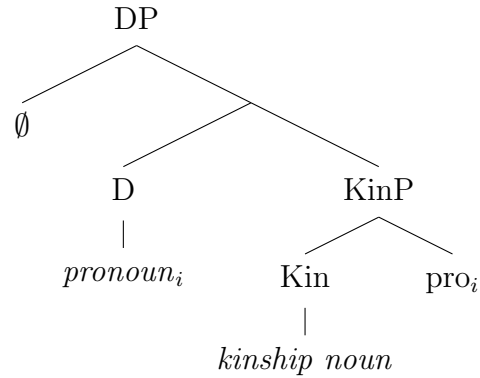
The kinship noun functions as a head and takes a pro as its argument, projecting a KinP projection. A DP is projected above the KinP, and the pronoun is located at D. The pro agrees with the pronoun in D in phi-features. It is noteworthy that the relationship between the pronoun and the pro is not binding. The lower case i on both the pronoun and the pro is just to indicate that they share the same phi-features. The whole phrase is a DP, and this captures the fact that JP expressions are definite. The crucial point of the above assumption is that the phi-features in D are not interpretable and they are just agreement features with the pro. In that way, the definiteness feature of the D heads the DP, but the phi-features do not.

As an illustration, the phrase *ta baba* 'her/his father' has the structure below:

(47)

```
                              DP
                        _____
                       /            \
                      ∅             /\
                                   /    \
                                  D      KinP
                                  |      /  \
                                 taᵢ   Kin   proᵢ
                               '(s)he'  |
                                       baba
                                     'father'
```
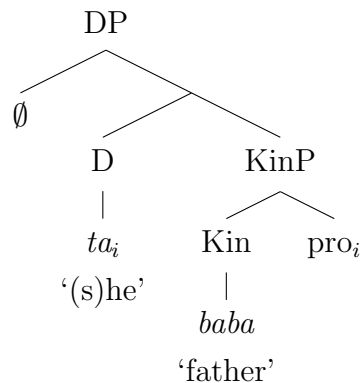
In the above, the complement position of the kinship noun *baba* 'father' is a caseless position, so only pro can enter this position. The pro agrees with the pronoun *ta* in phi-features, so the interpretation of the projection is 'his father'. It is important here that the pronoun in D is not interpretable, otherwise, the denotation of the DP will be *ta* '(s)he' rather than 'her/his father'.

The possibility that the pronoun is merged at the complement position of the kinship term and then moves to the higher D position, such as in (48), is ruled

out.

(48)
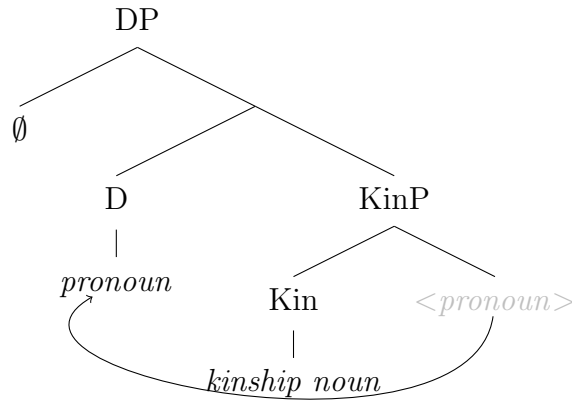
As shown by the tree, in order to generate the correct word order, *ta* has to raise across the head nominal, i.e. the kinship noun, and this will violate the head movement constraint. More explicitly, the pronoun is ambiguous between being a head and an XP. Once it raises to a head position, the entire chain is a head-chain. The movement in (48) is then blocked by relativised minimality, as Kin is an intervening head. Therefore, the tree in (46) rather than (48) can be seen as representing the correct structure of JPs in MC.

4.3.1   The kinship noun heads a Kin(ship)P

As already pointed out in section 4.2.4, the kinship noun in juxtaposed possession needs to be minimal, since it acts as a head and takes a pro as its argument. Thus, it cannot be accompanied by the morpheme *men*. As I propose in Chapter 3 that *men* is the syntactic realisation of the plural feature at Num head position, and *men* carries the [+definite,+animate] feature, this means that elements suffixed by *men* are necessarily phrasal. Subsequently, the kinship nouns attached by *men* cannot form JPs.

(49)   a.   Wo jian guo   ta   de didi-men.
             I   meet GUO (s)he DE younger-brother-MEN
             'I have met her/his younger-brothers.'

        b. *Wo jian guo   ta   didi-men.
             I   meet GUO (s)he younger-brother-MEN

More specifically, the sequence *didi-men* is necessarily a DP, its structure can be represented as follows:

(50)

DP *didi-men*

D
|
didi$_{[+def,+ani]}$

NumP

Num
|
didi+plural feature

NP
|
didi

'younger-brother'
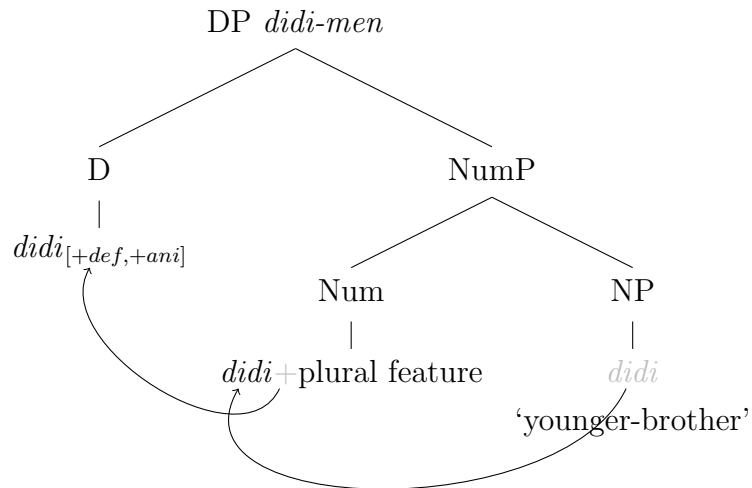
It cannot form a JP with the pronoun *ta*.

(51) *

DP

∅

D
|
ta$_i$
'(s)he'

KinP

DP *didi-men*

D
|
didi$_{[+def,+ani]}$

NumP

Num
|
didi+plural feature

NP
|
didi

'younger-brother'

pro$_i$
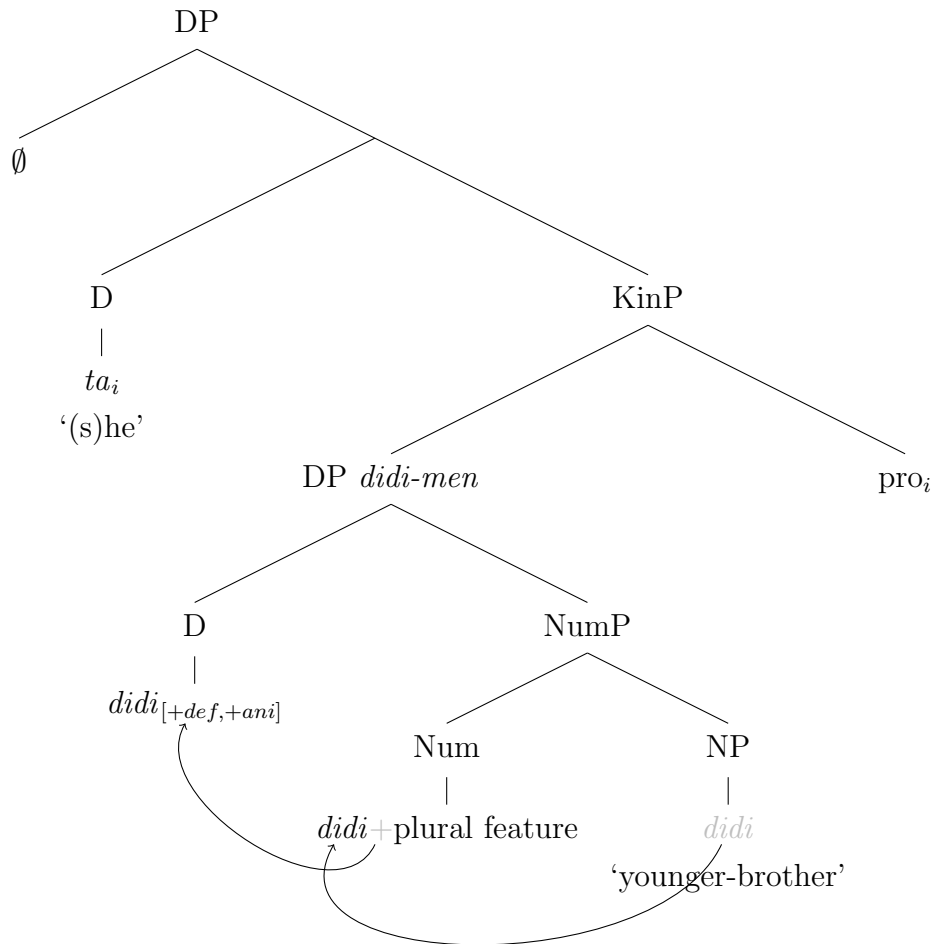
As shown in (49b), the phrase *ta didi-men* is bad. Consequently, *didi-men* can only form *de* possessive constructions. The configuration of the phrase *ta de didi-men* can be illustrated as follows:

(52)

DP
- *ta* 'he'
- PossP
  - *ta*
  - Poss'
    - *de*
    - DP *didi-men*
      - D
        - *didi*[+def,+ani]
      - NumP
        - Num
          - *didi*+plural feature
        - NP
          - *didi*
          - 'younger-brother'
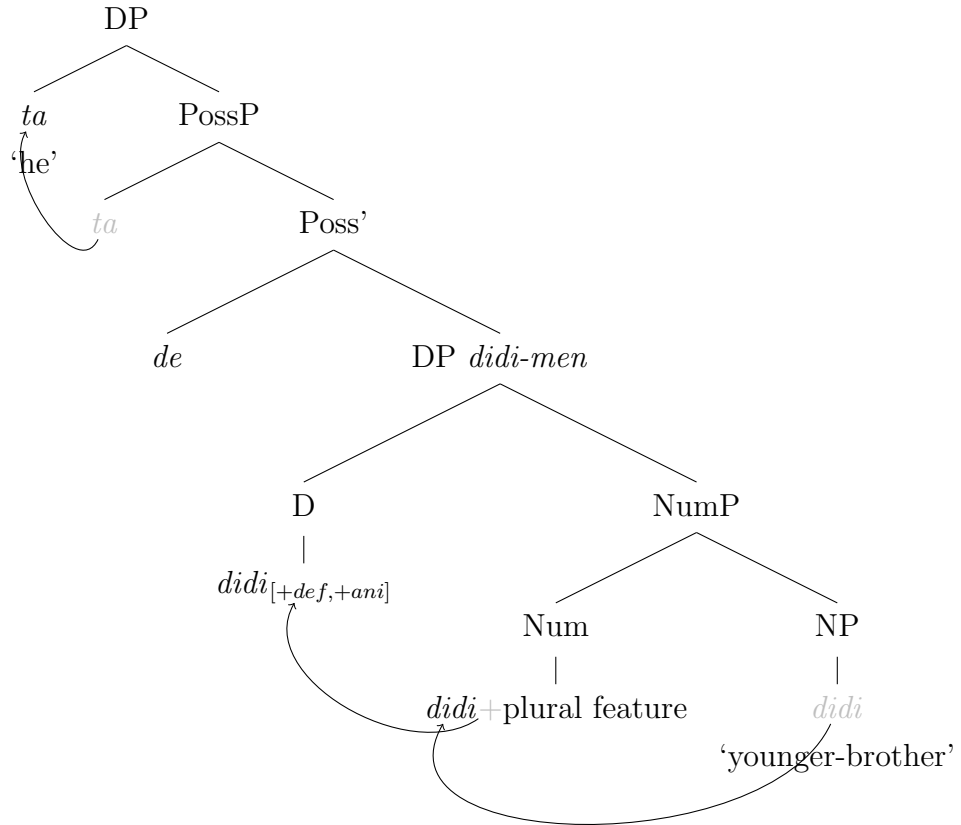
In this case, *didi-men* is a definite expression and denotes a plural meaning. Also, the whole *de* possessive phrase has a definite meaning, "her/his younger-brothers". Recall that in Chapter 1, I argue that in *de* possessives, the possessor nominal undergoes movement from SpecPossP to SpecDP:

(53)

DP
- XP$_1$
- PossP
  - XP$_1$
  - Poss'
    - Poss^0
      - *de*
    - XP$_2$
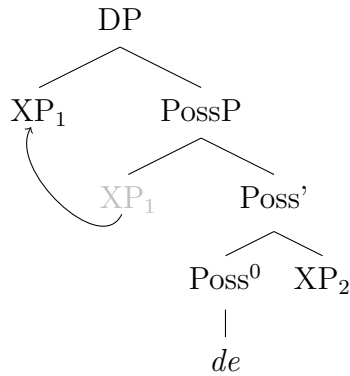
Therefore, in tree (52) above, the pronominal possessor moves to SpecDP to license the definiteness of the whole phrase.

Again, the pronoun cannot be followed by a phrase NumP. This explains why *ta liang ge didi* in (54b) is judged as much less acceptable than *ta de liang ge didi* in (54a).

(54)   a.   Wo jian guo ta   de liang ge didi.
                I   meet GUO (s)he DE two   CL younger-brother
                'I have met her/his two younger-brothers.'

        b.   *Wo jian guo ta   liang ge didi.
                I   meet GUO (s)he two   CL younger-brother

In addition, the coordination phrase *baba he didi* cannot enter juxtaposed possession. Alternatively, the possessive marker *de* is required to form *de* possessives.

(55)   a.   *Ni jian guo ta   baba he didi   ma?
                you meet GUO (s)he father and younger-brother MA

        b.   Ni jian guo ta   de baba he didi   ma?
                you meet GUO (s)he DE father and younger-brother MA
                'Have you met her/his father and younger-brother?'

The structure of the *de* possessive *ta de baba he didi* 'her/his father and younger-brother' is shown as follows:

(56)

'father and younger-brother'
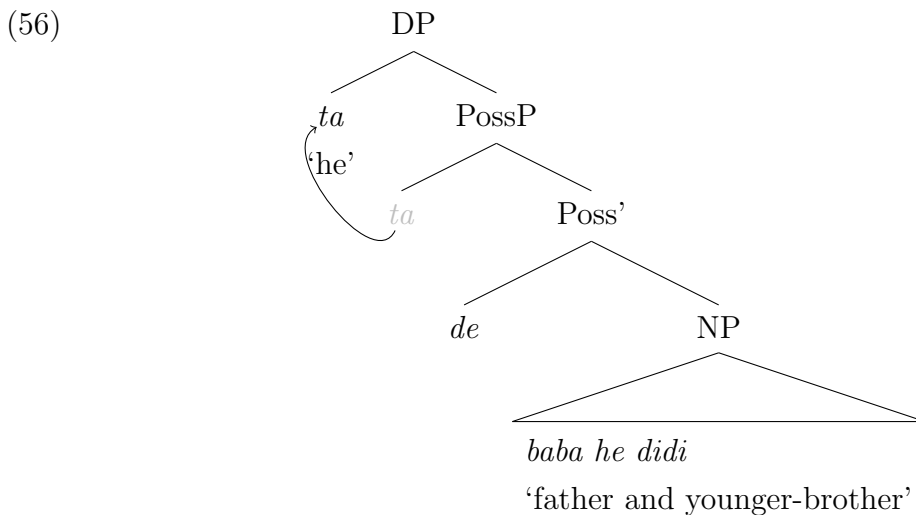
In brief, the proposal that the kinship noun in JPs is a head correctly captures the fact that it cannot show up with the plural marker *men*, the numeral and classifier sequence, and cannot be a coordination phrase. That is to say, the kinship noun in JPs must be minimal.

4.3.2   The personal pronoun is in D

As shown in the structure in (46), the pronoun is located at the D head position in JPs. It follows that the pronoun cannot be accompanied by *men*, either. To be more precise, recall that in Chapter 2, I argue that the plural pronoun *ta-men*

'(s)he-MEN, they' is a DP phrase, having the structure below:

(57)

DP *ta-men*

∅   D'

D   NumP

$ta_{[+def,+ani]}$+Pl   Num

plural feature
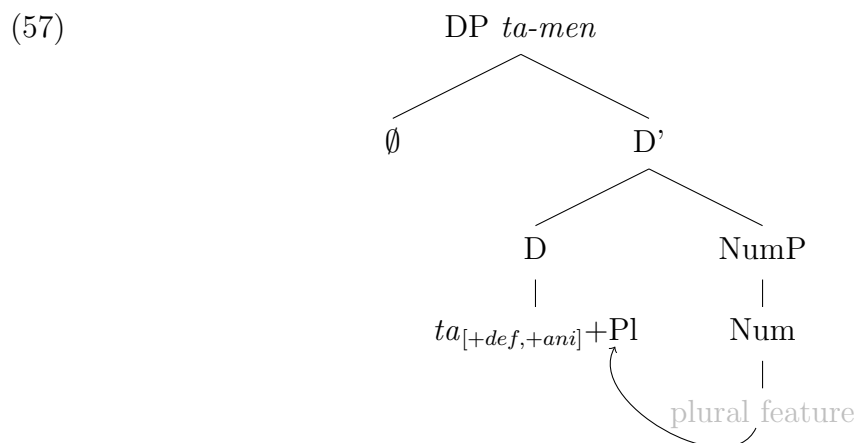
Since the plural pronoun is a DP with complex structure, it is incompatible with the D position in (46).

(58)   *

DP

∅

DP *ta-men*   KinP

∅   D'   Kin pro_i

D   NumP   *kinship noun*

$ta_{[+def,+ani]}$+Pl   Num

plural feature
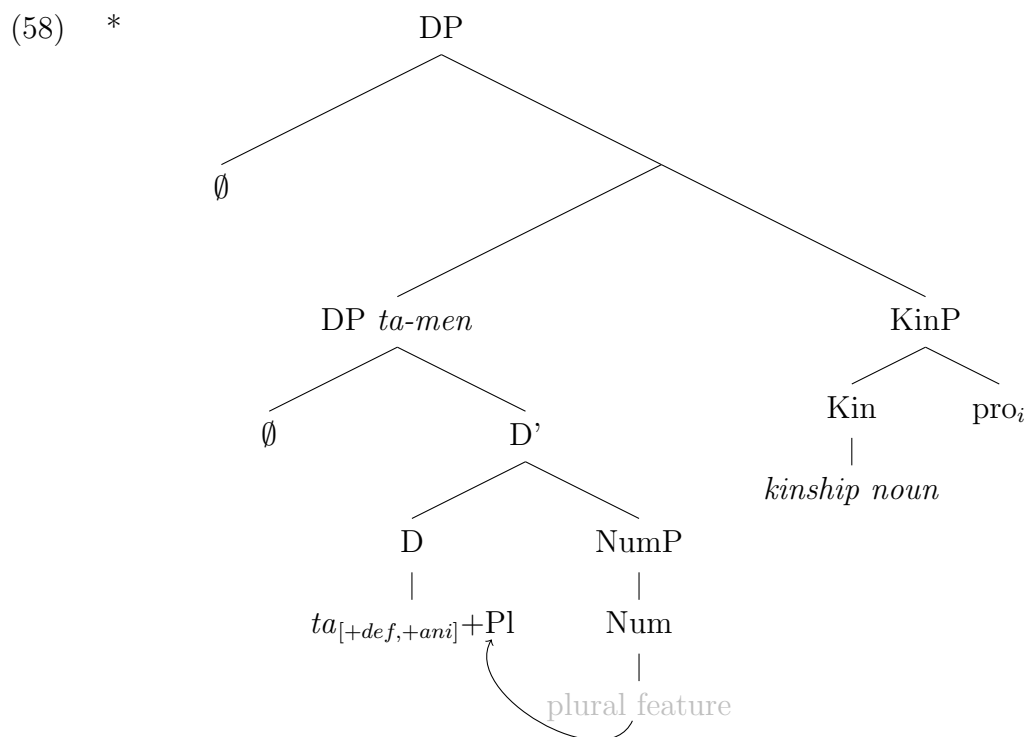
Consequently, phrases such as *ta-men baba* in (59b) are ruled out.

(59)   a.   Ni jian guo ta-men   de baba ma?
          you meet GUO (s)he-MEN DE father MA
          'Have you met their father?'

      b. ??Ni jian guo ta-men   baba ma?
          you meet GUO (s)he-MEN father MA

The structure of the *de* possessive *ta-men de baba* 'their father' in (59a) can be seen below:

(60)
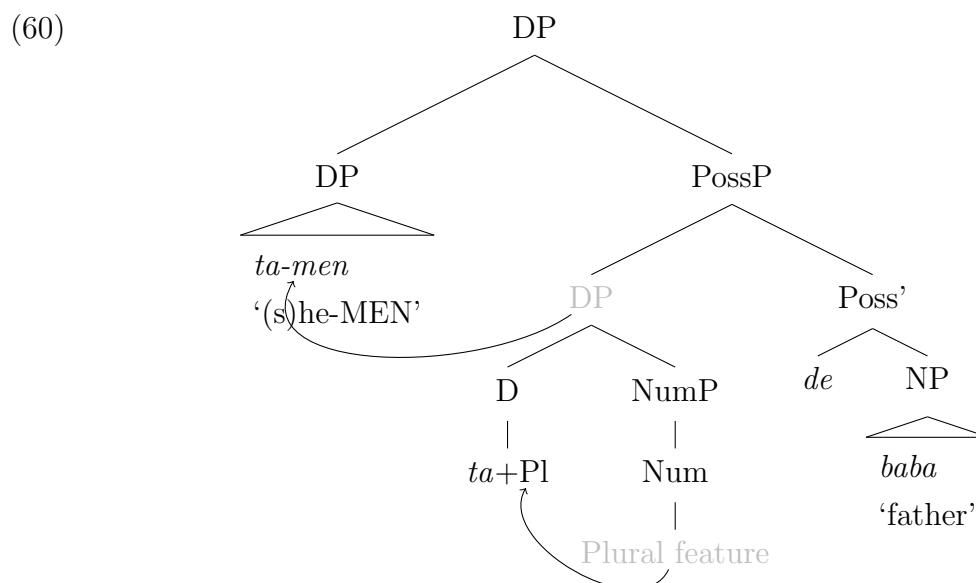
Since the JP phrase is a DP itself, cases where a JP phrase is embedded inside another one are excluded, such as the phrase *ta gege haizi* below.

(61) a. Wo mei jian guo ta   haizi.
          I   NEG meet GUO (s)he kid(s)
          'I have not met her/his kid(s).'

     b. *Wo mei jian guo ta   gege   haizi.
          I   NEG meet GUO (s)he older-brother kid(s)
          Intended: 'I have not met her/his older-brother's kid(s).'

In (61b), the phrase *ta gege* 'her/his older-brother' appears immediately before *haizi* 'kid(s)', occupying the same position as the pronoun *ta* 'he' in (61a). As I will argue later in section 4.4, *ta gege* 'her/his older-brother' has the same referential function as pronouns such as *ta*. Nevertheless, because it is a DP, it cannot form JPs with the kinship term *haizi* 'kid(s)'. As a result, (61b) is not grammatical.

   Since the possessor nominal is located at the D head position in JPs, it is predicted that coordination phrases cannot enter JPs as possessors. Indeed, this is borne out by the data below:

(62) a. *Ni jian guo ta he ta baba ma?
          you meet GUO he and her father MA
          Intended: 'Have you met the father of him and her?'

     b. Ni jian guo ta he ta de baba ma?
          you meet GUO he and her DE father MA

'Have you met the father of him and her?'

or 'Have you met him and her father'?

To express the meaning "her and his shared father", that is, when the possessor nominal is a coordination phrase *ta he ta* 'he and she', it is impossible to juxtapose it with the possessee nominal. Instead, the possessive marker *de* is required (62b).

As shown by the *, the phrase *ta he ta baba* in (62a) is unacceptable under the interpretation "his and her shared father", where there is only one person, i.e. the father.

(63) *

```
                        DP
                       /  \
                      /    \
                    ∅       \
                           /  \
                        *DP    KinP
                        /\     /  \
                       /  \  Kin   pro_i
                   ta he ta  |
                 'he and her' baba
                           'father'
```
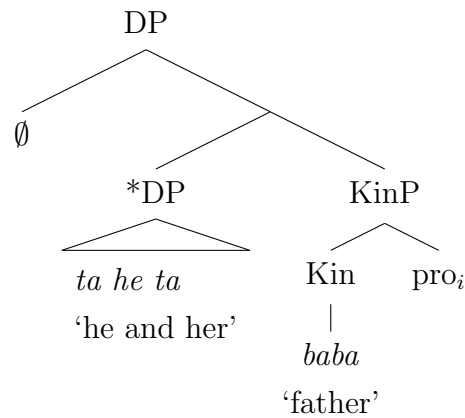
However, it is acceptable under the meaning "him and her father", where there are two people.

(64)

```
                         DP
                        / | \
                       /  |  \
                     DP   he   DP
                     |   'and'  /\
                     D        /   \
                     |       ∅     \
                     ta           /  \
                    'him'        D    KinP
                                 |    /  \
                                ta_i Kin  pro_i
                                'her' |
                                     baba
                                    'father'
```
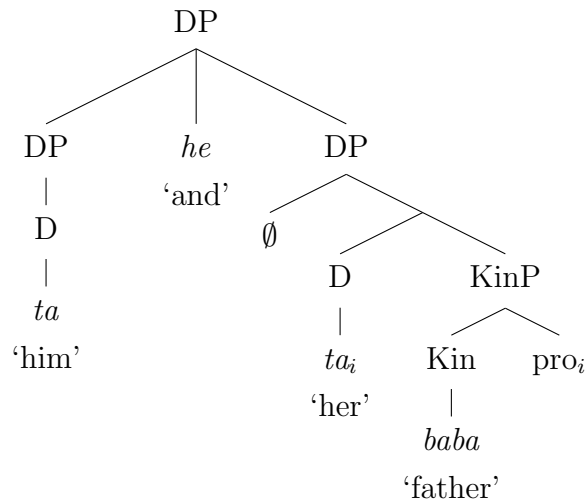
Sentence (65a) is unacceptable as the proper name and kinship noun combination *Zhangsan baba* is unacceptable.

(65)   a. *Ni jian guo ta he Zhangsan baba ma?
           you meet GUO he and Zhangsan father MA

        b. Ni jian guo ta he Zhangsan de baba ma?
           you meet GUO he and Zhangsan DE father MA
           'Have you met the father of him and Zhangsan?'

        or 'Have you met him and Zhangsan's father?'

(66)   *

```
                           DP
              ┌─────────────┼─────────────┐
             DP            he             DP
              │           'and'      ┌─────┴─────┐
              D                      ∅           │
              │                          ┌───────┴───────┐
             ta                        *DP             KinP
                                        │           ┌────┴────┐
                                     Zhangsan       Kin     pro_i
                                                     │
                                                   baba
                                                  'father'
```
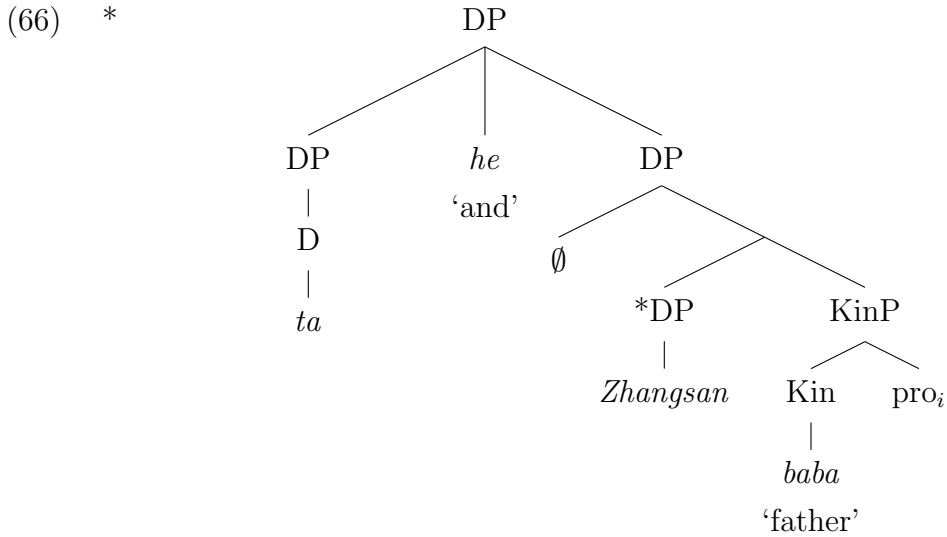
Similar to (62a), *de* is required to appear between the coordination phrase *ta he Zhangsan* and *baba* in (65b). Under the meaning "father of both him and Zhangsan", the structure of *ta he Zhangsan de baba* is shown below:

(67)

```
                                DP
               ┌─────────────────┴─────────────────┐
              DP                                  PossP
         ┌─────┴─────┐                       ┌──────┴──────┐
    ta he Zhangsan                       ta he Zhangsan  Poss'
    'he and Zhangsan'                              ┌──────┴──────┐
                                                 Poss⁰          NP
                                                   │          ┌──┴──┐
                                                  de         baba
                                                           'father'
```
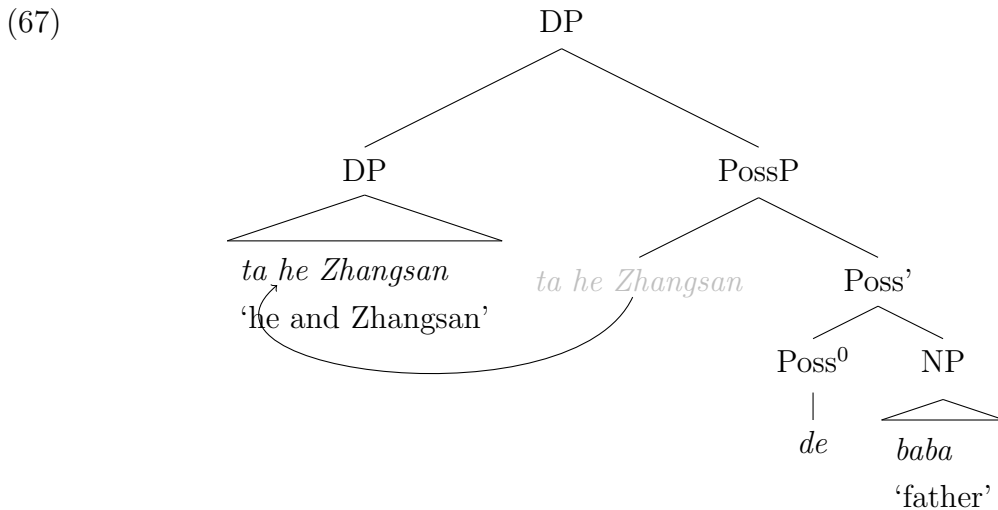
Nonetheless, under the meaning "him and Zhangsan's father", the structure of *ta he Zhangsan de baba* is illustrated below:

(68)
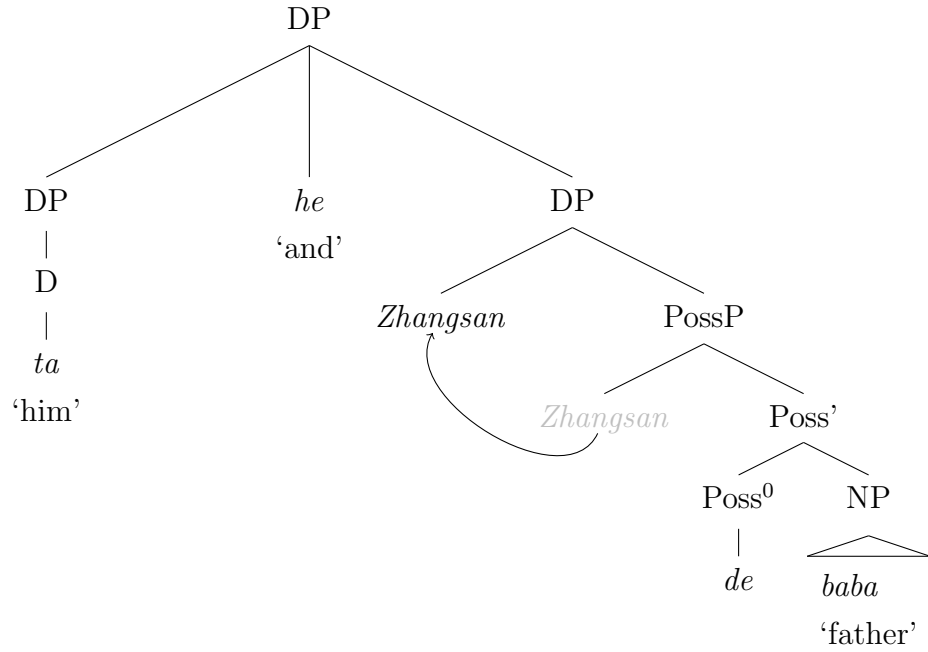
DP
├── DP
│   └── D
│   └── *ta*
│   'him'
├── *he*
│   'and'
└── DP
    ├── *Zhangsan*
    └── PossP
        ├── *Zhangsan*
        └── Poss'
            ├── Poss⁰
            │   └── *de*
            └── NP
                └── *baba*
                    'father'

To conclude, it can be seen from the above discussion that only the D element, i.e. the pronoun, can form JPs with kinship terms.

4.3.3   Proper names are excluded because they are DPs

With regard to proper names, recall that in Chapter 2 that I follow Longobardi and others by arguing that proper names are like common nouns; they are NPs. I propose that in MC bare proper names undergo N to D movement, so a bare proper name is a full DP (while a pronoun is a D). It follows that the proper name cannot appear in D head position, as shown below.

(69)   *

DP
├── ∅
└── D'
    ├── *DP
    │   └── *proper name*
    └── KinP
        ├── Kin
        │   └── *kinship noun*
        └── pro_i
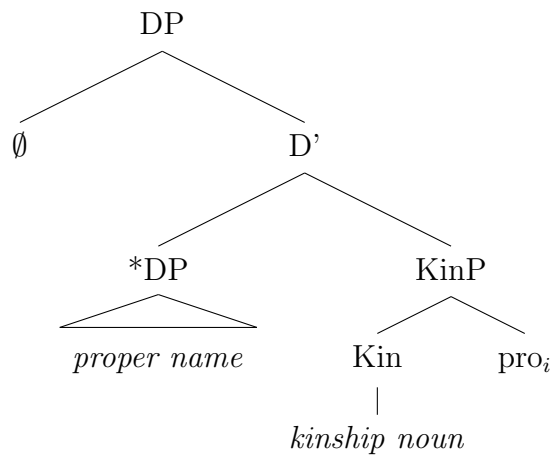
This explains why proper names cannot form JPs with kinship terms. Also, as the proper name is a DP, it cannot agree with the pro in phi-features.

(70)   a.   Wo jian guo Zhangsan de baba.
               I   meet GUO Zhangsan DE father
               'I have met Zhangsan's father.'

        b. *Wo jian guo   Zhangsan baba.
               I   meet GUO Zhangsan father

Since by hypothesis, the proper name *Zhangsan* is a DP, it cannot appear in the D position, taking KinP as its argument. Consequently, the phrase *Zhangsan baba* in (70b) is impossible (note that I will discuss the grammatical cases such as *Zhangsan ta baba* later and argue that the proper name can only be merged at the Spec of an overt D).

As mentioned earlier, the complement of Kin is a caseless position, thus, only pro is a possible complement of Kin (licensed via agreement with the pronoun in D). It follows that the following possibility where the proper name is merged at the complement position of Kin and raises to SpecDP is excluded.

(71)   *
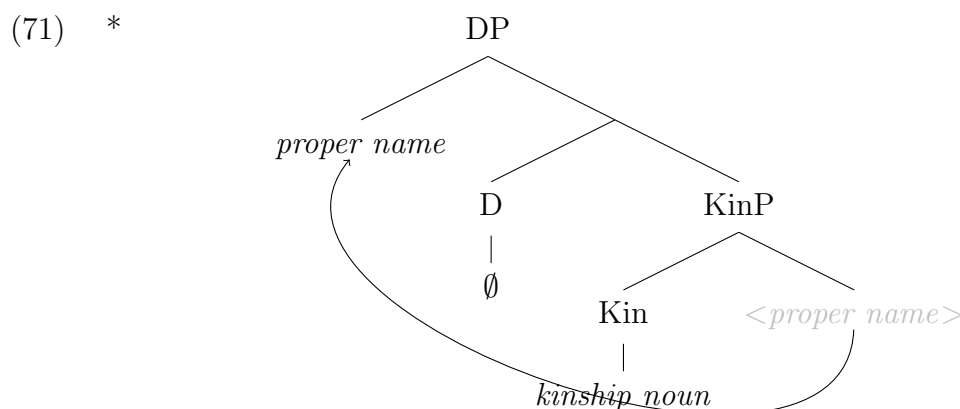
Consequently, the sequence *Zhangsan baba* cannot be generated syntactically.

Moreover, it is worth pointing out that the sequence *ta baba Zhangsan* is ungrammatical as well:

(72)   *Wo jian guo   ta   baba Zhangsan.
         I   meet GUO (s)he father Zhangsan

(73) *

```
                        DP
                       /  \
                      ∅    \
                        /       \
                       D         KinP
                       |        /    \
                      ta_i    Kin   Zhangsan_i
                     '(s)he'   |
                             baba
                            'father'
```
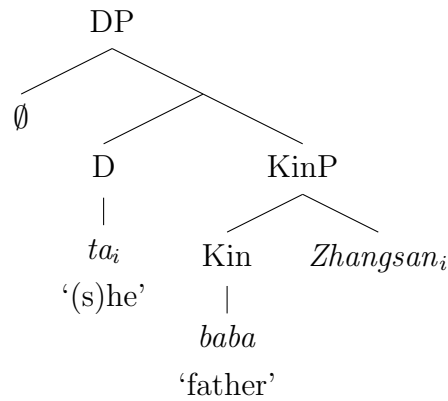
Similar to (71), this combination is ruled out because the proper name is not allowed in the complement position of Kin.

4.3.3.1 *Zhangsan ta baba*

As discussed above, proper names cannot form JPs with kinship nouns. However, when a pronoun appears between the proper name and the kinship noun, the JP becomes possible. For instance, the phrase *Zhangsan ta baba* is completely fine.

(74)   Zhangsan ta   baba hen nianqing.
         Zhangsan (s)he father very young
         'Zhangsan's father is very young.'

As argued in Chapter 3, when a proper name co-occurs with a pronoun or a demonstrative, it is merged as the specifier of DP. When the D position is filled by a pronoun, proper names can appear in the specifier of DP, as shown below:

(75)

```
                          DP
                        /    \
                 Zhangsan      \
                            /       \
                           D         KinP
                           |        /    \
                          ta_i    Kin    pro_i
                         '(s)he'   |
                                 baba
                                'father'
```
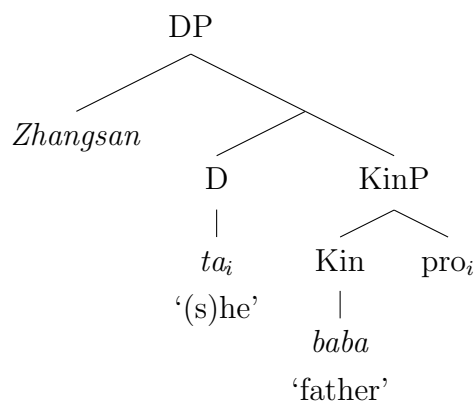
The pronoun *he* and the pro agree in ϕ-features. Also, the proper name *Zhangsan* functions as the index of the pronoun *ta* (I will discuss in more detail about the relationship between the pronoun and the proper name later). As shown in the tree

above, *Zhangsan ta baba* is a single constituent (a DP). Indeed, this is supported by the fact that *Zhangsan ta baba* can appear in the object position.

(76) Wo jian guo Zhangsan ta   baba.
      I   meet GUO Zhangsan (s)he father
      'I have met Zhangsan's father.'

Moreover, *Zhangsan ta baba* can appear after the preposition *dui*:

(77) Wo dui Zhangsan ta   baba yinxiang   hen hao.
      I   DUI Zhangsan (s)he father impression very good
      'I have very good impression of Zhangsan's father.'

The above evidence suggests that the sequence *Zhangsan ta baba* forms a single unit.

What is interesting is that unlike other cases where both JPs and *de* possessives are possible, the sequence *Zhangsan ta de baba* is ungrammatical.

(78) *Wo jian guo Zhangsan ta   de baba.
      I   meet GUO Zhangsan (s)he DE father

As already mentioned in Chapter 3, the specifier position of D is not available if D does not have a complement.[6] As a result, the sequence *Zhangsan ta* does not form a constituent by itself. Consequently, it cannot act as the possessor nominal in *de* possessives. The ungrammaticality of *Zhangsan ta de baba* in (78) is captured:

(79) *

4.3.3.2 *Zhangsang ta-men baba*

In contrast to *Zhangsan ta baba*, the sequence *Zhangsan ta-men baba* is definitely not acceptable:

---

[6]In *Zhangsan ta baba*, the pronoun which is in D takes a KinP as its complement, thus, the specifier position is available and the proper name *Zhangsan* can be combined.

(80)   a.   Zhangsan ta   baba hen nianqing.
            Zhangsan (s)he father very young
            'Zhangsan's father is very young.'

       b. *Zhangsan ta-men   baba hen nianqing.
            Zhangsan (s)he-MEN father very young

Following the discussion in the last section, *ta-men* '(s)he-MEN, they' is a phrase. Thus, it cannot appear in the D head position which requires a minimal element. As a result, the proper name *Zhangsan* cannot be combined. The ungrammaticality of the phrase *Zhangsan ta-men baba* is shown below:

(81)   *
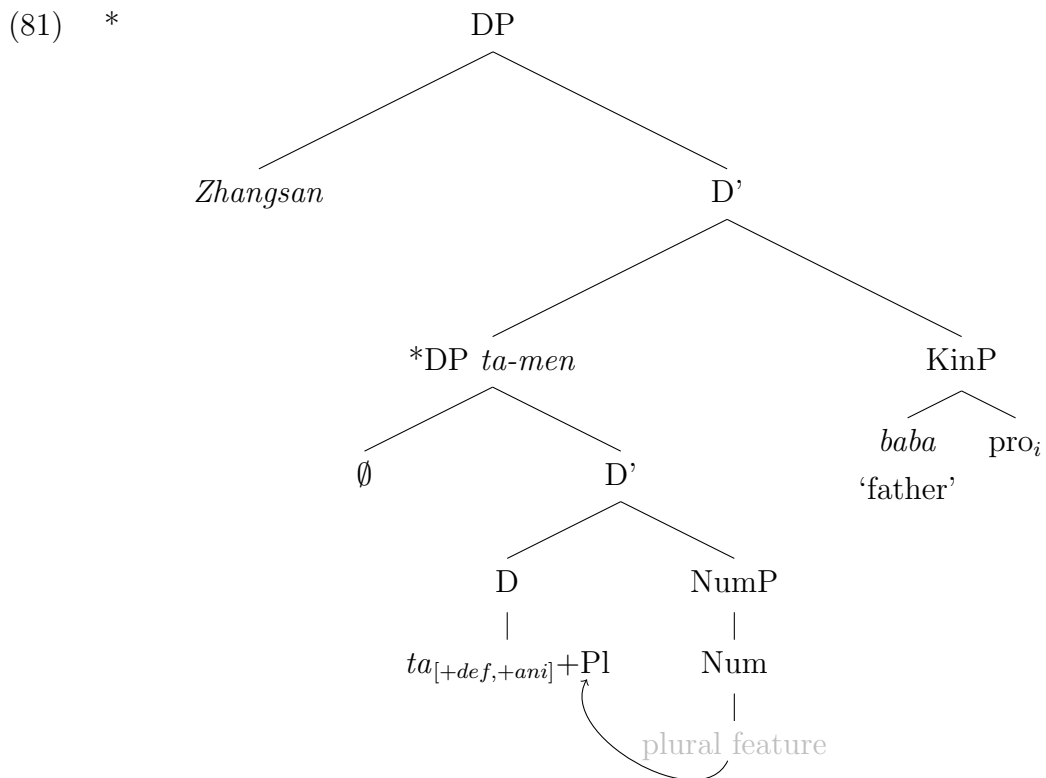
As shown in the tree, *ta-men* is merged with the kinship term *baba* 'father' directly before the merge of the proper name *Zhangsan*; *Zhangsan* and *ta-men* do not form a constituent. This should not to be confused with cases where *Zhangsan ta-men* form a single constituent.

(82)

DP
├── *Zhangsan*
└── D' *ta-men*
    ├── *ta*+Pl
    └── NumP
        ├── ∅
        └── Num
            └── Plural feature
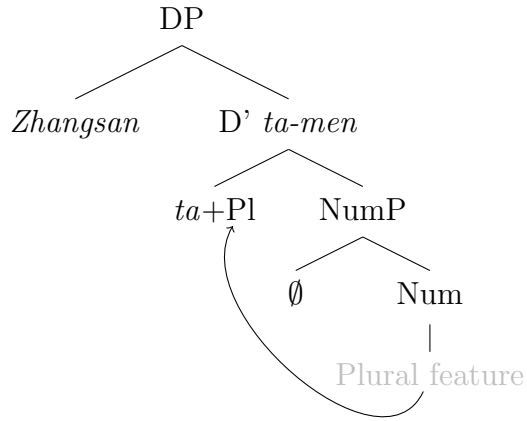
The DP phrase *Zhangsan ta-men* 'Zhangsan and others' cannot enter juxtaposed possession, but it can appear in *de* possessive construction.

(83)　　Wo dui Zhangsan ta-men   de baba hen you xinxin.
　　　　I   DUI Zhangsan (s)he-MEN DE father very have confidence
　　　　'I have confidence in Zhangsan and others' father(s).'

The structure of *Zhangsan ta-men de baba* 'Zhangsan and others' father(s)' is represented as the following:

(84)

DP
├── DP
│   └── *Zhangsan ta-men*
└── PossP
    ├── DP
    │   ├── *Zhangsan*
    │   └── D' *ta-men*
    │   ├── *ta*+Pl
    │   └── NumP
    │   └── Num
    │   └── Plural feature
    └── Poss'
        ├── Poss⁰
        │   └── *de*
        └── NP
            └── *baba*
                'father'
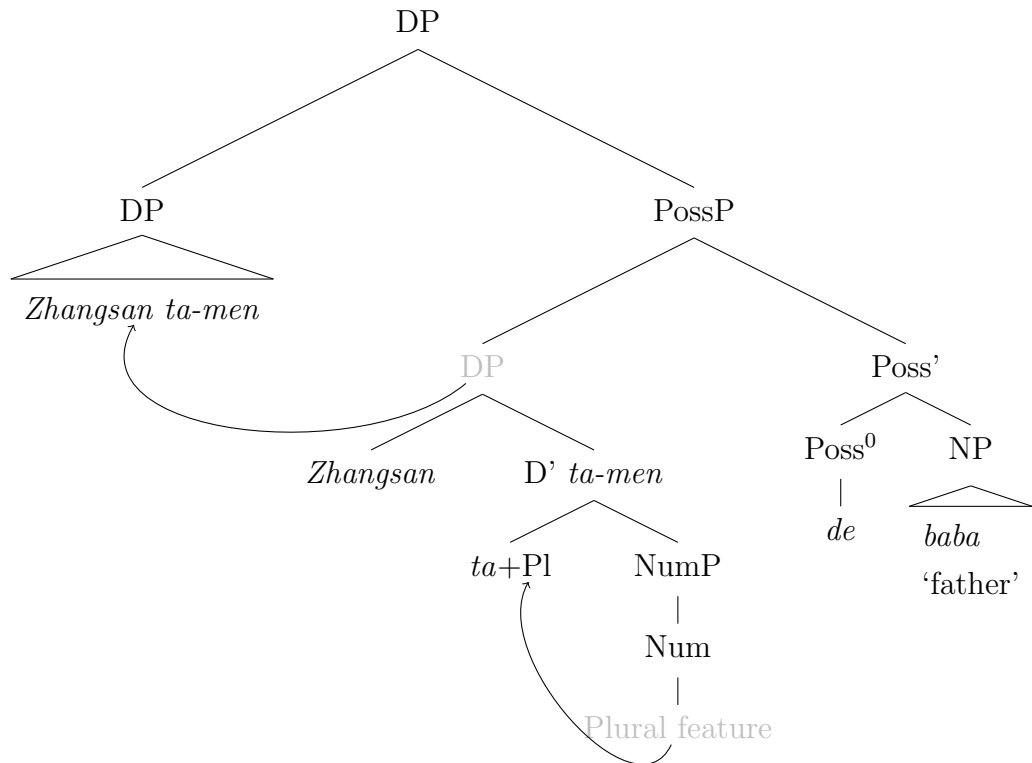
What is more, the sequence *Zhangsan ta-men ta baba* is also not possible.

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(85)   *

DP
├── DP
│   ├── *Zhangsan*
│   └── D' *ta-men*
│   ├── *ta*+Pl
│   └── NumP
│   └── Num
│   └── Plural feature
└── D'
    ├── D
    │   └── *ta$_i$*
    └── KinP
        ├── *baba*
        │   'father'
        └── pro$_i$
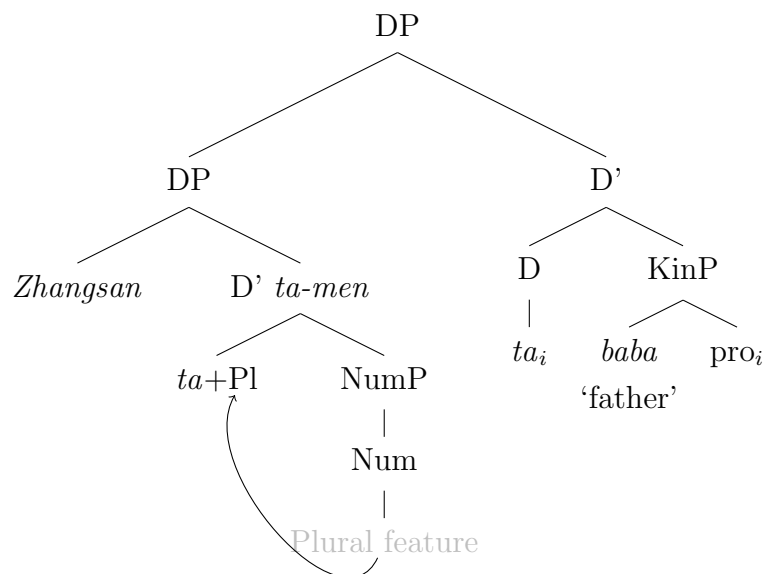
I mention in Chapter 3 that only proper names can be merged to SpecDP when D is filled, so the reason the above structure is out is that the phrase *Zhangsan ta-men* is not acceptable in the specifier position of DP.

As can be seen from above, proper names are prohibited from JPs for two reasons. For one thing, proper names are DPs. For another, they cannot assign the pro the ϕ-features. The only situation where they can appear in JPs is when they occupy the specifier position of the pronoun head, in which case, the pro gets the ϕ-features from the pronoun in D.

4.3.4   Quantifiers are not allowed because they are phrasal

In the corpus of Center for Chinese linguistics PKU, there is a very small number of *de* possessives with a quantifier as the possessor nominal but no JPs with a quantifier as the possessor nominal. That is to say, kinship terms do not normally juxtapose with quantifiers.

(86)   a. *Meigeren fumu   dou   hen yanli.
           everyone parents DOU very strict

       b. Meigeren de fumu   dou   hen yanli.
          everyone DE parents DOU very strict
          'Everyone's parents are very strict.'

(87)   a. *Renheren mama dou   hen cixiang.
           anyone   mother DOU very kind

       b. Renheren de mama dou   hen cixiang.
          anyone   DE mother DOU very kind
          'Anyone's mother is very kind.'

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This raises the question why quantifiers such as *meigeren* 'everyone' and *renheren* 'anyone' cannot form a constituent with kinship terms as pronouns do. The reason might be that quantifiers are not D heads and also they cannot agree with the pro in phi features.

What is more, the following sentences are bad, too.

(88) a. *Meigeren ta   fumu   dou   hen yanli.
        everyone (s)he parents DOU very strict
        Intended: 'Everyone's parents are very strict.'

     b. *Renheren ta   mama dou   hen cixiang.
        anyone   (s)he mother DOU very kind
        Intended: 'Anyone's mother is very kind.'

This might be because that quantifiers are not definite. Consequently they cannot function as the index of the pronoun in (88a) and (88b), as indexes must be definite (the idea that the pronoun has an index variable will be discussed in section 4.4.3.2).

To conclude, in this section, I propose that JPs in MC have the structure below:

(89)
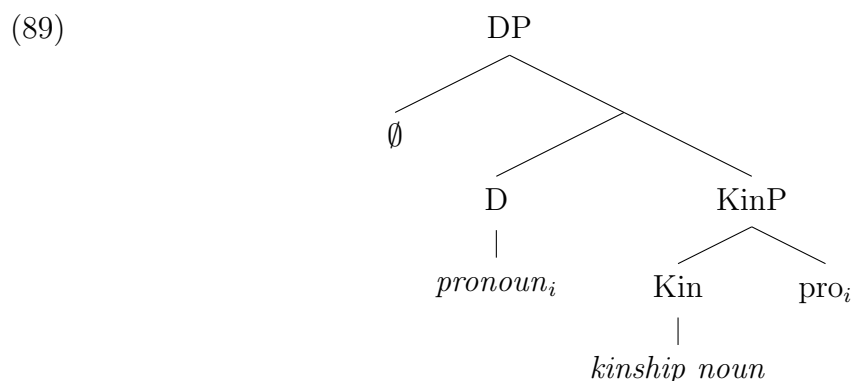
On the basis of the definite plurality analysis of *men* proposed in Chapter 3, I explore the syntactic reasons why the pronoun and the kinship noun cannot be suffixed with *men* in JPs. More precisely, *men* is the syntactic realisation of the plural feature based in Num head. Because the presence of *men* indicates the presence of the syntactic projection Num (and also D), elements suffixed by *men* are syntactically complex. As a result, the pronoun or the kinship term in JPs cannot be accompanied by *men*, as this conflicts with the assumption that both of them are heads. For the same reason, the pronoun and the kinship noun cannot be in other complex forms such as coordination phrases, accompanied by numeral phrases. Although being a D head, the pronoun is not interpretable in D and

it agrees with the pro in ϕ-features. This ensures that JPs denote the kinship relation rather than the reference of the pronoun. Proper names and quantifiers are excluded from JPs for two reasons: (i) they are phrasal, so they are not compatible with the head position; (ii) they cannot assign ϕ-features to the pro.

4.4   The semantics of JP expressions

In this section, I will focus on the semantic properties of JPs. Following Cui (1992) and Zhang (1998), I propose JPs directly refer within the speech act, in contrast to *de* possessives, which are normal referential expressions. I will also illustrate the semantic derivations of JPs. The idea that the proper name functions as the index of the pronoun when they co-occur will also be elaborated on.

4.4.1   JP expressions are directly referential

I propose that JP phrases receive their reference in a different way from normal definite expressions (including possessive expressions). They are similar to pronouns or proper names in that an aspect of their reference comes directly from the speech act, anchored to the pronoun. Thus they directly refer within the speech act.

The function of JP expressions can be summarised as a new person is identified through its kinship relation with the pronoun which is already known in the context. For instance, the phrase *wo baba* is directly referential and it refers to "Zhangsan" who is my father. To re-express this, a new person "Zhangsan" is identified/introduced via his kinship relationship (father-child) with the person represented by the pronoun *wo* 'I'.

As a matter of fact, apart from kinship nouns such as *didi* 'younger-brother' in (90), nouns that denote social relations such as *daoshi* 'supervisor' can form JPs with pronouns as well:

(90)   wo didi   (kinship)
        I   younger-brother
        'my younger-brother'

(91)   wo daoshi   (social relation)
        I   supervisor
        'my supervisor'

The relation between the two nominals in JPs is much closer than that in *de* expres-

sions. To a large extent, they have formed a fixed expression to refer to a person or an entity in the real world, just like a proper name. The referential function is realised by specifying a person or an entity through its relation with the reference of the pronoun. Specifically, in (90), since the person denoted by the pronoun *wo* 'I' is the speaker, who is already present in the context, another person, for example *Zhangsan*, can be specified through her/his kinship relation (younger-brother) with the speaker. In other words, my younger-brother "Zhangsan" is introduced to the listener indirectly via me which is prominent in the context. Likewise, in (91), because the person denoted by the pronoun *wo* 'I' is already known by both the speaker and the listener, it follows naturally that the person who supervises him/her can be referred to (accessible to the listener).

4.4.1.1   The "locating" process: "locator" and "locatee"

I propose that the pronoun is like the "locator", through which the speaker and the listener can "locate" a third person. The crucial point of this locating process is that the new person(s) introduced must bear a close and stable (relatively unchangeable) relation to the "locator": kinship or other stable social relations.

The fact that only pronouns can function as locators may be because the following two reasons: first, pronouns have a strong referential property, and secondly, due to their animate nature, pronouns can bear intimate relations with kinship nouns.

Additionally, as mentioned earlier, JP expressions have the same denotation as proper names, referring to a particular individual. That is to say, the reference of the JPs, i.e. the outcome of the locating process – the "locatee", must be prominent as well.

Semantically speaking, body part nouns cannot form JPs because unlike kinship nouns, body part nouns are one-place predicates; thus, they cannot take pronouns (pro) as complements. Therefore, unacceptable expressions such as (92b) are predicted.

(92) a.   Wo xihuan ta   de yanjing.
           I   like   (s)he DE eye
           'I like her/his eyes.'
      b. *Wo xihuan ta   yanjing.
           I   like   (s)he eye

Also, from a pragmatic point of view, sentence (92b) above is bad because the body part "his/her eyes" is not prominent enough that we need to give a proper name

to it. In other words, practically speaking, there is no point in giving each person's eyes a name. By analogy, we do not have names for each snowflake though as the saying goes "every snowflake is different", simply because there is no pragmatical usage of these names (even though it might be useful to the Eskimos). By contrast, even though they may look similar to many people, we have names for most of the mountains such as Mont Blanc, Mount Everest, because these names are very useful geographically. In other words, even though one's body part can be unique, there is no pragmatic motivation to refer to them in the same way as referring to a person's name. Thus, the JP expression, which is equivalent to a proper name, is not used to represent body part relations.

4.4.1.2 Semantic differences between JPs and *de* possessives

JPs are directly referential (deictic expressions), while *de* possessives are normal referential expressions. Cui (1992) and Zhang (1998) compare the semantic differences between JP expressions and their corresponding *de* possessives through several sets of examples. In the following, I will present their relevant discussion, respectively.

4.4.1.2.1 Cui (1992)

Cui (1992) suggests that when a PerPro (personal pronoun) and an N (noun) bear an inalienable possessive relation, *de* can be present or absent; while when PerPro and N bear alienable possessive relation, *de* is obligatory.[7]

Cui (1992) provides two sets of examples to illustrate the semantic differences of [PerPro+N] and [PerPro+*de*+N] expressions. The first set of examples are as follows:

(93)   a.   ta   baba
               (s)he father
               'her/his father'
        b.   ta   de baba
               (s)he DE father
               'her/his father'

According to Cui (1992), the phrase *ta de baba* entails a sense of exclusiveness which is not present in *ta baba*. In (93b), the speaker wants to emphasise the

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[7]In Cui (1992), inalienable relation includes kinship, social relation, part-whole, originality relation.

father is hers or his but not other person's. This indicates that the reference of [PerPro+*de*+N] expression comes from the possessive relationship.

The second set of examples are as follows:

(94)   a.   Ta shi shui?
                   she is who?
                   'Who is she?'

         b.   Ta shi wo nüpengyou.
                   she is I   girlfriend.
                   'She is my girlfriend.'

(95)   a.   Ta shi shui de nüpengyou?
                   she is who DE girlfriend
                   'Whose girlfriend is she?'

         b.   Ta shi wo de nüpengyou.
                   she is I   DE girlfriend.
                   'She is my girlfriend.'

Although on the surface, the difference between (94b) and (95b) is just the absence and presence of *de*; the two sentences have quite distinct implications and are used in different scenarios. Imagine a scenario where you are looking at a girl's photo, your friend asks you who she is, and you say that *ta shi wo nüpengyou*. In this case, you are introducing your girlfriend to your friend. *wo nüpengyou* here is used as a deictic expression, which refers to the person who is in the picture and who has a boyfriend-girlfriend relation with you. However, for sentence (95b), the situation will be that two men are arguing with each other about whose girlfriend the girl *ta* 'she' is. *wo de nüpengyou* emphasises the possessor, that is, *ta* 'she' is my girlfriend rather than yours. It can be seen that the reference of the *de* possessive *wo de nüpengyou* is expressed through the possessive relationship.

More specifically, in answering the question "Who is she?", the answer such as (95b) is worse than (94b). Likewise, in response to the question "Whose girlfriend is she?", the answer *wo de nüpengyou* in (95b) is much better than *wo nüpengyou* in (94b). This supports Cui's claim that the emphasis of *de* possession is the possessor nominal.

It can be seen from the above two groups of examples that JPs are directly referential and its reference is anchored to the individual represented by the pronoun via kinship relation. In comparison, *de* possessive expressions are normal referential expressions and its reference only comes from the possessive relationship.

4.4.1.2.2 Zhang (1998)

Zhang (1998) holds a similar view: *wo de gege* 'my elder-brother' and *wo gege* 'my elder-brother' are distinct expressions with different structures and interpretations: (i) *wo gege* is not derived from *wo de gege* by deleting *de*; (ii) *wo de gege* expresses possessive relation while *wo gege* is used to identify and refer. Zhang (1998) argues *wo* in *wo gege* performs the same function as demonstratives. *wo gege* is equivalent to this/that person. Unlike *wo de gege*, *wo gege* is a deictic expression.

Zhang (1998) advances that semantically speaking, kinship *de* possessive expressions and JP expressions differ from each other in three ways.

First, kinship *de* possessives can denote one person or more, i.e. a set of one member or more. In comparison, JP expressions can only refer to one person, i.e. a singleton set, and the function of the pronoun is similar to *this* or *that*. For example, *wo de meimei* could be one or two *meimei* 'younger-sister' or more, but *wo meimei* can only be one particular *meimei* 'younger-sister'.

(96)   a.   Wo de meimei   dou hen congming.
                I   DE younger-sister DOU very smart
                'My younger-sisters are all very smart.'

          b. *Wo meimei   dou hen congming.
                I   younger-sister DOU very smart

As shown by the contrast between (96a) and (96b), in the former, *dou* quantifiers over individuals, suggesting that there are more than one *meimei* involved, while in the latter, *dou* is not allowed, indicating that *wo meimei* just denotes a single *meimei*. As shown below, *wo meimei* refers to one person, and is equivalent to 'that person'.

(97)   Wo meimei   hen congming.
        I   younger-sister very smart
        'My younger-sister is very smart.'

Secondly, kinship *de* possessive expressions can refer to anyone, that is, it does not have a designated reference, whereas JPs can only refer to one particular person.

(98)   a.   Ni de pengyou jiu shi wo de pengyou.
                you DE friend   JIU is I   DE friend
                'Your friend(s) is/are my friend(s).'

          b. *Ni pengyou jiu shi wo pengyou.
                you friend   JIU is I   friend

ni de pengyou in (98a) means any of your friends; it does not refer to any particular friend(s). By contrast, the reference of *ni pengyou* is a particular individual, such as *Zhangsan.* Similarly, the reference of *wo pengyou* could be *Zhangsan* or *Lisi.* Sentence (98b) will have the odd meaning below:

(99)   a. *Zhangsan jiu shi Lisi.
           Zhangsan JIU is   Lisi
           'Zhangsan is Lisi.'

        b. *Zhangsan jiu shi Zhangsan.
           Zhangsan JIU is   Zhangsan
           'Zhangsan is Zhangsan.'

Thus, sentence (98b) is unacceptable.

    The distinction that JPs have designated reference while *de* possessives do not can be further shown by the following examples.

(100)   a. Wo yeye   shijishang shi wo de
           I   grandfather on father's side actually   is   I   DE
           waigong.
           grandfather on mother's side

        b. Wo de yeye   shijishang shi wo
           I   DE grandfather on father's side actually   is   I
           waigong.
           grandfather on mother's side

        c. ??Wo yeye   shijishang shi wo
           I   grandfather on father's side actually   is   I
           waigong.
           grandfather on mother's side

Sentences (100a) and (100b) are perfectly fine under appropriate scenarios. For instance, imagine that in a situation where Zhangsan's grandfather on her/his father's side (*yeye*) is dead, and Zhangsan calls her/his grandfather on her/his mother's side who is still alive *yeye*, as *yeye* is regarded as closer to one than *waigong*.[8] Then someone who knows Zhangsang's grandfather on her/his father's side is dead would wonder who Zhang's *yeye* is when hearing Zhangsan says *wo yeye*. In this case, Zhangsan can clarify by saying that "actually, *wo yeye* is my grandfather on my mother's side", as in (100a). That is, the person represented by *wo yeye* is actually my grandfather on my mother's side.

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[8]In Chinese culture, it is traditionally considered that relatives on one's father's side are closer to her/him than those on her/his mother's side, maybe this is related to the fact that a child always takes her/his father's surname. *yeye* is closer than *waigong*.

Conversely, in (100c), for some reason, Zhangsan decides to call her/his grand-father on her/his father's side (*yeye*) *waigong*. Then someone who thinks Zhangsan only has *waigong* but no *yeye* hears Zhangsan say *wo de yeye* may wonder who her/his *yeye* is. In this situation, Zhangsan can clarify by saying that "*wo de yeye* is actually the person who I call *waigong*, for example, *Zhangyi*". In other words, Zhangsan can say "*wo de yeye* is *Zhangyi*, it is just I call him *waigong*".

As discussed earlier, *wo yeye* refers to a designated individual, it is similar to a proper name such as *Zhangyi*. Likewise, *wo waigong* can be replaced by the proper name *Li'er*. Therefore, sentences in (100) can be re-written as below:

(101) a. Zhangyi shijishang shi wo de waigong.
    Zhangyi actually is I DE grandfather on mother's side
    'Zhangyi is actually my grandfather on my mother's side.'

    b. Wo de yeye   shijishang shi Li'er.
      I DE grandfather on father's side actually is Li'er
      'My grandfather on my father's side is actually Li'er.'

    c. *Zhangyi shijishang shi Li'er.
      Zhangyi actually is Li'er
      'Zhangyi is actually Li'er.'

In these cases, the reference of the *de* phrase such as *wo de waigong* in (101a) is ex-pressed by the possessive relationship, i.e. "the person who bears the grandfather (on mother's side)-grandson relationship with me". The semantics of (101a) can be interpreted as "Zhangyi is the person who bears the grandfather (on mother's side)-grandson relationship with me". Similarly, sentence (101b) can be inter-preted as 'the person who bears grandfather (on father's side)-grandson relation-ship with me is Li'er'. However, (101c) shows clearly why sentence (100c) is bad.

Thirdly, kinship *de* possessive expressions but not JP expressions can refer to an imagined individual or individuals. In the examples below, *wo de nüpengyou* 'my girlfriend' does not correspond to any actual person, while *wo nüpengyou* 'my girlfriend' must refer to an individual in the real world.

(102) Wo de nüpengyou bu yiding yao hen piaoliang, dan yiding
    I DE girlfriend NEG must need to very pretty, but must
    yao hen wenrou.
    need to very sweet
    'My (future) girlfriend does not need to be pretty, but must be sweet.'

The meaning of the sentence suggests that the speaker does not have a girlfriend yet. In this case, *wo de nüpengyou* cannot be swapped with *wo nüpengyou*:

(103) ??Wo nüpengyou bu   yiding yao   hen piaoliang, dan yiding yao
       I   girlfriend   NEG must need to very pretty,   but must need to
      hen wenrou.
      very sweet
      'My girlfriend does not need to be pretty, but must be sweet.'

The above sentence is very odd because the JP phrase *wo nüpengyou* has actual reference, and this is incompatible with the subjunctive mood of the sentence.

To summarise, the JP construction and the kinship *de* possessive construction are distinct expressions with completely different semantics. The former has designated reference, referring to one particular individual, and its reference partly comes from the pronoun, partly from the kinship relation. However, the latter does not have designated reference: it can refer to one or more individuals or anyone, and its reference only comes from the possessive relationship.

4.4.2 The deictic denotation comes from D

As discussed above, JPs are deictic expressions, referring to a designated individual. Then the question that follows is, where does the deictic denotation come from? As already indicated in the discussion of the last section, the pronoun is the "locator" of the "locating" process, in the following, I will propose that the deictic reference originates from the D head, i.e. the pronoun.

4.4.2.1 Kinship nouns need to be identified

Generally speaking, kinship terms such as *uncle* or *mother* cannot appear on their own, they require the co-occurrence of a possessor nominal.

(104)   a.   My uncle fell down the stairs.
         b.   The uncle of the Queen fell down the stairs.
         c. ?The/?An uncle fell down the stairs.

(105)   a.   My mother fell down the stairs.
         b.   The mother of the Queen fell down the stairs.
         c. ?The/?An mother fell down the stairs.

However, when the kinship noun *uncle* or *mother* is modified, for example, by a relative clause as in (106), or by an adjective in (107), the possessor nominal is not needed.

(106)   The uncle I was telling you about fell down the stairs.

(107)   A young mother was attacked at the disco.

According to Adger (2013), the above contrast suggests that pragmatically speaking, kinship nouns need to be identifiable. It is assumed that kinship terms bear a feature which requires that their referents are identifiable with respect to the discourse context. Specifically, in (104a) and (104b), as well as (105a) and (105b), the identity of the kinship nouns *uncle* and *mother* is established by its possessive relationship with the possessive pronominal *my* and the proper name *the Queen*, respectively. In (106) and (107), it is identified by the restriction from the relative clause and the adjective modifier, respectively.

It needs to be pointed out that in cases where kinship nouns appear on their own, the context must provide the possessor nominal for them to be identified, as shown by the following example:

(108)   Ta   jintian hen gaoxing, erzi jiehun   le.
         (s)he today very happy,   son get married LE
         '(S)he is very happy today, her/his son got married.'

In this case, it can be assumed that there is a pro co-referential with *ta* co-occurring with the kinship noun:

(109)   Ta$_i$ jintian hen gaoxing, pro$_i$ erzi jiehun   le.
         (s)he today very happy,   pro son get married LE

The referent of the kinship noun *erzi* 'son' is identified by the pronoun *ta* '(s)he' via pro. What is interesting is that in the above case, the pronoun *ta* can be substituted for the proper name *Zhangsan*:

(110)   Zhangsan jintian hen gaoxing, erzi jiehun   le.
         Zhangsan today very happy,   son get married LE
         'Zhangsan is very happy today, her/his son got married.'

Similarly, there is a pro co-referential with *Zhangsan* preceding the kinship noun, providing information of the possessor nominal for it to be identified.

To sum up, kinship terms need the co-appearance of a pronoun to be identified. This is consistent with my intuition that JP phrases are directly referential expressions in MC. Moreover, this feature of the kinship noun suggests that the structure I proposed for JPs is on the right track: the kinship noun takes a pro as its complement and the pro agrees with the pronoun in ϕ-features. In this way, the kinship term gets identified by the pronoun.

4.4.2.2 D is the locus of the reference

As already discussed in Chapter 3, D is the locus of reference, I will assume the deictic denotation of JPs comes from D, i.e. the pronoun in the D position.

As pointed out to me by Daniel Harbour via personal communication, semantically speaking, JP expressions can be seen as a path from one individual to another individual via the kinship relationship. The crucial point is that the individual at the starting point must be definite and the one at the terminal needs to be definite as well. This is consistent with the syntactic and semantic properties of the JP expression I have shown above: only singular pronouns that are directly referential can enter JP constructions. Also, as shown in section 4.4.1.2.2, the JP expression refers to a particular individual. Therefore, under the 'path' view, JPs can be reinterpreted as the path from the individual A indicated by the pronoun to the individual B that bears the kinship relationship with A. In a way, this idea coincides with my argument that JPs are directly referential expressions. It is a "locating" process, "locating" a new person via its kinship relation with the one denoted by the pronoun, which is known in the context.

Very importantly, the starting point of the "locating" process or the path must be definite, only in this way can it guarantee the end point is definite as well. Since pronouns are argued to be merged in D and directly referential, they can perform the "locator" role. Thus, it can be said that the deictic denotation of JPs stems from the personal pronoun.

4.4.3 The semantics of JP expressions

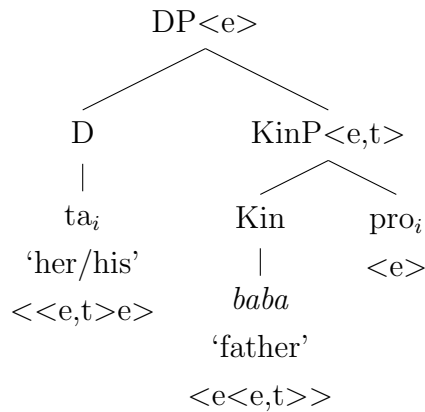In this section, I explore the semantic derivations of JPs under the framework of compositional semantics.

4.4.3.1 JPs are type e expressions

It can be seen from the above discussion that only the D element, i.e. the pronoun, can form JPs with kinship terms. The semantic derivations of the JP expression *ta baba* 'her/his father' are illustrated as follows:

(111)

DP<e>
├── D
│   └── ta$_i$
│   'her/his'
│   <<e,t>e>
└── KinP<e,t>
    ├── Kin
    │   └── *baba*
    │   'father'
    │   <e<e,t>>
    └── pro$_i$
        <e>

As argued in section 4.2.1.2, kinship terms are two-place predicates, thus, they are of type <e<e,t>>. pro is of type e. Here, I treat pronouns as definite articles, thus they are of type <<e,t>e>. The interpretation of (111) is that the individual that bears the "father" relation to the individual denoted by the pronoun *ta* '(s)he'.

4.4.3.2 JPs with propoer names are type e expressions

As mentioned above, I suggest that when a proper name and a pronoun appear right next to each other, that is, when the pronoun is in D and the proper name is merged at SpecDP, the proper name acts as the index of the pronoun. Below, I will illustrate how this idea works on the basis of Elbourne's (2008) discussion of the semantic composition of pronouns.

4.4.3.2.1 Elbourne (2008) on pronouns

Elbourne (2008) argues pronouns are definite descriptions. His analysis of pronouns is based on Nunberg (1993), which advances that the semantics of pronouns and other indexicals constitute four components, as summarised in Elbourne (2008):

1. A deictic component, which picks out a contextually salient object called an index, on the basis of which the actual interpretation of the indexicals will be computed.

2. A relational component, which constrains the relation that must hold between the index and the interpretation.

3. A classificatory component, including things like /-features, which adds further information about the interpretation.

4. An interpretation, which is an individual or definite description contributed to the proposition expressed (Elbourne 2008:419-420).

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Elbourne formalises the above claim and proposes that pronouns such as *it* have the structure below:

(112)   [it [R$_1$ i$_2$]]

According to Elbourne, i is a variable of type e, which constitutes the deictic component of the structure; R represents a relation variable of type <e<e,t>>, turning the noun phrase into a definite description (I modify Elbourne's exact analysis by excluding the situation semantic components here, see Elbourne (2008) for detailed discussion).

In the case of the third person pronoun, it is assumed that the index can be any object and the relation can be any salient relation, within certain limits. For instance, if I point to David and say *he*, then the index of *he* is "David". Also, if I mean to refer to David, that is, the relation component requires the interpretation to be David, then the relation involves will be identity. The structure of *he* with the reference to David can be seen below:

(113)

4.4.3.2.2   The proper name as the index of the pronoun

Similarly, the case where the proper name *Zhangsan* and the pronoun *ta* co-occur is represented as follows:
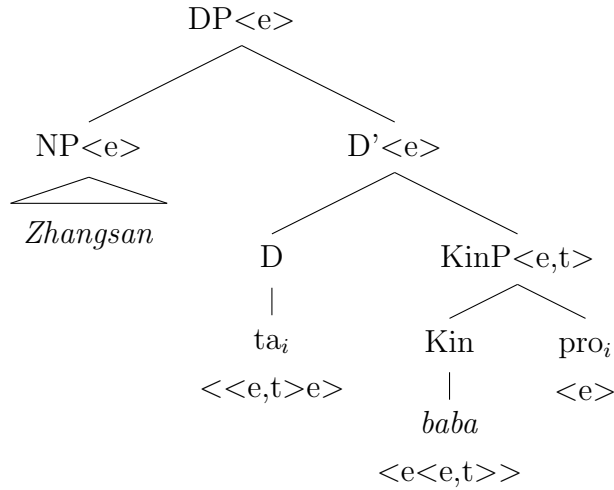
(114)

Zhangsan can be seen as acting as the index of the pronoun *ta*. Following this, the semantic derivations of *Zhangsan ta baba* 'Zhangsan's father' is represented as below:

(115)

```
                              DP<e>
                        _____|_____
                       |             |
                    NP<e>          D'<e>
                     /‾‾\        ____|____
                  Zhangsan      |         |
                                D       KinP<e,t>
                                |        __|__
                               ta_i     |     |
                            <<e,t>e>    Kin   pro_i
                                         |    <e>
                                       baba
                                    <e<e,t>>
```

The semantic type of each node is the same as the phrase *ta baba*, as shown in (111). The only difference is that D' is combined with the proper name *Zhangsan*, which is type e (Elbourne 2005), via an appositional semantic composition rule. Both of them are of the semantic type e, generating the type e definite expression *Zhangsan ta baba*. As *Zhangsan* functions as the index of the pronoun *ta*, the denotation of the whole phrase *Zhangsan ta baba* can be represented as the individual that bears the "father" relationship with "Zhangsan".

Very interestingly, only *ta* is acceptable in this situation, neither *wo* or *ni* is possible, as shown by the unacceptable sentences (116) and (117) below:

Imagine a person is talking to Zhangsan:

(116)   *Fangfang jian guo   Zhangsan ni   baba.
          Fangfang meet GUO Zhangsan you father

or Zhangsan himself is talking:

(117)   *Fangfang jian guo   Zhangsan wo baba.
          Fangfang meet GUO Zhangsan I   father

The intuition is that Zhangsan serves a pragmatic function, specifying the reference of *ta* in *Zhangsan ta baba*, whereas in (116) and (117), the reference of *ni* or *wo* is already present in the context, either the speaker or the listener. Thus, it is odd and redundant to restate *Zhangsan* as the reference of *ni* or *wo*. Then it follows that the phrases *Zhangsan ni baba* and *Zhangsan wo baba* are bad.

It could be said that there is always an operator in SpecDP identifying the referent of D, and it is null when the pronoun is first person or second person.

(118)

DP
∅ᵢ (the.speaker/listener)   D
wo/ni   R   i
'I'/'you' |
identity
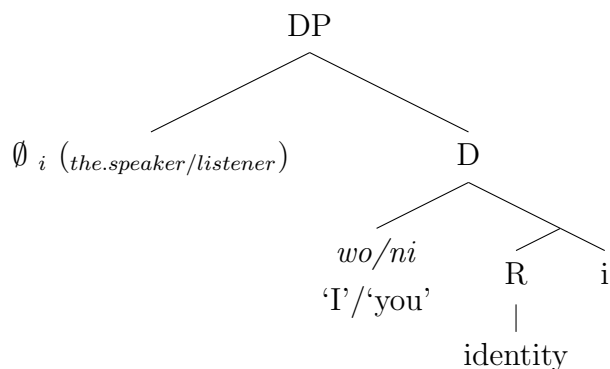
4.5 Two remaining issues

In this section, I would like to discuss two issues that are related to the analysis I proposed for JPs in the above. In section 4.3, I argue that both the pronoun and the kinship noun are heads in JPs, and this leads to the result that proper names, plural pronouns, plural kinship nouns and a few other complex forms are not acceptable in JPs. Instead, these elements can only form *de* possessives. As a matter of fact, apart from the syntactic restrictions, whether two nominals can form a JP or not is also influenced by non-syntactic factors. These factors will be the first topic of this section. Another important issue of the structure I proposed for JPs, as well as the one for *de* possessives in Chapter 2, is that it seems that there are two different nouns with different syntax and semantics for each kinship term. One enters JPs while the other forms *de* possessives, considering that JPs and *de* possessives are configured in completely different fashions. This issue will also be discussed in this section.

4.5.1 Other semantic, pragmatic and phonological factors

The syntactic realisation of the possessive relationship, especially, whether it appears in the juxtaposed form or the *de* form is also influenced by non-syntactic factors such as semantic, pragmatic and phonological reasons.

As mentioned earlier, to express the meaning 'my mother', either the *de* form *wo de mama* or the juxtaposed form *wo mama* is fine.

(119)   a.   Ta   jian guo   wo de mama.
                 (s)he meet GUO I   DE mother
                 '(S)he has met my mother.'

        b.   Ta   jian guo   wo mama.
                 (s)he meet GUO I   mother

'(S)he has met my mother.'

However, this is not always the case. For example, in the following, when the kinship noun is the mono-syllabic word *ma*, the phrase *wo de ma* is very odd phonologically. Conversely, the JP form *wo ma* sounds very natural, as disyllabic phonological sequences are much preferred in MC in general.

(120)   a. ??Ta   jian guo wo de ma.
             (s)he meet GUO I   DE mom

        b.   Ta   jian guo wo ma. (colloquial)
             (s)he meet GUO I   mom
             '(S)he has met my mom.'

Apart from phonological elements, whether the *de* form or the JP form is adopted is effected by semantic and pragmatic factors as well. For example, as argued earlier, plural pronouns in general are not acceptable in JP expressions, however, it seems that cases with 3rd person plural pronouns are much worse than those with the first and second person plural pronouns.

    First person plural pronoun *wo-men* 'we':

(121)   a.   Ni jian guo wo-men de baba ma?
             you meet GUO I-MEN DE father MA
             'Have you met our father?'

        b. ??Ni jian guo wo-men baba ma?
             you meet GUO I-MEN father MA

    Second person plural pronoun *ni-men* 'you':

(122)   a.   Ta jian guo ni-men   de baba ma?
             (s)he meet GUO you-MEN DE father MA
             'Has (s)he met your father?'

        b. ??Ta jian guo ni-men   baba ma?
             you meet GUO you-MEN father MA

    Third person plural pronoun *ta-men* 'they':

(123)   a.   Ni jian guo ta-men   de baba ma?
             you meet GUO (s)he-MEN DE father MA
             'Have you met their father?'

        b.???Ni jian guo ta-men   baba ma?
             you meet GUO (s)he-MEN father MA

Some speakers report *wo-men baba* 'our father' and *ni-men baba* 'your father' is

marginally acceptable, however, *ta-men baba* is bad. It seems that these judgements are contradictory to the claim made previously: *wo-men* and *ni-men* are phrasal and cannot appear in the head position, therefore, they are unacceptable in JPs. Nonetheless, it is possible that for those people who accept (121b) and (122b), *wo-men* or *ta-men* is a single word, unlike *ta-men*, which is a phrase. Thus then *wo-men* and *ni-men* can be in the head position, but *ta-men* cannot. However, I admit that this assumption is very stipulative. More work needs to be done regarding this issue. This difference between 1st person, 2nd person and 3rd person pronouns is also mentioned in Yang (2005).

I suggest this slight difference could also be explained by semantic reasons. In what follows, I will try to explore conjecturally the semantic and pragmatic reasons that might affect the acceptability of (121b), (122b) and (123b).

As mentioned in the last chapter, the semantic function of JP expressions is introducing a new person via its kinship relation with someone who is already known in the context (denoted by the pronoun). Actually, the pronoun acts as the "anchor" or "locator" of the introducing process, and this "anchor" or "locator" needs to have a strong reference, be clear and definite in the context. Singular pronouns *wo* 'I', *ni* 'you' and *ta* 'he/she' are good candidates for this role. By contrast, plural pronouns are worse. When there is more than one person involved, the referential power decreases. For instance, *wo-men*, the group of people anchored by the speaker, is not as clear and definite as the speaker himself/herself alone.

As argued in Chapter 3, plural pronouns such as *wo-men* actually are not plural but rather denoting a "collective" reading. More specifically, pronouns are pluralised in a different fashion from common nouns: by collecting a group of people depending on their relationship with the speaker (the "subject locator"), instead of simply multiplying the reference of the pronoun. The denotation of *wo-men* is a group of people anchored by the speaker. Therefore, it can be seen that the reference of the plural pronoun *wo-men* is not as clear as the singular *wo*. As a result, *wo-men* is not as good as *wo* as the "locator" of the JP expression. Worst of all, unlike *wo-men* 'the group of people anchored by the speaker' and *ni-men* 'the group of people anchored by the listener', the anchor of the 3rd person plural pronoun *ta-men* is either not salient or even not present in the context. Thus the third person plural pronoun *ta-men* is less clear and definite than *wo-men* and *ni-men*: (i) the reference of the anchor *ta* is less clear; (ii) the "collective" process, i.e. including more people makes it even less clear. Consequently, it is least acceptable in JP expressions.

The fact that in the following sentences, *wo-men baba* is slightly better than *ta-men baba* suggests that the above explanation may be along the right lines.

(124)   a. ??Ni renshi ta-men   baba ma?
             you know (s)he-MEN father MA
             'Do you know their father?'

          b. ?Ni   renshi wo-men baba ma?
             you know I-MEN father MA
             'Do you know our father?'

Normally, the speaker and the listener are present in the context, while the reference of the 3rd person pronoun might not be, or even it is present, it is not as prominent as the speaker and the listener. Therefore, the third person *ta-men* is less definite than the first person pronoun.

This exceptional behaviour of 3rd person pronouns is observed in Nez Perce as well. As reported in Deal (2012), unlike 1st and 2nd person singular pronouns, the third person pronoun is excluded from juxtaposed possession (125c).

(125)   a.   1SG 'iin-im   pike   / ne-'iic
               1SG-GEN mother / 1SG-mother

        b.   2SG 'im-im   pike   / 'im-'iic
               2SG-GEN mother / 2SG-mother

        c.   3SG 'ip-nim   pike   / –
               3SG-GEN mother

Even more interestingly, plural pronouns cannot form JPs in Nez Perce, too.

(126)   a.   1PL nuun-im pike   / –
               1PL-GEN mother

        b.   2PL 'imee-m pike   / –
               2PL-GEN mother

        c.   3PL 'imee-m pike   / –
               3PL-GEN mother

These facts from Nez Perce might indicate support for the explanation I provided above. At least, it shows that number and person feature of the pronoun has some influence in the formation of JPs. It seems that for some reasons, plurality and 3rd person are not preferred in forming JPs. The fact that this phenomenon is observed in MC and Nez Perce these two distinct languags suggests that this might be a cross-linguistic phenomenon. I would like to explore this interesting issue in the future.

4.5.2 *baba* in JPs v.s. *baba* in *de* possessives

Following the discussion of JPs in this chapter and that of *de* possessives in Chapter 2, the phrases *ta baba* 'her/his father' (directly referential) and *ta de baba* 'her/his father' have the structure in (127) and (128), respectively:

(127)

```
                    DP
                  /    \
               ∅        \
                   D      KinP
                   |     /    \
                  ta_i  Kin    pro_i
                 '(s)he' |
                        baba
                       'father'
```

(128)

```
                    DP
                  /    \
               ta       PossP
              'he'     /    \
                   ta       Poss'
                          /    \
                        de      NP
                               /\
                              baba
                             'father'
```
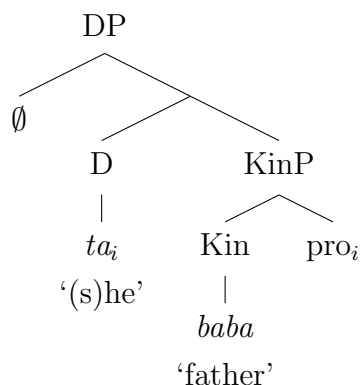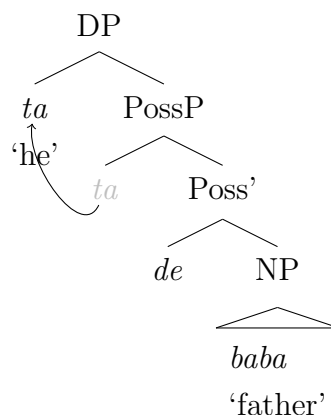
One important question is that is the possessed nominal in both juxtaposed form and *de* form the same lexical item or different? More precisely, is *baba* in (127) the same as the one in (128). In other words, are there two lexical items with the form *baba* in MC; one is verb-like as in (127), and the other one is noun-like as in (128)? If we assume there is only one *baba*, then how do we explain the structural difference we proposed for JPs and *de* possession?

One view is put forward by Vergnaud and Zubuzarreta (1992). They argue that in French the body-part noun *eye* or *hand* actually represents two lexical entries. One is an inalienable noun and requires a possessor argument, and the other one is an alienable noun and does not require a possessor argument. As an illustration, they give the example that the word *gorge* 'throat' in French corresponds to the following two lexical items:

(129)   a.   gorge (x)
         b.   george

According to Vergnaud and Zubuzarreta (1992), the relationship between *george(x)* and *george* is parallel to that between the causative verb *sink* which is transitive and the inchoative verb *sink* which is intransitive. They also mention that body-part nouns are inalienable inherently; and there are also nouns that can be inalienable by extension, for instance, some speakers may treat *computers* or *cars* as inalienable.

What is interesting is that Vergnaud and Zubuzarreta (1992) do not treat kinship terms as inalienable, conversely, they note that they are similar to *computers* or *cars* and can be inalienable by extension. Therefore, if following Vergnaud and Zubuzarreta (1992), it could be said that there are two lexical entries represented by the string *baba* in MC:

(130)   a.   *baba* (x)
         b.   *baba*

The former requires an argument and therefore forms a juxtaposed possessive, while the latter can only form possessive constructions with the help of the possessive marker *de*.

An alternative view is advanced in Adger (2013). Contrary to Barker (1995) and others (see section 4.4.2.1), which argue that relational nouns have an argument position in the lexical entry and need to take an argument, Adger points out the arguments of relational nouns are systematically optional in languages.

> Optionality Generalisation for Relational Expressions (OGRE) Across languages, relational nominals systematically take their apparent arguments optionally, in contrast to verbs, which vary idiosyncratically in whether any particular argument is optional (Adger 2013:53).

For example, even kinship nouns can appear without an argument, as shown by the examples below given in Adger (2013):

(131)   a.   A mother should never smoke.
         b.   The uncle I was telling you about fell down the stairs.

As to the reason why relation nouns without an argument are normally bad, Adger notes that pragmatically speaking, the referents of kinship nouns need to be

identified, either by possessor nominals or by other elements (also see discussion in section 4.4.2.1).

(132)   *The uncle fell down the stairs.

Sentence (132) is bad because the referent of the kinship noun *uncle* cannot be identified. In contrast, in the phrase *the uncle that I was telling you about*, the relative clause works to establish the relevant referent (see Adger 2013 for more details), therefore, sentence (131b) is fine. This proposal is supported by the fact that when its referent is identifiable in a certain context, the kinship noun can appear on its own, as shown below.

(133)   Lola's uncle and her cousin are visiting next week. The uncle smokes like a trooper, so I don't know which bedroom to put him in. Luckily, the cousin is very laid back.

Thus, it can be concluded that the arguments of the so-called relational nouns are optional. On this basis, Adger proposes that the relationality is represented in the syntax rather than encoded in the lexical specification of the noun. Specifically, the relational relationship between nominals is introduced by syntactic categories rather than by the lexical semantics of the nominal.

Take the possessive phrase *the uncle of Lola* as an example. According to Adger (2013), *uncle* is not relational with respect to *Lola*, instead, the relationality is introduced by a light root √KIN(KINSHIP).

(134)
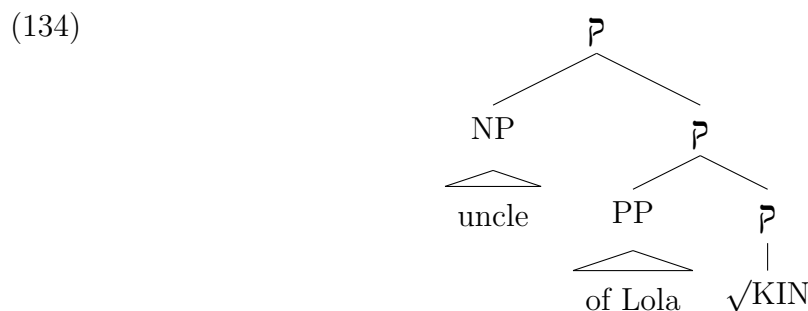
The above structure is built from the Self Merge of the light root √KIN, which is then dubbed as ק. The functional category ק first merges with its argument the PP *of Lola*, which is in the specifier position, then the new constituent combines with the NP containing *uncle*, which also is in the specifier position. It can be seen that in this analysis, *uncle* and *Lola* are not combined directly, instead, they are indirectly connected to each other via the independent functional category or

light root $\sqrt{\text{KIN}}$. Apart from $\sqrt{\text{KIN}}$, Adger (2013) motivates other types of light root, such as $\sqrt{\text{PROPERTY}}$, $\sqrt{\text{PART}}$, $\sqrt{\text{REP}}$(REPRESENTATION), $\sqrt{\text{ROLE}}$.

I propose that there is only one lexical entry for *baba* 'father' in MC. Following Adger (2013), I suggest that it is possible that there is a light root $\sqrt{\text{KIN}}$ projected in JPs, which connects the kinship noun with pro. The conjecture is roughly shown as follows:

(135)
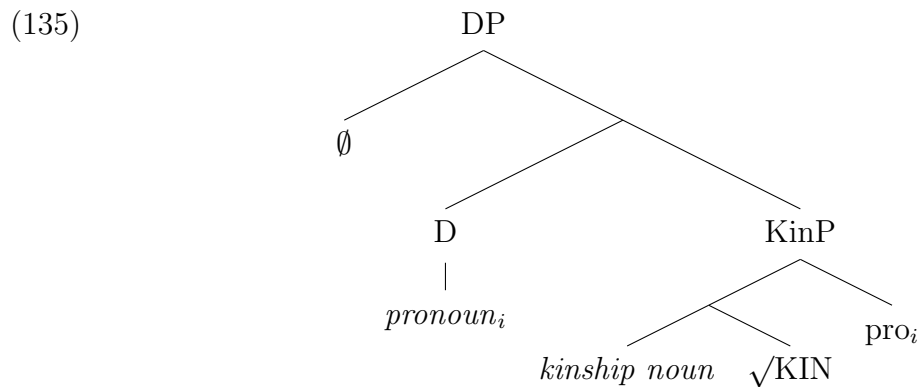
However, in *de* possessives, this light root $\sqrt{\text{KIN}}$ is absent, therefore, the possessive maker *de* is needed to connect the possessor nominal and the possess nominal, forming a *de* possessive construction.

Under the one lexical entry view, there is one lexical entry for *baba* 'father'. Alternatively, it can be said that in the syntax, if *baba* is taken by the n category, it creates the root $\sqrt[n]{baba}$; if it is selected by the relational kinship noun category, it generates the root $\sqrt[relational]{baba}$. The former is like common nouns such as *cat* or *chair*, while the latter requires the presence of a nominal complement.

Then if the root $\sqrt[relational]{baba}$ is combined with a singular personal pronoun such as *ta*, a JP is generated. However, if it is combined with a proper name or a plural pronoun, the process of producing JPs will crash. In a separate case, the string *baba* is selected by the n category, generating the root $\sqrt[n]{baba}$; this root is then selected by the possessive head *de*, forming a possessive phrase with any kind of possessor nominal. These two processes can be represented as below, respectively.

(136)

DP

∅

D
|
singualr presonal pronoun$_i$

KinP

Kin
|
$\sqrt[relational]{kinship\ noun}$

pro$_i$

(137)

DP

possessor nominal

PossP

possessor nominal

Poss'

de

NP
|
$\sqrt[n]{kinship\ noun}$

As discussed above, I take the position that there is only one lexical entry for each kinship noun, and it is the syntax that introduces the relationality which enables the kinship noun to be combined with the personal pronoun directly (without the presence of *de*).

4.6 Chapter summary

To conclude, in this section, I examine the syntactic and semantic features of juxtaposed possessives in MC. Starting with the proposal that kinship nouns have an argument position in the lexical entry and take nominal arguments, I argue that in JPs, the kinship noun is a head, taking a pro as its complement, projecting a KinP projection. The pronoun, which is merged as the D head, takes the KinP as the complement and agrees with the pro in ϕ-features, projecting a DP. In this way, the definite reading of JPs is captured and the kinship noun is identified

by the pronoun. This brings about the referential properties of JPs, specifically, the function of JPs is to introduce/"locate" a new person through her/his kinship relationship with the reference of the pronoun. The pronoun acts as the "locator" of the "locating" process. JPs are directly referential, which contrasts with *de* possessives which are normal referential expressions.

Both the pronoun and the kinship noun are heads, and this bans the plural morpheme *men*, numeral phrases from co-occurring with them. Phrasal elements such as proper names, quantifiers are excluded from JPs also for not agreeing in ϕ features with the pro. However, proper names can appear in JPs when co-occurring with a pronoun, in which case, I argue that the proper name acts as the index of the pronoun. The semantic derivations of these sequences are shown as the following:

(138)

```
                        DP<e>
                       /     \
                   NP<e>      D'<e>
                     |        /    \
               proper name   D     KinP<e,t>
                             |        /    \
                         pronoun_i   Kin    pro_i
                         <<e,t>e>     |      <e>
                                 kinship noun
                                   <e<e,t>>
```
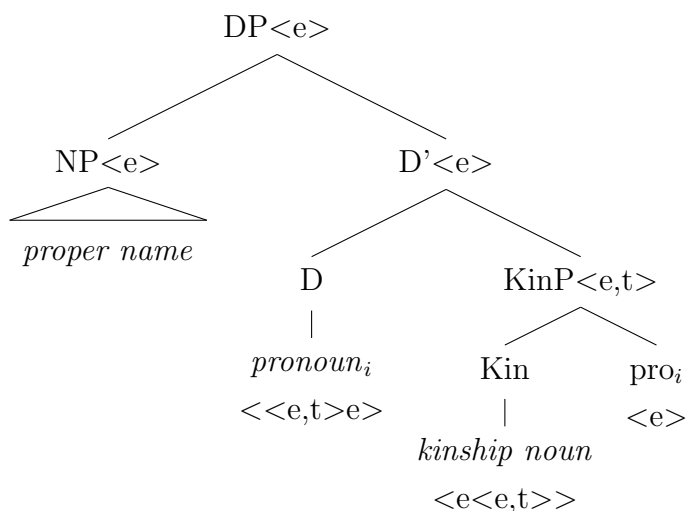
Apart from the syntactic and semantic reasons that determine whether two nominals which potentially bear kinship relationship can form JPs or *de* possessives, some phonological and pragmatic factors also play a role in it. For instance, if the kinship term is mono-syllabic, only JPs are possible, and *de* possessives are bad. Finally, I suggest that there is one lexical entry for each kinship noun and it is the syntax that decides whether the kinship noun is "relational" or not. For instance, the syntax may assign different categories to kinship noun, either n or relational, forming a *de* possessive construction or a JP, respectively. Or the syntax may include a functional category $\sqrt{\text{KIN}}$ in JPs but not in *de* possessives.

Chapter 5

Double Nominal Constructions in MC

5.1 Introduction

The double nominal construction (DNC) in MC ([NP1+NP2+AP/VP]) has drawn broad attention for both its formal and semantic attributes; (i) the two nominals, NP1 and NP2 are juxtaposed, and (ii), NP1 and NP2 are interpreted semantically as broadly possessive.
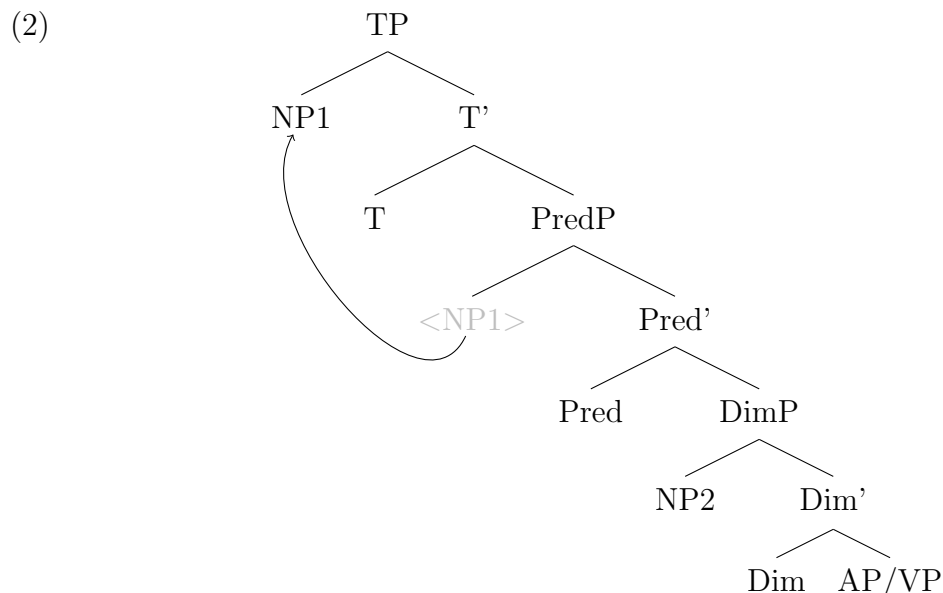
(1)   a.   [Lili]$_{NP1}$ [xingge]$_{NP2}$ [hen wenshun]$_{AP}$.
             Lili   character   very tame
             'The character of Lili is very tame.'

    b.   [Ta]$_{NP1}$ [yanjing]$_{NP2}$ [xia   le]$_{VP}$.
             (s)he   eye   blind LE
             '(S)he went blind.'

In this chapter, I will look at DNCs in which NP2 denotes a property or a body part of NP1.[1] Through examining the properties of each of the constituents in DNCs, I will show that the relationship between NP2 and NP1, AP/VP, respectively, is the key to understanding the syntax and semantics of our targeted constructions.

---

[1]The term "Double Nominal Construction" is first advanced by Teng (1974) and then widely used in the discussion of constructions of the form [NP1+NP2+AP/VP]. Besides this, 'S(ubject)-P(redicate) Predicate' sentence is another phrase frequently used to name this type of construction. The reason I choose the former rather than the latter is that 'S(ubject)-P(redicate) Predicate' sentence indicates one view of the syntactic configuration of [NP1+NP2+AP/VP] sentences, conversely, the article "Double Nominal construction" is neutral and just describes the surface form of my targeted constructions. Since the main purpose of this chapter is to develop an analysis for [NP1+NP2+AP/VP] sentences, the term "Double Nominal Construction" fits the content better.

Specifically, NP2 denotes the dimension of the predication relation represented by AP/VP with respect to NP1. This can be re-expressed as some individual (NP1) is in a state (AP/VP) restricted to its property/part (NP2). On this basis, I propose a syntactic structure where a functional projection Dim(ension)P is projected above AP/VP and NP2 is located at SpecDimP position.

(2)

```
                        TP
                      /    \
                   NP1      T'
                            /  \
                          T     PredP
                               /     \
                           <NP1>     Pred'
                                    /      \
                                 Pred      DimP
                                          /    \
                                       NP2      Dim'
                                               /    \
                                             Dim    AP/VP
```

This dimension analysis captures the various behaviours of DNCs in regard to the position of adverbs, the presence and absence of NP1 and NP2, and the semantic relations involved. Also, it has important implications for the understanding of the BI comparative construction in MC.

The dimension analysis developed for DNCs can be applied to the BI comparative constructions. I will argue that BI comparative constructions such as the one below are actually DNCs.

(3) Zhangsan gezi   bi Lisi (geng) gao.
     Zhangsan height BI Lisi GENG high
     'Zhangsan is taller than Lisi.'

For instance, in (3) above, the nominal *gezi* 'height' performs the same function as *xingge* 'character' and *yanjing* 'eye' do in (1). Specifically, in (3), *gezi* 'height' denotes the scalar dimension along which the comparison is made between *Zhangsan* and *Lisi*.

The only difference between DNCs and the BI comparative construction shown above is the presence of the *bi* phrase (and the morpheme *geng* associated with it) in the latter. In fact, this is related to an important characteristic of Mandarin
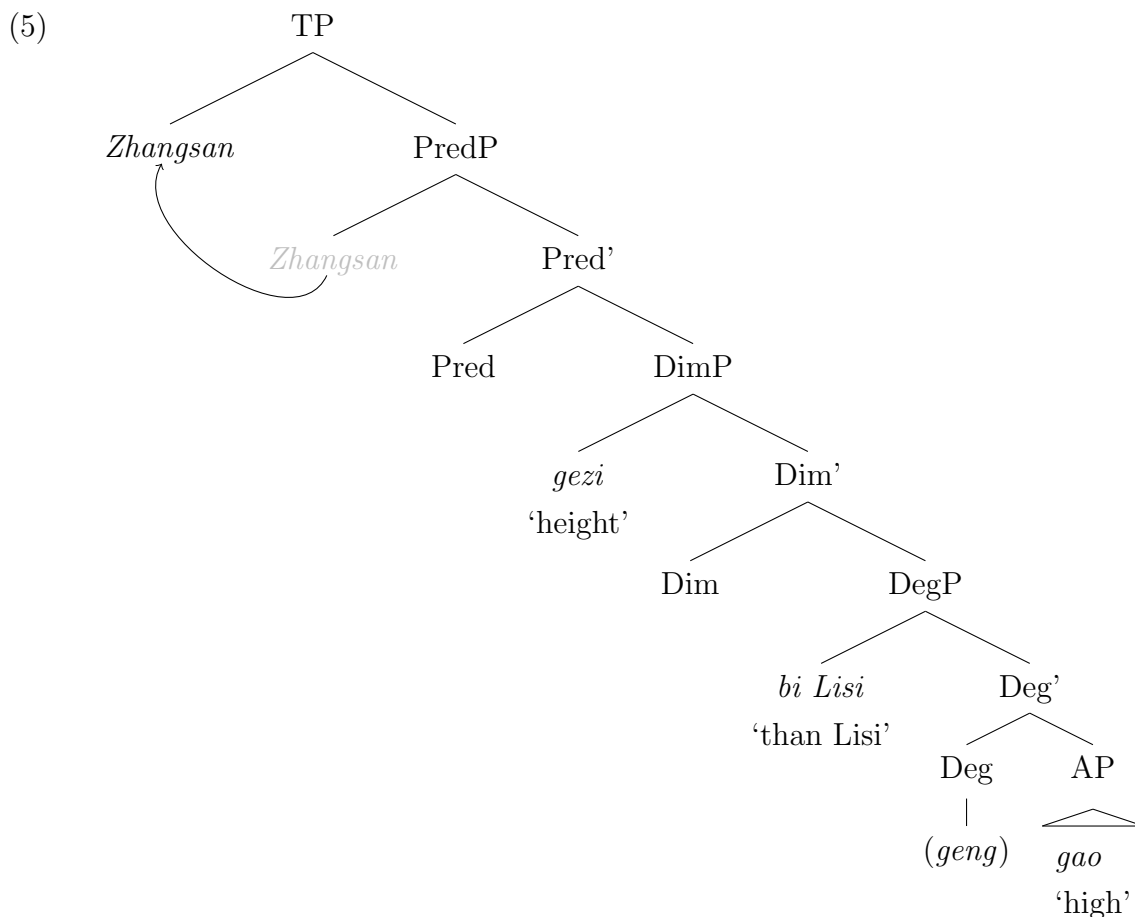
syntax: when functioning as predicates, adjectives must be accompanied by degree morphology such as the *bi* phrase *bi Lisi* in (3), *hen* in (1a) or other elements such as *le* in (1b). Bare adjectives are highly restricted in adjectival predicate sentences such as DNCs.

(4) a. ??Zhangsan (gezi) gao.
         Zhangsan   height tall

     b. Zhangsan (gezi) hen gao.
         Zhangsan height very tall
         'Zhangsan is (very) tall.'

Therefore, a separate issue of adjectival predication in MC will be investigated before we examine the syntax of BI comparative constructions. Following Rooth's (1992) and Ramchand's (1996) discussion on focus interpretation, I propose that the function of these elements is to create a set of alternative propositions, which is needed to satisfy the [+FOC] feature of the Pred head.

Finally, I apply the dimension analysis of DNCs and the $\text{Pred}_{[+FOC]}$ analysis of adjectival predication in MC to the BI comparative constructions (both direct BI constructions and indirect BI constructions, hence DBCs and IBCs, respectively). I argue that DBCs are parallel to normal subject predicate sentences, and IBCs are parallel to DNCs. Just like DNCs, there is a functional projection Dim(ension)P in IBCs. Also, in both DNCs and BI comparatives, there is a Deg(ree)P projected above AP/VP and below DimP. In IBCs, the morpheme *geng* correlated with the *bi* phrase performs the same function as degree morphemes such as *hen*, creating a set of alternatives and checking the [+FOC] feature of the Pred head; the traditionally-known 'point of comparison' (*gezi* 'height' in (3)) is actually the dimension of the predication relation represented by AP with respect to the subject. The structure of IBCs such as (3) is represented as follows:

(5)

```
                      TP
           _____/‾‾‾_____
      Zhangsan              PredP
         ↑             ____/‾‾‾\____
         |       Zhangsan         Pred'
         |                    ___/‾‾\___
         |                 Pred        DimP
         |                         ___/‾‾\___
         |                      gezi        Dim'
         |                    'height'   __/‾‾\__
         |                             Dim      DegP
         |                                   __/‾‾\__
         |                                bi Lisi   Deg'
         |                              'than Lisi' _/‾\_
         |                                        Deg    AP
         |                                         |     /\
         |                                      (geng)  gao
         |                                             'high'
```

It can be seen that the so-called IBCs (indirect BI (comparative) constructions) are just DNCs in disguise.

The main body of this chapter can be divided into three parts: in section 5.2, I examine the DNC, and I will develop a dimension analysis to capture its syntactic and semantic features. Section 5.3 is devoted to investigating the phenomenon that bare adjectives are highly restricted in the predicate position in MC, and a Pred$_{[+FOC]}$ analysis will be proposed to explain why this is the case. Following the above two analyses, in the last part, which is section 5.4, I will discuss the syntax and semantics of the indirect BI comparative constructions briefly, arguing that they are actually DNCs where the degree morpheme *geng* related to the *bi* phrase and the so-called 'point of comparison' perform the roles of creating alternatives and representing the dimension, respectively. I will conclude the whole chapter in section 5.5.

5.2   DNCs

It has been a common view that the following two groups of sentences are normal subject-predicate sentences, which consist of one subject and one predicate (e.g. Chao 1965; Zhu 1982; Huang et al. 2009, among many others)

(6)   Lili hen wenshun.
       Lili very tame
       'Lili is very tame.'

(7)   a.   Lili de xingge   hen wenshun.
            Lili DE character very tamen
            'Lili's character is very tame.'

       b.   Ta   de yanjing xia   le.
            (s)he DE eye   blind LE
            '(S)he went blind.'

Specifically, in (6), *Lili* is the subject and the adverb-adjective sequence *hen wenshun* 'very tame' is the predicate, whereas in (7a), the possessive phrase *Lili de xingge* 'Lili's character' is the subject. The schema can be seen below, respectively:

(8)   S(entence)
                          ╱   ╲
                   DP/subject   PredP
                        │   ╱   ╲
                      Lili   *hen wenshun*
                                    'very tame'

(9)   S
                           ╱   ╲
                    DP/subject   PredP
                   ╱   ╲   ╱   ╲
              Lili de xingge   *hen wenshun*
              'Lili's character'   'very tame'
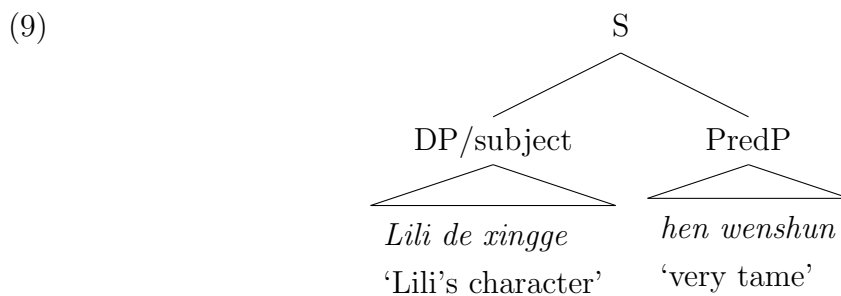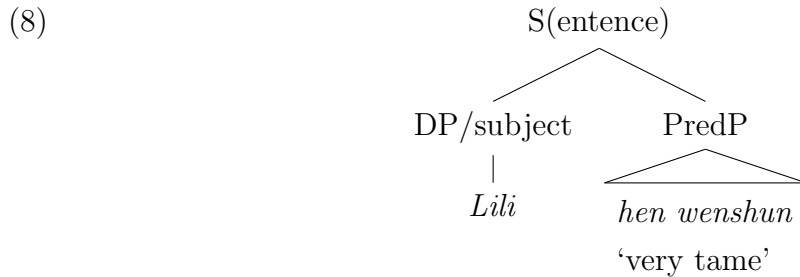
However, when it comes to the following sentences, opinions vary:

(10)   a.   [Lili]$_{NP1}$ [xingge]$_{NP2}$ [hen wenshun]$_{AP}$.
            Lili   character   very tame
            'The character of Lili is very tame.'

b.   [Ta]$_{NP1}$ [yanjing]$_{NP2}$ [xia   le]$_{VP}$.
      (s)he   eye   blind LE
      '(S)he went blind.'

On the one hand, compared with simple subject predicate sentences such as (6), the speciality of constructions such as (10a) is the presence of an 'extra' nominal NP2 before the predicate. On the other hand, compared with (7), the only difference of (10) on the surface is the absence of *de* between the two nominals. The important property of DNCs is the juxtaposition of two nominals NP1 and NP2. Accordingly, the key to understanding DNCs is the nature of the 'extra' nominal NP2. In other words, what is the relationship between NP1, NP2 and the rest of the sentence?

In the following, in section 5.2.1, I will go through previous approaches to the syntax of DNCs. After this, I will examine the limitations of these analyses and specify my targeted DNCs in section 5.2.2. Then in section 5.2.3, the properties of each of the constituents in DNCs will be investigated. On this basis, I will propose a Dim(ension)P in the extended projection of AP/VP analysis. Section 5.2.5 will show the implications of this new analysis. Section 5.5 concludes the section.[2]

5.2.1   Previous analyses

With respect to the issue of the relation between NP1 and NP2 or NP1 and the rest of the sentence, there are three main approaches to the syntax of DNCs: (i) *de*-deletion analysis; (ii) Topic-comment analysis; (iii) Subject-predicate predicate analysis.
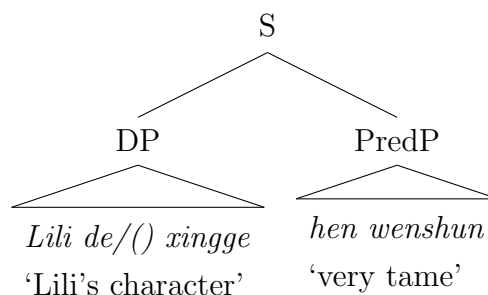
5.2.1.1   *de*-deletion analysis

Some traditional Chinese grammarians (Yuan 1996; Li 1998a, and others) argue that (10a) and (10b) are derived from (7a) and (7b), respectively, by deletion of *de*. In other words, they analyse the two nominals in DNCs as a single constituent, with an invisible *de* between NP1 and NP2. For instance, according to them, sentence (7a) and (10a) share the same structure below:

---

[2]A version of this section was presented at the 16th Seoul international conference on generative grammar. And a version of it appeared in the Proceedings of The 16th Seoul international conference on generative grammar in August 2014 (page 311-330).

(11)

```
                    S
                  /   \
               DP      PredP
             /    \    /    \
      Lili de/() xingge   hen wenshun
      'Lili's character'  'very tame'
```
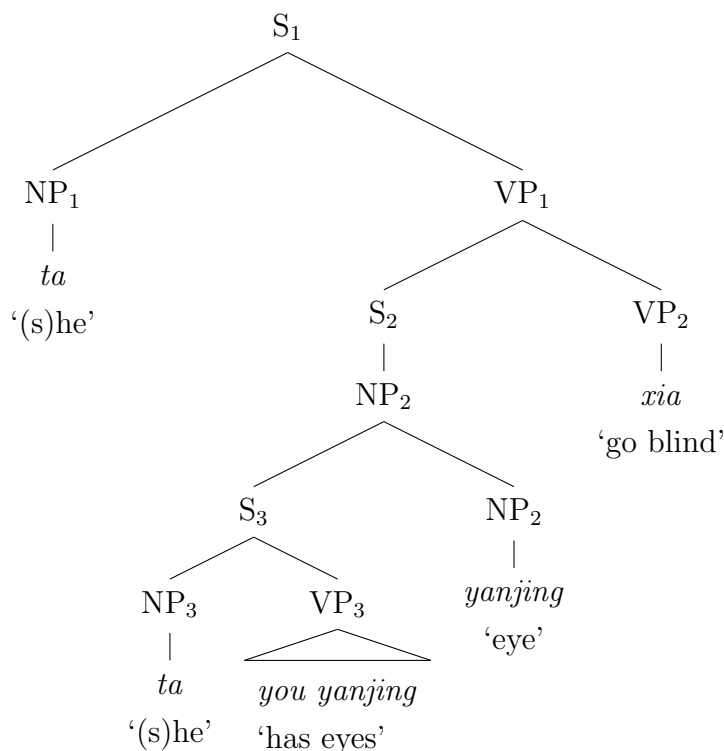
As shown above, *Lisi (de) xingge* 'Lisi's character' is a single unit, and the morpheme *de* can be present or absent. In the following, I will name this line of research as *de* deletion analysis.

5.2.1.2 Topic-comment analysis

In the generative approach, however, the dominant idea is that (10a) and (10b) are topic comment constructions (see Hashimoto 1969; Li and Thompson 1976, 1981; Chafe 1976; Lapolla 1990; Xu 2000; Yao 2007, among others). For instance, Hashimoto (1969) argues that example (10b) has the following underlying structure:

(12)

```
                         S1
                       /    \
                   NP1       VP1
                    |       /    \
                    ta    S2      VP2
                  '(s)he'  |       |
                          NP2     xia
                         /   \   'go blind'
                       S3     NP2
                      /  \     |
                   NP3   VP3  yanjing
                    |    / \  'eye'
                    ta  you yanjing
                  '(s)he' 'has eyes'
```

In the deep structure, the two nominals NP3 *ta* '(s)he' and NP2 *yanjing* 'eye' are in a possessive relation and in the surface, the possessor NP3 is topicalised, which

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is shown as NP1 in the above tree.

Moreover, Li and Thompson (1976, 1981) claim that languages differ in terms of the basic structure of their sentences: subject-predicate or topic-comment. That is, in the former, the notion "subject" plays a key role in building sentences, while in the latter, "topic" is taken to be fundamental in sentence construction. Under this general assumption, they argue that Mandarin is a topic-prominent language and DNCs are topic-comment constructions.

(13)   Nei ke shu yezi   da. (Mandarin)
        that CL tree leaves big
        'That tree (topic), the leaves are big.'

In Li and Thompson (1976), example (13) is treated the same as the *wa*-construction in Japanese and *nun*-construction in Korean, both of which are typical topic-comment constructions, as shown in the glosses below:[3]

(14)   Sakana wa   tai   ga   oisii.   (Japanese)
        fish   top. red snapper subj. delicious
        'Fish (topic), red snapper is delicious.'

(15)   Pihengki - nun 747 - ka   khu - ta.   (Korean)
        airplane - top. 747- subj. big - stative
        'Airplanes (topic), the 747 is big.'

These sentences are called "double subject" sentences in Li and Thompson (1976). Syntactically, however, they are analysed as topic-comment constructions. For instance, in the Mandarin sentence above, *na ke shu* 'that tree' is the topic and the rest *yezi da* 'leaves are big' is the comment part. According to Li and Thompson (1976), there is no selectional relation between the topic and the verb *da* 'big'.

Chafe (1976), Lapolla (1990), Xu (2000) and Yao (2007) also hold this view. Lapolla (1990) claims that there is no grammatical subject (or object) in MC of the syntactic function like that in Indo-European languages. As an illustration, he argues that BI comparatives ([NP1+bi+NP2+(NP3)+AP/VP]) are topic-comment sentences:[4]

(16)   Xiang   bi xiong bizi chang.
        elephant BI bear   nose long
        'Elephants have longer noses than bears.'

---

[3]*wa* is generally regarded as the marker of topic of a sentence in Japanese (Kuno 1973). Similarly, *nun* is a topic marker in Korean (Sohn 1999; Lee 2003).

[4]However, to me, BI comparatives ([NP1+bi+NP2+(NP3)+AP/VP]) are similar to DNCs except that [(NP3)+AP/VP] is modified by a prepositional phrase introduced by *bi*.

According to Lapolla (1990), there can be only one topic in comparative construc-
tions, which the rest of the sentence comments on. In (16), *xiang* 'elephant' is the
topic, and 'bizi' *nose* is part of the comment.

5.2.1.3   Subject-predicate predicate analysis

Contrary to *de*-deletion analysis and Hashimoto's (1969) topic-comment analysis,
many researchers (Ding 1961; Chao 1965; Zhu 1982; Wang 1985; Lü 1986; Li
1986; Wang 1990; Chen 1986; Cui 1992; Shou and Zhu 2002, inter alia) argue
that (10a) and (10b) are S(ubject)-P(redicate) predicate sentences, also known as
double-predicate sentences, namely, the predicate of a sentence is another subject-
predicate sentence and there is no invisible *de*.[5]

The term 'S(ubject)-P(redicate) Predicate Sentence' is first advanced by Ding
(1961). Chao (1965) proposes that there is a class of predicate in Mandarin which
is a full sentence with the form of S-P. That is, S-P sentence [NP2+AP/VP]
functions as the predicate of another subject, NP1, and expresses the state and
properties of NP1. This line of research is followed by a group of Chinese gram-
marians such as Zhu (1982), Wang (1985), Lü (1986), Li (1986), etc. Following the
S-P predicate sentence analysis, the structure of (10a) and (10b) can be illustrated
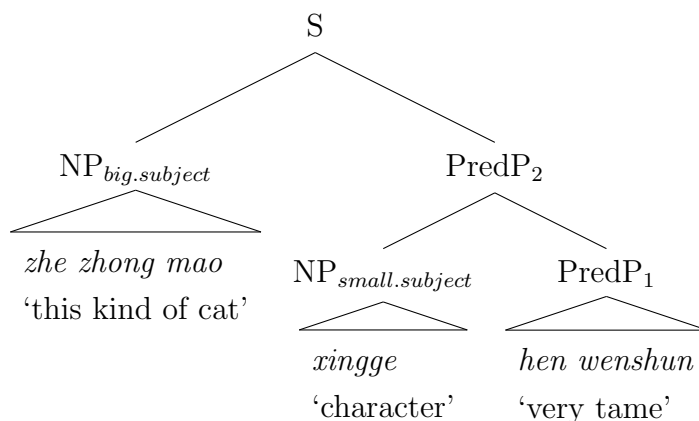below:

(17)   a.   [$_{s2}$Zhe zhong mao [$_{s1}$ xingge   hen wenshun]].
              this   CL   cat   character very tame
              'This type of cat's character is very tame.'

        b.   [$_{s2}$Zhangsan [$_{s1}$yanjing xia   le]].
              Zhangsan   eye   blind LE
              'Zhangsan went blind.'

A tree for sentence (17a) would be as follows:

---

[5]Actually, some people say it is a 'subject-predicate sentence' functioning as the predicate,
while others think it is a 'subject-predicate phrase/construction' functioning as the predicate.
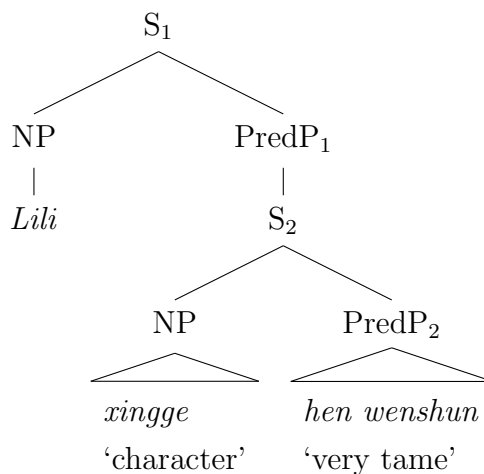However, normally people do not differentiate these two expressions.

(18)

$$S$$

$$\text{NP}_{big.subject} \qquad \text{PredP}_2$$

zhe zhong mao $\text{NP}_{small.subject}$ PredP_1
'this kind of cat'

xingge   *hen wenshun*
'character'   'very tame'

In (18), the demonstrative phrase *Zhe zhong mao* is the "big subject", and the common noun *xingge* is the "small subject". The terminology 'big subject' here refers to the subject of the main predicate (*xingge hen wenshun* in (17a)), while 'small subject' is the subject of the subordinate predicate (*hen wenshun* in (17a)). In (17b), the proper name *Zhangsan* is the big subject and *yanjing* 'eye' is the small subject.
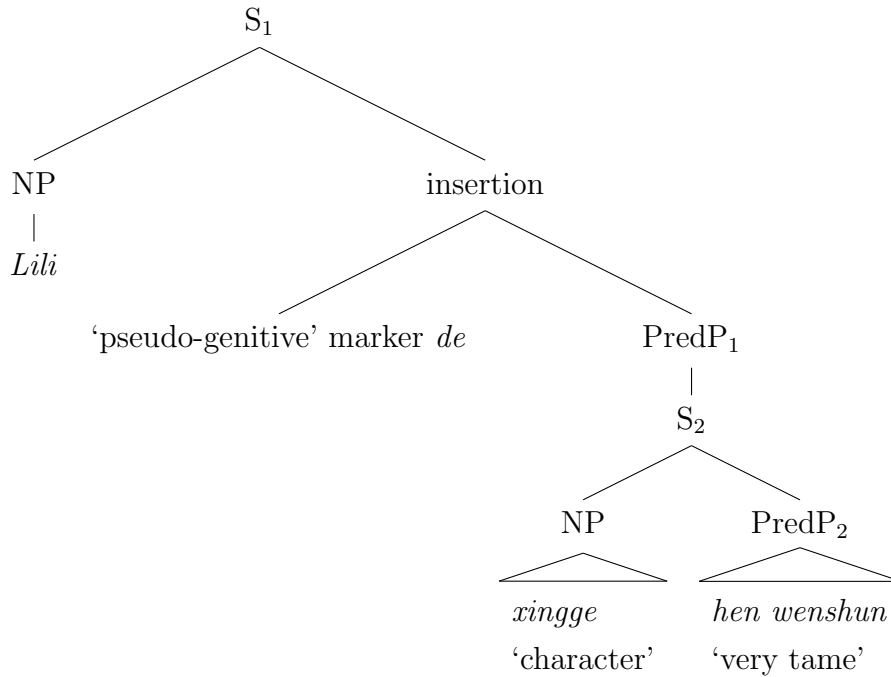
Teng (1974) proposes that (10a) and (10b) are sentences which have a subordinate full sentence functioning as the predicate. Contrary to the *de*-deletion analysis, he argues that (7a) and (7b) are derived from (10a) and (10b), respectively, by introducing the 'pseudo-genitive' marker *de*. For example, the structure of (10a) can be represented as the following:

(19)

$$S_1$$

$$\text{NP} \qquad \text{PredP}_1$$

$$| \qquad\qquad |$$

$$\textit{Lili} \qquad\quad S_2$$

$$\text{NP} \qquad \text{PredP}_2$$

xingge   *hen wenshun*
'character'   'very tame'

Teng argues that this 'pseudo-genitive' marker *de* in (7a) and (7b) is not base-generated, but inserted transformationally at a late stage in the derivation. Sentence (7a) can be derived by inserting *de* into the above structure (19), as shown below:

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(20)

```
                              S₁
                    ┌─────────┴─────────────┐
                   NP                    insertion
                    │              ┌─────────┴──────────┐
                  Lili    'pseudo-genitive' marker de   PredP₁
                                                         │
                                                         S₂
                                                  ┌──────┴──────┐
                                                 NP           PredP₂
                                                 ╱╲            ╱╲
                                              xingge      hen wenshun
                                            'character'    'very tame'
```

Unlike 'genuine possessive' marker *de*, the 'pseudo-genitive' marker *de* can be deleted. This kind of analysis is followed by Tsao (1990) and Shi (2000), etc.

It can be easily seen that S-P predicate analysis and Teng's sentence as predicate analysis are very similar in essence. Even the topic-comment analysis follows the same pattern structurally, despite the different use of terminology. In the following, I will argue that a proposal along those lines, which structurally separate DNCs from the noun phrases in an apparent possessive relation, is correct. Nonetheless, I will suggest an alternative proposal with respect to how the syntax of DNCs connects with their semantics.

5.2.2   Counter-arguments and the targeted construction

In this part, I will argue against the three analyses introduced in the last section. In section 5.2.2.1, I will go through a series of tests to show that NP1 and NP2 in DNCs are independent constituents. This argues against the *de* deletion analysis. Then, in section 5.2.2.2, I argue that NP1 is not a topic but a subject, which presents a challenge to the topic-comment analysis. Arguments against the S-P predicate analysis and Teng's sentence as predicate analysis will be provided in section 5.2.2.3. At the end, I will specify my targeted constructions.

5.2.2.1 NP1 and NP2 are independent constituents

In this section, I present evidence to show that NP1 and NP2 are two separate constituents in (10a) and (10b) and there is no invisible *de* between them. This stands against the *de*-deletion analysis which claims that (10a) and (10b) are derived from (7a) and (7b) by deletion of *de*.

5.2.2.1.1 Diagnostic 1: Adverb insertion

The first test is the adverb insertion test. Teng (1974) tests the constituency structure of DNCs by inserting adverbs such as *you* 'again', *hai* 'still' between NP1 and NP2:

(21) a. Ta   you   tou   teng le.
          (s)he again head ache LE

      b. Ta   tou   you   teng le.
          (s)he head again ache LE
          '(S)he has a headache again.'

(22) a. Ta   hai tou   teng ma?
          (s)he still head ache MA

      b. Ta   tou   hai teng ma?
          (s)he head still ache MA
          'Does (s)he still have a headache?'

As shown above, *you* 'again' and *hai* 'still' can appear either before NP2 or before VP in DNCs. However, in their *de* correspondents, they can only show up after NP2 and before the predicate:

(23) Ta   (*you) de (*you) tou   you   teng le.
      (s)he again DE again   head again ache LE
      '(S)he has a headache again.'

(24) Ta   (*hai) de (*hai) tou   hai teng ma?
      (s)he still DE still   head still ache MA
      'Does (s)he still have a headache?'

The fact that adverbs can be inserted between NP1 and NP2 in DNCs suggests that NP1 and NP2 do not form a constituent. In comparison, in examples (23) and (24), this is impossible, which suggests that [NP1+*de*+NP2] is a constituent.

Following Teng (1974), I will apply the adverb insertion test to diagnose the constituency of DNCs. The fact that adverbs such as *qishi* 'actually' can intervene between NP1 and NP2 suggests that the two nominals are separate constituents:

(25)   a.   Lili qishi   xingge   hen wenshun.
              Lili actually character very tame
              'The character of Lili is actually very tame.'

         b.   Lili xingge   qishi   hen wenshun.
              Lili character actually very tame
              'The character of Lili is actually very tame.'

As shown above, the adverb *qishi* 'actually' can appear either before NP2 or after it. By contrast, in examples (26), *qishi* 'actually' can only show up after NP2:
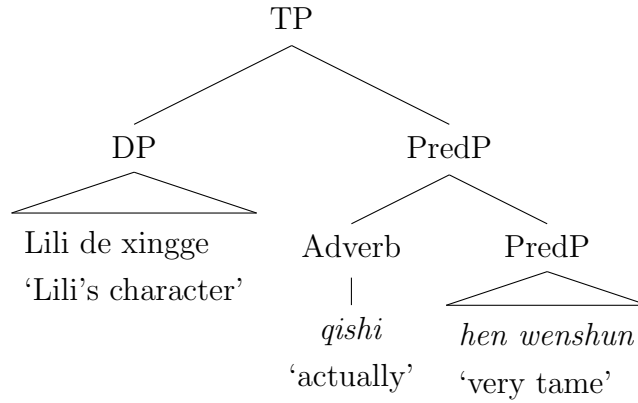
(26)   Lili (*qishi)   de (*qishi)   xingge   qishi   hen wenshun.
          Lili (*actually) DE (*actually) character actually very tame
          'The character of Lili is actually very tame.'

The above contrast suggests that *Lili* and *xingge* 'character' in (25) do not form a constituent as they do in (26). The difference can be illustrated tentatively by tree (27) and (28), respectively:[6]

(27)

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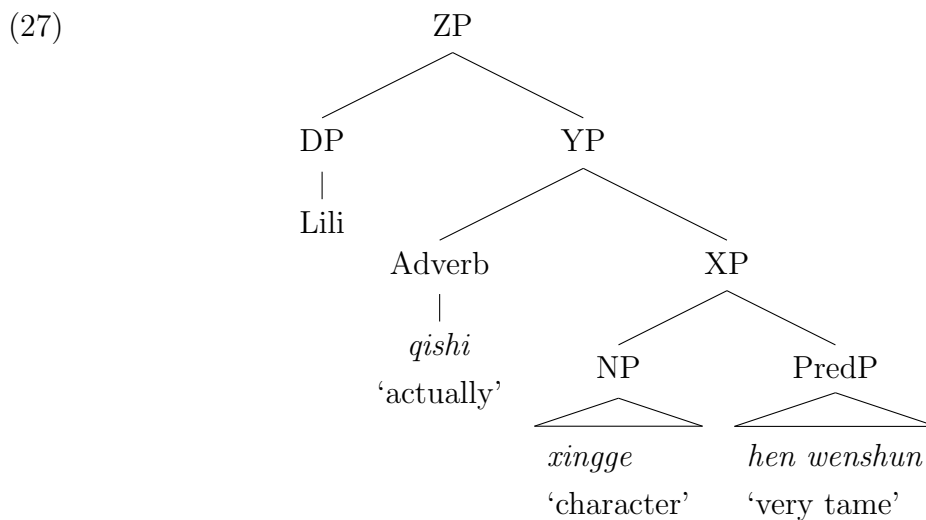
[6]I leave the label as XP, YP and ZP for the moment, returning to its categorical identity below.

(28)

TP
├── DP
│   └── Lili de xingge
│   'Lili's character'
└── PredP
    ├── Adverb
    │   └── qishi
    │   'actually'
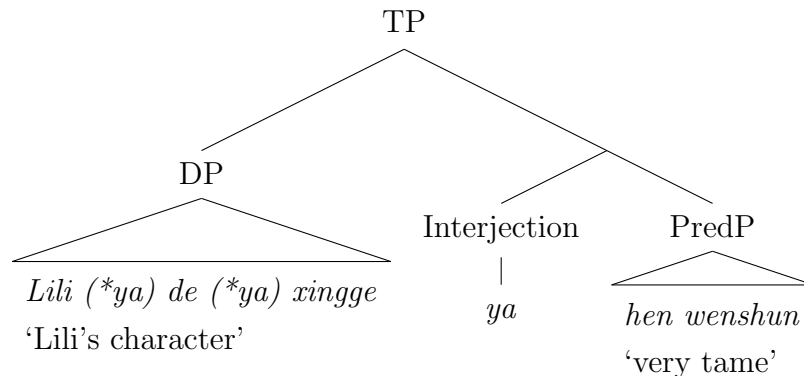   └── PredP
        └── hen wenshun
            'very tame'

5.2.2.1.2 Diagnostic 2: The interjection *ya, a* insertion

Similar constraints hold on the positioning of *ya. ya* is an interjection in Mandarin and is usually followed by a comma intonation. In *de* possessives, *ya* can only appear after NP2 (29a), while in DNCS, it can appear after NP1 (29b), or after NP2 (29c) (although less acceptable).

(29) a. Lili (*ya) de (*ya) xingge   ya, ting   wenshun de.[7]
          Lili YA   DE YA   character YA reasonably tame   DE
          'The character of Lili, um, is reasonably tame.'

      b. Lili ya, xingge   ting   wenshun de.
          Lili YA character reasonably tame   DE
          'The character of Lili, um, is reasonably tame.'

      c. ?Lili xingge   ya, ting   wenshun de.
          Lili   character YA reasonably tame   DE
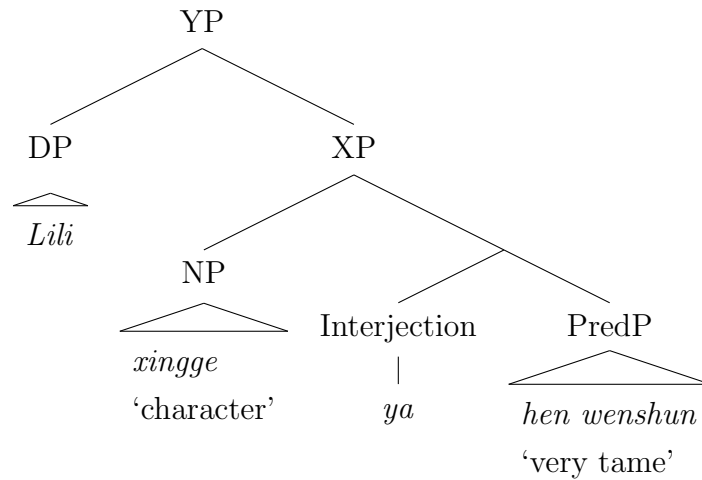   'The character of Lili, um, is reasonably tame.'

The structures of sentences (29a) and (29b) can be roughly shown as follows:

(30)

TP
├── DP
│   └── *Lili (*ya) de (*ya) xingge*
│   'Lili's character'
└──
    ├── Interjection
    │   └── ya
    └── PredP
        └── hen wenshun
            'very tame'

---

[7]The sequence *ting … de* usually modifies adjectives or adverbs in Mandarin, with the form of [*ting*+adjective/adverb+*de*]. Semantically, it is slightly weaker than the adverb *hen*.

(31)

```
                        YP
                ┌───────┴───────┐
               DP               XP
                ╱╲          ┌────┴────┐
              Lili         NP         ┌──┴──┐
                          ╱╲     Interjection   PredP
                       xingge        │          ╱╲
                    'character'       ya    hen wenshun
                                            'very tame'
```

5.2.2.1.3 Diagnostic 3: Coordination

Another piece of evidence for the argument that NP1 and NP2 are separate constituents comes from coordination. In the following sentence, the coordinator *danshi* 'but' joins two nominal plus adjective phrases *gezi youdian ai* 'height somewhat short' and *shencai hen hao* 'figure very good':

(32)　　Ta　gezi　youdian　ai,　danshi shencai hen　hao.
　　　　(S)he height somewhat short but　　figure　very good
　　　　'(S)he is somewhat short but has a good figure.'

Following the assumption that only constituents can be shared in coordination, it can be concluded that *ta* '(s)he' in (32) is a constituent itself. The structure of (32) is roughly represented by the following tree:

(33)

WP

DP ZP

|
ta
'(s)he'

XP YP

suiran
'even though'

XP

danshi
'but'

YP

gezi youdian ai
'height somewhat short'

shencai hen hao
'figure very good'
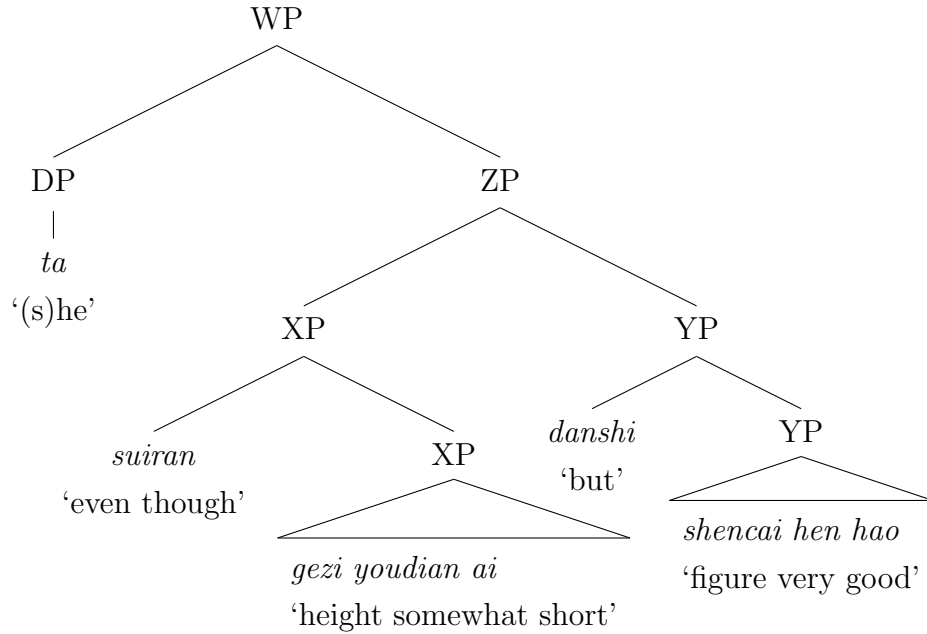
5.2.2.1.4 Diagnosis 4: NP2 can be moved to the sentence initial position

Furthermore, the syntactic operation movement only affects constituents (Adger 2003, et al.), so it can be used to test whether a sequence of words is a constituent or not.

(34) a. Zhangsan shenti   suzhi   ting   hao de, dan xinli
          Zhangsan physical quality reasonably good DE, but psychological
          suzhi   tai   cha le.
          quality very bad LE
          'Zhangsan's physical quality is reasonably good, but her/his psycho-
          logical quality is very bad.'

      b. Shenti   suzhi(,) Zhangsan ting   hao de, dan xinli
          physical quality Zhangsan reasonably good DE, but psychological
          suzhi   tai   cha le.
          quality very bad LE
          'As to physical quality(,) Zhangsan is reasonably good, but (her/his)
          psychological quality is very bad.'

In the above examples, from (a) to (b), NP2 *shenti suzhi* 'physical quality' moves across NP1 to the sentence initial position. After raising, the meaning of the sentence changes slightly. The (b) sentences can be interpreted as a topic-comment sentence: as to physical quality, Zhangsan is reasonably good, but as to psychological quality, he is very bad. However, the fact that NP2 can move to the

front of the sentence argues against the claim that [NP1+NP2] is a constituent.

(35)   [[NP1 NP2] Pred] → NP2 [[NP1 t] Pred]

It would be a violation of the constraint that subjects are islands if NP1 and NP2 together form a subject as shown above. However, since it is possible that NP2 can be fronted, that suggests that the above structure is incorrect.
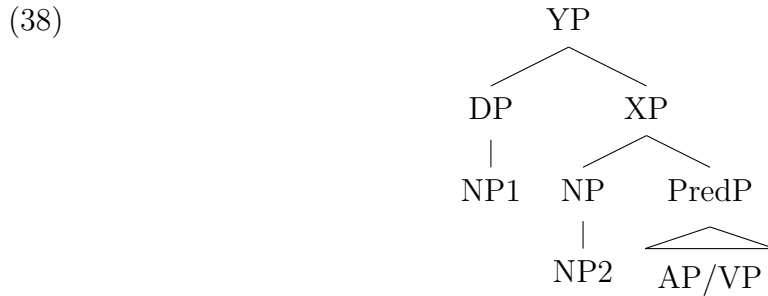
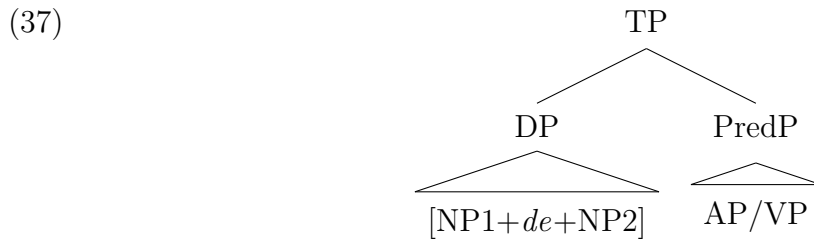### 5.2.2.1.5   Diagnosis 5: Idioms/fixed expressions

Last but not least, one more piece of evidence comes from idioms and fixed expressions. According to Huang et al. (2009), idioms are viewed as single units in the lexicon.

(36)   a.   Ta   erduo ruan.(Chao 1965)
             (S)he ears   soft
             'She/He is credulous.'
        b.   Ta   de erduo ruan.
             (S)he DE ears   soft
             'Her/His ears are soft.'

erduo ruan is an idiom in Mandarin, which means credulous. Since *erduo ruan* has word status itself, it is impossible for *ta* '(s)he' to form a constituent with *erduo* 'ear', therefore, *ta* '(s)he' must be a constituent on itself.

What is more, in (36b), when *de* shows up, the idiomatic meaning disappears, and *ta de erduo* means someone's physical ears. It is unreasonable to say (36a) is derived from (36b) by deletion of *de* since they have completely different meanings. This provides strong evidence for my proposal that there is no derivational relationship between DNCs and the corresponding *de* forms.

To conclude, the above diagnostics provide strong and diverse evidence for my assumption that NP1 and NP2 in DNCs are separate constituents. This argues against the *de*-deletion analysis, that is to say, there is no derivational relationship between DNCs and the corresponding *de* forms. Instead, they are independent expressions with different syntactic structures, semantic interpretations and pragmatic functions. The conjecture is illustrated below.

(37)

```
                        TP
                 _____/_____
                DP            PredP
          _____/\_____        _/\_
         [NP1+de+NP2]        AP/VP
```

(38)

```
                        YP
                  _____/\_____
                 DP          XP
                 |       ___/\___
                NP1     NP      PredP
                        |       _/\_
                       NP2     AP/VP
```

As argued in Chapter 2, the phrase [NP1+*de*+NP2] is a possessive expression with *de* as the possessive head. However, in (38), even though NP1 and NP2 are interpreted as possessive semantically, they act independently in the syntax. The interesting question is: what is the speciality of the structure of DNCs which makes this possible? This is the question I am going to explore below.

5.2.2.2   NP1 is not a topic but behaves like a subject

Contrary to the topic-comment analysis, in this section, I will illustrate that NP1 shows characteristics of a subject rather than a topic.

5.2.2.2.1   Argument 1: NP1 can be occupied by non-referential expressions

The first piece of evidence comes from the fact that non-referential expressions e.g. *wh*-words and universal quantifiers, can appear in NP1 position:

(39)   Meigeren xingge   dou   hen wenshun.
        everyone character DOU   very tame
        'Everyone's character is all very tame.'

(40)   Shui tou   hen teng?
        who head very ache
        'Who has a headache?'

Besides, DNCs can appear with the *you* construction which is an existential construction in MC:

(41)   You ren   tou teng ma?
        YOU person head ache MA?
        'Is there someone who has a headache?'

Generally speaking, topics are referential expressions. The fact that NP1 can be occupied by non-referential expressions suggests that NP1 is not a topic position.

Specifically, Chafe (1976) points out that one of the important properties of topics is that they must be definite. Following Chafe, Li and Thompson (1976) propose that just like definite common noun phrases, proper and generic NPs are also definite expressions. More recently, Linda (2008) notes that topics must be definite or generic. Huang et al. (2009) also state that topics in Chinese cannot be indefinite expressions because no lexical item is available to govern a topic (a topic should be definite unless used contrastively). More precisely, Huang et al. (2009) mention that the object appearing in OSV and SOV constructions (also termed as the external topic and the internal topic in Paul 2002 or topic and focus in Shyu 2001), normally cannot be an indefinite non-specific expressions. The examples they give are as follows:

(42)   a. Wo zai zhao yi   ben xiaoshuo.
            I   at seek one CL novel
            'I am looking for a novel.'

        b. *Wo yi   ben xiaoshuo zai zhao.
            I   one CL novel   at seek

        c. *Yi ben xiaoshuo, wo zai zhao.
            one CL novel   I   at seek

The individual-denoting phrase *yi ben xiaoshuo* 'one novel' (recall discussion in Chapter 2, it is a DP with an empty DP layer) is an indefinite expression. As shown in (42), it is perfectly acceptable in the object position in (42a), but it is not allowed in (42b) and (42c) where it is topicalised. This supports Huang et al.'s claim that indefinite non-specific expressions cannot act as topics.

Summing up, it can be seen that non-referential expressions cannot act as topics. However, the fact that NP1 in DNCs can be filled by non-referential phrases e.g. *wh*-words, universal quantifiers and even existential constructions suggests that NP1 is not a topic.

It needs to be pointed out that, as a matter of fact, the indefinite phrase *yi ben xiaoshuo* can not appear in the subject position, either.

(43)   *Yi ben xiaoshuo hen youyisi.
         one CL novel   very interesting

Intended: 'A novel is very interesting.'

This is because the empty D in the DP phrase *yi ben xiaoshuo* is not lexically governed in the sentence-initial position (see discussion in Chapter 2 and Chapter 3). Furthermore, it is worth noting the following sentence is bad not because the phrase *yi zhi mao* is indefinite, but because it is unbound in the sentence-initial position.

(44) *Yi zhi mao xingge   hen wenshun.
       one CL cat character very tame
       Intended: 'The character of one cat is very tame.'

5.2.2.2.2   Argument 2: [NP2+AP/VP] cannot stand alone

The second piece of evidence comes from the fact that NP1 in DNCs is not deletable as the sequence [NP2+AP/VP] cannot stand alone, which presents a problem for the topic analysis. According to Yao (2007), without the presence of NP1, the following sentences are incomplete and ambiguous:

(45) ??[xingge]$_{NP2}$ [hen wenshun]$_{AP}$.
       character   very tame

(46) ??[tou]$_{NP2}$ [hen teng]$_{VP}$?
       head   very ache

Yao (2007) argues that NP2 denotes an entity that cannot exist on its own, specifically, the meaning of 'character' and 'head', etc. can only be semantically completed by something which can have a 'character' or 'head', which should be a person in this case. However, topics are generally considered to be deletable as syntactically, they are considered to be adjoined above CP (Rizzi 1997; Cinque 1990, among others) and pragmatically, they are available in the context. This contradicts the fact that NP1 cannot be deleted in DNCs. Therefore, the obligatoriness of NP1 suggests that the position of the first nominal in DNCs is not a topic position.

However, some may argue that if there is a pro projected before NP2 which needs to be bound, NP1 cannot be deleted, either, as shown below:

(47)   Zhangsan$_i$ [pro$_i$ xingge] hen wenshun.

The fact that *xingge* 'character' can be moved to a position before NP1 *Zhangsan*, as shown in example (48b), suggests that there could not be a pro in it.

(48)   a.   Zhangsan xingge   hen wenshun.
               Zhangsan character very tame
               'Zhangsan is very tame.'

       b.   Xingge,   Zhangsan hen wenshun.
               character, Zhangsan very tame
               'In terms of character, Zhangsan is very tame.'

Otherwise, the pro accompanying *xingge* will be unbound in the sentence-initial position. Another piece of argument comes from the fact that the resumptive pronoun *ta*, which is considered as the lexical realisation of pro, cannot show up with NP2:

(49)   a. *Lili xingge   ta hen wenshun.
             Lili character she very tame

       b.   Lili ta xingge   hen wenshun.
             Lili she character very tame
             'The character of Lili is very tame.'

As I will show later in section 5.2.4.2, *ta* is in constituency with *Lili* in (49b). Thus, it can be seen that there is no pro in the argument position of NP2 (more detailed discussion of this argument will be shown in section 5.2.4.2). Therefore, this argument that NP1 is not a topic because [NP2+AP/VP] cannot stand alone still holds.

5.2.2.2.3 Argument 3: Coordination

Moreover, the example below where a [NP2+AP/VP] phrase is conjoined with a verb-object phrase indicates that NP1 is a subject rather than a topic:

(50)   Ta [xingge   hen wenshun] erqie [hen xihuan haizi].
       she personality very wenshun and very like   kid
       'Her personality is very tame and she likes kids very much.'

In the above sentence, two phrases *xingge hen wenshun* 'character very tame' and *xihuan haizi* 'like kids' are conjoined by the coordinator *erqie* 'and'. Straightforwardly, *ta* 'she' is the subject of the second phrase *xihuan haizi* 'like kids', accordingly, it cannot be the topic of the first one, i.e. the [NP2+AP] phrase, *xingge hen wenshun* 'character very tame'. This is because, within a single sentence, a constituent cannot be the grammatical subject of a predicate and the topic of another sentence at the same time.[8]

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[8]It is possible that there is a *pro* before each phrase, and *ta* 'he' is the topic and co-refers with the *pro*. Nonetheless, it still needs to answer the question of what the relationship between

In addition, Zhang (2009) shows that NP1 is not a focus, either. This is supported by the fact that NP1 can be a pronoun, as shown in various examples above. Also, she points out that in certain contexts, a *pro* may appear in the sentence-initial position (51b), which suggests that NP1 does not hold the focus function.

(51)   a.   Question: Lulu xianzai zenmeyang?
                 Lulu now   how
            'How is Lulu now?'

          b.   Answer: *pro* duzi   teng.
                 pro stomach ache
            'She has stomach ache.'

It needs to be pointed out that the pro in (51b) occupies the position of NP1 and it should not be confused with the one mentioned in section 5.2.2.2.2 which is conjectured to be in constituency with NP2. In sum, the arguments above suggest that NP1 in DNCs cannot be a topic, instead, it behaves like a subject.

5.2.2.3   NP2 is not a "small subject"

The proposal that DNCs are S-P predicate sentences, where a S-P sentence [NP2+ AP/VP] functions as the predicate of another subject NP1, also faces several challenges.

5.2.2.3.1   [NP2+AP/VP] cannot stand alone

In the first place, the assumption that [NP2+AP/VP] is itself a subject-predicate phrase/sentence is untenable, as the second nominal NP2 which is a property-denoting noun or body part cannot function as a subject as other nominals do:

(52)   Lili hen wenshun.
        Lili very tame
        'Lili is very tame.'

(53)   a. ??Xingge   hen wenshun.
            character very tame

          b.   Xingge   hen zhongyao.
              character very important
             'Character is very important.'

---

pro and NP2 *xingge* 'character' is.

Unlike *Lili*, the property-denoting noun *xingge* 'xingge' cannot act as the subject alone when the predicate is the adjective *wenshun* 'tame'. In fact, the adjectives that can appear as the predicate of *xingge* are very limited, *zhongyao* 'important' is one of them. However, *zhongyao* is generally regarded as a psychology adjective, which is different from normal adjectives: it represents the thoughts of the speaker rather than the properties of the subject itself. Sentence (53b) is making a generalisation and *xingge* 'character' in it has a generic interpretation. Therefore, it can be seen that property-denoting nouns and also body part nouns cannot function as the subject as other nominals do. As a consequence, the assumption that the sequence [NP2+AP/VP] in DNCs is a subject-predicate sentence/construction is untenable.

5.2.2.3.2 The relationship between the major subject (NP1) and the S-P predicate ([NP2+AP/VP]) is unclear

Moreover, the relationship between NP1 and [NP2+AP/VP] is unclear under the S-P predicate analysis. As has been pointed out by Li and Thompson (1976), treating [NP2+AP/VP] as a subject-predicate sentence will leave NP1 grammatically "stranded", i.e. it cannot be the subject of another full sentence. In Li and Thompson's view, analyzing NP1 as a topic can solve this problem perfectly. However, as shown in section 5.2.1.2, NP1 is not a topic. Therefore, the question of what the relation between NP1 and the rest of the sentence is remains unanswered.

Additionally, following Huang (1989), which assumes that modal verbs are raising verbs and that nominals preceding raising verbs necessarily surface at a subject position, Zhang (2009) proposes that NP2 (also named as $NP_{relational}$ in Zhang (2009)) is a subject. As shown below, NP2 can appear to the left of the modal verb *yinggai* 'should':

(54)   Lulu erduo yinggai bu-cuo.
       Lulu ear   should not-bad
       'Lulu's ears should not be bad.'

Nonetheless, the fact that NP2 shows up before modal verbs does not necessarily mean that it is a subject. For instance, NP2 ($NP_{relational}$) could be just located at the specifier position of a functional projection which is optional (I will discuss the possibility in section 5.2.4), and it is NP1 that occupies the subject position preceding modal verbs.

Another piece of Zhang's argument is that $NP_{relational}$ can be followed by a

bei-phrase, the nominals to the left of which are argued to be a raised subject (Hsu and Ting 2006). One of the examples given by Zhang is as follows:

(55)   Lulu erduo bei renwei   bu-cuo.
          Lulu ear   BEI consider not-bad
          'Lulu's ears are considered not bad.'

However, while Zhang treats the above sentence as grammatical, all of my consultants and I judge it as unacceptable. Therefore, due to the lack of evidence in its favour, Zhang's proposal that NP2 is a subject is not convincing.

Therefore, it can be seen that the S-P predicate analysis is problematic and the second nominal NP2 in DNCs is not a subject. As I will discuss more later, NP2 is normally non-referential, which further backs up the suggestion that it is not a subject.

In conclusion, in the above discussion, I argue that first in DNCs, NP1 and NP2 are independent constituents; secondly, NP1 is not a topic but rather shows characteristics of a subject; thirdly, [NP2+PredP] could not be a subject-predicate construction/sentence that functions as the predicate of NP1. In the following, I will propose an analysis which treats the two nominals NP1 and NP2 as independent constituents and also captures the fact that NP1 is a subject but NP2 is not. Before I turn to propose the new analysis, I would like to define my targeted constructions.

5.2.2.4   The targeted construction

One common problem of previous analyses is that they treat almost all the constructions with the form [NP1+NP2+AP/VP] the same. As mentioned in Zhang (2009), sentences such as (56) below are wrongly grouped with [DP $NP_{relational}$ XP] constructions in which the two nominals bear a relational relationship.[9]

(56)   Taiwan, xiatian hen re.
          Taiwan summer very hot
          'In Taiwan, summer is very hot.'

According to Zhang, this is a real topic-comment construction with *Taiwan* being the topic of the whole sentence *xiatian hen re* 'summer is very hot', which is perfectly fine to stand on its own. NP2 *xiatian* 'summer' is not a property or a part of *Taiwan*.

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[9]Here, DP and $NP_{relational}$ correspond to NP1 and NP2, respectively and XP corresponds to AP/VP in DNCs.

Since constructions with the surface form [NP1+NP2+AP/VP] are not necessarily the same type of construction, in the discussion in this chapter, I will first exclude real topic-comment constructions (56) and (57) and constructions in which NP2 includes location clitics (58). In those sentences, the two nominals normally do not bear possessive relationship.

(57)   Ta-men,   shei dou bu lai.
           (s)he-MEN who DOU not come
           'None of them is coming.'

(58)   Ta   shou-li   mei shenme qian.
           (s)he hand-inside NEG much   money
           '(S)he does not have much money.'

Secondly, possession is a broad notion and I will separate sentences in which NP1 and NP2 bear an ownership relation from those in which NP2 represents the property or a part of NP1. As illustrated by the examples below, they behave differently with respect to adverb insertion:

(59)   a. Lili qishi   xingge   hen wenshun.
              Lili actually character very tame
              'The character of Lili is actually very tame.'
        b. Lili xingge   qishi   hen wenshun.
              Lili character actually very tame
              'The character of Lili is actually very tame.'

In the above example, the second nominal *xingge* 'character' denotes the property of the first nominal *Lili*. As can be seen, the adverb *qishi* can appear between the two nominals (and also after *xingge* 'character'), which suggests *Lili* and *xingge* do not form a constituent. However, this is not the case in the following two groups of examples where NP2 represents an entity-denoting noun:

(60)   a. ??Zhangsan yifu   hen gui.
           Zhangsan clothes very expensive
           'Zhangsan's clothes are very expensive.'
        b. *Zhangsan qishi   yifu   hen gui.
              Zhangsan actually clothes very expensive
        c. *Zhangsan yifu   qishi   hen gui.
              Zhangsan clothes actually very expensive
              Intended: 'Zhangsan's clothes are actually very expensive.'

Actually, 5 of my 7 consultants think all three sentences in (60) are bad and there should be *de* between NP1 and NP2 in (60a) and (60c), as shown in (62). 2 think (60a) and (60c) are not perfectly fine but acceptable, but (60b) is bad. As shown in (60b) and (60c), the adverb *qishi* cannot appear between *Zhangsan* and *yifu* 'clothes' or after *yifu*. In sentence (61) below, the adverb *you* 'again' can appear after the entity-denoting noun *shouji* 'mobile' but not between it and *Zhangsan*.

(61)   a.   Zhangsan shouji you   diu le.
                Zhangsan mobile again lost LE
                'Zhangsan's mobile is lost again.'

        b. ??Zhangsan you   shouji diu le.
               Zhangsan again mobile lost LE

This suggests that *Zhangsan* may form a constituent with the entity-denoting noun *yifu* 'clothes' (for those who think (60a) is acceptable) and *shouji* 'mobile' in (60a) and (61), respectively.

The contrast between (59) on the one hand and (60) and (61) on the other hand suggests that the two sets of sentences are different syntactically. Moreover, for the intended meaning in (60), it is more natural to have *de* between NP1 and NP2, while for the intended meaning in (59), the *de* form is less common than the *de*-less form. In other words, (62) is preferred to (60c) (with or without 'actually'), whereas (63a) is less preferred than (63b).

(62)   Zhangsan de yifu   (*qishi*)   hen gui.
        Zhangsan DE clothes (actually) very expensive
        'Zhangsan's clothes are (actually) very expensive.'

(63)   a.   Lili de xingge   hen wenshun.
                Lili DE character very tamen
                'Lili's character is very tame.'

        b.   Lili xingge   hen wenshun.
                Lili character very tamen
                'Lili is very tame in character.'

For the reasons above, I will not examine constructions in which NP2 is an entity-denoting noun in this chapter.

Lastly, within relational relationship, kinship terms behave differently from property-denoting nouns and body parts with regard to DNCs. Again, this is shown by the fact that adverbs such as *qishi* 'actually' cannot be inserted between NP1 and a kinship term:

(64) a. *Ta   qishi   mama hen nianqing.
        (s)he actually mother very young

      b. Ta   mama qishi   hen nianqing.
        (s)he mother actually very young
        'Her/His mother is actually very young.'

As argued in Chapter 4, *ta mama* in (64) is a constituent, which is contrary to (63b) where the sequence *Lili xingge* actually represents two constituents *Lili* and *xingge*. This is further supported by the fact that the sequence *ta mama* can appear in the object position, but the sequence *Lili xingge* cannot (also discussed in Chapter 2 and Chapter 4):

(65) a. Wo hen xihuan ta   mama.
        I   very like   (s)he mother
        'I like her/his mother very much.'

      b. *Wo hen xihuan ta   xingge.
        I   very like   (s)he character

Therefore, it can be concluded that under the same form [NP1+NP2+AP/VP], cases where NP2 is a kinship noun are different from those where it is a property-denoting noun or a body part. As in Chapter 4, I already argued that the juxtaposed possessive construction is a single constituent and has distinct semantics, I will concentrate on DNCs where the NP2 is a property-denoting noun or a body part in this chapter.

What needs to be mentioned here is that it is true that (60) and (64) show similar behaviour with respect to adverb insertion, that is, no adverbs can be inserted between NP1 and NP2. Nonetheless, they are different syntactically, as can be seen from their different behaviours in the object position below:

(66) a. Wo hen xihuan ta   mama.
        I   very like   (s)he mother
        'I like her/his mother very much.'

      b. *Wo hen xihuan ta   yifu.
        I   very like   (s)he clothes

      c. Wo hen xihuan ta   de yifu.
        I   very like   (s)he DE clothes
        'I like her/his clothes very much.'

As pointed out in Chapter 2 and 4, *ta mama* is a JP phrase, while *ta yifu* is not a constituent and it can only form a possessive phrase with the help of the possessive marker *de*, as shown in (66c).

In brief, I will investigate DNCs in which NP2 is a property-denoting noun such as *xingge* 'character' or a body part such as *yanjing* 'eye' in this chapter. Those constructions in which NP2 is other types of noun are not examined here.

5.2.3 The properties of each constituent in DNCs

As shown in section 5.2.1.1, there are three constituents in DNCs: NP1, NP2 and AP/VP. In the next, I am going to examine the properties of each of these constituents.

5.2.3.1 The properties of NP1

Generally speaking, NP1s in DNCs are usually referential expressions and a majority of them are definite expressions such as a pronoun or a proper name.

(67) Sugelan-zheermao xingge   hen wenshun.
      Scottish Fold[10]   character very tame
      'The Scottish Fold is very tame.'

It can also be a complex phrase such as a [demonstrative+classifier+common noun] sequence:

(68) Zhe zhong mao xingge   hen wenshun.
      this kind   cat character very tame
      'The character of this kind of cat is actually very tame.'

or a possessive expression such as *ta de mao* 'her/his cat':

(69) Ta   de mao xingge   hen wenshun.
      (s)he DE cat   character very tame
      'Her/His cat's character is very tame.'

or a juxtaposed possessive phrase *ta baba* 'her/his father':

(70) Ta   baba nianji hen da.
      (s)he father age   very big
      'Her/his father is very old.'

or even a relative clause such as *jingchang yundong de ren*:

(71) Jingchang yundong de ren   shenti yiban dou hen jiankang.
      often   exercise DE person body usually DOU very healthy

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[10]Scottish Fold is a kind of cat which has folded ears.

'People who exercise regularly usually are very healthy.

When making a generalisation, generic expressions are also acceptable in this sentence-initial position:

(72)   Mao xingge   hen wenshun.
        cat   character very tame
        'Cats are very tame.'

According to Li and Thompson (1976), generic NPs are also definite expressions, because the referent of a generic NP is 'the class of items named by the noun phrase', which must be known by the speaker and listener. Cheng and Sybesma (1999) argue that generic/kind-referring bare nouns in Mandarin should be treated as definites and proper names. Dobrovie-Sorin and Mari (2006) argue that English bare plurals are not indefinite expressions, instead, they denote names of kinds. This is because English bare plurals can only denote maximal sums. According to Manfred Krifka (1995), just like normal entities, sums are also individuals, the difference is that they are derived individuals made up of other individuals. Therefore, bare plurals in English represent names of kinds and are definite expressions. In sentence (72), *mao* 'cat' actually denotes the sum of all individual cats, that is, *mao* represents the name of the kind of animal 'cats'. Therefore, it is actually a name/kind-denoting definite.

In addition, as mentioned in section 5.2.1.2, in some cases, NP1 can be indefinite or non-referential expressions, such as universal quantifiers (73), *wh*-words (74) or existential quantifiers (75).

(73)   Meigeren xingge   dou hen wenshun.
        everyone character DOU very tame
        'Everyone's character is all very tame.'

(74)   Shui tou   hen teng?
        who head very ache
        'Who has a headache?'

(75)   You ren   tou teng ma?
        YOU person head ache MA?
        'Is there someone who has a headache?'

As for semantic properties, NP1 in DNCs is an entity-denoting noun, literally, nouns that refer to persons or concrete objects. Property-denoting nouns, that is, nouns which denote abstract concepts or properties are impossible in NP1 position. I will discuss the reason why this is the case in section 5.2.5.

5.2.3.2 The properties of the predicate

The predicate in DNCs can consist of either an adjectival phrase or a verbal phrase, as illustrated by the two sentences below:[11]

(76)   Zhe jian yifu   jiaqian bu   gui.
          this CL   clothes price   NEG expensive
          'The price of these clothes is not expensive.'

(77)   Ta   duzi   e   le.
          (S)he stomach hungry LE
          '(S)he is hungry.'

The adjectival predicates and the verbal ones share a commonality: they both denote a state or a change of state of the subject. Teng (1974) mentions that verbs that appear in DNCs are generally stative intransitives including state and process verbs.

(78)   Wo tou   teng de   lihai.[12]
          I   head ache DE serious
          'I have a (serious) headache.'

In the above, the verb *teng* 'ache' indicates the on-going status of the subject, while in the following, the phrase *xia le* 'go blind' denotes a change of state of the subject, as indicated by the aspect marker *le* .

(79)   Ta   yanjing xia   le.
          (S)he eye   blind LE
          '(S)he is blind.'/'(S)he went blind.'

Sentences with transitive verbs and objects are comparatively rare:

(80)   Zhangsan yanjing kan bu   jian   dongxi le.
          Zhangsan eye   see NEG complement of 'see' thing   LE
          'Zhangsan cannot see things.'

---

[11]It is an important characteristic of Mandarin syntax that when functioning as predicates, such as in DNCs, adjectives cannot appear on their own. They normally need to be accompanied by degree morphology such as *hen* 'very', negators such as *bu*, or question particles e.g. *ma*. I will talk about this property of the adjectival modification in section 5.3 of this Chapter.

[12]As already mentioned in Chapter 1, the phonetic form *de* in MC corresponds to three different particles: (i) the possessive marker or modification marker *de*, which precedes the noun; (ii) the resultative complement marker, which follows the verb and precedes the resultative complement; and (iii) the adverbial marker, which follows the adverb. In this sentence, *de* is a resultative complement marker, which is followed by the resultative complement *lihai* 'serious'.

Similar to *xia le* in (79), the complex phrase *kan bu jian dongxi le* also represents the change of state "from not blind to blind" of the subject.

5.2.3.3 The properties of NP2

As can be seen from the above and the following examples, broadly speaking, NP2 bears a possessive relation with NP1. NP2s are property-denoting nouns such as *zhishang* 'IQ' (83) or body parts such as *yanjing* 'eye' (84).[13]

(83)   Zhe zhong gou zhishang hen gao.
       this kind dog IQ   very high
       'This kind of dog is very smart.'

(84)   Zhangsan yanjing hen da.
       Zhangsan eye   very big
       Zhgangsan's eyes are very big.'

In very few cases, NP2 can be derived nominals such as *biaoxian* 'performance', which are also bare:

(85)   Zhangsan jintian biaoxian   tebie hao.
       Zhangsan today performance very good
       'Zhangsan did very well today.'

Here, *biaoxian* 'performance' can be viewed as a property of *Zhangsan*: an abstract property which is related to a person's acquired qualities rather than her/his natural features such as *shengao* 'height' or *xingge* 'character'. As a matter of fact, a person has a variety of properties such as age, weight, heath condition,

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[13]It is worth pointing out that the following sentence is not within the scope of the discussion here.

(81)   Ta   na jian zise   de yifu   hen gui.
       (s)he that CL purple DE clothes very expensive
       'Her/his that purple clothes are very expensive.'

This sentences just shares the superficial form [NP1+NP2+PredP] with DNCs, but in essence, they are different constructions with distinctive syntactic structures. As already mentioned in Chapter 2, I suggest that the sequence *ta na jian zise de yifu* is a possessive phrase, where somehow the presence of the demonstrative licenses the absence of the possessive marker *de*. As can be seen that, when the demonstrative *na* 'that' is absent, the sentence becomes unacceptable:

(82)   *Ta   liang jian zise   de yifu   hen gui.
        (s)he two   CL purple DE clothes very expensive
        Intended: 'Her/his two purple clothes are very expensive.'

This phenomenon that *de* can be absent when the demonstrative shows up is also reported in Yang (2005), but no explanation is given there. I would like to explore this issue in the future.

qualities, competence, temper, and a T-shirt has colour, shape, size, thickness, material, quality, price, etc. as its properties. Apart from body part nouns, these are the nominals that normally appear in NP2 position.

5.2.3.3.1 Non-referentiality

In terms of syntactic properties, NP2 is normally a non-referential expression and generally bare. Specifically, when NP2 denotes a property, it is always bare as properties do not have number feature and do not show up with numerals, classifiers or demonstratives.[14]

(86)   *Zhe zhi mao zhe ge xingge   hen wenshun.
         this   CL cat   this CL character very tame

(87)   *Zhe zhi mao yi   ge xingge   hen wenshun.
         this   CL cat   one CL character very tame

Nonetheless, when it denotes a body part, it is possible for NP2 to be accompanied by [Num+Cl] sequences (91a) and (91b) or even [Dem+Num+C] sequences (92a) and (92b):

(91)   a. ?Zhe zhi mao yi   zhi zhuazi hen hei.
             this CL cat   one CL paw   very black
             'One of this cat's paws is very black.'

         b. Zhe zhi mao yi   zhi zhuazi shoushang le.
             this CL cat   one CL paw   hurt   LE
             'This cat is hurt in one paw.'

---

[14]The only classifier that can appear with property-denoting nouns is *zhong* 'kind', and it must co-occur with demonstratives, as illustrated by the contrast between (88) and (89):

(88)   *Zhe zhi mao yi   zhong xingge   hen tao   ren   xihuan.
         this   CL cat   one CL   character very make person like

(89)   Zhe zhi mao zhe zhong xingge   hen tao   ren   xihuan.
         this CL cat   this kind   character very make person like
         'This kind of character of this cat is very likeable.'

Besides, interestingly, if I swap the verbal predicate in (89) to an adjectival one as in (90), the sentence becomes unacceptable:

(90)   *Zhe zhi mao zhe zhong xingge   hen wenshun.
         this   CL cat   this kind   character very tame

As already mentioned in the last footnote and also as will be argued later in this section, sentence (89) is actually a subject-predicate sentence with *zhe zhi mao zhe zhong xingge* 'this cat's this kind of character' as the subject.

(92)   a. ?Zhe zhi mao na   zhi zhuazi hen hei.
              this CL cat   that CL paw   very black
              'That one of this cat's paws is very black.'

        b. Zhe zhi mao na zhi zhuazi shoushang le.
              this CL cat na CL paw   hurt   LE
              'That one of this cat's paws is hurt.'

5 out of my 7 consultants think (91a) is not as good as the following (typical) one, but still acceptable:

(93)   Zhe zhi mao zhuazi hen hei.
        this CL cat paw   very black
        'That cat's paws are very black.'

However, two consultants think (91a) and (91b) are unacceptable and prefer to express the intended meanings in the following way (taking (91b) as an example), as shown in example (94) below:

(94)   Zhe zhi mao you   yi   zhi zhuazi shoushang le.
        this CL cat   YOU one CL paw   hurt   LE
        'One of this cat's paws is hurt.'

This suggests that, as already mentioned in section 5.2.3.3.1, sentences in which NP2 contains numerals and classifiers such as examples (91a) and (91b) are not as natural as those in which NP2 is a bare noun. Also, 5 of my 7 consultants report that (92a) and (92b) are very odd if not completely unacceptable, while two think they are fine. Moreover, it is noteworthy that generally speaking, when NP2 is not bare, cases where the predicate is VP (91b) and (92b) are better than those where it is AP (91a) and (92a).

I will propose an analysis for the syntax of DNCs where NP2 contains a numeral phrase in section 5.2.4, as I will argue that they share the same structure with cases where NP2 is bare. As to constructions where NP2 contains demonstratives, I will suggest that NP1 forms a constituent with NP2 and [NP1+[Dem+(Num)+Cl +Noun]$_{[NP2]}$] functions as the subject of the predicate AP/VP. Thus the assumption is that when NP2 is a numeral phrase, it is independent of NP1, while when it is a demonstrative phrase, it forms a constituent with NP1.

The above assumption is supported by the fact that the [NP1+[Dem+(Num)+Cl +Noun]$_{[NP2]}$] sequence can appear in the object position while [NP1+[Num+Cl+ Noun]$_{[NP2]}$] cannot:

(95)   a.   Ta na   shuang yanjing hen miren.
              she that CL   eye   very attractive
              'Her that pair of eyes are very attractive.'

        b.   Wo hen xihuan ta na   shuang yanjing.
              I   very like   she that CL   eye
              'I like her that pair of eyes very much.'

ta na shuang yanjing 'her that pair of eyes' is a single unit in the above sentences. This forms a contrast with cases where NP2 is a numeral phrase.

(96)   a.   Ta yi   shuang yanjing hen miren.
              she one CL   eye   very attractive
              'Her eyes are very attractive.'

        b. *Wo hen xihuan ta yi   shuang yanjing.
              I   very like   she one CL   eye

As shown above, the numeral phrase *yi shuang yanjing* 'a par of eyes' does not form a constituent with *ta* 'she'. Because of this, I will treat cases where NP2 is a [numeral+classifier+body part noun] phrase as DNCs, but not those where NP2 contains demonstratives.

    Also, evidence from coordination suggests that NP1 is in constituency with NP2 when NP2 contains demonstratives:

(97)   *Lili zhuazi he Pipi erduo dou   hen hei.
         Lili paw   and Pipi ear   DOU very black

(98)   ?Lili na   zhi zhuazi he Pipi na   zhi erduo dou   hen hei.
         Lili that CL paw   and Pipi that CL ear   DOU very black
         'Lili's that paw and Pipi's that ear are both very black.'

The unacceptability of sentence (97) is expected, as has been shown in section 5.2.1, *Lili* and *zhuazi* 'paw' are two separate constituents, consequently, they cannot be coordinated with *Pipi* and *erduo* 'ear'. Contrary to (97), (98) is marginally acceptable if not completely fine, in which *Lili na zhi zhuazi* and *Pipi na zhi erduo* are conjoined by the coordinator *he* 'and'. This indicates that each of the phrase is a constituent.

    An alternative analysis for sentence (98) is that there may be right node raising involved, as illustrated below:

(99)   a.   Lili na   zhi zhuazi <hen hei>, bingqie Pipi na   zhi erduo ye
              Lili that CL paw   very black, and   Pipi that CL ear   also
              hen hei.
              very black
              'Lili's that paw is very black, and Pipi's that paw is very black as
              well.'

      b.   *Lili na   zhi zhuazi <hen hei>, he Pipi na   zhi erduo ye   hen
              Lili that CL paw   very black, and Pipi that CL ear   also very
              hei.
              black

The first sequence *hen hei* undergoes rightward movement to the end of the sentence or it is deleted. Also it is noteworthy that the coordinator has to be *bingqie* in the above sentence.

Then, if this is the case, sentence (97) should be treated alike as well. However, the ungrammaticality of (97) indicates that right node raising does not apply to these two sentences. Also, the fact that the coordinator *he* 'and' cannot be replaced by *bingqie* 'and' suggests that (98) is not derived from sentence (99a) (*he* normally connects nominals, while *erqie* conjoins adjectives and verbal phrases).

(100)   *Lili na   zhi zhuazi bingqie Pipi na   zhi erduo dou   hen hei.
            Lili that CL paw   and   Pipi that CL ear   DOU very black
            'Lili's that paw and Pipi's that ear are both very black.'

The contrast between sentences (98), (99) and (100) shows that (98) is not derived from (99a) by either deletion (Kayne 1994; Hartmann 2000, etc.) or movement (Ross 1967; Sabbagh 2003, etc.) of the predicate *hen hei* 'very black', as the coordinators in these two cases are different. Then it follows naturally that example (98) is not a right node raising case. Moreover, example (98) does not show the intonation contour that typical right node raising cases are associated with. Therefore, it can be concluded that the assumption that sentence (98) is a coordination construction with two possessive expressions being connected by the coordinator *he* 'and' still holds. This supports my earlier assumption that in cases where NP2 contains a demonstrative, NP1 is in constituency with NP2.

In sum, DNCs in which NP2 is a numeral phrase behave the same as those in while NP2 is a bare noun (in both cases, NP1 and NP2 are two separate constituents). However, constructions where a nominal is juxtaposed with a demonstrative phrase show characteristics of subject-predicate sentences where the two nominals form a constituent (though more arguments are still needed to support this assumption). Therefore, it can be concluded that NP2 in our targeted con-

structions (in which NP2 denotes a property or a body part) are non-referential expressions, either bare nouns or numeral phrases.

5.2.3.3.2 Optionality

Another important property of NP2 is that it is optional, as shown by the following two groups of sentences:

(101)   a.   Lili hen wenshun.
                Lili very tame
                'Lili is very tame.'

        b.   Zhangsan e   le.
                Zhangsan hungry LE
                'Zhangsan is hungry.'

Sentences in (101a) and (101b) are the equivalent of examples (102a) and (102b), respectively:

(102)   a.   Lili xingge   hen wenshun.
                Lili character very tame
                'The character of Lili is very tame.'

        b.   Zhangsan duzi   e   le
                Zhangsan stomach hungry LE
                'Zhangsan stomach is hungry.'

The above two groups of sentences are completely fine in MC, which suggests that NP2 is optional in DNCs. Technically speaking, the following sentence is acceptable without the presence of NP2 *tou* 'head' as well:

(103)   Ta   (tou) hen teng.
           (S)he head very ache
           '(S)he has a headache.'

When saying that someone aches, it is normal to specify where/which part. That is to say, NP2 is not crucial and just provides extra information to complete the semantics of the sentence. This can be supported by the fact that the expression *she aches* is acceptable in English, with the implication that she aches everywhere. However, in MC, it is more common to specify the part that aches, even when it is the whole body:

(104)   Ta   quanshen   dou hen teng.
           (S)he whole-body DOU very ache
           '(S)he aches everywhere.'

In fact, the absence of NP2 does not cause ungrammaticality as the missing of NP1 does. As discussed in section 5.2.1.3, NP1 must always be present as NP2 cannot act as a subject. Example (105) is as bad as example (106):

(105)　　*Tou　hen　teng.
　　　　　　head very ache

(106)　　*Arrived early.

Just like (106) needs a subject to be the actor of the action 'arrived early', (105) needs the presence of NP1 to fulfil the meaning of the whole sentence. Otherwise, the context must supply the subject pragmatically, such as in the following sentence:

(107)　　Ta　　qu yiyuan le,　tou　hen　teng.
　　　　　　(s)he go hospital LE, head very ache
　　　　　　'(S)he went to a hospital, her/his head aches.'

The NP1 for the sequence *tou hen teng* is present in the previous clause, which is *ta* '(s)he'.

　　As can be seen from the above, NP1 is obligatory in DNCs. On the contrary, NP2 is optional, it just adds extra information to the semantics of sentence. One more example is given below:

(108)　　Ta　　(xueya)　　　hen　gao.
　　　　　　(S)he blood-pressure very high
　　　　　　' Her/His blood-pressure is very high.'

Interestingly, without NP2, sentence (108) only means '(S)he is tall'. It seems like 'height' is the default dimension when NP2 is not specified in the case of (108). I will discuss the issue of the presence and absence of NP2 later in section 5.2.5.2.2. For now, it can be concluded that NP2 is optional in DNCs.

5.2.3.3.3　Relationality

A third property of the second nominal in DNCs is that on the one hand, it is closely related to the first nominal, on the other hand, it is semantically tied up with the predicate. As the terminology suggests, property-denoting nouns should represent the properties of the noun/noun phrase. This point is exemplified by the following examples:

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(109)   a.   Zhe jian yifu   yanse hen xianliang.
                this CL clothes colour very bright
                'The colour of these clothes is very bright.'

         b.   Zhe jian yifu   kuanshi hen xinying.
                this CL clothes style   very novel
                'The style of these clothes is very novel.'

         c.   Zhe jian yifu   jiaqian hen pianyi.
                this CL clothes price   very cheap
                'The price of these clothes is very cheap.'

         d.   *Zhe jian yifu   xingge   hen wenshun.
                this CL clothes character very tame
                'The character of these clothes is very tame.'

The only reason why (109d) is unacceptable is that unlike *yanse* 'colour' in (109a), *kuanshi* 'style' in (109b) and *jiaqian* 'price' in (109c), *xingge* 'character' is not the property of *yifu* 'clothes'. Therefore, it cannot form a DNC with *zhe jian yifu* 'these clothes'. These facts indicate that nominals that denote concrete objects possess a range of properties, and these properties play a significant role in the description (modification and predication) of the nominal.

In addition to the relationship between the property-denoting noun and the nominal, its relationship with the predicate is also crucial. See the examples below:

(110)   a.   *Zhe jian yifu   kuanshi hen pianyi.
                this CL clothes style   very cheap
                'The style of these clothes is very cheap.'

         b.   *Zhe jian yifu   jiaqian hen xianliang.
                this CL clothes price   very bright
                'The price of these clothes is very bright.'

The above two sentences are bad because in (110a), the meaning of the property-denoting noun *kuanshi* 'style' does not match that of the adjective *pianyi* 'cheap'. Likewise, in (110b), the meanings of the NP2 *jiaqian* 'price' and the predicate *xianliang* 'bright' are not compatible.

One more example is given below, sentence (111) is unacceptable in out of the blue contexts:

(111) ??Zhe liang che xingge   hen wenshun.
            this CL   car character very tame

As part of our common knowledge, unlike Lili or *na zhi mao* 'that cat', cars or *zhe liang che* 'this car' do not have *xingge* 'character'. We could discuss the

performance (112a) or engine (112b) of a car but not its character (111).

(112)   a.   Zhe liang che xingneng   hen   hao.
                 this CL   car performance very good
                 'This car's performance is very good.'

         b.   Zhe liang che fadongji hen   chao.
                 this CL   car engine   very noisy
                 'This car's engine is very noisy.'

Example (111) is bad due to the failure of NP2 *xingge* 'character' to meet the s(emantic)-selectional requirements of NP1 *zhe liang che* 'that car'. However, in some special context, for example, imagine watching the Hollywood film Cars where cars are animated and have characters, sentence (111) would become possible. This suggests that in DNCs, it is necessary that NP2 denotes a property or a part of NP1.

To sum up, there should be a semantic relation between NP2 and NP1 and AP/VP such that NP1 must be in an adequate relation to NP2 and NP2 must be an adequate semantic argument of AP/VP.

5.2.4   The dimension analysis

Based on the discussion above, I will propose that the properties and parts of an entity-denoting noun can be seen as its dimensions, and in predication, the predicate brings out those dimensions of the entity-denoting noun. As for the syntax and semantics of DNCs, the proposal I will defend is that NP2 denotes NP1's inherent properties/body parts; these can be understood as dimensions of NP1, and the AP/VP predicates NP1 along these dimensions.

This idea of dimension is drawn on Schwarzschild's (2006) discussion of measure phrases in extended noun phrase. As to the definition of dimensions, Schwarzschild (2006) notes the following:

> A dimension is a kind of property like weight, volume, or temperature
> that can be had in varying degrees (Schwarzschild 2006:72).

He argues that a measure phrase or a quantity phrase describes the extent of an object along some dimension. For instance, the following two measure phrases have different interpretations:

(113)   a.   two inch cable
         b.   two inches of cable

two inch cable means cables that have a diameter of 2 inch, while *two inches of cable* refers to a piece of cable that is two inches long. Thus it can be seen that the different meanings of the two phrases is closely related to the dimensions involved, i.e. diameter or length.

Moreover, Schwarzschild mentions that adjectives such as *heavy, cold, expensive* and *tall* denote meanings that involve the dimensions of "weight", "temperature", "price" and "height", respectively. What is interesting is that the same adjective may correspond to different dimensions when it combines with different nouns. For example, in *heavy rock*, the dimension at issue is "weight", while in *heavy oil*, it is "density".

As to how dimensions enter the syntax relevant to a nominal expression, Schwarzschild (2006) notes the following:

> . . . how a particular dimension enters into the interpretation of a given nominal projection. There are several possibilities. Dimensions may arise in the interpretation of the measure phrase, they might be part of the semantics of silent material that intervenes between the measure phrase and the noun, or they might enter in through rules of interpretation as they do in Bartschs (1976) semantics of adverbials. There are probably other avenues to explore (Schwarzschild 2006:74).

As said above, I propose that one way the dimension enters the syntax is by connecting the subject nominal with the predicate, forming DNCs, where the predicate describe the subject NP1 along the dimension of NP2.

A similar idea is delivered in Moltmann (2009) where Moltmann proposes a trope-based analysis of adjectives and adjectival constructions. According to her, tropes are particularised properties and a trope is a concrete manifestation of a property in an individual. It can be seen that tropes are the same as dimensions in essence. Moltmann argues that tropes rather than degrees are involved in the semantics of adjectives and degrees can be reconstructed in terms of tropes. For instance, she points out that the degree-based analysis cannot explain the contrast between the following two cases of comparative subdeletion:

(114)   a.   *John is taller than Mary is beautiful.
         b.   The table is wider than the sofa is long.

Instead, what causes the contrast between these two sentences is the type or dimension of the scale involved; whether it is of spatial extension, weight, or beauty. In (114b), the two dimensions involved are both in the linear spatial

extension, i.e. width or length, while in (114a), they are different; one is "height" and the other is "beauty" and this is the reason that causes the ungrammaticality of (114a). According to Moltmann (2009), dimensions are closely related to the meaning of adjectives, but different adjectives may have the same dimension, such as the adjective *wide* and *long* in (114b) share the dimension 'length'.

Moreover, Liu (2010a) proposes a dimension analysis to the A(djective)-Cl(assifier) compound adjectives in Taiwanese, as illustrated by example (115):

(115)   Tsit-tiao so?-a   tsin tua-/se-tiao.
         This-CL rope-NS very big/small-CL
         'This rope is very thick/thin.'

According to Liu (2010a), in (115), the classifier *tiao* is a dimension-provider: it provides the A-Cl compound *tua-/se-tiao* 'thick/thin' a dimension, i.e. the thickness of diameter, by which the individual noun 'rope' can be measured. The adjective *tua/se* denotes an ordering function which orders the degree points along the dimension "diameter" and in this way the predication is established. Here, the relationship between the classifier and the adjective as well as the individual noun is very similar to the relationship between NP2 and AP/VP as well as NP1 in DNCs. Liu (2010) terms classifiers such as *tiao* as dimension-denoting classifiers.

In a similar fashion, I propose that in DNCs, NP2 denotes the dimension of the predication relation represented by AP/VP with respect to NP1. Intuitively, (116a) and (116b) are paraphrasable as (117a) and (117b), respectively:

(116)   a. Lili xingge   hen wenshun.
             Lili character very tamen
             'Lili's character is very tame.'
         b. Ta   tou hen teng.
             (s)he head very ache
             'Her/His head aches.'

(117)   a. Lili is tame in the dimension of character.
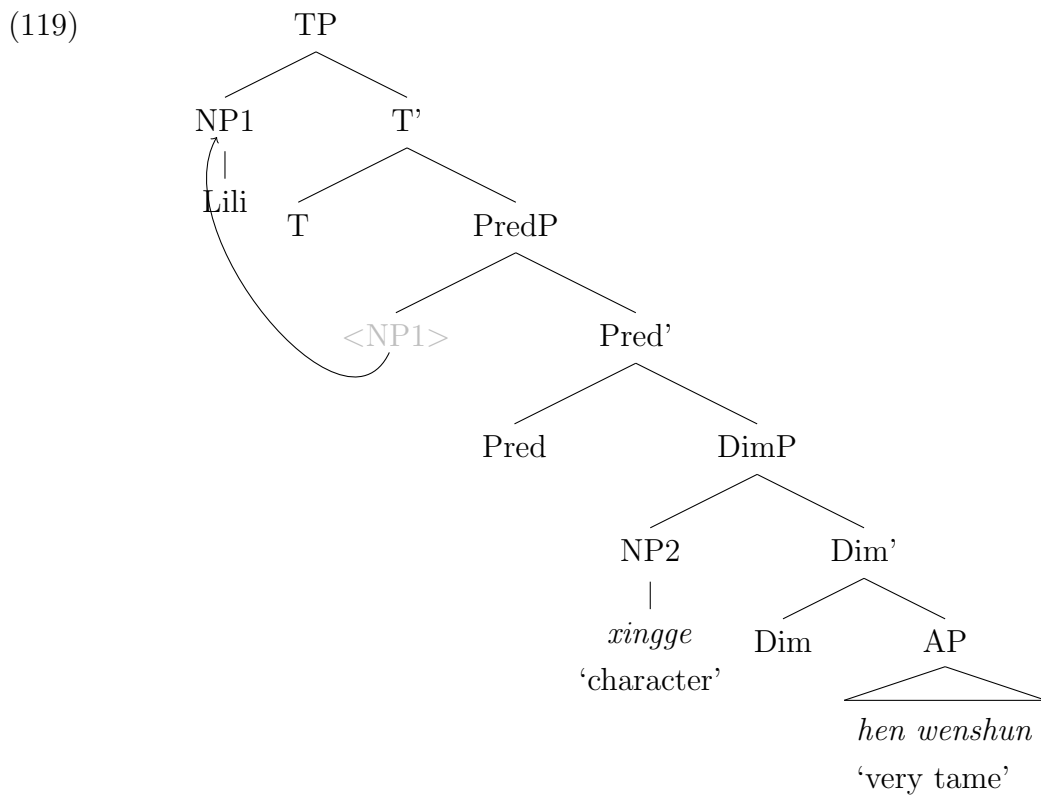   b. (S)he aches in the dimension of head.

Sentence (117a) can be interpreted as Lili's tameness is restricted to its character. Likewise, the interpretation of (117b) is Zhangsan aches in the part of his head, not other parts. Similar expressions can be found in somewhat archaic English, as shown below:

(118)   a. She is black of hair.

b. She is tall in height.

c. She is brown of skin.

5.2.4.1 NP2 as the specifier of Dim(ension)P

On the basis of the above discussion, following Cinque (2010), which assumes that adjectival modifiers are merged in the specifiers of dedicated functional heads, I propose a syntactic structure for DNCs in which a functional projection Dim(ension)P is projected above AP/VP. DimP modifies the predication relationship indicated by AP/VP. NP2 is located at the specifier position of DimP projection. The schema is shown in (119):

(119)

```
                    TP
                   /  \
                NP1    T'
                 |    /  \
                Lili T    PredP
                         /     \
                   <NP1>        Pred'
                               /      \
                            Pred       DimP
                                      /    \
                                   NP2      Dim'
                                    |      /    \
                                 xingge  Dim     AP
                               'character'      /  \
                                            hen wenshun
                                            'very tame'
```

Also, following Bowers (1993), Svenonius (1994), Chomsky (2000), Chomsky (2001), Adger and Ramchand (2003), etc. I assume a predicational head Pred is projected. PredP takes DimP as its complement and the subject of the sentence NP1 is merged at its specifier position. Because of this analysis, I will name our targeted constructions as dimension constructions in what follows.

The denotation of the structure can be summarised as follows: some individual (NP1) is in a state (AP/VP) restricted to its property/part (NP2). Provisional semantics for tree (119) are in (120), in which g is a variable over properties or parts. Following Chierchia (1998a) which argues that predicates (type $\langle e,t \rangle$) can

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be nominalised into kinds (type e) by the 'down' operator, I assume that g is nominalised from a predicate related to properties and parts. It is of type d which stands for a dimension type:
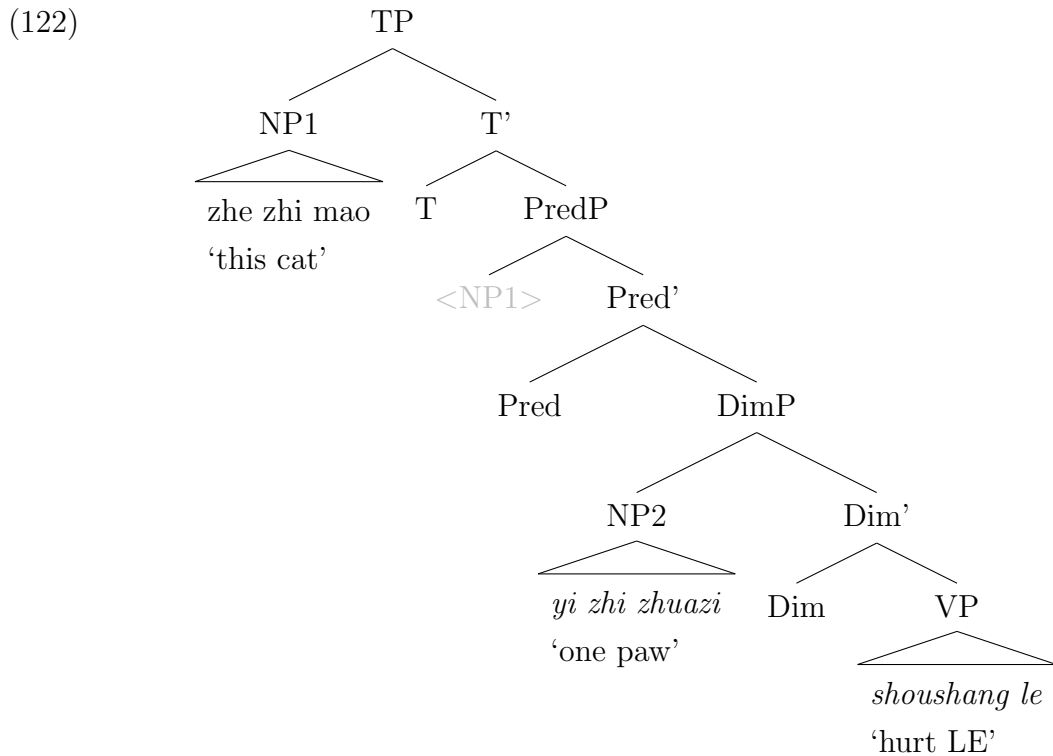
(120)   a. $[\![AP/VP]\!] = \lambda x.$ x is tame

           b. $[\![NP2]\!] = \lambda x.$ x is a character

           c. $[\![Dim]\!] = \lambda f_{\langle e,t \rangle}.\ \lambda g_{\langle d \rangle}.\ \lambda x.\ f(x) = 1$ in dimension g

           d. $[\![Dim']\!] = \lambda g_{\langle d \rangle}.\ \lambda x.$ x is tame in dimension g

           e. $[\![DimP]\!] = \lambda x.$ x is tame in the dimension of character

As shown in (119) and (120c), on the one hand, the functional head Dim connects NP2 with AP/VP and in this way, the semantic relatedness between NP2 and AP/VP is substantialised; on the other hand, Dim connects NP2 with NP1 and accordingly, capturing the relational relationship between the two nominals.

DNCs in which the property/body part-denoting NP2 is accompanied with numerals and classifiers can also be accommodated by my proposed structure. Since in our analysis, NP2 occupies the specifier position of DimP projection rather than Dim head position, NP2 does not need to be minimal. Also, as it just represents a property/part of NP1 and the dimension of AP/VP, NP2 is of semantic type <e,t>, as shown in (120). That is to say, NP2 should not be a definite expression. Therefore, it is reasonable to assume that the numeral sequence is located at SpecDimP position. For instance, in (121), the phrase *yi zhi zhuazi* 'one claw' performs the dimension role and is situated at SpecDimP. Semantically, it is nominalised to become a dimension of atomic type d. The structure of sentence (121) is shown by tree (122):

(121)   Zhe zhi mao yi   zhi zhuazi shoushang le.
           this CL cat   one CL paw   hurt   LE
           'This cat is hurt in one paw.'

(122)

```
                        TP
                   ┌────┴────┐
                  NP1        T'
                 ┌─┴─┐    ┌──┴──┐
            zhe zhi mao   T    PredP
            'this cat'       ┌──┴──┐
                           <NP1>  Pred'
                                ┌──┴──┐
                              Pred   DimP
                                   ┌──┴──┐
                                  NP2   Dim'
                                 ┌─┴─┐ ┌─┴─┐
                            yi zhi zhuazi Dim  VP
                            'one paw'       ┌─┴─┐
                                         shoushang le
                                          'hurt LE'
```

The semantics of structure (122) would be 'this cat is hurt in one paw (not all four paws)'. It is different from the interpretation of sentence (123) where there is a *de* between NP1 and NP2:

(123)   Zhe zhi mao de yi   zhi zhuazi shoushang le.
         this CL cat   DE one CL paw   hurt   LE
         'One of this cat's paws is hurt.'

In this case, the possessive phrase *zhe zhi mao de yi zhi zhuazi* 'one of this cat's paws' is the subject and the meaning of whole sentence is 'one of this cat's paws is hurt'.

The functional projection DimP can be proposed to exist in other languages as well. A case in point is English. As mentioned earlier, we can find the following sentences in somewhat archaic English:

(124)   a.   She is black of hair.
         b.   She is tall in height.
         c.   She is brown in skin.

More examples are given below:

(125)   a.   She is fair of face.

b. She is round of face.

c. Her hair is light in color.

It seems to me that preposition phrases such as *of hair, in height, of face* perform the same function as NP2 in DNCs, indicating the dimension of the predication represented by the adjective. For instance, sentences in (125) can be rephrased as in (126), respectively.

(126)   a.   She is fair in the dimension/part of face.

b.   She is round in the part/dimension of face.

c.   Her hair is light in the dimension of color.

I am not intending to propose a structure for these sentences here, but I will suggest that they might have a structure similar to that of Mandarin DNCs, where there is DimP projected and the preposition phrase is located at the SpecDimP. I will not discuss how the correct word order is derived here. Also, I have to admit that in English, sentences such as (125) are not as productive as DNCs in MC.

5.2.4.2   Other alternative analyses

As discussed in section 5.2.3.3.2, NP2 is optional in some cases. Therefore, it could be possible that NP2 is just an adjunct rather than sitting at the specifier of a functional head. That is to say, NP2 could be adjoined to AP/VP. However, this could not be the case: for one thing, NPs do not normally act as adjuncts; for another, NP2 here does not behave like an adjunct. A case in point is that unlike adjuncts, which can appear either before or after the predicate (127), NP2 in DNCs cannot appear after the predicate (128):
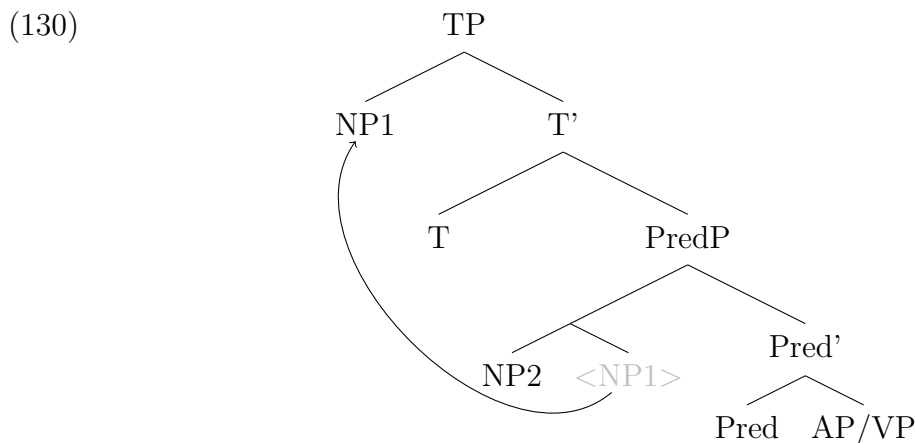
(127)   a.   Lili qishi   hen wenshun.
             Lili actually very tame
             'Lili is actually very tame.'

b.   Lili hen wenshun, qishi.
             Lili very tame   actually

(128)   *Lili hen wenshun, xingge.
         Lili   very tame   character

The contrast between (127) and (128) suggests that *xingge* 'character' is not an adjunct as *qishi* 'actually'. In fact, to express the meaning in (128), one needs to turn NP2 *xingge* 'character' into a preposition phrase such as *zai xingge fangmian* 'in terms of character/character-wise':

(129)　　Lili hen wenshun, zai xingge   fangmian.
　　　　Lili very tame   at character aspect
　　　　'Lili is very tame, in terms of character.'

In brief, the above evidence shows that it could not be the case that NP2 is adjoined above AP/VP. Hence, it is plausible to adopt a Cinque-style analysis and treat Dim as a functional head and locate NP2 at its specifier position.

A further question is whether the functional projection Dim is necessary or not? As has been argued by Jensen and Vikner (1994), Partee (1983/1997), Vikner and Jensen (2002), Partee and Borschev (2003), among others, relational nouns take arguments (this is also discussed in Chapter 4). Therefore, it seems that there is no need for DimP: it can be proposed that NP2 is at the Spec of PredP and NP1 is base-generated at the complement position of NP2 and then moves to a higher position.

(130)

```
                              TP
                         /         \
                     NP1            T'
                      ↑          /      \
                      |         T        PredP
                      |                /      \
                      |           /        \     Pred'
                      |        NP2   <NP1>    /    \
                      _____/            Pred   AP/VP
```
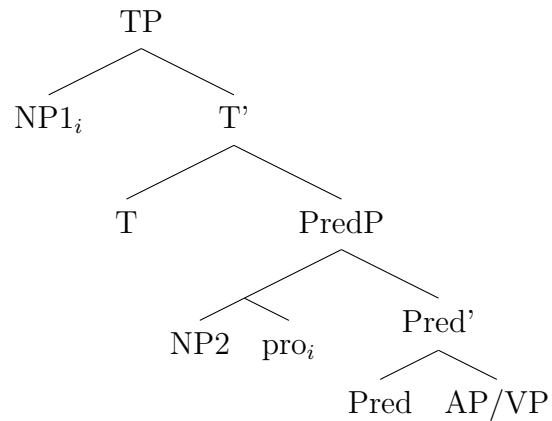
However, leaving aside that the movement of NP1 would violate the Subject Island Constraint, a crucial problem with the above analysis is that it cannot explain why kinship terms cannot be NP2 in DNCs, since kinship nouns are argued to be typical relational nouns (Barker 1995). The above structure cannot exclude kinship nouns from appearing in DNCs, and this suggests that the DimensionP is necessary.

A similar problem is faced by the assumption that NP2 at SpecPredP takes the pro which is co-referential with NP1 as an argument[15]and there is no need for a DimP, as shown below:

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[15]There is a tripartite division in the analysis of genitive/possessive constructions in terms of the relation between the genitive DP and the head noun, more precisely, the syntactic status of the genitive DP with respect to the head noun: argument only, modifier only and split approaches. In the argument-only approach, it is proposed that all genitives are arguments, or type-lifted arguments (Jensen and Vikner 1994; Partee and Borschev 1998; Vikner and Jensen 2002, etc.); in an opposite approach, all genitives are treated as modifiers (Hellan 1980; Kolliakou 1999); However, Partee (1983/1997), Barker (1991), Partee and Borschev (2003) argue that a
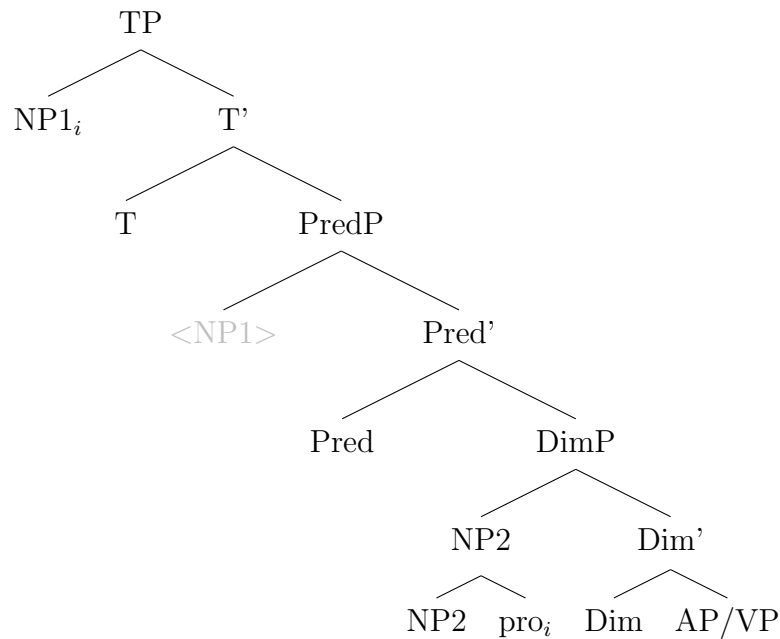
(131)

```
                    TP
                   /  \
               NP1ᵢ    T'
                      /  \
                     T    PredP
                         /    \
                    NP2  proᵢ   Pred'
                               /    \
                            Pred   AP/VP
```

The above structure cannot exclude kinship nouns from DNCs. What is more, as I will show below, the analysis of a pro at the complement position of NP2 is untenable.

Under the general idea of the dimension analysis, to capture the relationship between NP1 and NP2, the possibility of a *pro* which is co-referential with NP1 as an argument of the relational noun NP2 is also considered. This can be illustrated by the structure below:

(132)

```
                    TP
                   /  \
               NP1ᵢ    T'
                      /  \
                     T    PredP
                         /    \
                    <NP1>     Pred'
                             /    \
                          Pred   DimP
                                /    \
                             NP2     Dim'
                            /   \    /   \
                         NP2  proᵢ Dim  AP/VP
```

Since the pro needs to be bound, so whether there is a pro in the complement position in NP2 can be tested by moving NP2 to sentence-initial position:

split approach is preferable: some genitives are arguments, especially those appear with relational nouns, and others are modifiers.

(133) a. Zhangsan xingge   hen wenshun.
           Zhangsan character very tame
           'Zhangsan is very tame.'

       b. Xingge,   Zhangsan hen wenshun.
           character, Zhangsan very tame
           'In terms of character, Zhangsan is very tame.'

The fact that *xingge* 'character' can be moved to a position before NP1 *Zhangsan*, as shown in example (133b), suggests that there could not be a pro in it. Because according to binding theory, the binder must c-command the bindee, if there is a pro co-referential with NP1, it will be unbound in the sentence-initial position and this is prohibited. However, this is not a strong argument, as the pro could be bound under reconstructions. Other arguments for the claim that there is no pro in constituency with NP2 will be provided in what follows.

It is worth noting that the fact that NP2 can be moved (to the sentence initial position), indicates that it is phrasal, and this is compatible with my assumption that it is located in Spec of DimP.

Another possible diagnostic that can be used to test whether there is a pro or not is by examining the behaviours of the resumptive pronoun *ta* in DNCs, since it is generally regarded as the lexical realisation of *pro*, that is, pro (or a gap) and the resumptive pronoun *ta* substitute for each other in MC (Pan 2015, among others).

More specifically, in a simple sentence such as the following, there is a null element after *xihuan* 'like' in (134), either a *pro* or a trace:

(134)   Lili, Zhangsan hen xihuan.[16]
         Lili Zhangsan very like
         'Lili, Zhangsan likes (her).'

A pronoun *ta* which is co-referential with *Lili* can appear after *xihuan* 'like':

(135)   Lili, Zhangsan hen xihuan ta.
         Lili Zhangsan very like   her
         'Lili, Zhangsan likes her.'

Here, *ta* 'her' occupies the position of the null element. By analogy, to test if there is a pro in the complement position of NP2 or not, one diagnosis is to see the behaviour of the resumptive pronoun *ta* in DNCs. As I will show below, there is no *ta* in constituency with NP2 in DNCs, therefore, it can be concluded that

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[16] *Lili* is treated as a female name in this thesis.

there is no pro in constituency with NP2, either.

Specifically, as shown below, the resumptive pronoun *ta* cannot appear after NP2 but can appear before it.

(136)   a. *Lili xingge   ta hen wenshun.
               Lili character she very tame

        b. Lili ta xingge   hen wenshun.
               Lili she character very tame
               'The character of Lili is very tame.'

It is still possible that *ta* in (136b) is syntactically selected by the NP2 *xingge* 'character'. However, the behaviour of adverbs suggests that this could not be the case:

(137)   a. Lili ta qishi   xingge   hen wenshun.
               Lili she actually character very tame
               'The character of Lili is actually very tame.'

        b. Lili ta xingge   qishi   hen wenshun.
               Lili she character actually very tame

When the resumptive pronoun *ta* '(s)he' shows up after NP1, interestingly, it is possible to have an adverb such as *qishi* 'actually' appearing after *ta* (137a) but not before it (138). The possibility of inserting *qishi* between *ta* and NP2 *xingge* 'character' suggests that the two are separate constituents.

(138) ??Lili qishi   ta xingge   hen wenshun.
   Lili actually she character very tame

Moreover, the unacceptability of (138) indicates that *ta* is closer to NP1 *Lili* syntactically. Another piece of evidence that the resumptive pronoun may form a constituent with NP1 but not NP2 can be found in coordination constructions:

(139)   a. Lili ta gezi   hen gao erqi weiba hen chang.
               Lili she height very high and tail   very long
               'Lili is tall and her tail is long.'

        b. *Lili ta gezi   hen gao erqi ta weiba hen chang.
               Lili she height very high and she tail   very long

In sentence (139a), *gezi hen gao* 'height very high' is in conjunction with *weiba hen chang* 'tail very long', which suggests that they form a constituent and are independent of *ta*. Also, the fact that a second *ta* is banned from appearing before *weiba* 'tail' indicates that *ta* is in constituency with *Lili* (139b). The structure of

(139a) is roughly shown as follows:

(140)
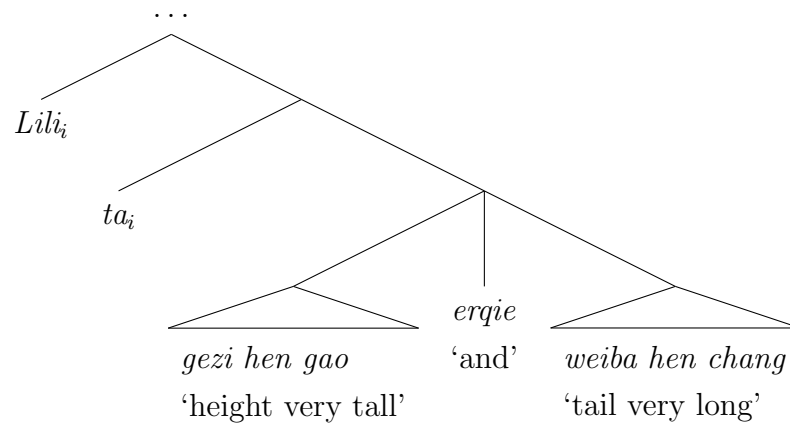
Altogether, the above facts show that resumptive *ta* forms a constituent with NP1 but not NP2. So far, there is no evidence that there is a pro co-referential with NP1 in the complement position of NP2.

To make the argument that pro does not exist stronger, I will try to put a second *ta* before and after NP2 to test whether there is a position for pro or not, as up to now, the above discussion just suggests that *Lili ta* is a constituent, and I have not yet really shown that there is not a *pro* in constituency with NP2.

The ungrammaticality of the following sentences demonstrates that a second resumptive pronoun *ta* is banned.

(141) a. *Lili ta xingge   ta hen wenshun.
          Lili she character she very tame

      b. *Lili ta ta xingge   hen   wenshun.
          Lili she she character actually very   tame

Again, the following coordination sentence is also unacceptable:

(142) *Lili ta ta gezi   hen gao erqi ta weiba hen chang.
        Lili she she height very high and she tail   very long

Its structure can be schematised as the tree below:

(143)   *

$Lili_i$

ta_i

erqie
'and'

×*ta gezi hen gao*
'she height very tall'

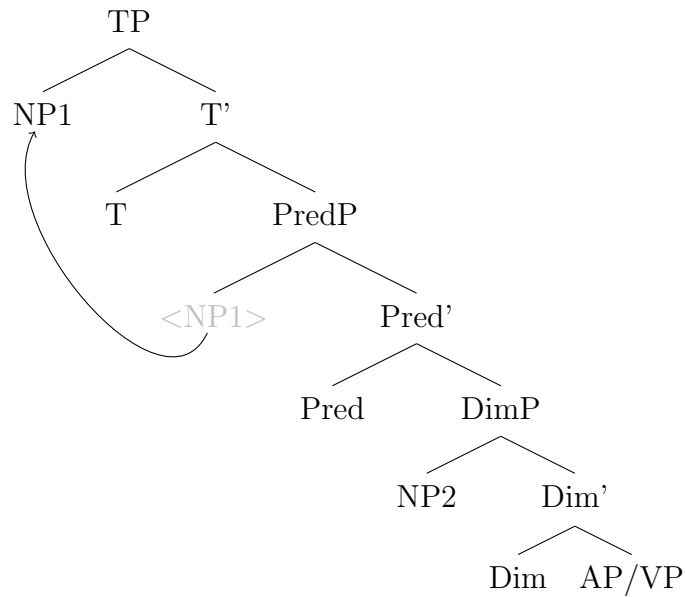×*ta weiba hen chang*
'she tail very long'
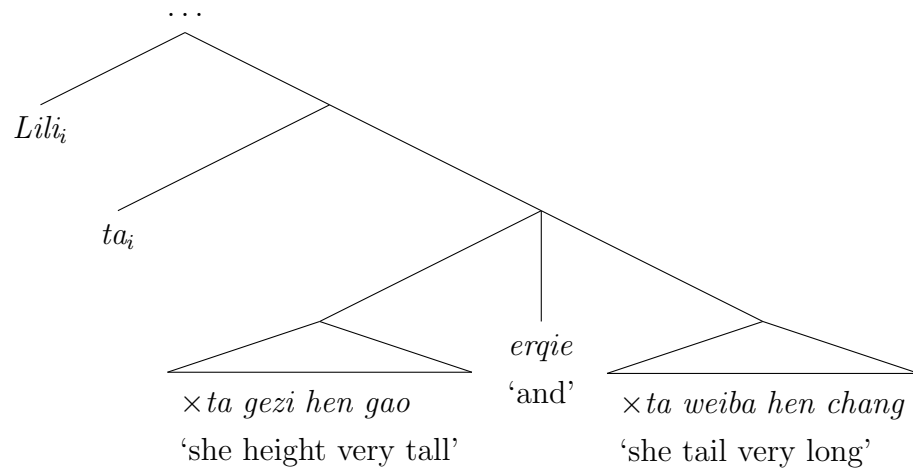
Since resumptive pronoun *ta* is generally regarded to be the lexical realisation of *pro*, the disallowance for a second resumptive *ta* suggests that there is not a *pro* in constituency with NP2. This argues against the assumption that a *pro* which is co-referential with NP1 is situated at the complement position of NP2 illustrated in (132).

The above argument also stands against the possessor raising analysis raised in Hashimoto (1969), Yao (2007) and the rest. If NP1 is base-generated at the possessor position of the possessive phrase [NP1+(*de*)+NP2] and then moves up to the sentence initial position, there should be a trace left at the base position. If *ta* is viewed as the visible form of the trace, we should expect [*ta*+(*de*)+NP2] to be a constituent. However, this is incorrect. The impossibility of inserting a second resumptive *ta* suggests that a trace is not available and therefore no movement of NP1 is involved in the derivation. Thus, it is more plausible to argue that NP1 is base generated as a subject.

So far, it can be seen that the adjunction analysis of NP2, the NP1 as the complement of NP2 analysis as well as the pro analysis are problematic. The problems facing these analyses do not exist under my proposed DimP analysis, the conjecture of which is shown below:

(144)

```
                    TP
            ┌────────┴────────┐
          NP1               T'
                      ┌──────┴──────┐
                     T            PredP
                           ┌────────┴────────┐
                        <NP1>              Pred'
                                      ┌──────┴──────┐
                                    Pred          DimP
                                            ┌──────┴──────┐
                                          NP2           Dim'
                                                   ┌──────┴──────┐
                                                  Dim         AP/VP
```

This analysis captures the properties of DNCs and has important implications, and all of these will be discussed in what follows.

In conclusion, DNCs in which the second nominal is a non-referential expression and denotes a property or a body part of the first nominal are dimension constructions as shown in (144), no matter NP2 is a bare noun or a numeral phrase.

5.2.5   Implications

Including DimP in the extended projection of AP/VP has significant implications. In the next two subsections, I will discuss its implications for the syntax and semantics of DNCs, respectively.

5.2.5.1   Syntactic implications

First of all, the dimension analysis correctly captures the fact that NP1 is a subject but not a topic.

(145)

```
                              TP
                      ┌───────┴───────┐
                    NP1              T'
                     ↑        ┌───────┴───────┐
                     │        T            PredP
                     │              ┌─────────┴─────────┐
                   <NP1>         Pred'
                                   ┌──────────┴──────────┐
                                 Pred                   DimP
                                              ┌──────────┴──────────┐
                                            NP2                    Dim'
                                                          ┌─────────┴─────────┐
                                                        Dim               AP/VP
```
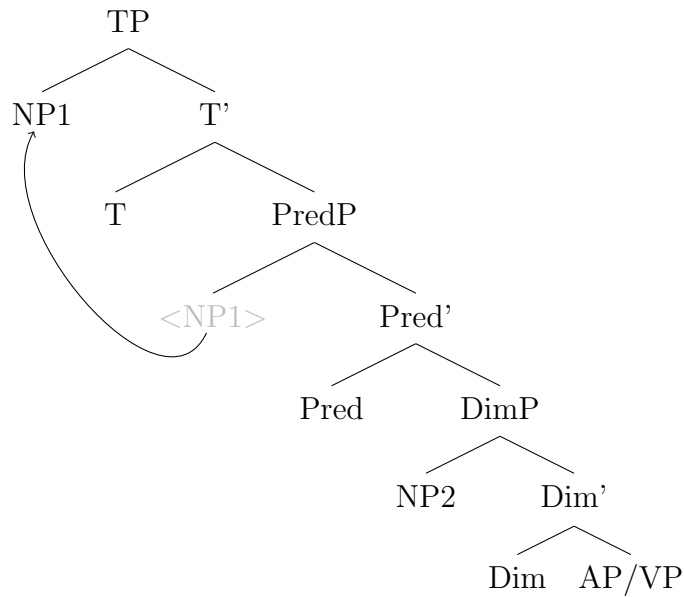
As shown above, NP1 is merged at SpecPredP and then undergoes movement to SpecTP. Since NP1 has the subject status, it follows that it is normally a referential expression such as pronouns, proper names, demonstrative phrases, etc.

(146) Zhe zhong mao xingge   hen wenshun.
       this kind   cat   character very tame
       'The character of this kind of cats is very tame.'

Also, since NP1 is not in the topic position, this explains why non-referential expressions such as *wh*-words, *you* existential quantifiers can appear as NP1.

(147) Shui tou   hen teng?
       who head very ache
       'Who has a headache?'

(148) You ren   tou teng ma?
       YOU person head ache MA
       'Is there someone who has a headache?'

Moreover, the positions of adverbs (and interjections) in DNCs are captured as well. More specifically, in addition to adjoining adverbs immediately above PredP, since DimP is just a functional projection above AP/VP, it is possible to insert adverbs below DimP as well. This explains why adverbs can appear either before or after NP2 in DNCs.

(149) a. Lili qishi   xingge   hen wenshun.
           Lili actually character very tame
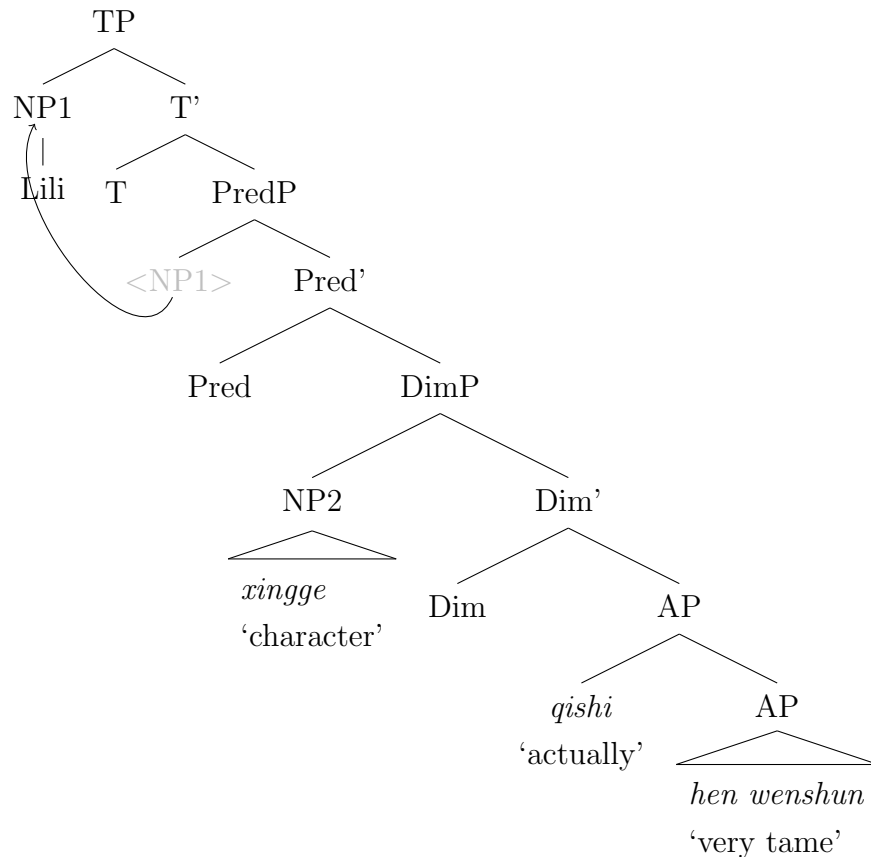
'The character of Lili is actually very tame.'

b.　Lili xingge　　qishi　　hen wenshun.
　　Lili character actually very tame

The structure of (149a) is shown as follows:

(150)
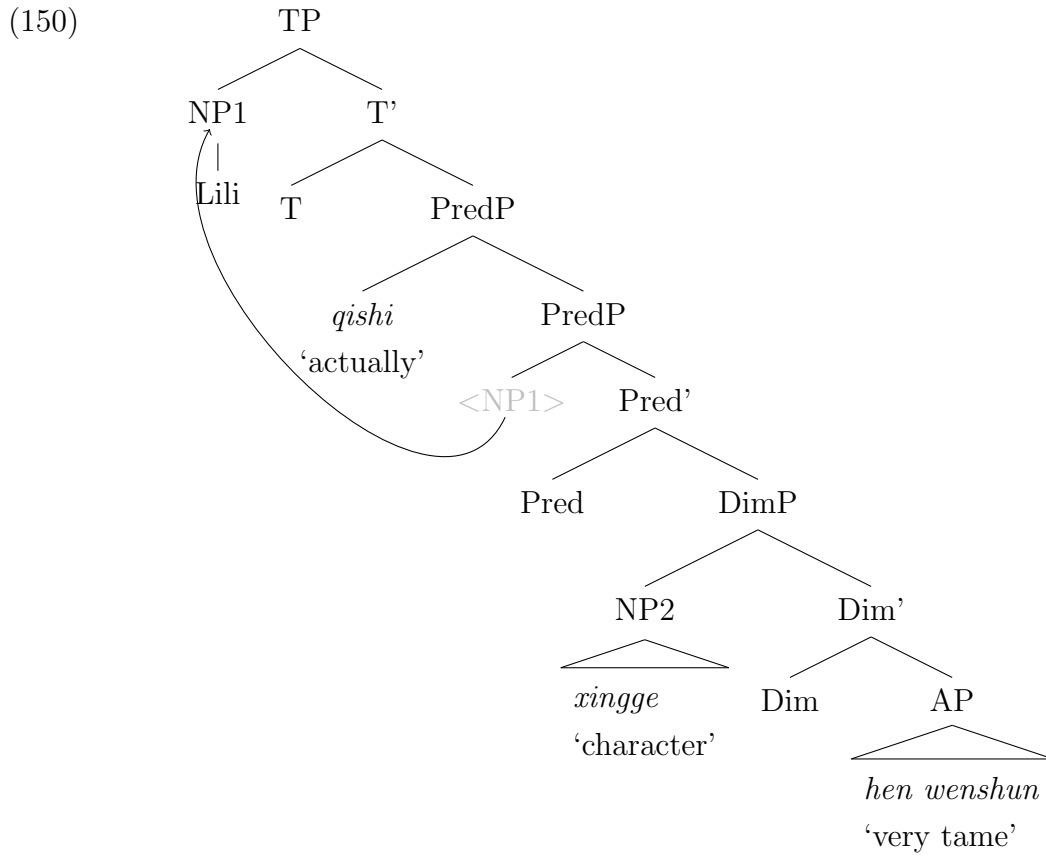
And the structure of (149b) is represented as the one below:

(151)

```
                        TP
                     ╱      ╲
                  NP1        T'
                   |       ╱    ╲
                 Lili    T      PredP
                       ╱      ╲
                    <NP1>      Pred'
                            ╱       ╲
                         Pred        DimP
                                  ╱        ╲
                               NP2          Dim'
                              ╱  ╲        ╱     ╲
                           xingge    Dim        AP
                         'character'         ╱      ╲
                                          qishi      AP
                                        'actually'  ╱  ╲
                                                 hen wenshun
                                                 'very tame'
```

Furthermore, it follows naturally from the current analysis that the [NP2+AP/VP] sequence cannot stand alone without the appearance of NP1.

(152)   a. ??Xingge   hen wenshun.
             character very tame

         b. ??Tou hen teng.
             head very ache

The string [NP2+AP/VP] is incomplete, as semantically NP2 modifies the adjectival/verbal phrase and syntactically it is located at the specifier position of a functional projection (DimP) above AP/VP. Thus, NP1 is needed to be predicated of and fill the subject position.

5.2.5.2   Semantic implications

The dimension projection sits between PredP and AP/VP, connecting with the subject NP1 on one hand and the AP/VP on the other hand, this captures the fact that NP2 needs to satisfy the s-selectional features of both at the same time. Also, since the second nominal is located at the specifier position of DimP, it can be present or not, the optionality of NP2 in DNCs therefore follows.

5.2.5.2.1 The relationality of NP2

The various semantic relations between constituents in DNCs are reflected in this analysis. It effectively predicts that as long as NP1 includes NP2 as an inherent property or a body-part and NP2 relates to AP/VP semantically, DNCs would be acceptable. For instance, as mentioned in section 5.2.3.3.3, in a film about animated cars, sentence (153) should be possible.

(153)   Zhe liang che xingge   hen wenshun.
            this CL   car character very tame

Even sentence (154) could become possible under a certain context:

(154)   Zhangsan yifu   hen shimao.
            Zhangsan clothes very fashionable
            'Zhangsan is very fashionable in clothes.'

Imagine a friend Zhangsan who is famous for wearing fashionable clothes and this habit of wearing fashionable clothes has become a characteristic of him. Then it is possible to say the above sentence, meaning that 'Zhangsan is very fashionable in terms of clothes'. It is true that I mentioned in section 5.2.2 that cases where NP2 is an entity-denoting noun should be treated as subject-predicate constructions in which NP1 and NP2 bear possessive relationship:

(155)   Zhangsan ?(de) yifu   hen shimao.
            Zhangsan DE   clothes very fashionable
            'Zhangsan's clothes are very fashionable.'

However, the conjecture is that when NP2 becomes a prominent feature of NP1, the relationship between NP1 and NP2 changes from ownership to a relational one. In sentence (154), what is actually talked about is Zhangsan (he is fashionable in terms of clothing), rather than Zhangsan's clothes as in (155). This is shown by the fact that an adverb *zongshi* 'always' can be inserted before NP2 *yifu* 'clothes':

(156)   Zhangsan zongshi yifu   hen shimao.
            Zhangsan always clothes very fashionable
            'Zhangsan is always very fashionable in clothes.'

Five out of seven of my consultants think in a special context, (154) and (156) are both fine. Two of them think (154) is fine, but (156) is marginally acceptable.

    One more example is given below:

(157) Zhangsan yifu   hen duo.
       Zhangsan clothes very abundant
       'Zhangsan is abundant in clothes.'

Sentence (157) is perfectly fine in MC. It is of interest in that it can only mean that Zhangsan is abundant in clothes (not other things). The meaning 'Zhangsan's clothes are abundant' is unavailable. It is very natural to insert an adverb before *yifu* 'clothes', as shown below:

(158) Zhangsan qishi   yifu   hen duo.
       Zhangsan actually clothes very abundant
       'Zhangsan is actually abundant in clothes.'

This suggests that example (157) is a dimension construction with *yifu* 'clothes' sitting at SpecDimP position. It is in contrast with sentence (159) below, which can only mean that Zhangsan's clothes but not Lisi's clothes are abundant:

(159) Zhangsan de yifu   hen duo.
       Zhangsan DE clothes very abundant
       'Zhangsan has many clothes.'

Again, treating (157) as a dimension construction seems to be contrary to my previous assumption that DNCs in which NP2 is an entity-denoting noun are different. However, sentence (157) is special and its speciality resides in the predicate *duo* 'abundant': unlike *gui* 'expensive', *shimao* 'fashionable' or *hou* 'thick', etc, *duo* 'abundant/many/much' or *shao* 'few/little', is not a property of clothes themselves. This can be seen from the contrast between the following two groups of examples:

(160) *Zhe jian yifu   hen duo.
        this CL clothes very abundant

(161) Zhe jian yifu   hen gui/shimao/hou.
       this CL clothes very expensive/fashionable/thick
       'This piece of clothes is very expensive/fashionable/thick.'

For a singular piece of clothing, it is possible to say it is expensive, fashionable or thick, but not abundant/many/much. Because quantity-denoting predicates are only applicable to plural nominals. Therefore, when the predicate is *duo*, the subject nominal should be either plural or mass. For example, in (157), the subject is a possessive phrase *Zhangsan de yifu* 'Zhangsan's clothes', which is plural in meaning.

Alternatively, the predicate *duo* could be modified by a dimension-denoting noun, which limits/defines the range/reference of the predicate, before it merges with the subject. This is exactly the case in (157). Specifically, before combining with the subject *Zhangsan*, *duo* is modified by the dimension-denoting noun *yifu* 'clothes', producing the complex predicate 'abundant in clothes'. In this way, the special predicate *duo* becomes compatible with the singular individual-denoting subject *Zhangsan*. It is worth mentioning that when the predicate is *duo*, NP2 is normally entity-denoting nouns but not property-denoting ones as only the former can be measured by quantity.

To summarise, in dimension constructions, NP2 should match NP1 and AP/VP semantically. As long as NP1 includes NP2 as a property, a part or a prominent feature and NP2 relates to AP/VP, a dimension construction is possible, even when NP2 is an entity-denoting noun.

5.2.5.2.2 The optionality of NP2

Furthermore, the present analysis provides an explanation for the optionality of NP2, which was a problem for previous analyses: DimP can be projected or not (alternatively, it can be assumed that DimP is always projected, and its Spec can be empty). If it is not projected, we get simple predication, as shown in example (162):

(162)   Lili hen wenshun.
        Lili very tame
        'Lili is very tame.'

This is a normal subject predicate sentence with *Lili* as the subject and the adjectival phrase *hen wenshun* 'very tame' the predicate. As already mentioned in section 5.2.3.3.2, in general, NP2 is optional in DNCs unless its absence causes ambiguity:

(163)   Zhangsan (duzi) e   le.
        Zhangsan stomach hungry LE
        'Zhangsan is hungry.'

(164)   Ta   *(tou) hen teng.
        (S)he head   very ache
        '(S)he has a headache.'

Unlike (163), in (164) above, without the appearance of *tou*, the meaning of the sentence becomes very unclear and as a result the sentence is unacceptable. In

fact, whether NP2 shows up in the surface or not is determined by the semantics of NP1 and the adjective together.

(165)   a.   Ta   (gezi)   hen gao.
                (S)he height very high

         b.   Ta   *(xueya)   hen gao.
                (S)he blood-pressure very high

         c.   Ta   *(zhishang) hen gao.
                (s)he IQ   very high

In (165a), NP2 *gezi* 'height' can be present or not. However, in (165b) and (165c), without NP2, the targeted meanings are impossible, instead, they have the same meaning as (165a) '(S)he is tall.' The reason for this might be that, according to our world knowledge, the adjective *high* is most naturally connected to height when describing a person. Thus, based on the meaning of the pronoun *ta* '(s)he' and the adjective *gao* 'high', it is very easy for the listener to figure out that the dimension at issue is stature in (165a). In other words, height is the default dimension when the adjective *high* is used to modify/describe a person, while *xueya* 'blood-pressure' and *zhishang* 'IQ' are not. As a consequence, they must show up in the corresponding sentences above.

In short, whether NP2 is present or not is determined by the co-occurring nominal and the predicate together. Normally, it is those default features that are optional. For instance, for the colour adjective *hei* 'black', the default body-part is fur for cats and skin for humans:

(166)   Zhe zhi mao (mao) hen hei.
         this CL cat   fur   very black
         'This cat's fur is very black.'

(167)   Ta   (pifu) hen hei.
         (s)he skin   very black
         'Her/His skin is very black.'

However, it is worth mentioning that in some cases, it is impossible to put another noun between the subject and the predicate, as illustrated in (168) below:

(168)   Zhangsan ku le.
         Zhangsan cry LE
         'Zhangsan cried.'

It is very unusual to say that 'Zhangsan's eyes cried'. It could be that in this case, the dimension of the predicate *ku* 'cry' is Zhangsan as a whole, rather than a property or a part of him.

The presence and absence of NP2 is also affected by pragmatic factors. In some contexts, NP2 shows up to highlight the dimension of the predication relation. This is very obvious in the sentence below, the discourse function of which is to make a comment on Zhangsan's physical appearance, and stature and body figure are the two features involved in the evaluation. Thus, both the property-denoting nouns *gezi* 'height' and *shencai* 'figure' are shown to form a contrast with each other:

(169)   Zhangsan [gezi   youdian ai],   danshi [shencai hen hao].
         Zhangsan height a bit   short but   figure   very good
         'Zhangsan is a bit short but has a good shape.'

To sum up, the intuition is that in predication (or modification), the predicate (or modifier) always picks up a certain feature/part of the nominal and modifies it in that respect. To be explicit, an entity-denoting noun usually has a variety of features/parts, for example, a person has properties such as height, weight, health condition, character, competence, a T-shirt has colour, shape, size, thickness, material, quality, price, etc. as its properties. Surrounding these properties/parts are a wide range of adjectives and verbs, and each corresponds to one property/part of the nominal in predication (or modification). These features/parts can be seen as the dimensions of the predication (or modification) relation (the role of dimension in modification will be explored in the future).

As property-denoting nouns denote abstract concepts themselves, they do not appear in NP1 position. Body part nouns are flexible: on the one hand, they denote entities and have different properties, therefore they can act as NP1; on the other hand, they are relational and they can be NP2 and requires the appearance of NP1. For instance, in the following sentence, NP1 is a possessive phrase in which the possessee denotes a part of the possessor:

(170)   Lili de zhuazi yanse hen hei.
         Lili DE paw   colour very black
         'Lili's paws are very black.'

In this case, *yanse* 'colour' functions as the dimension of the predicate *hen hei* 'very black' with respect to a part of *Lili*, i.e. *Lili de zhuazi* 'Lili's paws'.

In short, it can be seen that dimensions play an important role in connecting nominals and adjectival or verbal phrases. In this sense, it is plausible to assume that dimensions exist in any predication (or modification) relations, even in simple subject-predicate sentences, where dimensions are covert. I will examine the role of dimensions in predication (or modification) in a broader context in future research.

5.3 From *hen* to adjectival predication in MC

This section explores the question of why adjectives cannot function as predicates by themselves in MC.[17] As mentioned earlier, degree morphemes, question particles and other elements are required to co-occur with adjectives in predication. Following Rooth's (1992) and Ramchand's (1996) discussion on focus interpretation, I propose that the function of these elements is to create a set of alternative propositions, which are needed to satisfy the [+FOC] feature of the Pred head.

5.3.1 Bare adjectives are highly restricted in MC

As mentioned in section 5.2.3.2, it is an important characteristic of MC syntax that when acting as predicates, adjectives are normally accompanied by degree morpheme, negators, question particles or other elements (Sybesma 1999; Dong 2005; Huang 2006; Grano 2008; Liu 2010b; Grano 2011; Zhang 2015a, among others). This is the same in DNCs (171), normal subject predicate sentences (172) and other cases involving adjectival predication such as BI comparative constructions.

Without the appearance of the degree morpheme *hen* 'very', sentence (171a) is unacceptable under the meaning 'Zhangsan is (very) tall in height'.

(171)   a.   ??Zhangsan gezi   gao.
              Zhangsan   height tall

        b.   Zhangsan gezi   hen gao.
              Zhangsan height very tall
              'Zhangsan is (very) tall (in height).'

It is noteworthy that what I am trying to show is that *hen* is required for syntactic reasons here. The semantic contribution of *hen* is optional: sentence (171b) does not necessarily mean 'Zhangsan is very tall', instead, its most natural meaning is

'Zhangsan is tall'. In fact, it is a standard view that there are two *hen* in MC: one has syntactic functions, which is the one discussed here, while the other one purely indicates degree and is normally stressed (Li and Thompson 1981; Chui 2000, etc.).

Likewise, in the normal subject predicate sentence (172) below, to express the meaning 'Zhangsan is tall', *hen* is compulsory as well.

(172)   a.   ??Zhangsan gao.
              Zhangsan   tall

        b.   Zhangsan hen gao.
              Zhangsan very tall
              'Zhangsan is (very) tall.'

Again, the degree 'very' is optional in the meaning of sentence (172b). Since the phenomenon of interest exists in adjectival predication cases in general, in the following discussion, I will focus on investigating this issue in normal subject predicate sentences. Then I will apply the proposed analysis to DNCs and other constructions such as BI comparative constructions in MC.

Apart from *hen*, degree complements such as *budeliao* 'incredibly' can also save sentence (172a):

(173)   Zhangsan gao de *(budeliao).[18]
        Zhangsan tall DE incredibly
        'Zhangsan is incredibly tall.'

In addition to degree morphology, a variety of elements are available to rescue sentence (172a). This includes *bi* comparative phrases, question markers, A-not-A questions, negators, quantity phrases, among many others. In the following, I will give an example for each of these cases.

The *bi* phrase *bi Lisi* can appear before the adjective *gao* to form a comparative construction.

(174)   Zhangsan bi Lisi gao.
        Zhangsan BI Lisi tall
        'Zhangsan is taller than Lisi.'

The adjective *gao* 'tall' can be followed by the question marker *ma* to form a yes-no question.

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[18]Here, *de* is a resultative complement marker.

(175)   Zhangsan gao ma?
         Zhangsan tall MA
         'Is Zhangsan tall?'

Similarly, *gao* 'tall' can form an A-not-A (yes-or-no) question:

(176)   Zhangsan gao bu   gao?
         Zhangsan tall NEG tall
         'Is Zhangsan tall?'

Quantity phrases (QP) which are composed of numerals and units of measure can appear before the adjective as well:

(177)   Zhangsan liang mi   gao.
         Zhangsan two   meter tall
         'Zhangsan is two-meter tall.'

What is more, (172a) becomes fine when it is negated:

(178)   Zhangsan bu   gao.
         Zhangsan NEG tall
         'Zhangsan is not tall.'

Apart from the elements illustrated above, there are other elements such as aspect markers, coordinators or even clausal relationship that can accompany the bare adjective in the predicate position. My main concern is why bare adjectives cannot appear on their own and how these different elements turn the bare adjective into a legitimate predicate. This will be discussed in section 5.3.2 and 5.3.3. Before I move on, I would like to point out that actually, sentence (172) is possible under a comparative reading: Zhangsan is taller than some person/people in the context. What is worth noting is that in this case, *Zhangsan* is necessarily focused. This is an important clue to the analysis I am going to propose, so I will focus on exploring this phenomenon in the next section.

5.3.2   Cases where adjectives do stand on their own

There are only a few cases where the adjective does stand on its own. All these cases happen in contrastive situations where one entity/feature is contrastively focused. For instance, in the following sentence, the *wh*-word *shui* 'who' is stressed.

(179)   Zhangsan he   Lisi(,) shui$_F$[19]gao?
         Zhangsan and Lisi   who   tall

'Zhangsan and Lisi, who is taller?'

(179) is a *wh*-question sentence, in which the predicate is a bare adjective *gao* 'tall'. The subject *shui* 'who' is stressed and the whole sentence carries a comparative reading, as indicated by the translation.

As an answer to question (179), the following sentence is possible, in which the subject *Zhangsan* is stressed:

(180)   Zhangsan$_F$ gao.
            Zhangsan   tall
            'Zhangsan is taller.'

Another case is when the adjective is stressed. For example, when answering the yes-no question (181) or (182), sentence (183) is fine.

(181)   Zhangsan gao ma?
            Zhangsan tall MA
            'Is Zhangsan tall?'

(182)   Zhangsan gao bu   gao?
            Zhangsan tall NEG tall
            'Is Zhangsan tall?'

(183)   Zhangsan gao$_F$.
            Zhangsan tall.
            'Zhangsan is tall.'

Phonologically, the adjective *gao* 'tall' is pronounced longer and stronger. Semantically, it has the flavour of confirming the fact that Zhangsan is tall, rather than short.

Another contrastive example is given below, in which both the adjectives *gao* 'tall' and *ai* 'short' are stressed:

(184)   Zhangsan gao$_F$, Lisi ai$_F$.
            Zhangsan tall   Lisi short
            'Zhangsan is tall while Lisi is short.'

This sentence is interpreted as a contrast between the adjective *gao* 'tall' and its antonym 'short'.

In brief, in (179) and (180), what is in contrast is the entity, i.e. *Zhangsan* or *Lisi*, as indicated by the focus/stress marker F, whereas in (183) and (184), it is the feature *gao* 'tall' and *ai* 'short' that is contrasted. These facts suggest that

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[19]An F is put after *shui* to indicate that it is stressed phonologically.

the way adjectives are introduced as predicates in MC is closely related to focus interpretation.

5.3.3 The Pred$_{[+FOC]}$ analysis

5.3.3.1 Focus interpretation & alternative semantics

Rooth (1992) and Ramchand (1996) argue that the notion of a set of alternatives is widespread across languages. Focus is an important mechanism of creating alternative semantics and the alternative semantics of a sentence is a set of alternative propositions created by making substitutions in the position of the focused phrase:

(185) $[[_S[\text{Mary}]^F \text{ likes Sue}]]^f = \{\text{like}(x, s) \mid x \in E \}$

E represents the domain of individuals. 'Mary' is focused, and the alternative semantics of 'Mary likes Sue' is the set of propositions created by substituting Mary, i.e. {like (x, s) | x∈E}.

According to Rooth (1992), a range of linguistic elements are sensitive to alternative semantics signalled by focus. One of them is the English adverb 'only':

(186)   a.   Mary only introduced Bill to [Sue]$_F$.
         b.   Mary only introduced [Bill]$_F$ to [Sue].

Sentence (186b) is untrue in a senario that Mary introduced both Bill and Tom to Sue.

Therefore, my assumption is that in MC, bare adjectives are not predicative in nature, and they need to be turned into predicates. Following Rooth and Ramchand's idea, I propose that Mandarin adjectives are introduced as predicates by creating alternative propositions. Specifically, in predication constructions, morphemes such as *hen* and *ma* perform the function of generating alternative propositions by building contrastive pairs. Structurally, I will argue that PredP is projected in Mandarin predication constructions (Svenonius 1994; Adger and Ramchand 2003, among others) and the Pred head carries a [+FOC] feature. This proposal can be formalised as the following:

(187)

```
                           PredP
                          /     \
                         /       \
                    Subject      Pred'
                                /    \
                               /      \
                      Pred[+FOC]   ⟦AP⟧ = {alt₁, alt₂...altₙ}
                                        /    \
                                       /_____\
                                    hen adjective
```
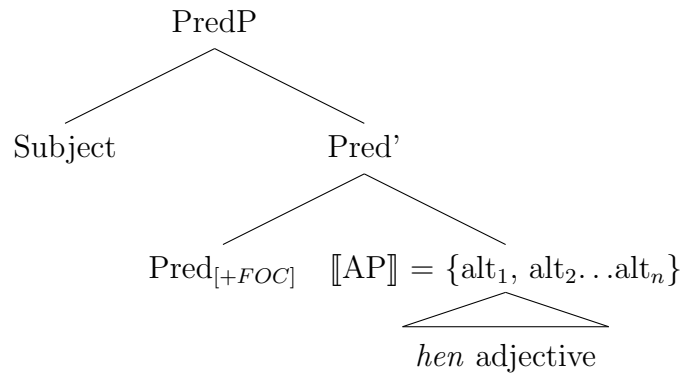
The [+FOC] feature of the Pred head needs to be satisfied by a set of alternatives, therefore, elements such as *hen*, negators, question particles, are required to create alternative propositions.

As an illustration, in the following sentence, the *wh*-word *na* 'which' denotes a set of alternatives, which is the group of students known in the context, it could be {Zhangsan, Lisi, Wangwu ... }.

(188)   Na   ge xuesheng (hen) gao?
        which CL student   very tall
        'Which student is (very) tall?'

The morpheme *hen* is optional in this case. *na* 'which' provides the set of alternatives, *hen* is just a degree intensifier.

Under this analysis, cases where the subject or the adjective is focused follow naturally: to create a set of alternatives by building contrastive scenarios. For instance, for sentence (189), the set of alternatives could be {Zhangsan, Lisi};

(189)   Zhangsan$_F$ gao.
        Zhangsan   tall
        'Zhangsan is taller.'

for sentence (190), {tall, not tall};

(190)   Zhangsan gao$_F$.
        Zhangsan tall.
        'Zhangsan is tall.'

and for (190), {tall, short}.

(191)   Zhangsan gao$_F$, Lisi ai$_F$.
        Zhangsan tall   Lisi short
        'Zhangsan is tall while Lisi is short.'

5.3.3.2   The application of the Pred$_{[+FOC]}$ analysis

In the next, I will go through those cases where there is no focus intonation and elements such as *hen* and *ma* co-occur with the adjective, to show how the current analysis captures these data.

The first case is when the adjective is accompanied by the degree adverb *hen* 'very'.

(192)   Zhangsan hen gao.
            Zhangsan very tall
            'Zhangsan is (very) tall.'

hen indicates a set of degrees such as {extremely, very, moderately, a bit...}.

More obviously, in the following BI comparative sentence, the *bi* phrase *bi Lisi* indicates a set of alternatives of the height difference between *Zhangsan* and *Lisi* (the stand of comparison): {Zhangsan is taller than Lisi, Lisi is taller than Zhangsan, Zhangsan is as tall as Lisi}.[20]

(193)   a.   Zhangsan bi Lisi gao.
                Zhangsan BI Lisi tall
                'Zhangsan is taller than Lisi.'

         b. *Zhangsan bi Lisi hen gao.
                Zhangsan BI Lisi very tall

Even more interestingly, when *bi Lisi* is present, the degree adverb *hen* is not allowed. This might suggest that the *bi* phrase and *hen* has the same function and therefore there is no need for them to show up at the same time in the same sentence. However, this is not exactly the case, and I will discuss this issue in detail in section 5.4.

The following two types of yes-no question can be analysed in a similar way.

(194)   Zhangsan gao ma?
            Zhangsan tall MA
            'Is Zhangsan tall?'

(195)   Zhangsan gao bu gao?
            Zhangsan tall not tall

---

[20]As I will discuss more later in section 5.4, as a matter of fact, it is the degree marker *geng* entailed by the *bi* phrase that creates a set of alternatives and satisfies the [+FOC] feature of Pred. According to Liu (2011), *geng* is the degree marker and the *bi* phrase is just an adjunct that introduces the stand of comparison. Thus in section 5.4, I will treat *geng* as the equivalent of the degree morpheme such as *hen* and propose that they are merged as the Spec of functional projection DegP above AP/VP.

'Is Zhangsan tall?'

According to Liu (2010b), there exists the degree value of Zhangsan's height and the contextually determined standard degree of human height and it is the relation of these two degrees that is being asked about in the yes-no question. Following this idea, the above two sentence can be interpreted as Zhangsan's height $>$ the standard human height or Zhangsan's height $\leq$ the standard human height. In these cases, it is the question particle *ma* and the A-not-A question form that check the [+FOC] feature of the Pred head.

The sentence below is very interesting, where the adjective co-occur with the sentence final particle *le*, denoting a change of state:

(196)   Zhangsan gao le.
   Zhangsan tall LE
   'Zhangsan got taller.'

Since this sentence denotes a change from one state to another, it is very plausible to assume that the set of alternatives include the different states of the subject, i.e. growing taller {1.5 meters tall, 1.6 meters tall, 1.7 meters tall}.

In the following, we will look into how the alternative semantics is established in the negation case and the quantity phrase case, which does not seem to be very straightforward at first glance.

Following Rooth (1992), Lee (2001) proposes that *bu* is a focus sensitive operator which introduces a set of alternatives to the part that is negated. Specifically, in (197) below, there is an alternative to 'Zhangsan is not tall', which is 'Zhangsan is tall'.

(197)   Zhangsan bu gao.
   Zhangsan NEG tall
   'Zhangsan is not tall.'

In fact, the A-not-A question in (195) can be understood in this way as well. The set of alternatives is {Zhangsan is tall, Zhangsan is not tall}.

With respect to the following case where the adjective is accompanied by a QP, it can be said that it creates a set of different values of height {1.5 meters, 1.8 meters, 2 meters...}

(198)   Zhangsan liang-mi gao.
   Zhangsan two-meter tall
   'Zhangsan is two-meter tall.'

As shown by the examples above, where elements such as degree morphemes, question particles and negators appear, there is indeed a set of alternatives present. It can be concluded that the function of those elements is creating alternative semantics. This explains why they are obligatory in adjective predicates in MC: to check the [+FOC] feature of the Pred head.

5.3.4 Further evidence

It can be seen from the above discussion that the alternative/contrastive semantics play an important role in this process. Therefore, it can be predicted that when contrastive semantics cannot be built, bare adjectives must be banned.

5.3.4.1 When there is no contrast

As discussed above, when there is no degree morpheme or any other elements accompanying the adjective, in a well-formed sentence such as the following, the two adjectives must form a contrast, to compose a set of alternatives.

(199) Zhangsan gao$_F$, Lisi ai$_F$.
　　　 Zhangsan tall　 Lisi short
　　　 'Zhangsan is tall while Lisi is short.'

However, as pointed out by Dong (2005), unlike (199), the following sentence is unacceptable.

(200) *Zhangsan gao, Lisi gaoxing.
　　　 Zhangsan tall, Lisi happy
　　　 'Zhangsan is tall, and Lisi is happy.'

The two adjectives *gao* 'tall' and *gaoxing* 'happy' do not form a contrast with each other. As a result, the bare adjectives cannot act as the predicates, and consequently sentence (200) is bad.

Before turning to the next part, I would like to mention that Grano (2008) claims that if embedded, clauses with bare adjectives could also be acceptable. The example he gives is shown below:

(201) Wo zhidao [Zhangsan gao], dan mei　 xiangdao ta　 zhe me gao.
　　　 I　 know　 Zhangsan tall, but NEG expect　 (s)he this　 tall
　　　 'I knew Zhangsan was tall, but I didn't expect (s)he was this tall.'

He argues that *hen* is only required in the matrix clause and in embedded clauses, adjectives can appear in predicate position without the presence of degree morphology. However, this is not true. For instance, if I keep the first half of the above sentence and change the second half to that in (202a), the sentence becomes unacceptable. It would be better to have *hen* 'very' before the adjective, as shown in (202b):

(202)   a.   ?Wo zhidao [Zhangsan gao], suoyi rang ta   qu da   lanqiu.
                I   know Zhangsan tall, so   let   him go play basketball
                'I know Zhangsan is very tall, so I let her/him play basketball.'

           b.   Wo zhidao [Zhangsan hen gao], suoyi rang ta   qu da   lanqiu.
                I   know Zhangsan very tall, so   let   him go play basketball
                'I know Zhangsan is very tall, so I let her/him play basketball.'

The only difference between (201) and (202b) is the relation between the two subclauses: in the former, it is transitional (*dan* 'but'); while in the latter, it is causal (*suoyi* 'so'). That is to say, in causal relation, such as (202a), bare adjectival predicates are not legitimate in embedded clauses. This may suggest that what makes (201) grammatical is the transitional relationship between clauses, more specifically, the contrast between the speaker's presupposed height of *Zhangsan* and his actual height.

    This supports my claim that when there is no contrast/alternative such as in (202a), bare adjectives are not permitted, while when there is a contrast, even it is clausal such as in (201), bare adjectives are acceptable. Whether it is a matrix clause or an embedded clause does not make a difference.

5.3.4.2   When there is no Pred

Another prediction of the current proposal is that when the Pred head is absent, the degree elements and others should not appear as well. This is indeed the case.

5.3.4.2.1   Small clauses

The first environment where Pred is not projected is in small clauses. The sequence *Lisi ai* 'Lisi short' in the following sentence is generally regarded as an instance of small clauses (Tang 1998).

(203)   Zhangsan xian   Lisi ai.
          Zhangsan disfavor Lisi short
          'Zhangsan disfavors Lisi for being short.'

According to native speakers, this sentence is completely fine. This is captured by my assumption: since Pred head is not present in *Lisi ai*, there is no reason for the degree morpheme to show up, either. In fact, when the degree marker appears, the acceptability of the sentence decreases greatly, as shown below.

(204)   *Zhangsan xian   Lisi hen ai.
            Zhangsan disfavor Lisi very short

In cases where degree elements do appear, they are just degree intensifiers.

(205)   Zhangsan xian   Lisi tai ai.
            Zhangsan disfavor Lisi too short
            'Zhangsan disfavors Lisi for being short.'

It is interesting that *tai* 'too' is acceptable in the above sentence but not *hen*. Semantically, *tai* is stronger than *hen* and it also carries the speaker's dissatisfaction with the excessive degree denoted by the adjective. Therefore, I will assume that *tai* 'too' in the above sentence is a pure degree intensifier and does not have any influence on the syntax of the sentence.

5.3.4.2.2   Prenominal modification

Similar reasoning applies to the prenominal modification cases in (206a) and (206b) where PredP does not exist.

(206)   a.   hong hua
             red   flower
             'a red flower' or 'red flowers'

        b.   xiao juzi
             small mandarin
             'a small mandarin' or 'small mandarins'

Generally speaking, *hen* is not required when adjectives modify nominals directly, that is, without the appearance of the morpheme *de*, as shown by examples (206a) and (206b). However, interestingly, whenever *hen* shows up, *de* must co-occur, as can be seen from the contrast between (206) and (207).[21]

---

[21]Grano (2008) argue that all the above prenominal adjectives are within relative clauses, therefore, it is fine for them to show up bare (he believes elements such as *hen* are only necessary in matrix clauses). However, the general assumption is that only the *de* cases (207) are relative clauses and the *de*-less cases (206) are adjectives merged with the nominals directly (Sproat and Shih 1991; Paul 2006, among others). As a result, Grano's argument does not hold.

(207)   a.   hen hong *(de) hua
                   very red   DE   flower
                   'a flower that is very red' or 'flowers that are very red'

        b.   hen gao *(de) nan haizi
                   very tall DE   male child
                   'a boy that is very tall' or 'boys that are very tall'

Moreover, in phrases where *hen* is not present, the adjective is necessarily stressed. As shown in (208) in which *hong de hua* 'red flowers' is in contrast with *huang de hua* 'yellow flowers':

(208)   a.   Wo xihuan hong$_F$ de hua
                   I   like   red   DE flower
                   'I like red flowers (not yellow ones).'

        b.   Hong$_F$ de hua   haokan.
                   red   DE flower beautiful
                   'Red flowers (not yellow ones) are beautiful.'

Recall that in Chapter 2, I show that in *de*-less modification ("direct" modification), the adjectives are merged at Spec of FP above NP, while in *de* modification cases, adjectives are inside relative clauses ("indirect" modification), which are then merged at higher SpecFPs (Cinque 2010; Sproat and Shih 1991; Paul 2006, and so forth). Under this assumption, the contrast between (206) on the one hand and (207) and (208) on the other hand is captured. In (206), there is no Pred involved, thus, *hen* is not needed. However, in (207) and (208), Pred is present in the relative clauses, therefore, *hen* is required to satisfy the [+FOC] feature of Pred; similarly, in (208), *hong* 'red' is stressed to create a set of alternatives ({red, yellow, purple... }) to satisfy the [+FOC] feature of Pred. Also, this explanation is supported by Larson (2009) where he argues that phrases such as (207a) and (207b) are derived from relative clauses and *de* in these cases is a clausal marker.

It is worth mentioning that the reduplicative form of the adjective, also known as complex adjectives (CA), can act as predicates directly:

(209)   Zhangsan gao-gao-de.
          Zhangsan tall-tall-DE
          'Zhangsan is tall.'

Compared with simple adjectives (SAs), complex adjectives (CAs) represent an intensified degree and sentence such as (209) could be viewed as a contrast between different degrees of tallness.
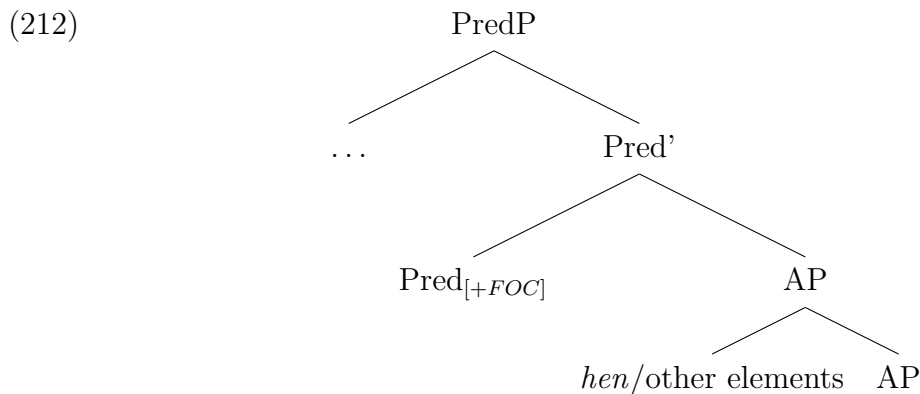
5.3.4.2.3 Non-gradable adjectives

Until now, all the adjectives I discussed are gradable adjectives; the other type of adjective in MC is non-gradable adjectives such as *dui* 'right', *zhen* 'authentic'. One property of these adjectives is that they normally cannot be modified by degree morphemes; however, they usually appear in *shi…de* construction, as shown below:[22]

(211) a. ?Zhe ge huaping hen jia.
           this CL vase   very fake

       b. Zhe ge huaping shi jia   de.
           this CL vase   SHI fake DE
           'This vase is fake.'

shi…de construction is generally considered to be a focus construction in the literature (Lee 2005, inter alia). In (211b) above, the adjective *jia* 'fake' is focused to form a contrast with its potential antonym *zhen* 'authentic'. The whole sentence is to emphasise that this vase is fake rather than genuine.

This fact above together with the discussion presented so far for gradable adjectives suggests that adjectives (both gradable and non-gradable) in MC are introduced as predicates via focus interpretation, specifically, by a functional projection PredP which bears a [+FOC] feature. The schema can be illustrated as the following:

(212)

$$
\begin{array}{c}
\text{PredP} \\
\diagup \diagdown \\
\cdots \quad \text{Pred'} \\
\diagup \diagdown \\
\text{Pred}_{[+FOC]} \quad \text{AP} \\
\diagup \diagdown \\
hen/\text{other elements} \quad \text{AP}
\end{array}
$$

---

[22]Gradable adjectives normally do not show up with *shi…de*:

(210) ??Zhangsan shi gao de.
        Zhangsan SHI tall DE
        'It is true that Zhangsan is tall.'

This sentence is marginally acceptable.

Elements around the adjective, including stress intonation, degree expressions and other morphemes, perform the same role: creating a set of alternatives to satisfy the [+FOC] feature of the Pred head.

5.3.5 Previous analyses and their limitations

Generally speaking, there are three lines of research regarding the issue why bare adjectives are not allowed as predicates in MC.

5.3.5.1 The semantic type shifting approach

The semantic approach argues that adjectives are of a particular semantic type and they need the co-occurrence of other morphemes such as *hen* to convert them into the right type in predicate position (Huang 2006, Liu 2010b, Zhang 2015a).

More specifically, it has been proposed that adjectives are of type e (Huang 2006) or <d,<e,t>> (Liu 2010b), and they require the co-occurrence of degree morphology such as *hen* (type <e,<e,t>>) or an operator POS (type d), respectively, to be converted into type <e,t> in predicate position. Following Kennedy (1997) and Liu (2010b), Zhang (2015a) also argues that *hen* is a POS marker based on the fact that it occurs in positive constructions only. It is of semantic type <<d,<e,t>>,<e,t>> and s-selects gradable adjectives which are type <d,<e,t>> (Zhang 2015a).

However, this line of analyses fails to capture the fact that degree morphology is not needed when adjectives modify nouns attributively in direct modification, unless it assumes that the semantic type of adjective changes in modification constructions such as the one below:

(213)   xiao juzi
         small orange
         'small oranges'

Moreover, Liu, Huang and Zhang's analyses cannot explain why morphemes such as question marker *ma* can save sentences without the appearance of *hen*.

5.3.5.2 The syntactic category shifting approach

Dong (2005) analyses *hen* as the aspectual marker for adjectives in stand-alone sentences, just as *le* for verbs in independent sentences.

According to him, in MC, *le* is a perfective marker, while the reduplicative form of adjectives AABB-*de* and *shi* ... *de* sequence are imperfective markers.

Based on the fact that *hen* cannot co-occur with these elements, as shown below, Dong (2005) draws the conclusion that *hen* is also an aspectual marker.

(214)   *Ta de lian hen hong le.
          she DE face very red   LE
          'Her face turned very red.'

(215)   *Ta de lian hen hong-hong de.
          she DE face very red-red   DE
          'Her face is red.'

(216)   *Ta de guandian shi hen cuowu de.
          she de opinion   SHI very wrong DE
          'Her opinion is wrong.'

As for why degree morphemes can be aspect marker, Dong's explanation is that since degree morphemes involve comparing the degree of the state of the object indicated by the adjective with that of the standard of comparison (Kennedy 2007), the state of the object must be existent in the span of the time that includes the time of the comparison.

   However, Dong's grammatical judgements of the sentences are problematic. Sentence (214) is fine in the context below.

(217)   Ta de lian hen hong le, bie   zai   rang ta he   jiu le.
          she DE face very red   LE don't again let   her drink wine LE
          'Her face turned very red, don't let her drink wine any more.'

The following sentence is completely fine, too.

(218)   Ta de guandian shi hen zhengque de.
          she de opinion   SHI very correct   DE
          'Her opinion is correct.'

   When talking about why in contrastive situations *hen* is not needed, Dong (2005) mentions that a contrast in itself is a comparison and a comparison is made between two degrees. As a matter of a fact, this idea is consistent with my proposal that the appearance of *hen* creates a set of different degrees.

   Grano (2011) proposes that degree adverbs, focus, etc, have the ability of turning adjectives into verbal categories. They are required to check the [+V] feature on T assuming that T is always projected in clauses.

(219)   a.   ??Zhangsan gao.
               Zhangsan   tall

    b. Zhangsan hen gao.
       Zhangsan very tall
       'Zhangsan is (very) tall.'

According to him, the reason why example (219a) is ungrammatical is that the adjective *gao* 'tall' fails to check the [+V] feature of T. By contrast, in (219b), the use of the degree adverb *hen* 'very' licenses the [+V] feature, and thus enables the adjective *gao* to function as a predicate of T. More specifically, degree adverbs such as *hen* turn the adjective into a verbal category, in this way, it renders the adjective qualified as the predicate of the sentence.

    This analysis correctly captures the fact that when T is not projected, for example, in prenominal modification constructions and small clauses, *hen* is not obligatory. However, it is not clear what the nature of the [+V] feature of T is. Also, it is not discussed how elements such as quantity phrases turn adjectives into verbal categories.

(220)   Zhangsan liang mi   gao.
         Zhangsan two   meter tall
         'Zhangsan is two-meter tall.'

It is not clear how the phrase *liang mi* 'two meter' in (220) has the function of changing the categorial status of adjectives. Likewise, in the following focus cases, it is even harder to understand how the phonological change can alter the syntactic categories of adjectives.
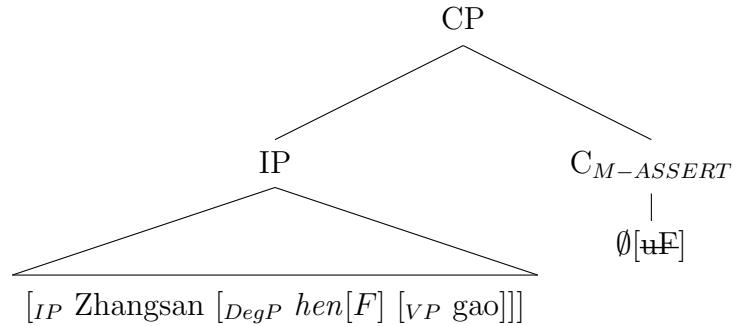
(221)   Zhangsan$_F$ gao.
         Zhangsan   tall
         'Zhangsan is taller.'

(222)   Zhangsan gao$_F$, Lisi ai$_F$.
         Zhangsan tall   Lisi short
         'Zhangsan is tall while Lisi is short.'

These problems exist in Dong's (2005) analysis as well. It is not clear how elements such as quantity phrases and focus intonation can be aspect markers.

5.3.5.3 The illocutionary force approach

Grano (2008) claims that degree morphology is needed only when the adjective is the entire predicate of the matrix-level declarative clause, to check the uninterpretable feature of C$_{M-ASSERT}$, which is the locus of the illocutionary force of the sentence. The schema is shown below.

(223)

```
                              CP
                            /    \
                          IP      C_{M-ASSERT}
                                    |
                                   ∅[u̶F̶]
        [_IP Zhangsan [_DegP hen[F] [_VP gao]]]
```

According to Grano, the following sentence is fine because the clause *Zhangsan gao* is embedded: C is not projected, thus, no elements are required to check its feature.

(224) Wo zhidao [Zhangsan gao], dan mei   xiangdao ta zheme gao.
       I   know Zhangsan tall, but NEG.PRF think   he this   tall
       'I knew Zhangsan was tall, but I didn't know he was so tall.'

However, as discussed in section 5.3.4.1, actually, sentence (224) is possible only because the two sub-clauses are connected by the contrastive coordinator *dan* 'but'. In comparison, in (225), when the clausal relationship is causal rather than contrastive, *hen* is necessary even though it is within an embedded clause.

(225) Wo zhidao [Zhangsan ??(hen) gao], suoyi rang ta   qu da   lanqiu.
       I   know Zhangsan very   tall, so   let   him go play basketball
       'I know Zhangsan is very tall, so I let him play basketball.'

Under the $\text{Pred}_{[+FOC]}$ analysis, it can be said that in (224), the [+FOC] feature of the Pred head in the embedded clause is checked by the coordinator *dan* 'but' (the contrast between 'tall' and 'extremely tall').

To summarise, in tackling the issue of the obligatory appearance of *hen* and other elements in predication constructions in MC, existing studies have limitations in two major aspects: (i) providing an analysis that covers adjectives both in prenominal modification position and postnominal predication position; (ii) unifying degree morphemes such as *hen*, focus intonation and the range of other elements that co-occur with the adjectives. Both of these are captured by my proposed $\text{Pred}_{[+FOC]}$ analysis.

The $\text{Pred}_{[+FOC]}$ analysis has important implications. First, the contrast between (224) and (225) above follows from this analysis. Secondly, it correctly predicts that when adjectives are used attributively (226) or appear in small clauses such as (227), degree morphology is not needed.

(226) hong hua
       red   flower
       'a red flower' or 'red flowers'

(227) Zhangsan xian   Lisi ai.
       Zhangsan disfavor Lisi short
       'Zhangsan disfavors Lisi for being short.'

Furthermore, as discussed in section 5.3.4.2.3, this analysis coincides with the fact that non-gradable adjectives need the accompany of the *shi...de* sequence in predicate position.

(228) a. *Zhe ge huaping jia.
            this CL vase   fake

       b. ?Zhe ge huaping hen jia.
            this CL vase   very fake

       c. Zhe ge huaping shi jia   de.
           this CL vase   SHI fake DE
           'This vase is fake.'

The obligatoriness of both *shi...de* sequence and *hen* suggests that the claim that adjectives in MC are introduced as predicates by Pred$_{[+FOC]}$ is on the right track.

To conclude, adjectives in MC are introduced as predicates by a functional projection PredP which bears a [+FOC] feature. Degree morphemes, focus intonation, *shi...de* sequence and other elements are required to check the [+FOC] feature by building contrastive pairs. As for the difference between MC and English, it can be assumed that, in English, the copular *is* checks the [+FOC] feature of Pred, and accordingly, degree elements are optional. However, for future research, I plan to conduct a systematic investigation on contrastive constructions in MC in general and then show in detail how *hen* and other elements are linked to the focus interpretation in MC.[23]
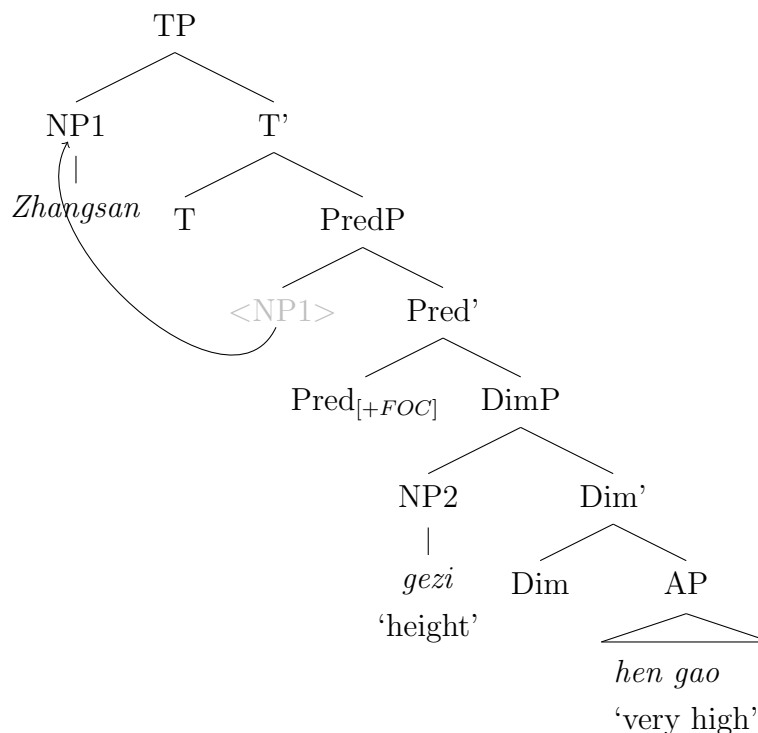
As for DNCs, since the assumption is that the Pred head carries a [+FOC] feature, it follows that degree morphology or other particles are needed to satisfy this [+FOC] feature of the Pred head. Take the following sentence as an example.

(229) Zhangsan gezi   hen gao.
       Zhangsan height very tall
       'Zhangsan is (very) tall.'

Its structure is illustrated below:

---

[23]I am grateful to one anonymous reviewer from TEAL-9 for pointing this out to me.

(230)

```
                    TP
            ┌────────┴────────┐
          NP1               T'
           │           ┌─────┴─────┐
        Zhangsan       T         PredP
                            ┌──────┴──────┐
                          <NP1>         Pred'
                                  ┌───────┴───────┐
                             Pred[+FOC]          DimP
                                          ┌───────┴───────┐
                                        NP2             Dim'
                                         │         ┌──────┴──────┐
                                        gezi      Dim           AP
                                      'height'                  hen gao
                                                              'very high'
```

In the above tree, the adjective *hen* indicates a set of alternatives and the alternative semantics satisfy the [+FOC] feature of Pred. Therefore, the obligatory appearance of degree morphemes, question particles and a range of other morphemes in the predicate position of DNCs is explained.

5.4 BI comparative constructions

The dimension analysis and the Pred[+FOC] analysis are very helpful to the understanding of the BI comparative constructions in MC.

In the following, I will focus on the syntax and semantics of the indirect BI constructions (IBCs) with the form [NP1+(de)+NP2+bi+NP3+AP] such as (231) and (232) in MC. The interpretation of IBCs is the one in which NP1 is compared to NP3 in the aspect of NP2 (Dexi 1999; Shao 1990; Cheng 2004, and others). NP2 is usually a property-denoting noun or body part which represents either a property or a part of NP1 and NP3.

(231)   Zhangsan (de) nianji bi Lisi da.
         Zhangsan DE   age   BI Lisi big
         'Zhangsan is older than Lisi.'

The interpretation of sentence (231) is that the speaker is comparing *Zhangsan*

with *Lisi* in terms of the property "age". In the following sentence, the speaker is comparing *Zhangsan* with *Lisi* in terms of their body-part "eyes".

(232)   Zhangsan (de) yanjing bi Lisi da.
        Zhangsan DE eye   BI Lisi big
        'Zhangsan's eyes are bigger than Lisi's.'

It has been argued that examples (231) and (232) are derived from direct BI constructions (DBCs) such as (233) and (234), respectively, by deletion of *de* and the copy of NP2 (Li 1986; Ma 1999, among others).

(233)   Zhangsan de nianji bi Lisi ~~de nianji~~ da.
        Zhangsan DE age   BI Lisi DE age   big
        'Zhangsan is older than Lisi.'

(234)   Zhangsan de yanjing bi Lisi ~~de yanjing~~ da.
        Zhangsan DE eye   BI Lisi DE eye   big
        'Zhangsan's eyes are bigger than Lisi's.'

The two phrases on either side of *bi* are therefore assumed to have identical structure. However, Waltraud (1993) points out that *bi* is not a coordinator but a preposition, and it is therefore unlikely that the two phrases on its two sides are symmetrical. I will claim that IBCs are independent of DBCs, with distinct syntax and semantics. Data from the Center for Chinese Linguistics Peking University corpus also suggests that IBCs are not derived from DBCs. For instance, the sequence *nianji bi* 'age BI' only appears in IBCs, and never in DBCs. Moreover, 60 out of the total 72 hits are of the form [NP1+NP2+*bi*+NP3+AP/VP] in which *de* is absent.

A crucial problem of the deletion analysis is that it cannot explain why entity-denoting nouns and kinship terms cannot appear in IBCs, as illustrated below:

(235)   a. *Zhangsan (de) yifu   bi Lisi da.
           Zhangsan DE clothes BI Lisi big

        b. Zhangsan de yifu   bi Lisi de yifu   da.
           Zhangsan DE clothes BI Lisi DE clothes big
           'Zhangsan's clothes are bigger than Lisi's.'

When NP2 is the entity-denoting noun *yifu* 'clothes', the form IBC is impossible. This is the same when NP2 is the kinship noun *baba* 'father'.

(236)   a. *Zhangsan de baba bi Lisi da.
           Zhangsan DE father BI Lisi big

b. Zhangsan de baba bi Lisi de baba da.
       Zhangsan DE father BI Lisi DE father big
       'Zhangsan's father is older than Lisi's father.'

In both cases, only DBCs are possible and this poses a challenge for the *de*-deletion analysis.

5.4.1 The degree marker *geng* satisfies the [+FOC] feature of Pred

I will first argue that BI constructions (both IBCs and DBCs) are not special; they are DNCs or normal subject-predicate sentences in which the adjective is modified by a *bi* phrase. The morpheme *geng* associated with the *bi* phrase has the same function as *hen* and other elements in normal subject predicate sentences or DNCs, satisfying the [+FOC] feature of Pred. Before I elaborate on these proposals, I would like to point out one misleading fact.

As mentioned in the last section, degree morphemes such as *hen* are obligatory before the adjectival predicate in normal subject-predicate sentences, however, in BI constructions they are disallowed:

(237)   Zhangsan de yifu   bi Lisi de yifu   (*hen) da.
         Zhangsan DE clothes BI Lisi DE clothes   very   big
         'Zhangsan's clothes are much bigger than Lisi's clothes.'

It seems that the above fact suggests that in BI constructions, the *bi* phrase performs the same function as *hen* does in subject-predicate sentences, i.e. it indicates the degree of the state represented by the adjective/predicate.

(238)   Zhangsan de yifu   [hen/bi Lisi de yifu]   da.
         Zhangsan DE clothes [very/BI Lisi DE clothes] big
         'Zhangsan's clothes are very big.'

         or 'Zhangsan's clothes are bigger than Lisi's clothes.'

Nonetheless, as pointed out by two anonymous reviewers of ConSOLE 23, the above argument is not convincing. According to them, in (239b) below, *geng* and *hen* are in complementary distribution, then following the idea that *bi* phrase and *hen* are in complementary distribution, it suggests that *geng* and *bi* phrase are in the same position.

(239)   a. Zhangsan de yifu   geng   da.
            Zhangsan DE clothes GENG big

'Zhangsan's clothes are bigger.'

b. *Zhangsan de yifu   geng   hen da.
   Zhangsan DE clothes GENG very big

However, this leaves sentence (240) where *bi* phrase and *geng* co-occur unexplained.

(240)   Zhangsan de yifu   bi Lisi de yifu   (geng) da.
         Zhangsan DE clothes BI Lisi DE clothes GENG big
         'Zhangsan's clothes are (even) bigger than Lisi's clothes.'

It seems that we get into an unsolvable problem here. However, following Liu (2011), I will argue that *geng* and *bi* phrase are not in the same position. Instead, they are correlated and the presence of one entails the existence of the other. This captures the fact that both of them are in complementary distribution with *hen* in (237) and (239b) but they themselves can co-occur (240).

The argument that *geng* and *bi* phrase are correlated is shown by the fact that they are frequently used together in BI constructions, as illustrated by sentence (240) above given by a reviewer and also example (241) below:

(241)   Zhangsan bi Lisi geng   nianqing.
         Zhangsan BI Lisi GENG young
         'Zhangsan is younger than Lisi.'

Moreover, even though *geng* is used alone, it still denotes comparative semantics:

(242)   Ta gege   hen congming, didi   geng   congming.
         he elder-brother very smart   younger-brother GENG smart
         'His elder-brother is very smart and his younger-brother is smarter.'

As indicated by the translation, *geng* carries comparative semantics and can be seen as the equivalent of the comparative marker *-er* in English. *bi* phrase can be viewed as the equivalent of the English *than*-phrase in MC. This explains why *bi* phrase and *geng* often co-occur.

Also, the sentences below suggest that the morpheme *geng* rather than the *bi* phrase is the equivalent of *hen*:

(243)   a. Zhangsan nianji bi Lisi da.
             Zhangsan age   BI Lisi big
             'Zhangsan is older than Lisi.'

         b. Zhangsan bi Lisi nianji da.
             Zhangsan BI Lisi age   big

'Zhangsan is older than Lisi.'

The phrase *bi Lisi* can appear before or after *nianji* 'age', but both *geng* and *hen* can only appear after *nianji*:

(244)   a.   Zhangsan nianji geng   da.
                 Zhangsan age   GENG big
                 'Zhangsan is older.'

          b.   *Zhangsan geng   nianji da.
                 Zhangsan GENG age   big

(245)   a.   Zhangsan nianji hen da.
                 Zhangsan age   very big
                 'Zhangsan is very old.'

          b.   *Zhangsan hen nianji da.
                 Zhangsan very age   big

It can be seen that *geng* rather than the *bi* phrase is equivalent to *hen*. The appearance of the *bi* phrase entails the existence of the *geng*, even though it is not phonologically present.

Furthermore, this argument is supported by the analysis in Liu (2011). Liu proposes that the function of *bi* is simply introducing the standard of comparison and *bi* phrase is adjoined to the left of the predicate. His first piece of argument is that in Chinese, adjunct degree morphemes such as *hen* must immediately precede the predicate, but *bi* phrase can be separated from the predicate:

(246)   a.   Wo dui ni   hen keqi.
                 I   DUI you very courteous
                 'I am very courteous to you.'

          b.   *Wo hen dui ni   keqi.
                 I   very DUI you courteous

As shown above, *hen* cannot be separated from the adjective *keqi* 'courteous' by the phrase *dui ni* 'to you'. By contrast, this is possible with *bi Lisi* below:

(247)   Zhangsan bi Lisi dui   wo keqi.
            Zhangsan BI Lisi DUI I   courteous
            'Zhangsan is more courteous to me than Lisi is.'

Secondly, degree phrases cannot appear in a position higher than a locative phrase (248), while *bi* phrases can (249). This again indicates that *bi* phrases are not degree phrases and *bi* is not a degree marker as argued in Lin (2005).

(248)   a.   Zhangsan zai meiguo geng   chidekai.
              Zhangsan at   America GENG influential
              'Zhangsan is even more influential in America.'

         b.   *Zhangsan geng   zai meiguo chidekai.
              Zhangsan GENG at   America influential

(249)   Zhangsan bi Lisi zai meiguo   chidekai.
         Zhangsan BI Lisi at   America influential
         'In America, Zhangsan is more influential than Lisi.'

According to Liu (2011), example (248) also suggests that *geng* is a degree morpheme. He analysed *geng* as a comparative degree morpheme and the occurrence of *bi* entails the occurrence of *geng*, and vice versa, and the two do not need to show up simultaneously.

(250)   a.   Zhangsan bi Lisi geng   gao.
              Zhangsan BI Lisi GENG tall
              'Zhangsan is taller than Lisi, and it is necessary for Lisi to be tall.'

When *geng* is absent, *bi* phrase must be present to denote the comparative semantics.

(251)   a.   Zhangsan bi Lisi gao.
              Zhangsan BI Lisi tall
              'Zhangsan is taller than Lisi, and it is not necessary for Lisi to be tall.'

         b. ??Zhangsan gao.
              Zhangsan tall

Sentence (251b) without any stress on either *Zhangsan* or *tall* 'high' is unacceptable. The structure Liu gives for (251a) is in (252):

(252) $[_S [_{NP} \text{Zhangsan}] [_{DegP} [\text{bi} [_{NP} \text{Lisi}]] [_{DegP} [_{AP} \text{gao}]]]]$.

To draw an analogy between English and MC, *bi* can be seen as the equivalent of English 'than', and *geng*, both overt and convert, has the same function as English comparative morpheme *-er*, even though they differ slightly in semantic denotations.

Thus, the fact that *hen* is in complementary distribution with *geng* and *bi* phrases, respectively, does not suggest that *geng* and *bi* phrases are in complementary distribution. On the contrary, these two both denote comparative semantics and are the two sides of one coin. Both of them are in complementary distribution
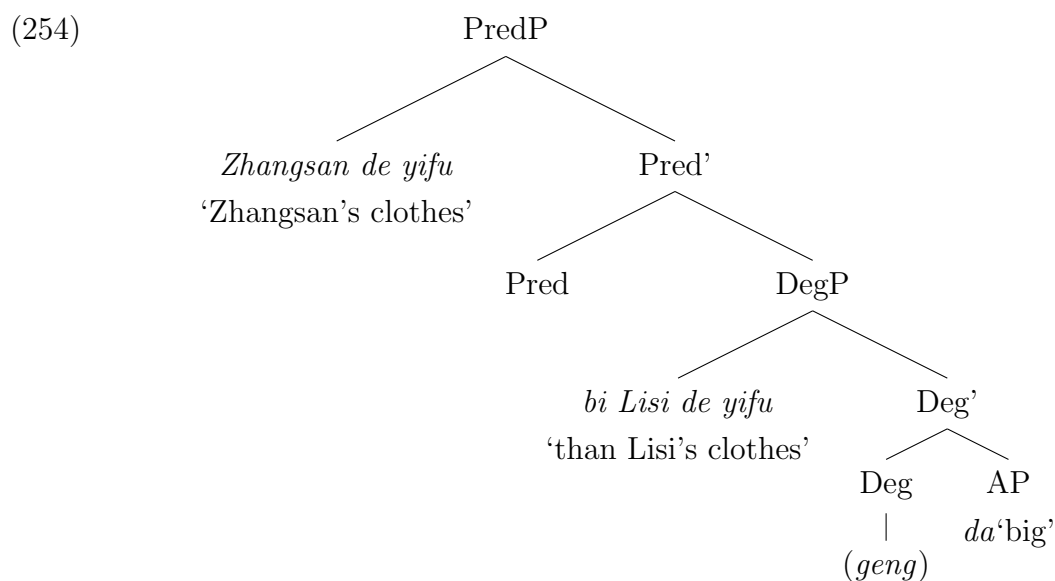
with *hen*.

Syntactically, Zhang (2015a) advances that *hen* is projected as the head of the functional projection DegP and s-selects a gradable phrase, either an AP or a stative VP. The structure is shown below:

(253)

$$
\begin{array}{c}
\text{DegP}_{POS} \\
\diagdown \\
\text{Deg} \quad \text{XP(gradable)} \\
| \\
hen_{POS}
\end{array}
$$
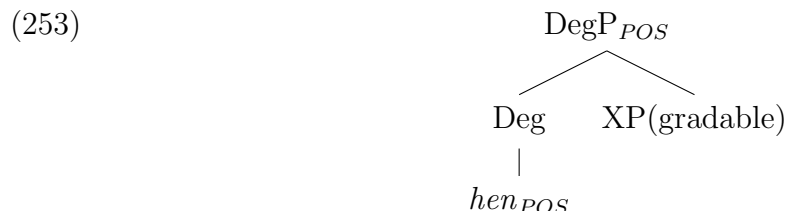
She argues that *hen* is not a modifier or an adjunct but rather heads a DegP projection.

Following the above analysis, I propose that the structure of DBCs such as (235b) can be represented as (254), in which a Deg(ree)P (Kennedy 1999; Zhang 2015a, among others) is projected above AP and the degree marker *geng* phrase is located at Deg position. Contrary to Liu's structure in (252), I propose that the *bi* phrase is merged at SpecDegP:

(254)

PredP

Zhangsan de yifu 'Zhangsan's clothes'   Pred'

Pred   DegP

bi Lisi de yifu 'than Lisi's clothes'   Deg'

Deg   AP
| *da*'big'
(*geng*)

As shown in the tree, *Zhangsan de yifu* 'Zhangsan's clothes' and *Lisi de yifu* 'Lisi's clothes' are constituents. The *bi* phrase is located at the Spec of DegP. What is being compared is Zhangsan's clothes and Lisi's clothes.

5.4.2 NP2 as the dimension of comparison

Contrary to DBCs, in IBCs, NP2 does not form a constituent with NP1. This is shown by the fact that adverbs such as *qishi* 'actually' and *keneng* 'possibly' can appear between the first two nominals in IBCs:

(255)   Zhangsan qishi   nianji bi Lisi da.
        Zhangsan actually age   BI Lisi big
        'Zhangsan is actually older than Lisi.'

(256)   Zhangsan keneng   nianji bi Lisi da.
        Zhangsan possibly age   BI Lisi big
        'Zhangsan is possibly older than Lisi.'

Thus compared with DBCs, IBCs are different in the appearance of an extra nominal NP2 (normally bare) before *bi*. See the contrast between examples (257b) and (257a).

(257)   a.   [Zhangsan]$_{NP1}$ [nianji]$_{NP2}$ [bi Lisi da]$_{AP}$.
             Zhangsan   age   BI Lisi big
             'Zhangsan is older than Lisi.'

        b.   [Zhangsan]$_{NP1}$ [bi Lisi da]$_{AP}$.
             Zhangsan   BI Lisi big
             'Zhangsan is older than Lisi.'

More importantly, this contrast between IBCs and DBCs is parallel to that between DNCs such as (258a) and normal subject predicate sentences such as (258b):

(258)   a.   [Zhangsan]$_{NP1}$ [nianji]$_{NP2}$ [hen da]$_{AP}$.
             Zhangsan   age   very big
             'Zhangsan is very old.'

        b.   [Zhangsan]$_{NP1}$ [hen da]$_{AP}$.
             Zhangsan   very big
             'Zhangsan is very old.'

Both IBCs and DNCs contain an extra nominal NP2 before the predicate.

Also, similar to DNCs, only property-denoting nouns and body parts are allowed in IBCs, while entity-denoting nouns (282) and kinship nouns (283) are not.

(259)   a.   *Zhangsan yifu   bi Lisi da.
             Zhangsan clothes BI Lisi big
             Intended: 'Zhangsan's clothes are bigger than Lisi's.'

b. *Zhangsan de baba bi Lisi da.
Zhangsan DE father BI Lisi big
Intended: 'Zhangsan's father is older than Lisi's father.'

This suggests that NP2 in IBCs denotes a property or a part of NP1/NP3. Also, NP2 should also satisfy the s-selectional features of the adjectives. For example, the following sentence is odd because NP2 *nianji* 'age' does not match the adjective *gao* 'high':

(260)   !Zhangsan (de) nianji bi Lisi gao.
Zhangsan DE age   BI Lisi high

The above facts suggest that IBCs and DNCs are syntactically and semantically similar. Following the analysis of DNCs, I propose that in addition to DegP, a Dim(ension)P is also projected above AP in IBCs. In IBCs, NP2 is found in SpecDimP as shown in (261) for sentence (257a). The semantic interpretation of (261) is that Zhangsan is old in the dimension of age, and the degree of oldness is '(older) than Lisi'.

(261)
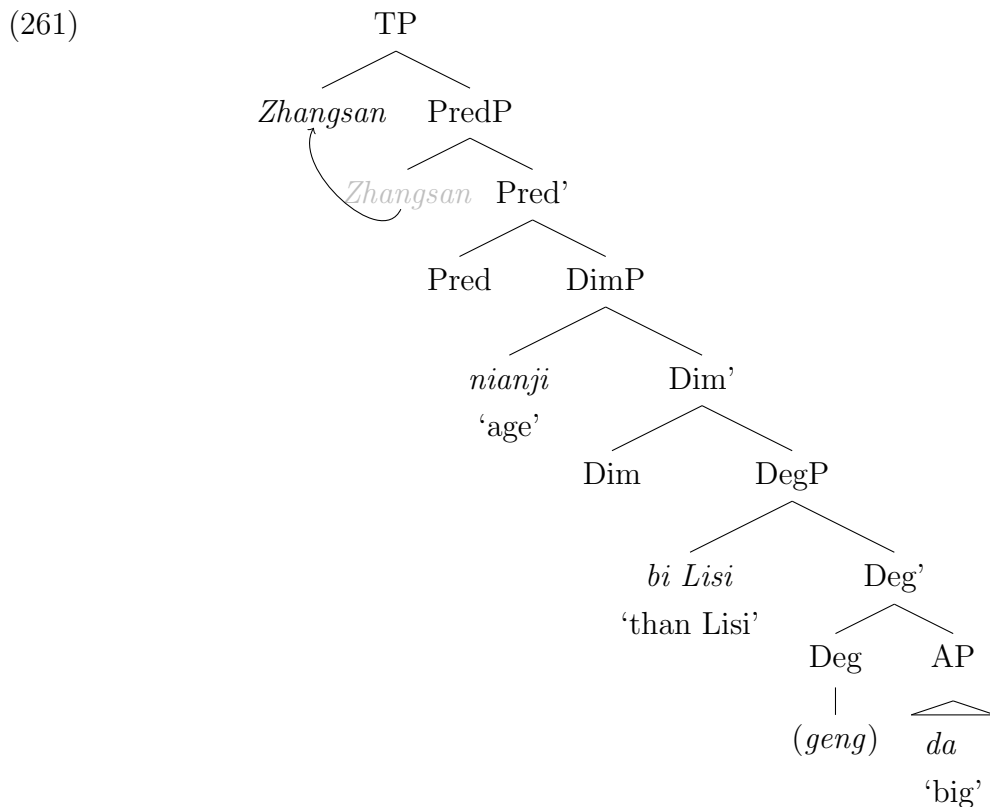
To sum up, I will argue that the so-called IBCs are in fact DNCs where the NP2 in IBCs denotes the dimension of the predication relation indicated by the AP

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with respect to the NP1. The degree marker *geng* associated with the *bi* phrase ([bi+NP3]) modifies the AP and indicates the degree of the state represented by AP. In DBCs, this dimension part is simply absent. DBCs are parallel to normal subject sentences in this sense.

While a property or a body-part can be seen as a dimension of a person or an object, an entity or a kinship cannot, and they cannot be the dimension of the adjectival predicate either. This explains why NP2 in IBCs (as well as DNCs) cannot be an entity-denoting noun or a kinship term.

As for the sentence in (262) where the *bi* phrase precedes the dimension-denoting noun *nianji* 'age', I assume that the *bi* phrase undergoes phrasal movement to a higher position, for instance, adjoining to DimP, as illustrated in (263) below:

(262)   Zhangsan bi Lisi nianji (geng) da.
            Zhangsan BI Lisi age   GENG big
            'Zhangsan is older than Lisi.'

(263)

320
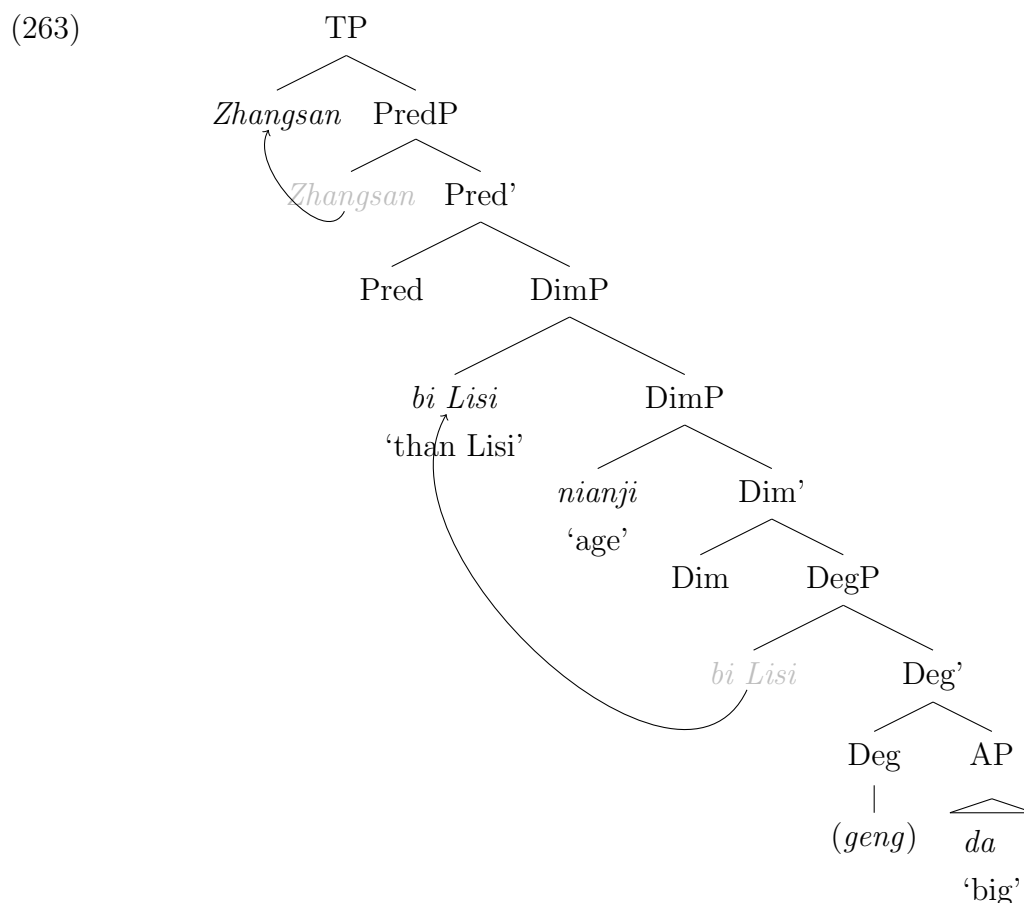
It can be seen that the assumption is that the DimP projection is higher than the DegP. This assumption is drawn on the fact that as mentioned earlier, the morpheme *geng* and *hen* can only follow the dimension-denoting noun but not precede it. The examples are given again:

(264)   a.   Zhangsan nianji geng   da.
               Zhangsan age   GENG big
               'Zhangsan is older.'

         b.   *Zhangsan geng   nianji da.
               Zhangsan GENG age   big

The degree marker *geng* cannot appear to the left of NP2, and this is captured by the structure above where the functional projection DegP is below the DimP. This is the same in DNCs where degree morphemes such as *hen* can only appear after the dimension-denoting noun NP2 (DimP > DegP).

(265)   a.   Zhangsan nianji hen da.
               Zhangsan age   very big
               'Zhangsan is very old.'

         b.   *Zhangsan hen nianji da.
               Zhangsan very age   big

The appearance of adverbs between NP1 and NP2 is also captured by this current analysis: it is possible to adjoin adverbs above DimP, as shown in (266), or DegP, such as in (267) below:

(266)   Zhangsan qishi   nianji bi Lisi da.
         Zhangsan actually age   BI Lisi big
         'Zhangsan is actually older than Lisi.'

(267)   Zhangsan nianji qishi   bi Lisi da.
         Zhangsan age   actually BI Lisi big
         'Zhangsan is actually older than Lisi.'

The dimension analysis also provides an explanation to the optionality of NP2 in some cases:

(268)   Zhangsan (nianji) bi Lisi da.
         Zhangsan age   BI Lisi big
         'Zhangsan is older than Lisi.'

(269)   Zhangsan (gezi) bi Lisi gao.
         Zhangsan height BI Lisi high
         'Zhangsan is taller than Lisi.'

In the above two sentences (268) and (269), NP2 can be absent. This follows naturally from the dimension analysis: since DimP is a functional projection, it can be absent or its specifier position can be empty, if the absence of NP2 does not lead to ambiguity or incompleteness in meaning.

5.4.3 The semantics of BI comparative constructions

Faller (1992), Kennedy and McNally (2005), Kennedy and Levin (2008) and Grano and Kennedy (2012), among others analyse comparative adjectives as special kinds of measure function, namely "difference functions", which measure the degree to which two objects diverge relative to a scalar dimension. For example, the scalar dimension of "weight" can be illustrated as follows:

(270)   WEIGHT: $0 \longrightarrow \infty$

In sentence (271), if *heavy* is a function from individuals to degree values on the scale of "weight", *heavier than Lisi* is a function from Zhangsan to the part of the scale that starts with Lisi's weight and therefore measures the extent to which Zhangsan diverges from Lisi in weight.

(271)   Zhangsan is heavier than Lisi.

As shown below, the black dot represents Lisi's weight, and Zhangsan's weight can be represented by the second dot.

(272)   WEIGHT: $0 \text{———————} Lisi\bullet\text{–}\bullet\text{Zhangsan}\longrightarrow\infty$

Following this, I propose that the semantics of BI comparative constructions is expressing the degree of a property of the subject by comparing it to that of the standard along a certain scalar dimension. In other words, through the degree of which the subject diverges from the standard relative to a scalar dimension, the degree of the property of the subject is presented.

(273)   a.   Zhangsan bi Lisi zhong.
                Zhangsan BI Lisi heavy

         b.   Zhangsan tizhong bi Lisi zhong.
                Zhangsan weight   BI Lisi heavy
                'Zhangsan is heavier than Lisi.'

Similarly, in the following, the straight line starting from 0 represents the scalar dimension "weight". The standard of the comparison which is Lisi is indicated by the black dot, and the second dot represents Zhangsan.

(274)   WEIGHT: 0 ————————-$Lisi\bullet$–$\bullet$Zhangsan⟶∞

Zhangsan's weight will be known to the speaker relative to Lisi's which is already known in the context, heavier or lighter, depending on whether the dot for Zhangsan is to the left of the dot for Lisi or to the right of it.

To conclude, it can be seen from the above discussion that the so-called special constructions such as BI constructions (and also *ba* constructions, etc.) are not special. They are just normal basic constructions decorated with additional semantic elements: *bi* phrase and the dimension denoting noun NP2 (*ba* phrases in *ba* constructions). Huang et al. (2009) make a similar comment on BA constructions in MC:

> The *ba* construction is not unique at all. It is just a variation of a construction with an accomplishment verb phrase and the verb-raising process is replaced by *ba*-insertion (Huang et al. 2009:192).

5.4.4   A remaining issue

As for BI comparative constructions such as (275), in which NP2 is a property-denoting noun or a body part and there is still a *de* between NP1 and NP2, there are two opposing analyses in the literature.

(275)   Zhangsan de nianji bi Lisi da.
         Zhangsan DE age   BI Lisi big
         'Zhangsan is older than Lisi.'

One is the deletion analysis, which I have argued against previously.

(276)   Zhangsan de nianji bi Lisi ~~de nianji~~ da.
         Zhangsan DE age   BI Lisi DE age   big
         'Zhangsan is older than Lisi.'

One more problem of this analysis is that it is not clear what licenses the deletion of *de* and the copy of NP2. Since head deletion is unusual, it is not convincing to assume the possessive head *de* is deleted (as argued in Yang 2005 and also Chapter 2 of this thesis, *de* in *de* possessives is a head). Also, unlike NP-ellipsis, which is

argued to be licensed by the head *de*, the deletion of NP2 in cases such as (275) is mysterious, since *de* is not available.

Alternatively, Teng (1974) and Waltraud (1993) argue that, in contrast to the "genuine possessive marker" *de* in DBCs, *de* in IBCs is a "pseudo-possessive marker" inserted at a late stage, and is therefore semantically empty and deletable. For instance, (275) is derived by inserting *de* in the IBC (277) on the surface.

(277)   Zhangsan nianji bi Lisi da.
         Zhangsan age   BI Lisi big
         'Zhangsan is older than Lisi.'

If *de* is only inserted phonologically, that is, it is not present in the syntax, we should expect that NP1 *Zhangsan* and NP2 *nianji* 'age' in (275) are independent of each other as they are in (277). However, this is not the case. First, adverbs are not acceptable before or after *de* in sentence (275), as shown below:

(278)   Zhangsan (*qishi) de (*qishi) nianji bi Lisi da.
         Zhangsan actually DE actually age   BI Lisi big

Moreover, if *de* is added because of phonological reasons, it should be fine to leave it out. That is to say, sentence (275) behaves the same as its *de*-less equivalence, i.e. the IBC in (277).
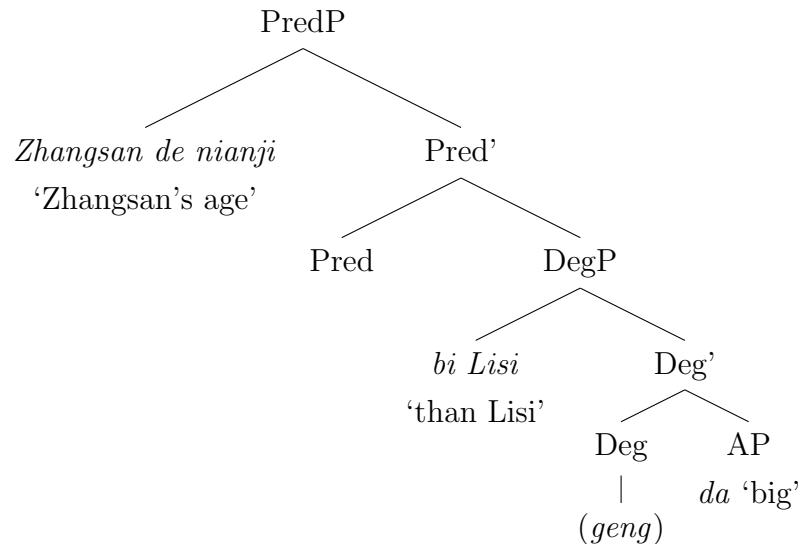
However, although topicalisation of *Zhangsan de nianji* is acceptable in (275), it is impossible for *Zhangsan nianji* in (277):

(279)   Zhangsan de nianji, Wangwu juede bi Lisi da.
         Zhangsan DE age   Wangwu think BI Lisi big
         'Zhangsan's age, Wangwu thinks is older than Lisi.'

(280)   *Zhangsan nianji, Wangwu juede bi Lisi da.
         Zhangsan age   Wangwu think BI Lisi big

This suggests that it is not the case that *de* is only inserted phonologically and syntactically null in (275).

I will argue that sentence (275) is neither a case of deletion of *de* and the copy of NP2 nor a case of phonological insertion of *de*, rather, it has the structure below:

(281)

```
                          PredP
                    ┌───────┴────────┐
            Zhangsan de nianji      Pred'
            'Zhangsan's age'     ┌───┴────────┐
                                Pred          DegP
                                         ┌─────┴──────┐
                                       bi Lisi        Deg'
                                      'than Lisi'   ┌───┴───┐
                                                   Deg      AP
                                                    │     da 'big'
                                                 (geng)
```

Structurally speaking, this sentence shares the same syntax with DBCs. The speciality of this sentence is that the meaning of Lisi's age is included in the noun phrase *Lisi*. To be more precise, since the meaning 'age' has already shown up in the subject position, we assume that it is semantically present in the phrase after *bi* as well. Since age is a property of Lisi, it is possible for it to be included in Lisi. By contrast, entity-denoting nouns such as *clothes* only bear ownership relationship to Lisi, therefore, it is impossible for them to be included in Lisi. As a result, the following sentence is bad.

(282)   *Zhangsan de yifu   bi Lisi da.
         Zhangsan de clothes BI Lisi big
         Intended: 'Zhangsan's clothes are bigger than Lisi's.'

Similar reasoning applies to kinship nouns which are in head-complement relationship with Lisi. This can be seen from the ungrammaticality of the following sentence:

(283)   *Zhangsan de baba bi Lisi da.
         Zhangsan DE father BI Lisi big
         Intended: 'Zhangsan's father is older than Lisi's father.'

The above reasoning is further backed up by the unacceptability of the following sentence:

(284)   *Zhangsan de nianji nianji bi Lisi geng   da.
         Zhangsan DE age   age   BI Lisi GENG big
         Intended: 'Zhangsan is older than Lisi.'

Since the meaning *nianji* 'age' is already present in the phrase *Zhangsan de nianji* 'Zhangsan's age' at the beginning of the sentence, denoting the scalar dimension along which the comparison is made, there is no need for a second appearance of *nianji* 'age'. Also, *nianji* can not be a property of the object denoted by *Zhangsan de nianji*. Therefore, sentence (284) is bad due to semantic oddness.

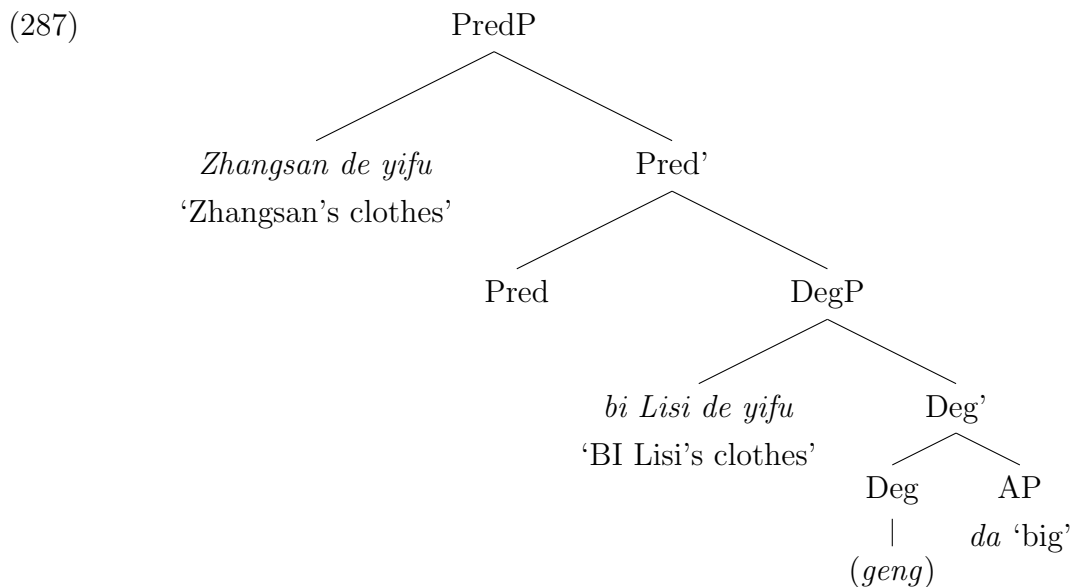Therefore, it can be concluded that sentences such as (285) are similar to DBCs.

(285)   Zhangsan de nianji bi Lisi da.
               Zhangsan DE age   BI Lisi big
               'Zhangsan is older than Lisi.'

It it just that the meaning of *nianji* 'age' is included in standard of comparison *Lisi*, rather than showing up in the surface as *de nianji* after *Lisi*.
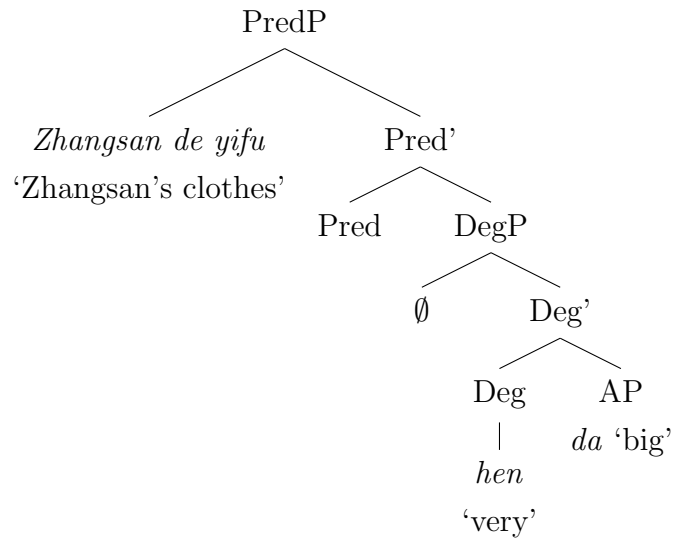
To conclude this section, DBCs such as (286a) are comparable to normal subject predicate sentences such as (286b):

(286)   a.   Zhangsan de yifu   bi Lisi de yifu   (geng) da.
                       Zhangsan DE clothes BI Lisi DE clothes GENG big
                       'Zhangsan's clothes are (even) bigger than Lisi's clothes.'

             b.   Zhangsan de yifu   hen da.
                       Zhangsan DE clothes very big
                       'Zhangsan's clothes are very big.'

The structures of (286a) and (286b) are shown in (287) and (288), respectively:
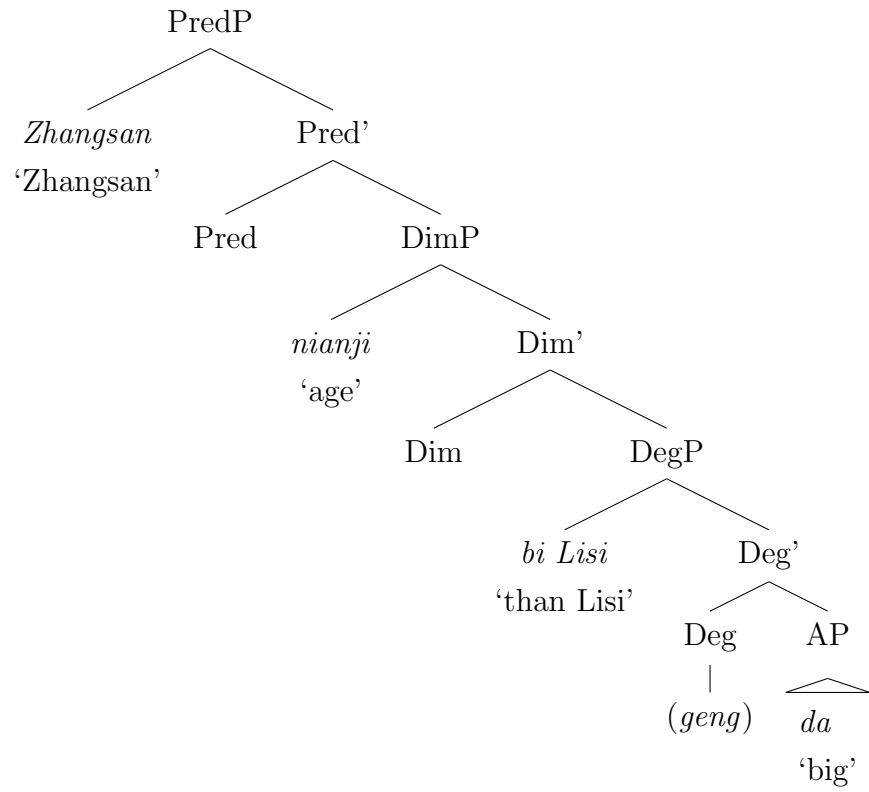
(287)

(288)

```
                          PredP
                     ╱          ╲
           Zhangsan de yifu      Pred'
          'Zhangsan's clothes'   ╱    ╲
                              Pred    DegP
                                     ╱    ╲
                                    ∅     Deg'
                                         ╱    ╲
                                       Deg     AP
                                        │    da 'big'
                                       hen
                                      'very'
```

IBCs such as (289a) are comparable to DNCs such as (289b):

(289)   a.   Zhangsan nianji bi Lisi (geng) da.
               Zhangsan age   BI Lisi GENG big
               'Zhangsan is older than Lisi. '

         b.   Zhangsan nianji hen da.
               Zhangsan age   very big
               'Zhangsan is very old.'

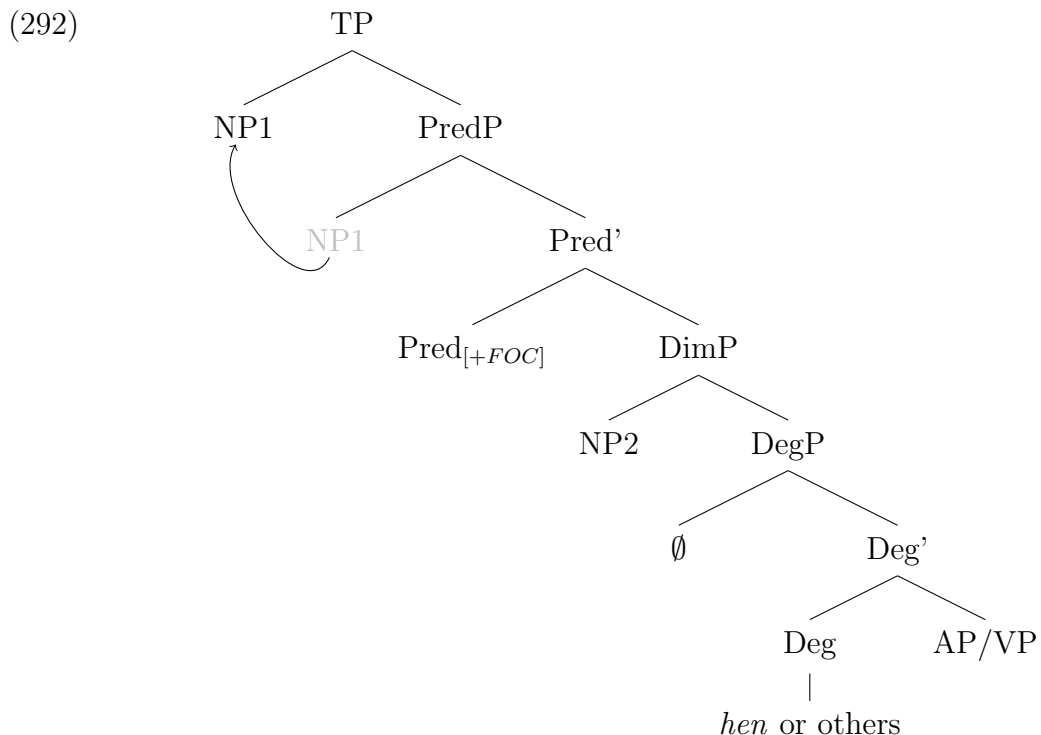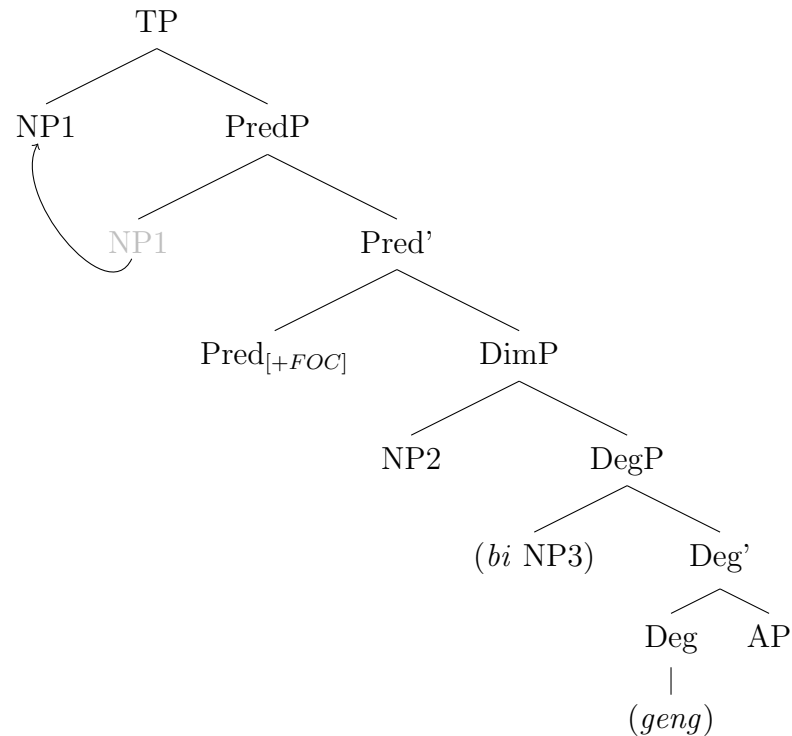Their structures can be seen in (290) and (291), respectively.

(290)

```
                    PredP
                   /    \
            Zhangsan    Pred'
           'Zhangsan'   /   \
                     Pred   DimP
                           /    \
                       nianji   Dim'
                        'age'   /   \
                             Dim    DegP
                                   /    \
                               bi Lisi  Deg'
                              'than Lisi' /  \
                                        Deg   AP
                                         |    /\
                                      (geng)  da
                                             'big'
```

(291)

```
                    PredP
                   /    \
            Zhangsan    Pred'
           'Zhangsan'   /   \
                     Pred   DimP
                           /    \
                       nianji   Dim'
                        'age'   /   \
                             Dim    DegP
                                   /    \
                                  ∅     Deg'
                                        /   \
                                      Deg   AP
                                       |    /\
                                      hen   da
                                     'very' 'big'
```
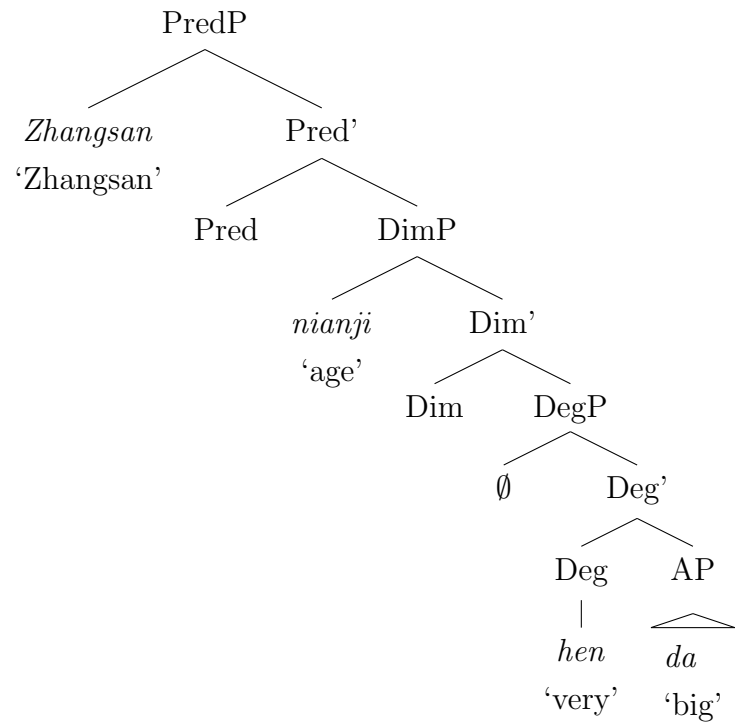
5.5 Chapter summary

Analysing DNCs in which NP2 is a property-denoting noun or a body part as dimension constructions provides a new perspective of understanding the syntax and semantics of this type of construction: a transition from focusing on the relationship between the two nominals NP1 and NP2 to examining the relationship between NP2 and the predicate AP/VP. By including DimP in the extended projection of PredP in DNCs, my proposal suggests that MC introduces a dimensional restriction in its predication. This way of constructing complex predication is also observed in the so-called indirect BI comparative constructions (hence IBCs of the form [NP1+NP2+*bi*+NP3+AP]).

IBCs exhibit the same semantic and syntactic properties as DNCs. Based on this fact, I propose that IBCs are actually DNCs where the AP/VP in the predicate position is accompanied by the *bi* phrase or the degree morpheme *geng* or both rather than degree adverbs such as *hen*. More specifically, following the analysis of DNCs, I propose that there are two functional projections DimP and DegP projected above AP/VP (DimP>DegP) in IBCs. NP2 in IBCs denotes the scalar dimension along which the comparison is made and it is located at SpecDimP position; the degree marker *geng* associated with the *bi* phrase is situated at Deg, while the *bi* phrase is merged at SpecDeg, but it can undergo phrasal movement to a higher position. The schema of DNCs and IBCs are represented as follows:

(292)

(293)

```
                          TP
                        /    \
                    NP1       PredP
                    ↑        /      \
                   NP1      Pred'
                           /      \
                    Pred[+FOC]     DimP
                                  /    \
                               NP2      DegP
                                       /     \
                                 (bi NP3)     Deg'
                                             /    \
                                           Deg     AP
                                            |
                                         (geng)
```

As for the reason why degree morphemes such as *hen*, *geng* are obligatory in adjectival modification in MC, I suggest that it is related to focus interpretation. More precisely, the Pred head in MC carries a [+FOC] feature, which needs to be satisfied by a set of alternatives. Elements such as *hen*, *geng*, question particles, coordinators are required to create such alternatives.

I also suggest that the way adjectives are introduced as predicates differs across languages. In English, adjectives are introduced by the copular *is*, which checks the [+FOC] feature of Pred. On the other hand, in MC, in short of copulars such as English *is*, this [+FOC] feature is satisfied by the alternative semantics created by the various elements co-occurring with the adjectives, among which are degree morphemes, aspect makers, coordinators. Moreover, the argument that there is a dimensional restriction in its predication in MC (both DNCs and IBCs) raises interesting questions as to whether adjectival/verbal syntax and semantics in other languages are also so restricted, and to what extent this kind of restriction can be parameterised.

Chapter 6

Conclusion

6.1 Cases that are not discussed

Before I conclude this thesis, I would like to point out that, relevant to the possessive constructions studied, there are three cases (at least) that I do not discuss in the current thesis. In the following I will give a brief introduction to each of them.

6.1.1 Institution nouns

Some Chinese linguists note that [pronoun+institution noun] combinations behave in a similar fashion as [pronoun+kinship noun] JP expressions, i.e. the morpheme *de* is not present normally:

(1) a. Wo xihuan ta-men   de xuexiao.
         I   like   (s)he-MEN DE school
         'I like their school.'

     b. Wo xihuan ta-men   xuexiao.
         I   like   (s)he-MEN school
         'I like their school.'

(2) a. Wo xihuan ni-men   de gongsi.
         I   like   you-MEN DE company
         'I like your company.'

     b. Wo xihuan ni-men   gongsi.
         I   like   you-MEN company
         'I like your company.'

As shown in (1), *ta-men* '(s)he-MEN' can form a *de* possessive phrase with the institution nominal *xuexiao* 'school'. Or it can combine with *xuexiao* directly

without the appearance of *de*. This is the same for the combination *ni-men* 'you-MEN' and *gongsi* 'company' in (2). What needs to be pointed out is that *ni-men de gongsi* or *ni-men gongsi* 'your company' tend to mean the company you work in rather than the company that is owned by you. This is similar to *ta-men de xuexiao* and *ta-men xuexiao* 'their school' in (1).

However, [pronoun+institution noun] expressions are different from JP expressions in at least two ways: the pronoun appearing in [pronoun+institution noun] expressions normally needs to be accompanied by the morpheme *men*, otherwise, *de* must appear, as shown in (3) and (4). This is in direct contrast to JP expressions where pronouns affixed by *men* are not allowed.

(3) a. Wo xihuan ta   de xuexiao.
         I   like   (s)he DE school
         'I like her/his school.'
     b. *Wo xihuan ta   xuexiao.
         I   like   (s)he school

(4) a. Wo xihuan ni   de gongsi.
         I   like   you DE company
         'I like your company.'
     b. *Wo xihuan ni   gongsi.
         I   like   you company

What is more, in the *de* cases such as in (3a), the phrase *ta de xuexiao* is more likely to be interpreted as 'the school that is owned by her/him'. Similarly, *ni de gongsi* in (4a) has the reading that 'the company that belongs to you'.

Even though there are expressions such as those in (5), these expressions are very limited.

(5) wo gongsi/shi/guo
     I   company/city/country
     'us company/city/country'

They are only acceptable with the pronoun *wo*, for instance, those with *ni* or *ta* below are impossible:

(6) *ni   gongsi/shi/guo
      you company/city/country

(7) *ta   gongsi/shi/guo
      (s)he company/city/country

Generally speaking, the personal pronouns occur with institution/organisation nouns tend to be plural (X-*men*), even when the reference is a single institution. As [X-*men*+institution noun] expressions behave differently from my targeted JP constructions [singular personal pronoun+singular kinship noun], these constructions have been left for future research.

6.1.2   Depth of embedding of possessives

In this thesis, I examined simple *de* possessive constructions, that is, phrases of the form [NP$_1$+*de*+NP$_2$]. However, there are more complex possessive constructions, for example, where the possessor NP is another possessive phrase.

(8)   ?Zhangsan de shouji de xingneng   hen hao
       Zhangsan   DE phone DE performance very good
       'The performance of Zhangsan's phone is very good.'

The possessor in the possessive phrase *Zhangsan de shouji de xingneng* is a possessive phrase itself *Zhangsan de shouji* 'Zhangsan's phone'. To re-express this, the possessive phrase *Zhangsan de shouji* forms a bigger possessive construction with the common noun *xingneng* 'performance'.

According to Lin (2005), for three nouns NP$_1$, NP$_2$ and NP$_3$, where NP$_1$ and NP$_2$ bear a possessive relation and the combination of the two bears a possessive relation to NP$_3$, there is normally only one *de* appearing in the combination [NP$_1$+NP$_2$+NP$_3$] and it tends to appear between NP$_2$ and NP$_3$, as illustrated in the following examples:

(9)   a. ?wo de shouzhang de pifu
           I   DE palm   DE skin
       b. *wo de shouzhang pifu

       c.   wo shouzhang de pifu
           I   palm   DE skin
           'the skin of my palm'
       d. *wo shouzhang pifu

Example (9a) is not good because it is awkward to pronounce two *de* in one phrase. As a consequence, [NP$_1$+*de*+NP$_2$+*de*+NP$_3$] is not common in Mandarin. According to Lin (2005), the example in (9c), that is, the form [NP$_1$+NP$_2$+*de*+NP$_3$] is perfect. However, in (10), the form [NP$_1$+*de*+NP$_2$+NP$_3$] (10c) is better than [NP$_1$+NP$_2$+*de*+NP$_3$] (10b).

(10)   a. ?Zhangsan de shouji de xingneng
            Zhangsan DE phone DE performance
        b. ??Zhangsan shouji de xingneng

        c. Zhangsan de shouji xingneng
            Zhangsan DE phone performance
            'the performance of Zhangsan's phone'

        d. *Zhangsan shouji xingneng

Thus it seems that whether [NP$_1$+NP$_2$+de+NP$_3$] is better than [NP$_1$+de+NP$_2$ +NP$_3$] or the other way round varies from case to case. As my intuition is that the position of de is not determined by pure syntactic factors in those cases, I will not tackle this issue in this thesis.

6.1.3   When XP$_2$ is headed by a demonstrative

As mentioned in Chapter 2, Yang (2005) argues that the second condition where de in possessive phrase can be silent is that when the possessed nominal is headed by a demonstrative. The following are the examples Yang (2005) uses to support the above conclusion (examples below from (11) to (15) are taken from Yang (2005)). For instance, the morpheme de can be absent when the possessed nominal is lead by a demonstrative, such as *na ben shu* 'that book' in (11b).

(11)   a. Wo kan guo [ni de   [na ben shu]].
            I   read GUO you DE$_{PossP}$ that CL book
            'I have read that book of yours.'

        b. Wo kan guo   [ni [na   ben shu]].
            I   read GUO you that CL book
            'I have read that book of yours.'

However, when the possessed nominal is a bare noun, de cannot be absent, as shown in (12b).

(12)   a. Wo bu xihuan [ni de   [shu]].
            I   not like   you DE$_{PossP}$ book
            'I don't like your book(s).'

        b. *Wo bu xihuan [ni [shu]].
            I   not like   you book
            'I don't like your book(s).'

One more group of example is given below. The idea is to show the contrast between (13b) where the possessee is a demonstrative phrase *na san ben shu* 'those

three books' and (14b) where the possessee is a numeral phrase *san ben shu* 'three books'. The former is acceptable while the latter is not.

(13)   a.   Wo kan guo [[Zhangsan de]   na san ben shu].
            I   read GUO Zhangsan DE_{PossP} that three CL book
            'I have read Zhangsan's those three books.'

        b.   Wo kan guo [[Zhangsan] na san ben shu].
            I   read GUO Zhangsan   that three CL book
            'I have read Zhangsan's those three book.'

(14)   a.   Wo kan guo [Zhangsan de   [san ben shu]].
            I   read GUO Zhangsan DE_{PossP} three CL book
            'I have read Zhangsan's three books.'

        b. *Wo kan guo   [Zhangsan [san ben shu]].
            I   read GUO Zhangsan three CL book

However, the issue is that to all of my consultants and me, (14b) is completely acceptable, and so are the following sentences:

(15)   a.   Ni kan   guo [ta [ji   bu dianying]]?[1]
            you watch GUO (s)he how many CL film
            'How many films of hers/his have you watched?'

        b.   Wo kan   guo [ta [san bu dianying]].
            I   watch GUO (s)he three CL film
            'I have watched her/his three films.'

In all these sentences, the possessor nominal is not headed by demonstratives but *de* is still not present.

    Moreover, what is interesting that only cases where the possessor nominal is headed by a demonstrative can appear in the subject position:

(16)   Zhangsan na san ben shu hen youyisi.
        Zhangsan that three CL book very interesting
        'Zhangsan's those three books are very interesting.'

As shown above, the sequence *Zhangsan na san ben shu* 'Zhangsan's those three books' can appear in the subject position (16), which indicates that it is a single constituent. In comparison, the sequence *Zhangsan san ben shu* cannot appear in the subject position.

(17)   *Zhangsan san ben shu hen youyisi.
        Zhangsan three CL book very interesting

---

[1] *ta* 'she/he' may be an actor/actress or film director.

Based on this, I suggest that *Zhangsan na san ben shu* in (13b) and (16) is a possessive phrase and the presence of the demonstrative somehow licenses the absence of the possessive morpheme *de*. In contrast, in *Zhangsan san ben shu* in (17), *Zhangsan* does not form a possessive phrase with *san ben shu*. However, this could not explain why sentences in (14b) and (15) are fine. I will leave this issue for future research as well.

6.2 Main proposals and theoretical implications

In the current thesis, I examined the syntax and semantics of three possession-related constructions in MC: the *de* possessives, the juxtaposed possessives (JPs) and the double nominal constructions (DNCs). Arguing against the traditional assumption that *de*-less possessives are the reduced forms of *de* possessives where *de* is simply deleted, I have shown that JPs and DNCs are independent configurations of their corresponding *de* forms. More specifically, JPs are directly referential expressions with a Kin(ship)P as the core structure; the so-called DNCs actually are dimension constructions, while *de* possessives are normal referential expressions with *de* as the head of Poss(essive)P.

These structural and interpretational differences boil down to the type of semantic relationship that holds between the two nominals, or more fundamentally, the properties of the nominal that is semantically regarded as the possessee. To be more specific, the contrast between JPs and *de* possessives comes from the special features of kinship nouns: kinship nouns can take arguments but other kinds of noun cannot, and this enables kinship nouns to form JP constructions with personal pronouns apart from forming *de* possessives, whereas other types of noun can only enter *de* possessive constructions. As for the DNC, it is true that its speciality relies on the bigger structure it resides in: there is a dimensional restriction in its predication in MC (both DNCs and IBCs). However, it has to be said that what makes this possible is the properties of the class of nominal that normally represents and describes the various aspects/dimensions of entity-denoting nouns, i.e. property-denoting nouns and body-part nouns.

In this thesis, I distinguish two classes of nominal from the mass of nouns in languages: kinship nouns, property-denoting nouns and body-part nouns. It can be said that it is the distinguished features of these nouns that make JPs and DNCs possible. In other words, JPs and DNCs are the syntactic realisations of the properties of kinship nouns and property-denoting nouns and body-part nouns, respectively. The close links between syntactic distributional facts and semantic

interpretations are shown again by these studies.

Possession is a broad semantic category, within which, there exist different kinds of possessive relationship, and these relationships surface in the syntax in different forms. This phenomenon is observed in different languages. A case in point is Nez Perce, a Sahaptian language spoken in the United States, in which the possessive constructions exhibit very similar behaviours to those in MC. This calls for a cross-linguistic study of the syntactic realisations of kinship nouns and property-denoting nouns and body-part nouns, and this is the issue I would like to explore in the future.

Bibliography

Abney, S. 1986. Functional elements and licensing. Gerona: Spain: Paper presented at GLOW.

Abney, Steven. 1987. The English noun phrase in its sentential aspect. Doctoral Dissertation, MIT, Cambridge, MA.

Adger, David. 2003. *Core syntax: A minimalist approach*. Oxford: Oxford University Press.

Adger, David. 2013. *A syntax of substance*. Cambridge, Ma.: The MIT Press.

Adger, David, and Gillian Ramchand. 2003. Predication and equation. *Linguistic Inquiry* 34:325–359.

Alexiadou, Artemis. 2003. Some notes on the structure of alienable and inalienable possessors. In *From np to dp: The expression of possession in noun phrases*, ed. by M. Coenem and Y. Dhulst, 167–188. Amsterdam: John Benjamins.

Alexiadou, Artemis, Liliane Haegeman, and Melita Stavrou. 2007. *Noun Phrase in the generative perspective*. Berlin: Mouton de Gruyter.

Aoun, Joseph, and Yen hui Audrey Li. 1993. Wh-elements in situ: Syntax or LF. *Linguistic Inquiry* 24:199–238.

Barker, Chris. 1991. Possessive descriptions. Doctoral Dissertation, University of California, Santa Cruz.

Barker, Chris. 1995. *Possessive descriptions*. Chicago: University of Chicago Press.

Bernstein, Judy. 1993. Topics in the syntax of nominal structure across Romance. Doctoral Dissertation, CUNY.

Bernstein, Judy-B. 1997. Demonstratives and reinforcers in Romance and Germanic languages. *Lingua* 102.

Borer, Hagit. 2005. *The normal course of events: Structuring sense*. Oxford: Oxford University Press.

Bouchard, Denis. 2002. *Adjectives, number and interfaces: Why languages vary*, volume 61 of *Linguistic Variations*. Amsterdam/Boston: North Holland Linguistic Series.

Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59:145.

Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24:591–656.

Brame, Michael. 1982. The head-selector theory of lexical specifications and the nonexistence of coarse categories. *Linguistic Inquiry* 10:277–325.

Burge, T. 1973. Reference and proper names. *Journal of Philosophy* 70:425–439.

Chafe, Wallace. 1976. Givennes, contrastiveness, definiteness, subjects and topics. In *Subject and topic*, ed. by Charles N. Li, 25–55. New York: Academic Press.

Chao, Yuenren. 1965. *A grammar of spoken Chinese*. Berkeley and LA: University of California Press.

Chappell, Hilary, and William McGregor. 1996. Inalienability and the personal domain in Mandarin Chinese discourse. In *The grammar of inalienability. a typological perspective on body part terms and the part-whole relation*, ed. by Hilary Chappell and William McGregor, 465–527. Berlin: Mouton de Gruyter.

Chappell, Hilary, and Sandra Thompson. 1992. The semantics and pragmatics of associative *de* in Mandarin discourse. *Cahiers Linguistiques Asie Orientale* XXI:199–229.

Chen, Jianmin. 1986. *Studies on Mordern Chinese syntax*. Beijing: Language and Culture Press.

Cheng, Lisa Lai-Shen, and Elizabeth Ritter. 1988. A small clause anaiysis of inalienable possession m Mandarin and French. In *Proceedings of nels 18*, ed. by J. Blevins and J. Carter, 65–78. Amherst MA: GLSA.

Cheng, Lisa Lai-Shen, and Rint Sybesma. 1999. Bare and not-so-bare nouns and the structure of NP. *Linguistic Inquiry,* 30:509–542.

Cheng, Lisa Lai-Shen, and Rint Sybesma. 2009. De as an underspecified classifier: first explorations. *Luncong* .

Cheng, Lisa Lai-Shen, and Rint Sybesma. 2012. Classifier and DP. *Linguistic Inquiry,* 43:634–650.

Cheng, Lisa Lai-Shen, and Rint Sybesma. 2014. The syntactic structure of noun phrases. In *The handbook of Chinese linguistics*, ed. by Simpson A. Huang C.T. James, Y.H. Audrey Li, 248–274. London: Blackwell Publishers.

Cheng, Shuqiu. 2004. The complementary discussion on the substitution regularity in character comparing sentence. *The Northern Forum* 4:68–70.

Chierchia, Gennaro. 1998a. Plurality of mass nouns and the notion of "semantic parameter" .

Chierchia, Gennaro. 1998b. Reference to kinds across languages. *Natural Language Semantics* 6:339–405.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Minimalist essays in honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, Ma.: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. by Michael Kenstowicz, 1–52. Cambridge, Ma.: MIT Press.

Chui, Kawai. 2000. Morphologization of the degree adverb *hen*. *Language and Linguistics* 1:45–59.

Cinque, Guglielmo. 1990. *Types of A'-dependencies*. Linguistic inquiry monographs; 17. Cambridge, Ma.: MIT Press.

Cinque, Guglielmo. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24:239–297.

Cinque, Guglielmo. 1994. On the evidence for partial N-movement in the Romance DP. In *Paths towards Universal Grammar: Studies in honor of Richard S. Kayne*, ed. by Guglielmo Cinque, Jan Koster, Jean-Yves Pollock, Luigi Rizzi, and Raffaella Zanuttini, 85–110. Washington, DC: Georgetown UP.

Cinque, Guglielmo. 2010. *The syntax of adjectives: A comparative study*. Cambridge, MA: MIT Press.

Coene, Martine, and Yves D'hulst. 2003. Introduction: The syntax and semantics in noun phrases theoretical background. In *From np to dp: The syntax and semantics in noun phrases*, ed. by Martine Coene and Yves D'hulst, volume 1, 1–46. Amsterdam: John Benjamins.

Cui, Xiliang. 1992. The presence and absence of *de* when personnal pronouns modifiying nouns. *Chinese Teaching in the World* 3:179–183.

Deal, Amy Rose. 2012. Nominal possessives: themes and puzzles. Handout of the syntactic seminar "Possession: Nominal and Clause" in UCSC.

Dexi, Zhu. 1999. On *bi* constructions. In *The collected works of dexi zhu*. Beijing: The Commercial Press.

den Dikken, Marcel. 2006. *Relators and linkers: The syntax of predication, predicate inversion, and copulas*. Cambridge, MA: MIT Press.

Ding, shengshu. 1961. *Speech on Modern Chinese grammar*. Beijing: The commercial Press.

Dobrovie-Sorin, Carmen, and Alda Mari. 2006. Generic plural indefinites: Sums or groups? In *Proceedings of nels 14*.

Doetjes, Jenny. 1996. Mass and count: Syntax or semantics? In *Proceedings of meaning on the hil*, 34–52. HIL/Leiden University.

Dong, Hongyuan. 2005. Gradable adjectives in Chinese and degree morphemes. Ms. Cornell University.

Elbourne, Paul. 2005. *Situations and individuals*. Cambridge, Mass: MIT Press.

Elbourne, Paul. 2008. Demonstratives as individual concepts. *Linguistics and Philosophy* 31:409–466.

Faller, Martina. 1992. Dimensional adjectives and measure phrases in vector space semantics. In *Formalizing the dynamics of information*, ed. by Stefan Kaufmann Martina Faller and Marc Pauly, 151–170. Stanford, CA: Center for Study of Lang. & Information.

Fara, Delia Graff. 2015. Names are predicates. *Forthcoming in Philosophical Review* .

Giorgi, Alessandra, and Giuseppe Longobardi. 1991. *The syntax of noun phrases: configuration, parameters and empty categories*. Cambridge studies in linguistics ; 57. Cambridge: Cambridge University Press.

Giusti, Giuliana. 1997. The categorical status of determiners. In *The new comparative syntax*, ed. by L. Haegeman, 95–123. New York: Longman Publishing Group.

Grano, Thomas. 2008. Mandarin *hen* and the syntax of declarative clause typing. *Ms. at LingBuzz* .

Grano, Thomas. 2011. Mandarin *hen* and universal markedness in gradable adjectives. *Natural Language & Linguistic Theory* 30:513–565.

Grano, Thomas, and Chris Kennedy. 2012. Mandarin transitive comparatives and the grammar of measurement. *Journal of East Asian Linguistics* 21:219–266.

Guéron, Jacqueline. 1985. Inalienable possession, pro inclusion and lexical chains. In *Grammatical representation*, ed. by H.-G. Obenauer J. Guéon and J.-Y. Pollock, 43–86. Dordrecht: Foris.

Guéron, Jacqueline. 2006. Inalienable possession. In *The blackwell companion to syntax*, ed. by M. Everaert and H. van Riemsdijk, volume 2, 589638. Boston/ Oxford: Blackwell.

Hall, David. to appear. Licensing definiteness: a spanning account of noun phrase interpretation in mandarin chinese and cantonese. Newcastle Working Papers in Linguistics.

Hartmann, Katharina. 2000. *Right node raising and gapping: Interface conditions on prosodic deletion*. Amsterdam: John Benjamins.

Hashimoto, Anne. 1969. The verb to be in Modern Chinese. In *Foundations of language, supplementary series*, volume 9 (4), 72–111. Reidel: Dordrecht.

Haspelmath, Martin. 2008. Alienable vs. inalienable possessive constructions. Handout, Leipzig Spring School on Linguistic Diversity.

Hellan, Lars. 1980. Towards an integrated theory of noun phrases: The development of a grammatical model adequate for the description of the syntax and semantics of noun phrases in English and Norwegian. Doctoral Dissertation, University of Trondheim.

Heller, Daphna, and Lynsey Wolter. 2010. On direct reference and perceptually grounded descriptions. In *Proceedings of the 46th annual meeting of the Chicago Linguistics Society*. Chicago, US.

Higginbotham, James. 1985. On semantics. *Linguistic Inquiry* 16:547–593.

Horrocks, Geoffrey, and Melita Stavrou. 1987. Bounding theory and Greek syntax: evidence for wh-movement in NP. *Journal of linguistics* 23:79–108.

Hsu, Yu-Yin, and Jen Ting. 2006. On the possessive multiple nominative constructions in Mandarin Chinese. In *Conference Manual and Abstructs of the 14th Annual Conference of the international Association of Chinese Linguistics and the 10th International Symposium on Chinese Languages and Lillguistics Joint meeting*, 96–97.

Huang, C.-T. James. 1982. Logical relations in Chinese and the theory of grammar. Doctoral Dissertation, MIT, Cambridge, Ma.

Huang, C. T. James. 1987. Remarks on empty categories in Chinese. *Linguistic Inquiry* 18:321–337.

Huang, C. T. James. 1989. *Shuo shi he you* [on 'be' and 'have' in Chinese]. *Bulletin of the Institute of History and Philology* 59:43–64.

Huang, C. T. James, Y. H. Audrey Li, and Yafei Li. 2009. *The syntax of Chinese*. Cambridge: Cambridge University Press, 1st edition.

Huang, Shizhe. 2006. Property theory, adjectives, and modification in chinese. *Journal of East Asian Linguistics* 15:343–369.

Iljic, Robert. 1994. Quantification in Mandarin Chinese: two markers of plurality. *Linguistics* 91–116.

Iljic, Robert. 2001. The problem of the suffix *men* in Chinese grammar. *Journal of Chinese Linguistics* 11–68.

Jensen, Per Anker, and Carl Vikner. 1994. Lexical knowledge and the semantic analysis of Danish genitive constructions. In *Topics in knowledge-based nlp systems*, ed. by S. L. Hansen and H. Wegener, 37–55. Copenhagen: Samfundslitteratur.

Joy, Philip. 2012. Coordinating and subordinating linkers. Doctoral Dissertation, University College London.

Julien, Marit. 2005. *Nominal phrases from a Scandinavian perspective*. Amsterdam: John Benjamins Publishing Company.

Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.

Kennedy, Christopher. 1997. Antecedent-contained deletion and the syntax of quantification. *Linguistic Inquiry* 28:662–688.

Kennedy, Christopher. 1999. Projecting the adjective: The syntax and semantics of gradability and comparison. Doctoral Dissertation, Garland, New York.

Kennedy, Christopher. 2007. Vagueness and grammar: The semantics of relative and absolute gradable adjectives. *Linguistics and Philosophy* 30:1–45.

Kennedy, Christopher, and Beth Levin. 2008. Measure of change: The adjectival core of degree achievements. In *Adjectives and adverbs: Syntax, semantics and discourse*, ed. by Louise McNally and Christopher Kennedy, 156–182. Oxford: Oxford University Press.

Kennedy, Christopher, and Louise McNally. 2005. Scale structure and the semantic typology of gradable predicates 81:345–381.

Kolliakou, Dimitra. 1999. De-phrase extractability and individual/property denotation. *Natural Language and Linguistic Theory* 17:713781.

Kuno, Susumu. 1973. *The structure of the Japanese language*. Cambridge, Ma.: MIT Press.

Kuo, Grace C.−H., and Kristine M. Yu. 2012. Taiwan Mandarin quantifiers. In *Book chapter in handbook of quantifiers in natural language*, ed. by Edward Keenan and Denis Paperno, volume 90, 647–698. Springer.

Lapolla, Randy. 1990. Grammatical relations in Chinese: Synchronic and di- achronic con- siderations. Doctoral Dissertation, University of California, Berkeley, Berkeley.

Larson, Richard K. 2009. Chinese as a reverse ezafe language. *Yuyanxue Luncong (Journal of Linguistics)* 39:30–85.

Lee, Chung-Min. 2001. The Chinese negation marker *bu* and its association with focus. *Linguistics* 39:703–731.

Lee, Chung-Min. 2003. Contrastive topic and/or contrastive focus. *Japanese and Korean Linguistics* 12:352–364.

Lee, Huichi. 2005. On De in Shi. . .de construction. In *Ust working papers in linguistics*, 131–160. Hsinchu, Taiwan: National Tsing Hua University.

Lekakou, M, and K Szendroi. 2012. Polydefinites in Greek: Ellipsis, close apposition and expletive determiners. *Journal of Linguistics* 48:107–149.

Li, Charles N., and Sandra A. Thompson. 1976. Subject and topic: A new typology of language. In *Subject and topic*, ed. by Charles N. Li, 457–489. New York: Academic Press.

Li, Charles N., and Sandra A. Thompson. 1981. *Mandarin Chinese: A functional reference grammar*. Berkeley: University of California Press.

Li, Fangjie. 1998a. Subject predicate sentences-big subject or small subject are *de* phrases. *Wuhan University Journal (Philosophy & Social Sciences)* 4:92–96.

Li, Linding. 1986. *Sentence patterns in Modern Chinese*. Beijing: The Commercial Press.

Li, Yen-hui Audrey. 1990. *Order and constituency in mandarin chinese*. Dordrecht: Kluwer.

Li, Yen-hui Audrey. 1992. *Dou*: S-structure or LF. In *Paper presented at the fourth north american conference on chinese linguistics*. Ann Arbor: University of Michigan.

Li, Yen-hui Audrey. 1998b. Argument determiner phrases and number phrases. *Linguistic Inquiry* 29:693–702.

Li, Yen-hui Audrey. 1999. Plurality in a classifier language. *Journal of East Asian Linguistics* 8:75–99.

Li, Yen-hui Audrey. 2014. Structure of noun phrases-left or right? *Taiwan Journal of Linguistics* 12:1– 32.

Lin, Chien-Jer Charles. 2011. Processing (in)alienable possessions at the syntax-semantics interface. In *Researching interfaces in linguistics*, ed. by Raffaella Folli and Christiane Ulbrich. New York: Oxford University Press.

Lin, Shaoqun. 2005. The study on the "n1+(de)+n2" modifier-head construction of Modern Chinese. Doctoral Dissertation, Fujian Normal University, Fuzhou, China.

Linda, Badan. 2008. Preposed object and low periphery in Mandarin Chinese. *STiL Studies in Linguistics, CISCL Working Papers* 2:18–41.

Liu, Chen-Sheng Luther. 2010a. Dimension-denoting classifiers in Taiwanese compound adjectives. *Journal of East Asian Linguistics* 19:181–205.

Liu, Chen-Sheng Luther. 2010b. The positive morpheme in Chinese and the adjectival structure. *Lingua* 120:1010–1056.

Liu, Chen-Sheng Luther. 2011. The Chinese *bi* comparative. *Lingua* 121:1767–1759.

Liu, Yongsheng. 2004. A study of the presence and absence of *de* in "np1+de+np2" constructions in Mandarin Chinese at the sentential level. *Rhetoric Learning* 6:51–52.

Longobardi, Giuseppe. 1994. Reference and proper names: A theory of N-movement in syntax and logical form. *Linguistic Inquiry* 25:609–65.

Lü, Shuxiang. 1986. S-p predicate sentence. *Zhongguo Yuwen* 5.

Lü, Shuxiang. 1999. *Xiandai hanyu babai ci "The eight hundred words of modern chinese"*. Beijing, China: Commercial press.

Lyons, Christopher. 1999. *Definiteness*. Cambridge, UK: Cambridge University Press.

Ma, Zhen. 1999. New thoughts on *bi* constructions. In *Discussion on expletives in modern chinese*, 179–203. Beijing: Language and Culture Press.

Manfred Krifka, Gregory N. Carlson Alice ter Meulen Gennaro Chierchia Godehard Link, Francis Jeffry Pelletier. 1995. Genericity: an introduction. In *G-n*, ed. by Carlson and F. Pelletier, 1–124. Chicago: The University of Chicago Press.

Martin, Jack. 1993. "Inalienable possession" in Creek (and its possible origin). *International Journal of American Linguistics* 59:442–452.

Matushansky, Ora. 2006. Why rose is the rose. In *Empirical issues in formal syntax and semantics 6*, ed. by Olivier Bonami and Patricia Cabredo Hofherr, 285–308. CSSP online publication.

Moltmann, Friederike. 2009. Degree structure as trope structure: a trope-based analysis of positive and comparative adjectives. *Linguist and Philos* 32:51–94.

Nichols, Johanna, and Balthasar Bickel. 2011. Possessive classification. In *The world atlas of language structures*, ed. by David Gil Martin Haspelmath, Matthew S. Dryer and Bernard Comrie, Chapter 59. Berlin: Max Planck Digital Library.

Nunberg, Geoffrey. 1993. Indexicality and deixis. *Linguistics and Philosophy* 16:1–43.

Pan, Victor Junnan. 2015. Resumptivity and two types of A'-dependencies in minimalist program. *International Journal of Chinese Linguistics* 2.

Panayidou, Fryni. 2013. (In)flexibility in adjective ordering. Doctoral Dissertation, Queen Mary, University of London.

Partee, Barbara. 1983/1997. Uniformity vs. versatility: The genitive, a case study. appendix to theo janssen (1997), compositionality. In *The handbook of logic and language*, ed. by Johan van Benthem and Alice ter Meulen, 464470. New York: Elsevier.

Partee, Barbara H., and Vladimir Borschev. 1998. Integrating lexical and formal semantics: Genitives, relational nouns, and type-shifting. In *Proceedings of the second tbilisi symposium on language, logic, and computation*, ed. by R. Cooper and Th. Gamkrelidze, 229241. Tbilisi: Center on Language, Logic, Speech, Tbilisi State University.

Partee, Barbara H., and Vladimir Borschev. 2003. Genitives, relational nouns, and argument-modifier ambiguity. In *Modifying adjuncts*, ed. by C. Maienborn & C. Fabricius-Hansen E. Lang, 67–112. Berlin: Mouton de Gruyter.

Paul, W. 2002. Sentence-internal topics in Mandarin Chinese: The case of object preposing. *Language and Linguistics* 3.4:695–714.

Paul, W. 2005. Adjectival modification in Chinese and related issues. *Linguistics* 43:757–793.

Paul, Waltraud. 2006. Zhu dexi's two classes of adjectives revisited. In *Studies in chinese language and culture. festschrift in honour of christoph harbsmeier on the occasion of his 60th birthday*, ed. by C. Anderl and H. Eifring, volume vii, 303–315. Oslo: Hermes Academic Publishing.

Paul, Waltraud. 2009. Adjectives in Mandarin Chinese: the rehabilitation of a much ostracized category. In *Adjectives: Formal analyses in syntax and semantics*, ed. by Patricia Cabredo Hofherr and Ora Matushansky, volume vii, 115–152. Amsterdam: Benjamins.

von Prince, Kilu. 2011. Nominal possession in Daakaka. In *Proceedings from AFLA 18*, ed. by Gregory Scontras Lauren Eby Clemens and Maria Polinsky, 163–180. Massachusetts, USA: Department of Linguistics, Harvard University.

Radford, Andrew. 2000. NP shells. In *Essex research reports in linguistics*, volume 33, 2–20.

Ramchand, Gillian. 1996. Questions, polarity and alternative semantics. *Lingbuzz* .

Ritter, Elizabeth. 1993. Where's gender. *Linguistic Inquiry* 24:795–803.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar: Handbook in generative syntax*, ed. by Liliane Haegeman, 281–337. Dordrecht: Kluwer.

Rooth, Mats Edward. 1992. A theory of focus interpretation. *Natural Language Semantics* 3:75–116.

Ross, John Robert. 1967. Constraints on variables in syntax. Doctoral Dissertation, MIT, Cambridge, Ma.

Sabbagh, Joseph A. 2003. Ordering and linearizing rightward movement. Ms, MIT.

Schwarzschild, Roger. 2006. The role of dimensions in the syntax of noun phrases. *Syntax* 9:67–110.

Shao, Jingmin. 1990. On the substitution regularity in *bi* constructions. *Zhongguo Yuwen* 6.

Shi, Dingxu. 2000. Topic and topic-comment constructions in Mandarin Chinese. *Language* 76:383–408.

Shi, Dingxu, and Chunli Zhao. 2009. Classification and interpretation of "n1+a+d+n2" in Chinese. *Linguistic Science* 8:304–316.

Shou, Yongming, and Shaoqin Zhu. 2002. An analysis of the np1+(np2+vp) pattern. *Journal of Zhejiang University* 2:112–116.

Shyu, Shu-Ing. 2001. Remarks on object movement in Mandarin SOV order. *Language and Linguistics* 2.1:93–124.

Siloni, Tal. 1997. *Noun Phrases and Nominalizations: the syntax of DPs*. Dordrecht: Kluwer Academic Publishers.

Simpson, Andrew. 2003. On the status of modifying *de* and the structure of the Chinese DP. In *On the formal way to Chinese languages*, 74–101. Stanford: CSLI.

Simpson, Andrew. 2005. Classifiers and DP structure in Southeast Asia. In *The oxford handbook of comparative syntax*, ed. by Guglielmo Cinque and Richard S. Kayne, 806–838. Oxford: Oxford University Press.

Sio, Joanna U.S. 2006. Modification and reference in the Chinese nominal. Doctoral Dissertation, Universiteit Leiden.

Sohn, Ho-Min. 1999. *The Korean language*. Cambridge: Cambridge University Press.

Sproat, Richard, and C. Shih. 1988. Prenominal adjective ordering in English and Mandarin. In *Proceedings of nels 12*. UMass, Amherst: GLSA.

Sproat, Richard, and Chilin Shih. 1991. The cross-linguistic distribution of adjective ordering restrictions. In *Interdisciplinary approaches to language*, ed. by C. Georgopoulos and Ishihara R., 565–593. Dordrecht: Kluwer.

Stowell, Tim. 1991. Determiners in NP and DP. In *Views on phrase structure*, ed. by Katherine Leffel and Denis Bouchard, 37–56. Dordrecht: Kluwer Academic.

Svenonius, Peter. 1994. Dependent nexus: Subordinate predication structures in English and the Scandinavian languages. Doctoral Dissertation, University of California at Santa Cruz.

Svenonius, Peter. 2012. Spanning. *Ms. CASTL, University of Troms* .

Sybesma, Rint. 1999. *The Mandarin VP*. Dordrecht: Kluwer.

Sybesma, Rint, and Joanna Sio. 2008. D is for demonstrative - investigating the position of the demonstrative in Chinese and Zhuang. *The Linguistic Review* 25:453–478.

Szabolcsi, Anna. 1983. The possessor that ran away from home. *The Linguistic Review* 3.

Szabolcsi, Anna. 1987. Functional categories in the noun phrase. In *Approaches to hungarian*, ed. by I. Kenesei, volume 2, 167–189. Szaged: JATE.

Szabolcsi, Anna. 1994. The noun phrase. In *Syntax and semantics 27. the syntactic structure of Hungarian*, ed. by F. Kiefer and K.É. Kiss, 179–274. San Diego: Academic Press.

Tang, C.-C. Jane. 1998. Parametrization of features in syntax. Doctoral dissertation, University of California.

Teng, Shou-hsin. 1974. Double nominative in Chinese. *University of California dissertation* 50:455–472.

Tsai, Wei-Tien Dylan. 1996. Subject specificity, raising modals and extended mapping hypothesi. In *Paper presented at the symposium on the referential properties of noun phrase*. Hong Kong: City University of Hong Kong.

Tsao, Feng-fu. 1990. *Sentence and clause structure in Chinese: A functional perspective*. Taipei: Student Book Co.

Vergnaud, Jean-Roger, and Maria Luisa Zubuzarreta. 1992. The definite determiner and the inalienable construction in French and in English. *Linguistics Inquiry* 23:595–652.

Vikner, Carl, and Per Anker Jensen. 2002. A semantic analysis of the English genitive. Interaction of lexical and formal semantics. *Studia Linguistica* 56:191–226.

Vikner, Carl, and Per Anker Jensen. 2003. Producer interpretations of the english pre-nominal genitive. In *Proceedings of the conference "sub7−sinn und bedeutun"*, ed. by Matthias Weisgerber, volume 114. FB Sprachwissenschaft: Universität Konstanz.

Waltraud, Paul. 1993. A non-deletion account of the comparative construction in Mandarin Chinese. *Cahiers de Linguistique - Asie Orientale* 22:9–29.

Wang, Li. 1985. *Modern Chinese grammar*. Beijing: The Commercial Press.

Wang, Li. 1990. A definition of subject and its application in Chinese. In *A collection of works by wang li*, 271–285. Jinan: Shandong Education Press.

Wu, Yicheng, and Adams Bodomo. 2009. Classifiers are not determiners. *Linguistic Inquiry* 40:487–503.

Xu, Lie-jiong. 1996. Limitation on subjecthood of numerically quantified noun phrases: A pragmatic approach. City University of Hong Kong.

Xu, Lie-jiong. 2000. The topic-prominence parameter. *ZAS papers in Linguistics* 20:21–41.

Yang, Henrietta Shu-Fen. 2005. Plurality and modification in Mandarin nominal phrases. Ph.d. dissertation, University of Texas, Austin.

Yao, Yao. 2007. Double nominative construction revisited. Hongkong: Paper presented at 8th Chinese Lexical Semantics Workshop.

Yuan, Yulin. 1996. Topicalization and the related grammatical process. *Zhongguo Yuwen* 4:241–254.

Zhang, Min. 1998. *The cognitive linguistic and Chinese noun phrase*. Beijing: China Social Science Press.

Zhang, Niina. 2006. Representing specificity by the internal order of indefinites. *Linguistics* 44:121.

Zhang, Niina. 2009. The syntax of relational-nominal second constructions in Chinese. *Yuyanxue Luncong* 39:257–301.

Zhang, Niina. 2015a. Functional head properties of the degree word *hen* in Mandarin Chinese. *Lingua* 14–41.

Zhang, Niina. 2015b. Nominal-internal phrasal movement in Mandarin Chinese. *The Linguistic Review* .

Zhu, Dexi. 1982. *Notes on Chinese grammar*. Beijing: The Commercial Press.

Zou, Xu. 2007. A study on the possession category of Modern Chinese. Doctoral Dissertation, Sichuan Normal Univeristy.