

1. Introduction

It is well-known that morphological case is related to specificity in Turkish (Diesing 1992, among many others), Finnish (Kiparsky 1998), Hindi (Butt 1993: 53), Hebrew (Siloni 1997: 242, 257), etc. A less-known fact is that nominal-internal word-order can also be related to specificity. The goal of this paper is to present this fact. As in other languages, modifiers of a nominal can be a PP, AP, NP, a relative clause, etc. We will show that Chinese indefinite nominals with a prenumeral modifier, which are in the order of Modifier-de-Numeral-Classifier-N, as in (1a), are unambiguously presupposed specific, whereas indefinite nominals with a post-numeral modifier, which are in the order of Numeral-Classifier-Modifier-N, as in (1b), are either specific or nonspecific.¹ In order to identify them easily, we will call the indefinite nominals with a prenumeral modifier M#N, whereas indefinite nominals with a post-numeral modifier #MN.²

- (1) a. dai yanjing de san ge xuesheng (M#N)
 wear glasses DE three CL student
 ‘three students who wear glasses’
 b. san ge dai yanjing de xuesheng (#MN)
 three CL wear glasses DE student
 ‘three students who wear glasses’

The paper is organized as follows. In section 2 we present a distribution contrast between the two types of indefinite nominals, namely, #MNs cannot, while M#Ns can, occur as subjects and shifted objects. In section 3 we present an interpretation contrast between the two types of indefinite nominals, namely, M#Ns are exclusively presupposed specific, whereas #MNs can be either specific or nonspecific. In section 4 we discuss the possible structure contrast of the two types of indefinite nominals. In section 5 we account for the

¹ The syntactic status of the functional word *de* is controversial. At PF, *de* is immediately right-adjacent to a modifier. Since the issue does not affect the argumentation here, *de* is simply understood as a modification marker in this paper.

Note that we do not discuss data like the following, which are in the order of Numeral-Adjective-Classifier-N, and the modifier modifies the classifier rather than the N. Such data are very restricted: only adjectives such as *da* ‘big’, *xiao* ‘small’, and *chang* ‘long,’ can occur as a modifier (ii), and no *de* is allowed (iii).

- (i) a. san da zhang lao-bing b. si xiao wan niunai
 three big CL pan-cake four small bowl milk
 (ii) a. *san hou zhang lao-bing b. *si ci wan niunai
 three thick CL pan-cake four porcelain bowl milk
 (iii) a. *san da de zhang lao-bing b. *si xiao de wan niunai
 three big DE CL pan-cake four small DE bowl milk

Also note that in Chinese, if a demonstrative or a universal quantifier occurs with a modifier, the modifier can also occur in either the left-peripheral position of the nominal, as in (va), or an internal position, as in (vb).

- (v) a. Xue wuli de na san ge xuesheng lai-le.
 study physics DE that three CL student come-PRF
 ‘Those three student who study physics have come.’
 b. Na san ge xue wuli de xuesheng lai-le.
 that three CL study physics DE student come-PRF
 ‘Those three student who study physics have come.’

There are a lot of literature on the two orders (Chao 1968, Huang 1982, Tsao 1986, Hou & Kitagawa 1987, among many others). Since the nominals in either order are presupposed, their difference, if there is any, is not that of specificity.

² The abbreviations used in the Chinese examples are: EXP: experience aspect, PRF: perfect aspect, CL: classifier.

distribution constraint on #MNs in terms of their structural differences from M#Ns. Section 6 is a summary.³

2. A Distribution Constraint on #MNs

The data in (2) and (3) show that both #MNs and M#Ns can occur as post-verbal objects, and objects of prepositions, respectively.

- (2) a. Akiu renshi san ge xue wuli de xuesheng.
Akiu know three CL study physics DE student
'Akiu knows three student who study physics.'
- b. Akiu renshi xue wuli de san ge xuesheng.
Akiu know study physics DE three CL student
'Akiu knows three student who study physics.'
- (3) a. Akiu cong san ben wo mai de shu li faxian-le tade mingzi.
Akiu from three CL I buy DE book in find-PRF his name
'Akiu found his name in three books which I bought.'
- b. Akiu cong wo mai de san ben shu li faxian-le tade mingzi.
Akiu from I buy DE three CL book in find-PRF his name
'Akiu found his name in three books which I bought.'

However, on the one hand, #MNs cannot occur as preverbal subjects, while M#N can.

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

On the other hand, #MNs cannot occur between a subject and a verb, unlike regular shifted objects, whereas M#Ns can:

- (5) a. *Baoyu si pian guanyu daici de lunwen kan-guo-le.
Baoyu four CL about pronoun DE paper read-EXP-PRF
- b. Baoyu guanyu daici de si pian lunwen kan-guo-le.
Baoyu about pronoun DE four CL paper read-EXP-PRF
'Baoyu has read four papers on pronouns.'

This constraint on #MNs is not accidental. The same constraint is seen in Italian bare nouns which do not have a modifier. According to Longobardi (2000: 692) Italian bare nouns (BNs) in a preverbal subject position must be accompanied by a (relative, adjectival, PP) modifier. The contrast between preverbal subject BNs and postverbal subject BNs is shown in the contrast between (6) and (7):

- (6) a. *Medici sono stati chiamati spesso, ieri, in questo ospedale.
doctors were called up often yesterday in this hospital
- b. Medici del reparto di pronto intervento sono stati chiamati spesso, ieri,
doctors of the first aid department were called up often yesterday
in questo ospedale.

³ In order to focus on the general specificity effect of nominal-internal word-order, we avoid using the data where the numeral is *yi* 'one' in this paper. Like *ein* in German and *un* in French, *yi* has properties of an indefinite determiner, and interacts with relatives, although not with other types of modifiers (Zhang 2001).

- in this hospital
 ‘Yesterday in this hospital it was the case that doctors of the first aid department were called up.’
- (7) a. Vengono chiamati spesso medici.
 are called up often doctors
 b. Vengono chiamati spesso medici del reparto di pronto intervento.
 are called up often doctors of the first aid department

We will discuss this constraint in section 5.

3. Presupposition of M#Ns

The semantic contrast between M#Ns and #MNs has been noticed by Wu (1996). She however wrongly claims that the former are definite. Dialogues like the following show that her claim is not convincing:

- (8) A: Akiu xie de (#na) san ben shu hen youqu.
 Akiu write DE that three CL book very interesting
 ‘Three books which were written by Akiu are very interesting.’
 B: na san ben?
 which three CL
 ‘Which three?’

In this dialogue, if Speaker A uses the demonstrative *na* ‘that,’ the question of Speaker B is abnormal. It is a common sense that a definite nominal is used when the reference is clear to both participants of a conversation. The fact that the M#N *Akiu xie de san ben shu* ‘three books that Akiu wrote’ without *na* is fine in this dialogue indicates that the nominal is not definite. In other words, if the subject nominal were definite, the presence of the demonstrative would not change the felicity of the dialogue, contrary to the fact. The possible definite interpretation of M#Ns in certain contexts is pragmatically induced. For instance, if Akiu wrote only three books, *na* ‘that’ is optional, and the response of B is always inappropriate.

Instead of definiteness, we claim that M#Ns are presupposed indefinite, and thus are specific indefinite. This is shown in the following four aspects.

First, M#Ns cannot occur in the existential constructions which exclude specific nominals. Huang (1987) notes that the post-verbal argument of (dis)appearance verbs such as *lai* ‘come’ and *si* ‘die’ must be indefinite, as shown in (9).

- (9) a. Lai-le {liang ge ren /*Daiyu/*na ge ren}.
 come PRF two CL person/Daiyu/that CL person
 ‘Two persons have come.’
 b. Cun-li si-le {san tou zhu/*Daiyu/*na tou zhu}.
 village-in die-PRF three CL pig/ Daiyu / that CL pig
 ‘Three pigs died in the village.’

The following contrast shows that while #MNs can, M#Ns cannot occur to the right of such verbs. The fact suggests that more accurately, (dis)appearance verbs require the argument to their right to be nonspecific, and while #MNs satisfy this requirement, M#Ns do not. This follows our claim that M#Ns are specific.

- (10) a. Lai le san ge dai yanjing de xuesheng.
 come PRF three CL wear glasses DE student

- ‘Three students who wear glasses have come.’
- b. *Lai le dai yanjing de san ge xuesheng.
come PRF wear glasses DE three CL student
- (11) a. Cun-li si le liang tiao qu-nian chusheng de gou.
village-in die PRF 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 PRF last-year bear DE two CL dog

Second, M#Ns cannot occur as objects of verbs of creation. According to Diesing (1992: 111), indefinite objects of verbs of creation must have a nonspecific reading. The object of the following sentence is not presupposed.

- (12) I usually write a book about slugs.

If M#Ns are intrinsically specific indefinite, accordingly, their absence in the object position of such verbs is accounted for.

- (13) a. Baoyu meitian xie san fen guanyu shichang-jingji de baogao. (PP)
Baoyu everyday write three CL about market-economy DE report
‘Baoyu writes three report on market economy everyday.’
- b. *Baoyu meitian xie guanyu shichang-jingji de san fen baogao.
- (14) a. Daiyu jingchang zai zhuo-shang hua liang zhi hen ke’ai de xiaomao. (AP)
Daiyu often at table-on draw two CL very lovely DE kitten
‘Daiyu often draws two very lovely kittens on the table.’
- b. *Daiyu jingchang zai zhuo-shang hua hen ke’ai de liang zhi xiaomao.
- (15) a. Daiyu ming-nian gei wo zhi san shuang ta ziji sheji de mao-wazi. (RC)
Daiyu next-year for I knit three pair she self design DE wool-sock
‘Daiyu will knit me three pairs of woolen-socks which she designs herself.’
- b. *Daiyu ming-nian gei wo zhi ta ziji sheji de san shuang mao-wazi.

The above data are in contrast to the following (16) and (17), where the verb of using, *du* ‘read’, and the experiencer verb, *taoyan* ‘dislike’, occur, respectively, and the indefinite objects in both orders are fine:

- (16) a. Baoyu du-le san ben Daiyu mai de shu.
Baoyu read-PRF three CL Daiyu buy DE book
‘Baoyu read three books which Daiyu bought.’
- b. Baoyu du-le Daiyu mai de san ben shu.
- (17) a. wo taoyan liang ge chouyan de tongshi.
I dislike two CL smoke DE colleague
‘I dislike two colleagues who smoke.’
- b. wo taoyan chouyan de liang ge tongshi.

According to Diesing (1992: 112), experiencer verbs require a specific reading of their indefinite objects, and verbs of using allow their indefinite objects to have either specific or nonspecific reading. The acceptability of indefinite objects in either order shows that on the one hand, if M#Ns are specific, they are of course compatible with both types of verbs; on the other hand, the occurrence of #MN objects with these two types of verbs as well as with the verbs of creation as shown in (13)-(15) indicates that such indefinites allow both specific and nonspecific reading. This conclusion argues against Tsai’s (2001: 135) claim that plural

#MNs in Chinese are always nonspecific. The conclusion also suggests that the ban of #MNs in the preverbal subject and preverbal shifted object positions, as shown in section 2, cannot be accounted for semantically. Specifically, if, for instance, preverbal subjects in Chinese must be specific, as assumed generally, one would expect #MNs to occur in the subject position with their specific reading, contrary to the fact.⁴ The structural constraint thus must be accounted for syntactically. We will discuss the constraint in section 5.

Moreover, since definite nominals can be objects of verbs of creation, as shown in (18), whereas M#Ns cannot, the latter cannot be definite, contra to Wu (1996) (also see our discussion of (8) above).

- (18) a. Lu Xun xie-le Kuang-ren Riji
Lu Xun write-PRF mad-man diary
'Lun Xun wrote *The Diary of a Mad Man*'
b. Daiyu gei Baoyu zhi-le na shuang mao-wazi.
Daiyu for Baoyu knit- PRF that pair wool-sock
'Daiyu knitted that pair of woolen-socks for Baoyu.'

Third, no element can be extracted from M#Ns, regardless of the landing site. In (19), it is possible to extract *lishi-shu* 'history-book' from the #MN *liangben guanyu Xizang de lishi-shu* 'two history-books on Tibet' to either the post-subject position or the pre-subject position. Similarly, in (20), it is possible to extract *xiaoshuo* 'novel' from the classifier-initial nominal *ben guanyu Xizang de xiaoshuo* 'a novel on Tibet' to either the post-subject position or the pre-subject position. According to Cheng & Sybesma (1999) and Lin (1998), classifier-initial nominals (CIMN) are intrinsically nonspecific. In (21), however, the parallel extractions from the M#N *guanyu Xizang de liangben lishi-shu* 'two history-books on Tibet' are impossible.

- (19) a. Akiu du-guo-le liang ben guanyu Xizang de lish-shu. (#MN)
Akiu read-EXP-PRF two CL about Tibet DE history-book
'Akiu has read two history books on Tibet.'
b. Akiu (xingkui) lish-shu du-guo-le liang ben guanyu Xizang de t.
Akiu fortunately history-book read-EXP-PRF two CL about Tibet DE
'Akiu has (fortunately) read two history books on Tibet.'
c. lish-shu Akiu (xingkui) du-guo-le liang ben guanyu Xizang de t.
history-book Akiu fortunately read-EXP-PRF two CL about Tibet DE
'Akiu has (fortunately) read two history books on Tibet.'
(20) a. Akiu yao mai ben guanyu Xizang de xiaoshuo. (CIMN)
Akiu want buy CL about Tibet DE novel
'Akiu want to buy a novel on Tibet.'
b. Akiu xiaoshuo yao mai ben guanyu Xizang de.
c. Xiaoshuo Akiu yao mai ben guanyu Xizang de.
(21) a. Akiu du-guo-le guanyu Xizang de liang ben lish-shu. (M#N)
Akiu read-EXP-PRF about Tibet DE two CL history-book
'Akiu has read two history books on Tibet.'
b. *Akiu (xingkui) lish-shu du-guo-le guanyu Xizang de liang ben t.
c. *lish-shu Akiu (xingkui) du-guo-le guanyu Xizang de liang ben t.

A constraint stated in Diesing (1992: 115) is that elements can be extracted from nonspecific indefinites, but not from specific indefinites, as shown below. In (22a), the object

⁴ We are grateful to Andreas Haida for discussing this issue with us.

of the verb of creation *write* has an exclusive nonspecific reading, and the extraction from the object is fine. In (22b), the object of the experiencer verb *like* has an exclusive specific reading, and the extraction from the object is not allowed.

- (22) a. What do you usually write a book about?
 b. *What do you usually like a picture of?

Diesing (p.133) accounts for this constraint by the assumption that specific nominals adjoin to IP at LF, then a further extraction from the nominals violates the Constraint on Extraction Domain, which does not allow extraction from an adjunct (Huang 1982).

Fourth, M#Ns cannot occur as antecedent of the coda in the Existential Coda Construction (ECC). ECC refers to the construction in (23), where the NP must be indefinite and the XP (the underlined part in the data), called coda, is a clause modifying the NP.

- (23) a. YP - V - NP - XP
 b. Jie-shang lai-le yi ge xiaohair mei chuan xie.
 street-on come-PRF one CL child not wear shoe
 ‘On the street has come a child who does not wear shoes.’
 c. Baoyu jiao-guo {yi/*na} ge xuesheng hen wanpi.
 Baoyu teach-PRF one/that CL student very naughty
 ‘Baoyu taught a student who was very naughty.’

The construction has been discussed in Li & Thompson (1981: 611-619 “Realis Descriptive Clause Construction”), Huang (1987), McCawley (1988: 451, 1989), Tsai (1994/1999), and Wilder (2000), among others.

As noted by Huang (1987) and Tsai (1994/1999), the NP modified by the clausal XP in ECC not only must be indefinite, but also must not be presupposed. The fact that M#Ns cannot be such nominals shows that they are presupposed, and thus presupposed specific.

- (24) a. Lai le [san ge dai yanjing de xuesheng] hen haoxiao.
 come ASP three CL wear glasses DE student very funny
 ‘Three students who wear glasses have come. They are very funny.’
 b. *Lai le [dai yanjing de san ge xuesheng] hen haoxiao.
 come ASP wear glasses DE three CL student very funny
 (25) a. Akiu jiao-guo [san ge lai zi Beijing de xuesheng] tebie xihuan Jing-ju.
 Akiu teach-EXP three CL come from Beijing DE student very like Beijing-opera
 ‘Akiu taught three student from Beijing who liked Beijing-operas very much.’
 b. *Akiu jiao-guo [lai zi Beijing de san ge xuesheng] tebie xihuan Jingju.
 Akiu teach-EXP come from Beijing DE three CL student very like Beijing-opera

Summarizing, we have shown two contrasts between #MNs and M#Ns: the former are ambiguous in specificity, whereas the latter are exclusively specific; the former, like modifierless BNs in Italian, cannot occur as preverbal subjects, whereas the latter do not have this constraint. In the following two sections, I discuss these two contrasts, respectively.

4. Specificity with respect to nominal-internal structure

4.1 The “high” position of the modifier in M#Ns

It is well-known that English nominals started with an indefinite determiner or numeral can be either specific or nonspecific, although they have the same surface word-order (Milsark 1974, Diesing 1992, among others). In the current literature, there are different approaches to the specificity of nominals. Diesing (1992) assumes that specific subjects are base-generated out

of VP whereas nonspecific subjects are base-generated inside VP. The contrast has been restated as the choice between deletion of the upper copy and deletion of the lower copy of the subject chain at LF in Tsai (1994/1999). Diesing's conclusion drawn from preverbal subjects is recently supported by Longobardi's (2000) study of postverbal subjects in Italian. As for objects, Diesing (1992) proposes that specific objects undergo a(n) (c)overt raising, whereas nonspecific ones do not. In other words, the contrast is shown in different positions at LF. Karimi (1999) and Cheng et al. (1997), among others, on the other hand, assume that specific objects are base-generated at SpecVP, whereas nonspecific objects are sister of V. Thus, generally speaking, in these approaches, the specificity contrast is represented in either LF or the relevant base-positions of the nominals. Importantly, specific ones are all assumed to take a higher position than nonspecific ones.

In the approaches such as Zamparelli (1996) and Kim (1998/2000), however, the specificity contrast is also represented in an earlier stage of the derivation, i.e, the internal structure of nominals. Milsark (1974) assumes that weak determiners, which give nonspecific readings, are structurally akin to adjectives, in contrast to strong determiners, which give specific readings. Developing Milsark's theory, Zamparelli (1996) argues for a split DP: the higher DP hosts determiners of nominals which have a specific reading, whereas the lower DP hosts determiners of nominals which have a nonspecific reading. Kim (1998/2000), on the other hand, claims that a determiner is an argument of the head noun, and it is base-generated inside NP, but it raises to DP when the nominal is specific (has a strong indefinite reading). His claim is adopted by Hornstein (2001: 107). In both Zamparelli's and Kim's approaches, exclusive specific reading of a nominal is related to a higher position of the determiner. Moreover, crucially to the current study, Zamparelli claims that "in some cases, an abstract functional head can be licensed if a modifier of the appropriate type is generated or moved into its specifier" (The abstract of the dissertation). Crisma (1991) and Cinque (1992) have proposed that modifiers of nominals such as adjectives are hosted in the specifiers of multiple functional projections.

Following the general idea of the Zamparelli-type of approaches, we claim that the modifier in Chinese M#Ns is in a higher structural position than that in #MNs, regardless of whether the modifier in the former case is raised to the surface position or base-generated there. Importantly, this high position of the modifier is responsible for the exclusive specific reading of M#Ns. In contrast, the modifier of #MNs is in a low position, and the specificity of #MNs is unspecified and can be disambiguated by the context such as the semantic type of the selecting verb.

4.2 The "low" modifiers

Our distinction between the high position of the modifier in M#Ns and the low position of the modifier in #MNs is supported by the fact that there are modifiers which cannot occur in M#Ns. Such modifiers are *zhuyao-de* 'main', *jiandan-de* 'simple', *zhijieliiaodang-de* 'straightforward', and *gaochao-de* 'super', etc.

- (26) a. jingcha qingli-le wu tiao zhuyao de daolu.
 policeman clear-PRF five CL main DE road
 'The policemen cleared five main roads.'
- b. *jingcha qingli-le zhuyao de wu tiao daolu.
 policeman clear-PRF main DE five CL road
- (27) a. Baoyu jieda-le san dao jiandan de suanshu-ti.
 Baoyu solve-PRF three CL simple DE arithmetic-problem
 'Baoyu solved three simple arithmetic problems.'
- b. *Baoyu jieda-le jiandan de san dao suanshu-ti.
 Baoyu solve-PRF simple DE three CL arithmetic-problem

- (28) a. tamen biaoyan-le liang xiang gaochao de jishu.
 they perform-PRF two CL super DE technique
 ‘They performed two super techniques.’
 b. *tamen biaoyan-le gaochao de liang xiang jishu
 they perform-PRF super DE two CL technique

However, we have not found any modifier which can occur only in the high position of an indefinite, i.e., occur only in M#Ns but not #MNs. It seems that all modifiers can immediately precede the noun in indefinites.

If individual-denoting arguments must be DPs (Longobardi 1994, Li 1998), both individual-denoting M#Ns and #MNs are DPs. Assume that the M in M#Ns takes the Spec position of the highest functional projection. #MNs, however, starts with a numeral. Since the highest functional projection of individual-denoting #MNs is not NumP, the numeral cannot be at the head of the functional projection. Since there is no phrasal element to the left of the numeral, we claim that the highest functional projection of individual-denoting #MNs has both an empty Spec and a null head.

5. The syntactic licensing of #MNs

5.1 Government of a null D or not?

Regarding the constraint that Italian BNs in preverbal subject positions must be accompanied by a modifier, Longobardi (2000: 693) claims that this constraint appears to be related to the fact that Romance unmodified BNs, unlike modified ones and normal, overtly determined DPs, must be lexically “governed” (however this descriptive notion may be ultimately formalized in the theory). Specifically, he claims that the constraint can perhaps be related to the actual presence of an empty category, understood as a syntactic (i.e., nonpronominal) variable, in the D position of BNs. According to him, preverbal subject positions in several languages have been known for many years to be insufficiently “governed” in this sense. Modification, unnecessary for clearly lexically governed BNs such as postverbal direct objects, seems to be somehow a remedy for the violation. However, he states (p. 693 ft3): “This licensing effect of modification on BNs, strictly speaking, still unexplained, but the need to resort to it will anyway be taken as a diagnostic for the presence of an ungoverned null D.”

We do not adopt this assumption of the lexical government of a null D to account for the distribution constraint on #MNs in Chinese. We have two reasons. First, Chinese is a pro-drop language, allowing null subjects. If null subjects are allowed, how can a null D of a subject be disallowed? Thus regardless of how one accounts for the constraint on Italian BNs, we cannot account for the distribution constraint on #MNs in Chinese by the lexical government assumption. Second, licensing an empty determiner by a lexical head would wrongly predicate the structure of (29) to be grammatical (as discussed in Borsley 1997 and Bianchi 2000)

- (29) *Bill liked [_{DP} e [_{NP} picture]].

We thus conclude that it is not the lexical government that plays a role. Nor is it the preverbal position itself that plays a role, since as we saw in (3), if #MNs are objects of prepositions, they can occur preverbally. Moreover, the distribution constraint on such indefinites cannot be accounted for semantically, since they can be either specific or nonspecific.

We claim that #MNs are not able to move. Specifically, unlike definite nominals and M#Ns, they cannot raise out of their theta-position, i.e. vP or VP. They cannot move to Spec IP as regular subjects, nor can they be shifted to the left of their selecting verb. This property of #MNs is directly related to their internal structure. As we assumed at the end of section 4,

the Spec of the highest functional projection of M#Ns is filled by the M, whereas the highest functional projection of #MNs has both an empty Spec and a null head. We assume that a DP which has both a null D and an empty Spec of D is defective in Chinese in the sense that it is not able to move.

Our claim captures the contrast between individual-denoting #MNs and the quantity-denoting #MNs, to be discussed below.

5.2 The quantity reading of #MNs

In the above discussion, all indefinite data are intended to have individual-denoting reading rather than quantity-denoting reading. Nominals with a quantity reading are NumPs in the sense of Li (1998). One important fact is that the distribution contrast between #MNs and M#Ns presented in section 2 is absent in NumPs. For instance, the reading of (30) is clearly quantity-relevant. Our world knowledge tells us that pianos are heavy, that students who study physical training are usually strong, and that to move heavy things we need fewer strong persons than weak persons. (30) states that two such students, rather than more, are sufficient to move the piano. The accomplishment of the movement of the piano is related to the number of the persons who participate the event. The adverb *jiu* ‘then’ there implies the meaning of “sufficient.” The #MN *san ge xue tiyu de xuesheng* ‘three student who study physical training,’ as a NumP, occurs as a preverbal subject and the sentence is fine.

- (30) San ge xue tiyu de xuesheng *jiu neng bangdong zhe jia gangqin.*
 three CL learn physical-training DE student then can move this CL piano
 ‘Three student who study physical training can move this piano.’

If a quantity-reading of a #MN cannot be ensured from the context, the #MN cannot occur in the preverbal subject position, regardless of whether the verb is a modal verb and whether the eventuality is irrealis, as shown in (31a) and (31b), respectively:

- (31) a. *Liang ge zai yinhang gongzuo de ren *yinggai zhidao zhe jian shi.*
 two CL at bank work DE person should know this CL matter
 b. *Mingtian liang ge zai yinhang gongzuo de ren *lai zuo baogao.*
 tomorrow two CL at bank work DE person come make report

In (31a), the realization of the event of knowing something is not related to the number of the persons who occur in the event. Similarly, in (31b), the realization of the event of coming to make a report is not related to the number of the persons who come. The acceptability contrast between (30) and (31) is related to the quantity-reading of the former, and the absence of such reading in the latter.

Li (1998) claims that NumPs differ from individual-denoting nominals in that no DP is projected. If individual-denoting #MNs have a DP, which has a null D and an empty Spec of D, and thus cannot move, the absence of the DP-projection in quantity-denoting #MNs, i.e., NumPs, accounts for the contrast between (30) and (31). Specifically, in (30), since there is no DP projection in the #MN, it is not a defective DP, and thus the #MN can occur in the preverbal subject position. In contrast, in (31), since the #MN is individual-denoting and is a defective DP, it cannot move to the preverbal subject position and thus the sentence is unacceptable.

6. Summary

We have presented two contrasts between #MNs and M#Ns: with respect to interpretation, the former are ambiguous in specificity, whereas the latter are exclusively specific; with respect to structural positions, the former, can occur neither as preverbal subjects nor shifted objects,

whereas the latter do not have this constraint. We have claimed that the exclusive specific reading of M#Ns is related to the high position of the modifier, and the distribution constraint on #MNs is related to the DP projection which is, on the one hand, required to encode individuals rather than a pure quantity, and on the other hand, defective since it has both a null head and an empty Spec. In Chinese, the defectiveness of the DP makes #MNs unable to move, either to the preverbal subject position or the shifted object position, although they can be specific.

This study shows that the specificity of indefinites is represented in their internal syntactic structures. In addition, it explores more syntactic differences between specific and nonspecific indefinites in Chinese. In Diesing (1992), specificity restricts the range of subject positions (in German), the possibility of extraction, and the types of selecting verbs. In the current study, only the DPs in the structure that exclusively represents specific individuals can move, whereas DPs which allow either specific and nonspecific reading cannot move.

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