

Representing Specificity by the Internal Order of Indefinites

Niina Zhang

National Chung Cheng University lngnz@ccu.edu.tw June 2004

Draft Comments are welcome.

Abstract

This paper presents two contrasts between two types of indefinites in Chinese: those with an internal modifier and those with a left-peripheral modifier. 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 as shifted objects, whereas the latter do not have this constraint. We claim that the exclusive specific reading of the latter type is related to the high position of the modifier. The distribution constraint on the former type is also seen in predicative nominals. We suggest that such indefinites are NPs, although they are individual-denoting.

1. Introduction

It is well-known that morphological case is related to specificity in Turkish (Enç 1991, Diesing 1992), Finnish (Kiparsky 1998), Hindi (Butt 1993: 53), Hebrew (Siloni 1997: 242, 257), among others. A less-known fact is that nominal-internal word-order can also be related to specificity. The goal of this paper is to discuss this fact. As in other languages, modifiers of a nominal can be a PP, AP, NP, a relative clause, and so on. 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-de-N, as in (1b), can be specific, nonspecific, or quantity-denoting (not individual-denoting. See Li 1998). We will call the former type OMN (Outer Modifier Nominal), and the latter IMN (Inner Modifier Nominal).¹

- (1) a. dai yanjing de san ge xuesheng (OMN)
wear glasses DE three CL student
'three students who wear glasses'

¹ The abbreviations used in the Chinese examples are: EXP: experience aspect, PRF: perfect aspect, CL: classifier. 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. We do not discuss such data in this paper either.

- b. san ge dai yanjing de xuesheng (IMN)
 three CL wear glasses DE student
 ‘three students who wear glasses’

The paper is organized as follows. In section 2 through section 6 we discuss individual-denoting nominals only, leaving the issue of the quantity-reading of IMNs in section 7. In section 2 we argue that OMNs are indefinite nominals. In section 3 we present a distribution contrast between the two types of indefinite nominals, namely, IMNs cannot, while OMNs can, occur as subjects and shifted objects. In section 4, we present an interpretation contrast between the two types of indefinite nominals, namely, OMNs are exclusively presupposed specific, whereas IMNs can be either specific or nonspecific. In section 5 we discuss the possible structure contrast of the two types of indefinite nominals. In section 6 we account for the distribution constraint on IMNs in terms of their structural differences from OMNs. Section 7 is on the quantity-reading of IMNs. Section 8 is a summary.²

2. OMNs are indefinite

The semantic contrast between OMNs and IMNs has been noticed by Wu (1996) and others. However, it has been wrongly claimed that the former are definite. We present two arguments to show that they are indefinite.³

Firstly, there are contexts where definite nominals can occur, whereas OMNs cannot. Consider data like the following:

- (2) I want to translate this article into French,
 a. Ni neng gei wo jieshao san ge hui Fayu de tongxue ma?
 you can to I introduce three CL know French DE student Q
 ‘Could you introduce to me three students who know French?’
 b. Ni neng gei wo jieshao yixia hui Fayu de na san ge tongxue ma?
 you can to I introduce a.bit know French DE that three CL student Q
 ‘Could you talk to me a bit about those three students who know French?’
 c. *Ni neng gei wo jieshao (yixia) hui Fayu de san ge tongxue ma?

The verb *jieshao* ‘introduce’ in (2a) has the reading of introducing for the first time. The IMN *san ge hui Fayu de tongxue* ‘three students who know French’ is selected by the verb. The verb *jieshao* in (2b), on the other hand, has the reading of talking about. The definite nominal *hui Fayu de na san ge tongxue* ‘those three students who know French’ is selected by the verb. Note that in this case, the adverb *yixia* ‘a bit’ makes the sentence natural. However, as shown in (2c), regardless of whether *yixia* occurs or not, the object cannot be replaced with the OMN *hui Fayu de san ge tongxue* ‘three students who know French.’ Neither of the two possible readings of the verb can survive.

In this context, the referent of the IMN object in (2a) is not presupposed. The nominal is a non-specific one. The referent of the definite object in (2b) is known to both the speaker and the hearer, and thus the speaker can ask the hearer to say something about the referent. The incompatibility of the OMN with either of the two readings of the verb indicates that the nominal is neither non-specific nor definite. Later in section 4 I will argue that such nominals are exclusively specific indefinites.

² 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. Also see Chen 2003).

³ Thanks to an anonymous review for letting me know that Chesterman (1991), Halliday (1985), Kölver (1978), McCawley (1988), and Seiter (1978) have all claimed that OMNs are definite, in other languages as well as in Chinese. In this section I show that this is not true in Chinese. However, I make no claim on the issue in other languages.

Secondly, definite nominals can be predicates of equational sentences (also called equatives), whereas OMNs cannot. The nominals *the first American President* in (3a), and *the queen* in (3b) are equatives.

- (3) a. Washington was the first American President.
b. She is the queen.

In the following (4) and (5), the equatives are definite nominals in the a-/b-sentences and OMNs in the c-sentences. The c-sentences are absolutely not acceptable to me and other native speakers around me. The acceptability contrast tells us that definite nominals can, whereas OMNs cannot, be equatives.

- (4) a. Baoyu he Daiyu jiu shi **na** liang ge wo tidao de nianqing-ren.
Baoyu and Daiyu exactly be that two CL I mention DE young-person
'Baoyu and Daiyu are the two young persons I mentioned.'
b. Baoyu he Daiyu jiu shi wo tidao de **na** liang ge nianqing-ren.
c. *Baoyu he Daiyu jiu shi wo tidao de liang ge nianqing-ren. (RC)
- (5) a. Lanlan, Taotao, he Jiajia jiu shi **na** san ge tebie congming de haizi.
Lanlan Taotao and Jiajia exactly be that three CL very smart DE child
'Lanlan, Taotao, and Jiajia are the three very smart children.'
b. Lanlan, Taotao, he Jiajia jiu shi tebie congming de **na** san ge haizi.
c. *Lanlan, Taotao, he Jiajia jiu shi tebie congming de san ge haizi. (AP)

Equational sentences either relate one definite nominal to another definite nominal, as shown by (3) above, or relate one property-denoting element to another property-denoting nominal, as shown by (6) below:

- (6) (It is not the case that) a hungry fish is a happy fish.

The absence of OMNs in equational sentences indicates that such nominals are neither definite individual-denoting nor property-denoting. In next section we will show that OMNs are exclusively specific indefinite. Accordingly, such nominals cannot be used as equatives, unlike definite ones.

Based on the two arguments above, we claim that OMNs are indefinite rather than definite.

Note that numeral-initial nominals in English can be used as specific or even definite ones in a casual style. One such example given by an anonymous reviewer is the freeway sign "use left two lanes," instead of "use the left two lanes." Similarly, both IMNs and OMNs might be used as definite nominals in a casual style. We do not discuss this usage in this paper.

In the next two sections, we present a distribution and an interpretation contrast between the two types of indefinites, IMNs and OMNs.

3. A Distribution Constraint on IMNs

The data in (7) and (8) show that both IMNs and OMNs can occur as post-verbal objects, and objects of prepositions, respectively.

- (7) 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.'

- (8) 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, firstly, IMNs cannot occur as preverbal subjects, while OMN can.

- (9) 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.'

Secondly, IMNs cannot occur between a subject and a verb, unlike regular shifted objects, whereas OMNs can:

- (10) 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.'

We will discuss this constraint in section 6.2.

4. The Presupposition of OMNs

In this section we further argue that OMNs are presupposed indefinite, and thus are specific indefinite. This is shown in the following four aspects.

First, OMNs cannot occur in the existential constructions which exclude specific nominals. Huang (1987) notes that the argument following (dis)appearance verbs such as lai 'come' and si 'die' must be indefinite, as shown in (11).

- (11) 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 IMNs can, OMNs 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 IMNs satisfy this requirement, OMNs do not. This follows our claim that OMNs are specific.

- (12) 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

- (13) 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, OMNs cannot occur as objects of verbs of creation. This is shown in the b-sentences of the following data.

- (14) a. Baoyu meitian yao xie san fen guanyu shichang-jingji de baogao. (PP)
Baoyu everyday must write three CL about market-economy DE report
'Baoyu must write three reports on market economy everyday.'
b. *Baoyu meitian yao xie guanyu shichang-jingji de san fen baogao.
(15) a. Baoyu mei nian wancheng wu pian guanyu dongci de lunwen. (PP)
Baoyu every year complete five CL about verb DE paper
'Baoyu completes five papers on verbs every year.'
b. *Baoyu mei nian wancheng guanyu dongci de wu pian lunwen.
(16) 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.
(17) a. Daiyu jingchang zai xingqitian lao liang zhang xiangpenpen de laobing. (AP)
Daiyu often at Sunday bake two CL savoury DE pan-cake
'Daiyu often bakes two savoury pan-cakes on Sundays.'
b. *Daiyu jingchang zai xingqitian lao xiangpenpen de liang zhang laobing.
(18) 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.

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.

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

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

The above data are in contrast to the following (20) and (21), where the verb of using, *du* 'read', and the experiencer verb, *taoyan* 'dislike', occur, respectively, and the indefinite objects in both orders are fine:

- (20) 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.
(21) 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 OMNs are specific, they are of course compatible with both types of verbs; on the other hand, the occurrence of IMN objects with these two types of verbs as well as with the verbs of creation as shown in (7)-(18) indicates that such indefinites allow both specific and nonspecific reading. This conclusion argues against Tsai's (2001: 135) claim that plural IMNs in Chinese are always nonspecific. The conclusion also suggests that the ban of IMNs in the preverbal subject and preverbal shifted object positions, as shown in section 3, cannot be accounted for semantically. Specifically, if, for instance, preverbal subjects in Chinese must be specific, as assumed generally, one would expect IMNs 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 6.2 and section 7.

Third, no element can be extracted from OMNs, regardless of the landing site. In (22), it is possible to extract *lishi-shu* 'history-book' from the IMN *liangben guanyu Xizang de lishi-shu* 'two history-books on Tibet' to either the post-subject position or the pre-subject position. Similarly, in (23), 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 (24), however, the parallel extractions from the OMN *guanyu Xizang de liangben lishi-shu* 'two history-books on Tibet' are impossible.

- (22) a. Akiu du-guo-le liang ben guanyu Xizang de lishi-shu. (IMN)
 Akiu read-EXP-PRF two CL about Tibet DE history-book
 'Akiu has read two history books on Tibet.'
 b. Akiu (xingkui) lishi-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. lishi-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.'
- (23) 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.
- (24) a. Akiu du-guo-le guanyu Xizang de liang ben lishi-shu. (OMN)
 Akiu read-EXP-PRF about Tibet DE two CL history-book
 'Akiu has read two history books on Tibet.'
 b. *Akiu (xingkui) lishi-shu du-guo-le guanyu Xizang de liang ben t.
 c. *lishi-shu Akiu (xingkui) du-guo-le guanyu Xizang de liang ben t.

A constraint stated in Enc (1991) and Diesing (1992: 115) is that elements can be extracted from nonspecific indefinites, but not from specific indefinites, as shown below. In (25a), the object of the verb of creation *write* has an exclusive nonspecific reading, and the extraction from the object is fine. In (25b), the object of the experiencer verb *like* has an exclusive generic reading, which is not nonspecific, and the extraction from the object is not allowed.

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

⁴ I am grateful to Andreas Haida for discussing this issue with me.

Mahajan (1992: 513) accounts for the extraction constraint in the following way. He claims that specific objects in English must move to a Spec position of a functional category, then “specific objects will occupy what constitutes a ‘subject’ (= Spec) position in the phrase marker. Any extractions from such NPs will therefore constitute a Condition on Extraction Domain (CED) violation (more specifically, a Subject Condition violation; see Huang (1982), Chomsky (1986)).” Diesing (1992: 133) also uses CED to account for the constraint. She assumes that specific nominals adjoin to IP at LF, then a further extraction from the nominals violates the CED. (See Mahajan 1992: ft. 6 for his comments on Diesing’s analysis)⁵

Fourth, OMNs cannot occur as an antecedent of the coda in the Existential Coda Construction (ECC). ECC refers to the construction in (26), where the NP must be indefinite and the XP (the underlined part in the data), called coda, is a clause modifying the NP.

- (26) 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 OMNs cannot be such nominals shows that they are presupposed, and thus specific indefinite.

- (27) 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
 (28) 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 IMNs and OMNs: the former are ambiguous in specificity, whereas the latter are exclusively specific; the former cannot occur as preverbal subjects or shifted objects, whereas the latter do not have this constraint. In the following two sections, I discuss these two contrasts, respectively.

5. Specificity with respect to nominal-internal structure

5.1 The “high” position of the modifier in OMNs

It is well-known that English nominals beginning with an indefinite determiner or numeral can be either specific or nonspecific (Milsark 1974, Diesing 1992, among others). In the current literature, there are two major approaches to the specificity of nominals: a nominal-external approach and a nominal-internal approach.

⁵ Although no element can be moved out of a specific object, it is not the case that extraction from non-specific objects is always possible. See Davies and Dubinsky (2003) for further constraints.

In the nominal-external approach, specificity contrast is represented by the position of the relevant nominals. Diesing (1992) proposes 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 of nominals 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. In Mahajan (1992), specific objects must move from the complement of V to a Spec position of a functional category, whereas non-specific ones remain as the sister of V. In Szabolcsi (1997), specific nominals are related to RefP or other functional phrases which are projected above the predication-denoting projection, whereas nonspecific nominals are interpreted in their base-positions. Summarizing, in these analyses, 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 nominal-internal approach, however, specificity contrast is represented nominal-internally. De Jong (1987) proposes that the features of Det vary, corresponding to both the definiteness and Milsark's strong-weak contrast of indefinites. Moreover, Milsark (1974) assumes that weak determiners, which give nonspecific readings, are structurally akin to adjectives, in contrast to strong determiners, which give specific readings. Furthermore, developing Milsark's theory, Zamparelli (1996) argues for a split DP hypothesis: the higher DP hosts the determiners of the nominals which have a specific reading, whereas the lower DP hosts the determiners of the nominals which have a nonspecific reading. Kim (1998/2000, see also Hornstein 2000: 107), 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). In both Zamparelli's and Kim's approaches, exclusive specific reading of a nominal is related to a higher position of the determiner.

It is important to point out Zamparelli's following claim: "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). Similarly, Crisma (1991) and Cinque (1992) have also proposed that modifiers of nominals such as adjectives are hosted in the specifiers of multiple functional projections.

The correlation between the left-peripheral position of the modifiers of OMNs and the exclusive specific reading of such nominals presents a direct link to Zamparelli-Kim's nominal-internal structure approach. Following the general idea of the Zamparelli-type of approach, we claim that the modifier in Chinese OMNs is in a higher structural position than that in IMNs, 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 OMNs. In contrast, the modifier of IMNs is in a low position, and the specificity of IMNs is under-specified and can be determined Chomsky (1986) by the context such as the semantic type of the selecting verb.

5.2 The intrinsic "low" and "high" modifiers

Our distinction between the high position of the modifier in OMNs and the low position of the modifier in IMNs is supported by the fact that there are modifiers which cannot occur in OMNs, and there are also modifiers which cannot occur in IMNs. For instance, material-denoting modifiers belong to the former group:⁶

⁶ Note that the b-phrases in (29) through (31) may become acceptable if the demonstrative *na* 'that' follows *de*. In such a case, the whole nominal becomes definite and the initial modifier is contrastively focused. Since we analyze only indefinites in this paper, we do not discuss such cases.

- (29) a. Akiu mai-le si duo suliao (de) meiguihua.
 Akiu buy-PRF four CL plastic DE rose
 'Akiu bought four plastic roses.'
 b. *Akiu mai-le suliao (de) si duo meiguihua.
- (30) a. Akiu mai-le liang zhang boli (de) zhuozi.
 Akiu buy-PRF two CL glass DE table
 'Akiu bought two glass tables.'
 b. *Akiu mai-le poli (de) liang zhang zhuozi.
- (31) a. Akiu mai-le wu shuang buxiu-gang (de) kuaizi.
 Akiu buy-PRF five pair stainless-steel DE chopstick
 'Akiu bought five pairs of stainless-steel chopsticks.'
 b. *Akiu mai-le buxiu-gang (de) wu shuang kuaizi.

In contrast, modifiers like *qiyu* 'the rest,' *lingwai* 'other,' and *yishang* 'above' cannot follow any numerals and thus cannot occur in IMNs, as shown below (I am grateful to one anonymous reviewer for pointing out these three words to me).

- (32) a. Akiu yaoqing-le {qiyu/lingwai} liang ge laoshi.
 Akiu invite-PRF rest/other two CL teacher
 'Akiu invited the other two teachers.'
 b. *Akiu yaoqing-le liang ge {qiyu/lingwai} laoshi.
- (33) a. Akiu huida-le yishang san ge wenti.
 Akiu answer-PRF above three CL question
 'Akiu answered the above three questions.'
 b. *Akiu huida-le san ge yishang wenti.

The correlation between the left-peripheral position of the modifiers of OMNs and the exclusive specific reading of such nominals is significant. It shows that cross-linguistically, not only morphological case markers but also nominal internal order can represent specificity.

6. The category of IMNs

6.1 Are IMNs individual-denoting NPs or defective DPs?

If individual-denoting arguments must be DPs (Longobardi 1994, Li 1998), both OMNs and IMNs are DPs. Assume that the M in OMNs takes the Spec position of the highest functional projection. IMNs, however, starts with a numeral. Since the highest functional projection of individual-denoting IMNs 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 IMNs has both an empty Spec and a null head, as shown in (34b).

- | | | | | |
|------|----|--|----|---|
| (34) | a. | DP (of OMN)
$\bar{3}$
Mod D'
$\bar{3}$
D 5
\emptyset # N | b. | DP (of IMN) (to be revised later)
$\bar{3}$
\emptyset D'
$\bar{3}$
D 6
\emptyset # Mod N |
|------|----|--|----|---|

If the DP of (34b) has both an empty Spec and a null head, it is a vacuous projection. There are two possible analyses of IMNs: either no DP is projected, and thus theoretically we allow individual-denoting NPs, in addition to DPs, or a defective DP is projected. In the latter case, DP is projected only for the assumed interpretation requirement: an individual-denoting nominal must be a DP, rather than for any syntactic reason. Before making a choice between the two theoretical

possibilities, in next section, we look for nominals which share syntactic properties with IMNs. Such a comparison will help us with the syntactic category of IMNs.

6.2 IMNs behave like predicative nominals

In section 3 we showed that IMNs can neither occur as preverbal subject, nor occur between a subject and a verb. Note that it is not the preverbal position itself that plays a role, since as we saw in (8a), if IMNs 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 IMNs are not able to move. Specifically, unlike definite nominals and OMNs, 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 (See Huang 1993 for the claim that subjects in Chinese are moved out of their theta-position, Lin 2002 for the claim that Chinese has tense, which is generally assumed to be licensed by the projection of IP or TP, and Cheng & Sybesma 2004 for the most recent arguments for the projection of IP in Chinese).

The inability of movement is also seen in predicative nominals which do not contain a definite marker, such as the demonstrative na ‘that’ in Chinese and the in English. The following data show how such nominals fail to undergo the so-called predicate nominal inversion (for a recent discussion of this inversion, see Moro 1997, 2000) ((35) is cited from Adger & Ramchand 2001).

- (35) a. Jenny is the teacher.
 b. The teacher is Jenny.
 c. * (A) teacher is Jenny.
- (36) a. Akiu jiu shi na ge bendan.
 Akiu exactly be that CL fool
 'Akiu is the fool.'
 b. Na ge bendan jiu shi Akiu.
 c. * (yi ge) bendan jiu shi Akiu.
 one CL fool exactly be Akiu

The following Chinese data show how predicative nominals in general fail to undergo topicalization, as in the b-sentences, and scrambling (or shift), as in the c-sentences:

- (37) a. Akiu shi (yi ge) xuesheng.
 Akiu be one CL student
 'Akiu is a student.'
 b. * (Yi ge) Xuesheng, Akiu shi.
 c. * Akiu (yi ge) xuesheng shi.
- (38) a. Women jiao Akiu shen-tong.
 we call Akiu genius-child
 'We call Akiu a genius-child.'
 b. * shen-tong, women jiao Akiu.
 c. * Women shen-tong jiao Akiu.

We thus see that the demonstrativeless predicative nominals cannot move. Such predicative nominals have been assumed to be property-denoting, and be NPs rather than DPs. Our IMNs, which are individual-denoting, cannot move either. The two types of nominals are semantically different, but share the same syntactic property: they cannot move. In both types, the left-peripheral element of nominals play a role in the movability, as seen in the contrast between (36b) and (36c), and between OMNs and IMNs.

Recall that we presented two choices in 6.1 for the category of IMNs: NP or defective DP. The NP-choice is superior to the defective DP-choice in three aspects. First, the shared syntactic

property with predicative nominals, which are NPs, is captured. We can simply claim that at least in Chinese, NPs cannot move, regardless of their semantic functions. Second, adding a new category “defective DP” in the computation is ad hoc. Third, as we stated before, if a defective DP is projected for IMNs, the DP is projected only for the assumed interpretation requirement: an individual-denoting nominal must be a DP, rather than for any syntactic reason. In a different context, Englehardt (1999: 123) correctly points out:

Interpretation alone is not sufficient in establishing the presence or absence of D, as it is contingent upon our assumptions regarding the semantic properties of this functional head and, thus runs into the danger of circularity. Functional heads are invoked by the syntactic apparatus to activate the checking mechanism, regulating structural relations (Chomsky 1995). Whatever its semantic content, the existence of the functional head can hardly be justified if it makes no contribution to the structure. If so, the presence of the functional head can and even must be diagnosed primarily via manifestation of the relevant syntactic properties.

We thus conclude that IMNs are NPs in Chinese. In languages like English, however, numeral-initial nominals and determiner-initial nominals may have same syntactic properties and thus both types of nominals can be DPs. This conclusion makes us be able to account for why IMNs in Chinese cannot occur as preverbal subjects or shifted objects, although they can be specific. The reason is simply that like other NPs and unlike DPs, they cannot move.

7. The quantity-reading of IMNs

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 IMNs and OMNs presented in section 2 is absent in NumPs. For instance, the reading of (39) 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 ones. (39) states that three 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 IMN 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.

- (39) 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 IMN cannot be ensured from the context, the IMN 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 (40a) and (40b), respectively:

- (40) 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 (40a), the realization of the event of knowing something is not related to the number of the persons who occur in the event. Similarly, in (40b), 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 (39) and (40) is related to the quantity-reading of the former, and the absence of such a reading in the latter.

Li (1998) claims that NumPs differ from individual-denoting nominals in that no DP is projected, and that NumP is projected somewhere above NP. We claimed in 6.2 that NPs cannot move in Chinese. Here in (39), the IMN is a NumP and thus it can move to the preverbal subject position. In contrast, in (40), since the individual-denoting IMN is an NP, it cannot move to the preverbal subject position and thus the two sentence are unacceptable.

We summarize our claims in (41):

(41)	a. OMN	b. Individual-denoting IMN	c. Quantity-denoting IMN
	DP	NP	NumP
	3	6	3
	Mod	# Mod N	∅ Num'
	D'		3
	D 5		Num 6
	∅ # N		# Mod N

8. Summary

We have presented two contrasts between individual-denoting IMNs and OMNs: 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 as shifted objects, whereas the latter do not have this constraint. We have claimed that the exclusive specific reading of OMNs is related to the high position of the modifier. Moreover hand, the distribution constraint on IMNs is also seen in predicative nominals. We suggested that like the latter, the former may also be NPs, although they are individual-denoting. We also discussed the quantity-denoting IMNs. As NumPs, they do not show the distribution constraint.

Appendix

A distribution constraint similar to the one on the individual-denoting IMNs 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 (42) and (43):

- (42) 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.
in this hospital
'Yesterday in this hospital it was the case that doctors of the first aid department
were called up.'
- (43) 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

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 somehow remedy 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.”

Recall that in section 6 we stated that the left-peripheral element of nominals is crucial to the distribution contrast in Chinese. The contrast between the a- and the b-sentences in Italian above, however, is not that of the left-peripheral element. Instead, the occurrence of a modifier to the right of the bare nouns makes the difference. The Italian constraint is thus syntactically different from that on Chinese IMNs.

References

- Adger, David & Gillian Ramchand (2001). Predication and Equation. Paper presented at Workshop on the Syntax of Predication. ZAS, Berlin, Nov. 2-3, 2001.
- Butt, Miriam (1993). A reanalysis of long distance agreement in Urdu. *Proceedings of the Nineteenth Annual Meeting of the Berkeley Linguistics Society*, David A. Peterson (ed.), 52-63. Berkeley: Berkeley Linguistics Society.
- Chao, Yuen-Ren (1968). *A Grammar of Spoken Chinese*. Berkeley: University of California Press.
- Chen, Ping (2003). Indefinite determiner introducing definite referent: a special use of ‘yi ‘one’ + classifier’ in Chinese. *Lingua* 113: 1169-1184.
- Cheng, Lisa, James Huang, Audrey Li, and Jane Tang (1997). Causative compounds across Chinese dialects: A study of Cantonese, Mandarin and Taiwanese. *Chinese Languages and Linguistics IV*. 199-224.
- Cheng, Lisa and Rint Sybesma (1999). Bare and not so bare nouns and the structure of NP. *Linguistic Inquiry* 30 (4), 509-542.
- Cheng, Lisa and Rint Sybesma (2004) Postverbal ‘can’ in Cantonese (and Hakka) and Agree. *Lingua* 114: 419-445.
- Chesterman, Andrew (1991). *On definiteness: A study with special reference to English and Finnish*. New York: Cambridge University Press.
- Chomsky, Noam (1986). *Barriers*. MIT Press, Cambridge, Massachusetts.
- Cinque, Guglielmo (1992). Evidence for partial N movement in the romance DP. Paper presented at GLOW-15. *GLOW Newsletter* (28), 12-13.
- Crisma, Paola (1991). Functional categories inside the noun phrase: A study on the distribution of nominal modifiers. Unpublished Master Thesis (Tesi di Laurea), University of Venice.
- Davis, William and Stanley Dubinsky (2003) On extraction from NPs. *Natural Language and Linguistic Theory* 21: 1-37.
- Diesing, Molly (1992). *Indefinites*. Cambridge: The MIT Press.
- Enc, Murvet (1991). The semantics of specificity. *Linguistic Inquiry* 22, 1-55.
- Engelhardt, Miriam (1999). Properties as arguments. *The Proceedings of the 18th West Coast Conference on Formal Linguistics*. 121-131. Somerville, MA: Cascadilla Press.
- Halliday, Michael A.K. (1990). *An introduction to functional grammar*. London: Edward Arnold.
- Hornstein, Norbert (2001). *Move! A Minimalist Theory of Construal*. Mass: Blackwell.
- Hou, John & Chisato Kitagawa (1987). Null operators and the status of empty categories in Chinese. *Linguistic Inquiry* 18, 518-523.
- Huang, Cheng-Teh James. (1982). Logical relations in Chinese and the theory of grammar. Unpublished doctoral dissertation, MIT.
- Huang, Cheng-Teh James (1987). Existential sentences in Chinese and (in)definiteness. In Reuland, Eric & Alice ter Meulen (eds.) *The Representation of (In)definiteness*, 226-253. Cambridge, MA: MIT Press.
- Huang, Cheng-Teh James (1993). Reconstruction and the structure of VP: some theoretical consequences. *Linguistic Inquiry* 24: 103-138.
- Jong, Franciska de (1987). The compositional nature of (in)definiteness. In Reuland, Eric & Alice ter Meulen (eds.) *The Representation of (In)definiteness*, 270-285. Cambridge, MA: MIT Press.

- Karimi, Simin (1999). A Note on Parasitic Gaps and Specificity. *Linguistic Inquiry* 30, 704-713.
- Kim, Kuang-sup (2000 [1998]). *(Anti)-Connectivity*. Doctoral dissertation, University of Maryland at College Park. Hanshin Publishing Co.
- Kiparsky, Paul (1998). Partitive case and aspect. In *Argument Projection: Lexical and Syntactic Constraints*. Miriam Butt and Wilhelm Geuder (eds.) 265-307. Stanford, California: the Center for the Study of Language and Information (CSLI).
- Kölver, Ulrike (1978). On Newari noun phrases. In *Language Universals*. Hansjakob Seiler (ed.), 277-300. Tübingen: Gunter Narr Verlag.
- Li, Yen-hui Audrey (1998). Argument Determiner Phrases and Number Phrases. *Linguistic Inquiry* 29, 693-702.
- Li, Charles and Sandra Thompson (1981). *Mandarin Chinese: A Functional Reference Grammar*. Berkeley and Los Angeles: University of California Press.
- Lin, Jo-wang (1999). On Non-specific Determiner Clitic in Chinese, Ms. National Chiao Tung University, <http://www.usc.edu/dept/LAS/ealc/chinling/>
- Lin, Jo-wang (2002). Selectional restrictions of tenses and temporal reference of Chinese bare sentences. *Lingua* 113: 271-302.
- Longobardi, Giuseppe (1994). Reference and proper names: a theory of N-movement in syntax and Logical Form. *Linguistic Inquiry* 25, 609-665.
- Longobardi, Giuseppe (2000). "Postverbal" subjects and the Mapping Hypothesis. *Linguistic Inquiry* 31, 691-702.
- Mahajan, Anoop (1992). The Specificity Condition and the CED. *Linguistic Inquiry* 23, 510-516.
- McCawley, James D. (1988). *The Syntactic Phenomena of English*. Chicago, London: The University of Chicago Press.
- McCawley, James D. (1989). Notes on Li and Thompson, Mandarin Chinese: A Functional Reference Grammar. *Journal of Chinese Language Teachers Association* XXIV (1), 19-42.
- Milsark, Gary (1974). Existential Sentences in English. Unpublished doctoral dissertation, MIT.
- Moro, Andrea (1997). *The raising of predicates: predicative noun phrases and the theory of clause structure*, Cambridge: Cambridge University Press.
- Moro, Andrea (2001). *Dynamic Antisymmetry*. Cambridge: MIT Press.
- Seiler, Hansjakob (1978). Determination: a functional dimension for interlanguage comparison. In *Language Universals*. Hansjakob Seiler (ed.), 301-328. Tübingen: Gunter Narr Verlag.
- Siloni, Tal (1997). Hebrew Noun Phrases: Generalized Noun Raising. In *Parameters and Functional Heads*, Adriana Belletti and Luigi Rizzi (eds.), 239-268. New York, Oxford: Oxford University Press.
- Szabolcsi, Anna (1997). Strategies for scope taking. In *Ways of Scope Taking*, Anna Szabolcsi (ed.), 109-155, Dordrecht, Boston, London: Kluwer Academic Publishers.
- Tsai, Dylan (1999 [1994]). *On economising the theory of A-bar dependencies*. Doctoral dissertation, MIT. New York: Garland.
- Tsai, Dylan (2001). On subject specificity and theory of syntax-semantics interface. *Journal of East Asian Linguistics* 10, 129-168.
- Tsao, Feng-fu (1986). Relativization in Chinese and English: A contrastive study of form and function. *Journal of Chinese Language Teachers Association* XXI (3), 13-47.
- Wilder, Chris (2000). Syntax of Predication. Project proposal. ZAS-Berlin.
- Wu, Mary (1996). Representing definiteness in non-article-bearing languages. In: *Proceedings of the Joint Meeting of the 4th International Conference on Chinese Linguistics & the 7th North American Conference on Chinese Linguistics*. 317-331. Los Angeles: Graduate Students In Linguistics (GSIL), University of Southern California.
- Zamparelli, Roberto (2000 [1996]). *Layers in the Determiner Phrase*. Doctoral dissertation, University of Rochester. New York: Garland.
- Zhang, Niina (2001). The deals made among Asps and Ds in relativization. <http://www.usc.edu/dept/LAS/ealc/chinling/articles/deals.pdf>