

**SUBJECT SPECIFICITY, PREDICATE DISTRIBUTIVITY,
AND SCOPE INTERPRETATION***

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ABSTRACT

This paper proposes a syntactic account for the licensing conditions and interpretations of indefinite subjects in Mandarin Chinese. Three dimensions are explored: subject specificity, predicate distributivity, and scope interpretation. We suggest that the indefinite subject be best treated as a variable, which has to be bound by certain operator, to account for its various readings. The property of its corresponding operator in turn determines the specificity of the indefinite subject: The specific/presuppositional reading is licensed by the existential predicate *you* 'have/exist' serving as an existential quantifier *YOU*, while the nonspecific/cardinal reading is licensed by either the implicit existential closure (Diesing 1992) at Mod' (Tsai 2001) or *you* serving as the overt realization of the existential closure. Furthermore, the predicate distributivity plays a nontrivial role in licensing indefinite subjects. I propose a hierarchical account to clarify the two confusing notions, i.e. specificity and distributivity, on the interpretation of indefinite subjects. The distributive reading of indefinite subjects is licensed at a higher position than the collective reading. Finally, the wide-scope indefinite phenomenon is attributed to the scope-independent reading (Liu 1997) which in turn is licensed by specificity and distributivity. In a word, each of the three dimensions mentioned above contributes to the interpretation of the indefinite subject in Mandarin Chinese.

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1. INTRODUCTION

The subject specificity in Mandarin Chinese has been widely discussed by linguists over the past two decades (see, for example, Lee 1986, Shyu 1995, Shi 1996, Xu 1996, Li 1999, and Tsai 2001, among others). Among them, it is generally agreed that Chinese does not allow indefinite subjects as in (1) unless otherwise licensed, e.g., by the existential predicate *you* 'have/exist' in (2) or the "modal constructions"¹ in (3) (Tsai 2001):

- (1) *San-ge ren lai-le.
three-CL person come-Asp
'Three persons came.'
- (2) You san-ge ren lai-le.
have three-CL person come-Asp
a. 'There are three person *x* such that *x* came.'
b. 'Three (nonspecific) persons came.'
- (3) a. San-ge-ren tai-de-qi/tai-bu-qi yi-tai gangqin.
three-CL-ren lift-can-up/lift-cannot-up one-CL piano
'Three persons can/cannot lift a piano.'
- b. San-ge-ren keyi/neng tai-qi yi-tai gangqin.
three-CL-person may/can lift-up one-CL piano
'Three persons may/can lift a piano.'

Though (2,3) are all grammatical, the indefinite subjects yield different readings. In (2a) the indefinite subject *san-ge-ren* 'three persons' has a prominent specific reading (presuppositional reading in Diesing's (1992) sense) which presupposes the existence of three men in question. That is, even if no man comes, the three men is still in existence, only that the truth value of this proposition is undefined. In (2b) we get a nonspecific reading akin to Diesing's cardinal reading which only asserts the

¹ Tsai (2001) points out that the indefinite subjects are allowed in the V-de-V/V-bu-V construction, the modal construction, the flip-flop construction, and the *gou*-construction. For ease of exposition, we use the "modal construction" as a cover term referring to all of the above mentioned constructions which have something to do with the modal licensing.

existence of the three men. Therefore, if no man comes, the truth value of this proposition turns out to be false. An easy way to distinguish these two readings is through the insertion of the adverb *yijing* ‘already’:

- (4) a. You san-ge ren **yijing** lai-le.
have three-CL person already come-Asp
‘There are three person *x* such that *x* have already come.’
- b. **Yijing** you san-ge ren lai-le.
already have three-CL person come-Asp
‘Three (nonspecific) persons have already come.’

When the indefinite subject is higher than the adverb *yijing* ‘already’, a specific reading is prominent; whereas when it is lower than *yijing*, we get a nonspecific reading.

In (3), however, the indefinite subject only yields a nonspecific reading. Therefore, in (3) any three persons can make a set to the indefinite subject *san-ge-ren* ‘three person’. Meanwhile, (3) also has a collective reading, which denotes the ability to host or contain a group of individuals collectively engaging in lifting a piano. It is false if each of the three persons lifts a piano.²

² An anonymous reviewer suggests that the collective reading is not prominent. Contrary to him/her, I think the collective reading indeed exists. It is well known that the mixed predicate (distributive-plus-collective predicate) like ‘lift’ in English is ambiguous in yielding both the distributive reading and the collective reading as (i) suggests whereas in Chinese it only yields the collective reading as in (ii) (see, for example, Li 1997, Huang 2002):

- (i) John and Bill lifted a piano.
a. John and Bill together lifted a piano.
b. John and Bill each lifted a piano.
- (ii) Zhangsan he Lisi taiqi-le yi-tai gangqin.
Zhangsan and Lisi lift-Asp one-CL piano
a. Zhangsan and Lisi together lifted a piano.
b. #Zhangsan and Lisi each lifted a piano.

Therefore, it is out of question that the collective reading in which the individuals denoted by the subject collectively engage themselves in the action denoted by VP should exist for the mixed predicate. To help derive the collective reading, we may try

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Li (1999) points out that the examples in (3) are not always consistent if we change the verb phrase:

- (5) *Wu-ge ren (keneng) chi-bu-bao fan.
five-CL person may eat-not-full rice
'Five persons possibly cannot get full from eating rice.'
- (6) *San-ge bubing keyi/neng/yinggai/bixu hen yonggan.
three-CL foot-soldier may/can/should/must very brave.
'Three foot soldiers may/can/should/must be very brave.'

The fact that both examples above are ruled out suggests that predicate type should also play a role in licensing indefinite subjects. As will be revealed later, it is the collectivity/distributivity distinction of the predicate that determines the licensing conditions of the indefinite subject.

In addition to the modal constructions mentioned above, there is another construction, the relative clause construction, where the indefinite subject may survive. That is, the indefinite NP may stay at the subject position in a relative clause without any overt licenser to ensure its grammaticality whereas no subject specificity effect is observed and the nonspecific reading and the collective reading surface.

- (7) a. [DP [CP San-ge ren xie] de wenzhang] bijiao
three-CL person write DE article more
youqu.
interesting
'Articles that three persons (collectively) wrote are more interesting.'
(nonspecific, collective)
- b. [DP [CP San-ge chushi zuo] de liaoli] yiding bijiao
three-CL cook do DE meal must more
haochi.
delicious

the following context:

- (iii) San-ge-ren tai-de-qi yi-tai gangqin, liang-ge-ren jiu buxing le
three-CL-person lift-can-up one-CL piano two-CL-person then cannot Asp
'Three persons can (together) lift a piano, while two persons cannot.'

'Meals that three cooks (collectively) cook must be more
delicious.' (nonspecific, collective)

The scope of the indefinite subject above is limited within the relative clause. We term it "narrow" scope (or NP-internal, according to Huang (1982)) for ease of exposition. Note that the relative clause itself does not belong to the modal constructions mentioned above, i.e. without the V-de-V/V-bu-V or modal licensing as noted in footnote 1, whereas they are grammatical and still yield both the nonspecific reading and the collective reading which are originally guaranteed by the modal constructions.

The situation gets more interesting when the existential predicate *you* 'have/exist' is added:

- (8) [DP_{[CP} You san-ge ren xie] de wenzhang] bijiao
have/exist three-CL person write DE article more
youqu.
interesting
a. 'There are three persons *x* such that articles that each of *x* wrote
are more interesting.'³
b. 'Articles that three persons wrote are more interesting.'⁴

(8) is ambiguous in three aspects, i.e., scopal interpretation, specificity, and distributivity. The embedded subject *san-ge-ren* 'three persons' may have a wide-scope reading (NP-external reading in Huang's (1982) sense) relative to the complex NP in (8a), contrary to the narrow-scope reading in (8b).⁵ Also, the indefinite subject has a specific reading representing

³ The English gloss here follows Huang's (1982) translation in which the QP *three men* is translated as situated outside of the complex NP, hence the NP-external reading. This suggests that the QP takes a wide scope relative to the complex NP. As will be demonstrated in section 4, we propose that such wide scope interpretation is only an illusion of either a specific reading or a distributive one.

⁴ The English gloss here cannot express the exact scope interpretation because it is itself ambiguous in both scope readings. What is intended in this gloss is the surface order of the indefinite subject which takes the narrow scope relative to the complex NP.

⁵ One may suggest that the narrow-scope reading is hard to get. We may try the following examples where both the wide-scope reading and the narrow-scope reading are prominent:

three specific persons of a presupposed set assumed by the speaker as (8a) suggests, whereas in (8b) it has the nonspecific reading in which any three persons can satisfy the set denoted by the indefinite subject. Furthermore, the indefinite subject denotes a distributive reading in which each of the three men wrote different articles as (8a) suggests, while (8b) denotes a collective reading in which three men co-authored on certain articles.

Following our illustration above, it is obvious that in order to get a clear picture on the interpretation of the indefinite subject, three dimensions have to be considered, namely, specificity, distributivity, and scope. Section 2 discusses the subject specificity issue. We briefly review Diesing's (1992) Mapping Hypothesis (MH) and Tsai's (1994, 2001) revision on MH as a background knowledge to deal with the idiosyncratic property of Chinese indefinite subjects. We suggest that the specific reading of indefinite subjects is licensed by the existential predicate *you* serving as an existential quantifier *YOU* and that the nonspecific reading is licensed by either the modal construction (Tsai 2001) or *you* serving as the overt realization of the existential closure. Section 3 discusses three predicate types and suggests that the distributive reading of indefinite subjects is syntactically licensed at a higher position than the collective reading. This hierarchical account clarifies two confusing notions on the interpretation of indefinite subjects, i.e. specificity and distributivity. Section 4 deals with the wide-scope indefinite phenomenon and proposes that it is in fact the scope-independent reading (Liu 1997) licensed by specificity and distributivity. Section 5 concludes our discussion.

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- (i) [DP[CP You san-zhi gou kangshou] de fangzi] yiding hen
have/exist three-CL dog watch DE house must very
anquan.
safe
a. 'There are three dog *x* such that houses that each of *x* watches must be safe.'
b. 'Houses that three dogs watch are safer.'

As shown in (ib) the narrow-scope reading is easy to derive. The situation for it can be that there is a house which is watched by three dogs. Therefore, the narrow scope reading does exist.

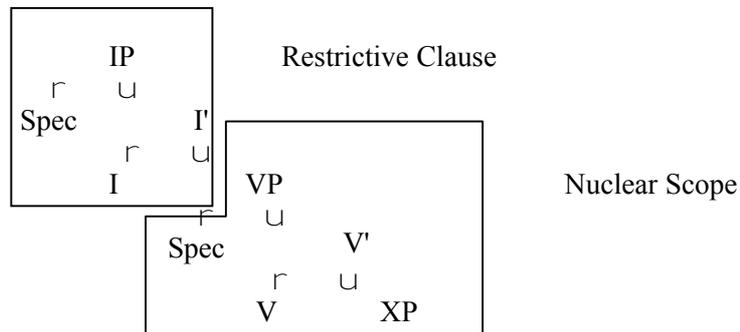
2. SUBJECT SPECIFICITY

To serve as an interface between the syntactic representation and the semantic interpretation, Diesing (1992) proposes an explicit account in determining the interpretations of indefinite NPs following Kamp (1981) and Heim (1982):

- (9) Mapping Hypothesis
 - a. Material from VP is mapped into the nuclear scope.
 - b. Material from IP (excluding VP) is mapped into a restrictive clause.

Assuming the VP-internal subject hypothesis where the SpecIP and SpecVP can be the potential positions for the subject of a clause to reside in, a tree splitting process is sketched as below:⁶

(10)



Diesing proposes that there be two readings for the indefinite NPs.⁷

⁶ Throughout this paper, we use SpecXP to represent [Spec, XP], the specifier position of XP for ease of exposition.

⁷ What Diesing suggests to the property of indefinite NPs is a little bit different from that of Kamp (1981) and Heim (1982). Diesing suggests that the indefinite NPs are ambiguous between quantificational and non-quantificational. When being quantificational, the determiner phrases undergo QR to form a tripartite structure; whereas when being non-quantificational, they remain within VP and are bound by an existential closure merged at VP. On the other hand, Kamp (1981) and Heim (1982) suggest that the indefinites are consistent in being non-quantificational and that they only

One is the presuppositional reading which corresponds to the indefinite NP outside VP, the restrictive clause. Such an indefinite NP has its own quantificational force and has to undergo Quantifier Raising (QR) to take its scope.⁸ The other is the cardinal reading which corresponds to the indefinite NP within VP, the nuclear scope. Such an indefinite NP has no inherent quantificational force and has to be bound by the existential closure merged on VP. If I am not wrongly interpreting Diesing's theory, the following example should have two readings, i.e. the presuppositional reading in (11a) and the cardinal one in (11b):

- (11) Three men came.
a. $\text{Three}_x [\text{man}(x)] [x \text{ came}]$ (presuppositional)
b. $\exists_x [\text{three}(x) \wedge \text{man}(x) \wedge x \text{ came}]$ (cardinal)

In Diesing's (1992) sense, the numeral quantifier *three* is a weak determiner and can either stay out of VP to get the presuppositional reading (11a) or stay within VP to get bound by the existential closure and thus yields the cardinal reading (11b). Therefore in (11a) *three men* refers to three specific men whose existence is presupposed by the speaker, while in (11b) it refers to any three nonspecific men.⁹ In a word,

introduce variables which must be bound either in the nuclear scope by existential closure or in the restrictive clause by a strong quantifier.

⁸ Following Milsark (1974), Diesing includes the notion of strong/weak determiner to her presuppositional and cardinal reading distinction. That is, the strong determiner such as *every* can only stay out of the VP/nuclear scope to get the presuppositional reading (from which a restrictive clause is formed), whereas the weak determiner such as *some* can stay either in the nuclear scope to get the cardinal reading or out of the nuclear scope to get the presuppositional reading.

⁹ What Diesing (1992) proposes is the *SOME-some* (or *sm*) contrast between the presuppositional reading and the cardinal reading: (from Diesing 1992:59(5))

- (i) a. SOME ghosts are in the pantry; the others are in the attic. (presupposes the existence of ghosts)
b. There are some ghosts in my house. (unstressed *some*, asserts existence of ghosts)

According to Diesing, the weak determiner *some* is ambiguous. When stressed, as *SOME* in (ia), it presupposes the existence of ghosts. Even if no ghost exists, the sentence is still not false, only that the truth-value is undefined. On the contrary, when *some* is unstressed in (ib), it only asserts the existence of ghosts. If no ghost exists, the sentence turns out to

there are two subject positions associated with the interpretation of indefinite NPs. That is, SpecIP is associated with the presuppositional reading and SpecVP, the cardinal reading.

Tsai (1994, 2001) points out that Diesing's Mapping Hypothesis has to be revised to accommodate Chinese indefinites. Otherwise, the Chinese counterpart in (12) should be grammatical in either the specific reading or the nonspecific reading parallel to Diesing's presuppositional/cardinal contrast. Obviously such is not the case, since (12) is simply ungrammatical.

- (12) *San-ge ren lai-le.
three-CL person come-Asp
'Three persons came.'

Before we go into Tsai's (1994, 2001) analysis, a clarification on the notion of specificity has to be made. As far as I know, there seems to be no uniform definition for the notion of specificity.¹⁰ Therefore, which notion of specificity is adopted in this paper will have an effect on the readers' judgments of the interpretation of indefinite NPs.¹¹ Traditionally, the notion of specificity is based on identifiability in which the indefinite NP in question is said to be specific if the speaker can identify the referent(s) denoted by the indefinite NP. Such a notion is intuitive and easy to follow. Yet, it suffers much criticism, which leads to various definitions of the notion of specificity (see von Heusinger (2002) for an overview on identifiability and types of specificity).

If we adopt Diesing's analysis, one would know that the traditional view of specificity is different from her presuppositionality. The traditional view is based on identifiability whereas Diesing's presuppositionality is based on the quantificational force of the weak determiner. The weak determiner may behave like a strong quantifier undergoing QR and thus yields the presuppositional reading. Therefore, Diesing's presuppositional reading is in effect quantificational. It presupposes the existence of the individual(s) denoted by the indefinite

be false. The specific-nonspecific contrast mentioned in this paper parallels with Diesing's *SOME-some* contrast.

¹⁰ This paper does not aim at providing a uniform definition for it, since this is not the main concern here. Instead, this paper would explore the licensing conditions for indefinite NPs in Mandarin Chinese.

¹¹ I owe thanks to an anonymous reviewer for pointing out that.

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NP. Diesing uses examples of partitive specificity to illustrate her idea as in (13).

(from Diesing 1992:59(5))

- (13) a. SOME ghosts are in the pantry; the others are in the attic.
(presupposes the existence of ghosts)
b. There are some ghosts in my house. (unstressed *some*, asserts existence of ghosts)

According to Diesing, the weak determiner *some* is ambiguous. When stressed, as *SOME* in (13a), it presupposes the existence of ghosts. Even if no ghost exists, the sentence is still not false, only that the truth-value is undefined. The presuppositional reading of *some ghosts* is then referred as *some of the ghosts*. Meanwhile, when *some* is unstressed as in (13b), it only asserts the existence of ghosts. This is the cardinal reading. If no ghost exists, the sentence turns out to be false.

The specific reading mentioned in this paper is mainly based on Diesing's presuppositionality, instead of the traditional view. What is said to be "specific" in this paper is when the entities/individuals denoted by the indefinite NP in question are of a presupposed set of the type specified by the NP. That is, the domain to which the quantifier (weak determiner in Diesing's (1992) and Milsark's (1974) term) may apply is a presupposed set. In this sense, this notion of specificity addressed in this paper may be applied to either Enç's (1991) partitive specificity or von Heusinger's (2002) referential anchoring to a discourse domain. *Three ghosts* may then be referred to as *three of the ghosts* that are existentially presupposed as a set by the speaker. This sense of specificity, presuppositional specificity, is then naturally compatible with Diesing's presuppositionality within which the partitive specificity is subsumed.

On further thing to note. In this paper, I will maintain the term "specific reading" instead of Diesing's presuppositional reading because in my opinion the inherent property of the weak determiner in Mandarin is different from that of Diesing's weak determiner in, say, English and German. Diesing's weak determiner is ambiguous in being quantificational and existential. When it is quantificational, the weak determiner itself behaves like a strong quantifier which undergoes QR to form the tripartite structure and thus yields the presuppositional reading. When it is existential, the weak determiner functions as a cardinality predicate which remains in situ. On the other hand, in this paper, I

suggest that the indefinite NP in Mandarin Chinese do not have the quantificational force in itself and therefore should not undergo QR. The burden of the dual status of the weak determiner in English and German falls upon the existential predicate *you* ‘have/exist’ which can be either quantificational or existential. Such an idea will be revealed as we move on. Therefore, I will use the term “specific reading” and “nonspecific reading” instead of the presuppositional reading and the cardinal reading, since the weak determiner in Mandarin Chinese is never quantificational (in terms of QR).

With the presuppositional specificity in mind, we may take a look at the example (4) where we suggest that the indefinite subject has two interpretations.

- (4) a. You san-ge ren **yijing** lai-le.
have three-CL person already come-Asp
'There are three person *x* such that *x* have already come.'
- b. **Yijing** you san-ge ren lai-le.
already have three-CL person come-Asp
'Three (nonspecific) persons have already come.'

What (4a) yields is exactly Diesing’s presuppositional reading in the sense that it denotes the partitive specific reading as *three of the persons*, which presupposes the existence of the three persons.

- (14) You san-ge ren **yijing** lai-le; qitade ren hai
have three-CL person already come-Asp other person still
zai lu-shang.
on road-on
'Three of the persons have already come; the others are still on the road.'

In (14) the three men’s existence is presupposed. Even if we try falsify the statement by claiming “no man actually came,” the three men are still existentially presupposed by the speaker. The existential predicate *you* here serves as an existential quantifier *YOU* triggering a tripartite structure (15). The indefinite subject is then situated in the restrictive clause higher than the nuclear scope.

(15) YOU_x [three(x) \wedge man(x)] [x came]

In (4b), however, only the nonspecific cardinal reading is allowed. It asserts the existence of the three men. If no man comes, the sentence will be false. In this regard, the existential predicate *you* is more like an overt realization of the existential closure ensuring the nonspecific cardinal reading:

(16) \exists_x [three(x) \wedge man(x) \wedge x came]

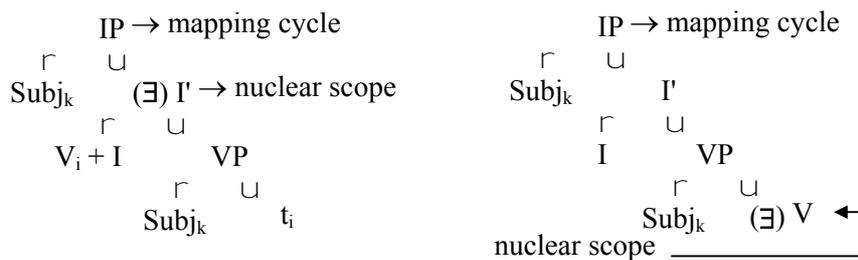
This time the indefinite subject is located within the nuclear scope and is bound by the existential closure.

In this sense, the syntax-semantics mapping is also attested in Mandarin Chinese if we assume that the indefinite subjects in (4) are of different positions, only that the dual status of the quantificational/existential contrast falls upon the existential predicate *you* instead of the weak determiner *san* ‘three’.

After clarifying the notion of specificity adopted in this work, we may go into Tsai’s (1994, 2001) analysis. Tsai proposes a dynamic version of Mapping Hypothesis in determining the nuclear scope to accommodate the difference between (11) and (12) above. That is, in English, due to its V-to-I movement, the nuclear scope is extended from V’ to I’, while in Chinese, due to its lack of V-to-I movement, the nuclear scope is V’ or V as illustrated below:

(17) a. English

b. Chinese



In other words, the nuclear scope is not the fixed VP, but the domain of a dynamic syntactic predicate (see Tsai (2001:137ff.) for a detailed

illustration).

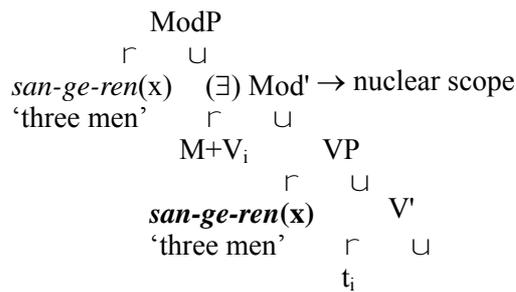
Now (12) is easy to deal with. Assuming Chomsky's Copy Theory (1993) both copies of Chinese subjects are out of the domain of the existential closure as (17b) illustrates. Since both copies are not bound by the existential closure, the nonspecific reading is naturally not available. Meanwhile, because Chinese numeral plural determiners are inherently [-strong] (Tsai 2001), a variable-like property which needs to be bound in our sense, it naturally can not stand alone without any external licensing force. The specific reading is then ruled out.

Tsai then points out that some constructions in Chinese do allow indefinite subjects as already mentioned in (3) repeated here.

- (3) a. San-ge-ren tai-de-qi/tai-bu-qi yi-tai gangqin.
 three-CL-ren lift-can-up/lift-cannot-up one-CL piano
 'Three people can/cannot lift a piano.'
- b. San-ge-ren keyi/neng tai-qi yi-tai gangqin.
 three-CL-ren may/can lift-up one-CL piano
 'Three people may/can lift a piano.'

He suggests that these constructions all involve the V-to-Mod movement. When the verb adjoins to Mod, the nuclear scope is extended to Mod' so that the lower subject copy at SpecVP is licensed by the existential closure on Mod'. Hence the nonspecific reading. See (18) for an illustration.

(18)



It is obvious from the above illustration that there is no way to license

the upper subject, the one at SpecModP, to derive the specific reading. That is why only the nonspecific reading is allowed in the modal constructions. To derive the specific reading, we will have to add an existential predicate *you* to bind the upper subject. The specific reading is then quite prominent. We get a reading where three specific men presupposed by the speaker can lift a piano.

- (19) a. You san-ge-ren tai-de-qi/tai-bu-qi yi-tai
 have/exist three-CL-person lift-can-up/lift-cannot-up one-CL
 gangqin.
 piano
 'There are three persons *x* such that *x* can lift a piano.'
- b. You san-ge-ren keyi/neng tai-qi yi-tai
 have/exist three-CL-person may/can lift-up one-CL
 gangqin.
 piano
 'There are three persons *x* such that *x* can/may lift a piano.'

As mentioned before, *you* here is more like an existential quantifier *YOU* which is merged higher up and thus is able to bind the *three persons* at SpecModP, the upper copy. The restrictive clause responsible for the specific reading is then formed as the following logical representation shows:

- (20) $YOU_x [three(x) \wedge man(x)] [x \text{ can lift a piano}]$

The above analysis suggests that the indefinite subject in Mandarin Chinese is not like that in English where Diesing (1992) proposes a dual status for the weak quantifier *three* (see (11)). It seems that Chinese indefinite subject behaves more like a variable that it cannot stand alone or undergo QR, and it always needs to be bound by some operator to get licensed.

An anonymous reviewer provides two examples (21) where the indefinite subject can stand alone without being licensed by the modal constructions or the existential quantifier *YOU* whereas it even gets a prominent definite reading, contrary to our prediction. The reviewer mentions that the contrast between (21) and (1) may be because “the latter is a presentative sentence and an indefinite subject in a presentative

sentence must be assertive rather than anaphoric”.

- (21) a. San-ge ren zuihou zhongyu dacheng gongshi.
three-CL person finally eventually reach consensus
‘The three persons finally reached consensus.’
- b. San-zhi xiao-zhu shenme ye mei chidao.
three-CL little-pig what also not eat
‘The three little pigs didn’t eat anything.’

- (1) *San-ge ren lai-le.
three-CL person come-Asp
‘Three persons came.’

My reply comes as follows. If the context provides enough information and more restriction is added in the sentence, even (1) can become grammatical with the definite reading:

- (22) Zuihou san-ge ren zhongyu lai-le.
finally three-CL person eventually come-Asp
‘Finally (the) three persons came.’

The context can be that we were waiting for John, Mary, and Bill, and they were late. We waited for a long time and the three persons came at last. Such an utterance is natural when the speaker is referring this event to others. The contrast in (1) and (21) is therefore gone. In a word, the definite reading may be attributed to the rich discourse context and the enough restriction within the sentence.

But how come it is the definite reading instead of the specific reading that is yielded in the above examples? Here I would like to suggest that the indefinite NP here be serving as an adverbial,¹² instead of a subject, similar to that in *tamen san-ge-ren* ‘they three’. The definiteness is attributed to the pronoun *tamen* ‘they’ which is pro-dropped. A good example to illustrate the idea is through the control construction. Though it is still arguable whether there exists the finite-nonfinite distinction in Mandarin Chinese, it is generally agreed that the control verb *dasuan* ‘plan’ or *jihua* ‘plan’ takes an infinitive clause where its subject has to be

¹² My thanks go to W.-T. Dylan Tsai for pointing out that.

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a null PRO instead of an overt subject:

- (23) Zhangsan he Lisi dasuan [**tamen*/PRO yiqi qu Taipei].
Zhangsan and Lisi plan they together go Taipei
'Zhangsan and Lisi plan to go to Taipei together.'

On the other hand, the fact that (24) is grammatical strongly suggests that the indefinite NP *san-ge-ren* 'three persons' should not be the subject.

- (24) Zhangsan Lisi he Wangwu dasuan [*san-ge ren*
Zhangsan Lisi and Wangwu plan three-CL person
yiqi qu Taipei].
together go Taipei
'Zhangsan, Lisi, and Wangwu (they three) plan to go to Taipei
together.'

It should, therefore, be an adverbial as we suggest above. If the above reasoning is plausible, we may still maintain that it is specificity rather than definiteness that is involved in the interpretation of indefinite subject in Mandarin Chinese.

In the following section, I pin down to different types of predicates and propose that predicate distributivity also contributes to the licensing and the interpretation of indefinite subjects in Mandarin Chinese.

3. PREDICATE DISTRIBUTIVITY

An immediate challenge to Tsai's account of the modal constructions is the examples in (5-6) which has much to do with the property of the distributive predicate. Before moving on, let's briefly familiarize the readers with three types of predicates usually mentioned in the literature (see, for example, Link 1983, Dowty 1986, Landman 1989, 1996, among many others). The first one is the collective predicate, e.g. *be numerous*, *gather*, *meet*, whose denotation is substantiated only by the 'cooperative' work of all the members involved. That is, it applies to a plurality of things as a whole and not to each of the individual members:

- (25) a. All the guests gathered in the lobby.

- b. *John gathered in the lobby.

Another type is the distributive predicate, e.g. *die, be asleep*, which applies exclusively to each individual member. When applied to plural noun phrases, it distributes over the members of the plurality:

- (26) The kids are asleep.

The third one is the mixed predicate, e.g. *lift the piano, write a book*, whose denotation is ambiguous in yielding both the collective reading and the distributive one:

- (27) John and Mary lifted the piano.

(27) has two readings. One is the collective reading, where John and Mary together lifted the piano. The other one is the distributive reading, where John and Mary each lifted the piano.

Moving on to Chinese modal constructions, one would find that only the collective predicate and the mixed predicate are allowed. Moreover, only the nonspecific reading and the collective reading surface, while the specific reading and the distributive reading are out:

Collective predicate

- (28) Wubai-ge ren keyi/neng baowei yi-zuo cangku.
five-hundred-CL person can/can surround one-CL warehouse
'Five hundred persons can surround one warehouse.'
(nonspecific, collective)

Distributive predicate

- (29) *San-ge ren keyi/neng chi-bao fan.
three-CL person can/can eat-full rice
'Three persons can each eat and get full.'
(*specific, *distributive)

Mixed predicate

- (30) San-ge ren keyi/neng taiqi yi-tai gangqin.
three-CL persons can/can lift one-CL piano
a. 'Three (nonspecific) persons can collectively lift a piano.'
(nonspecific, collective)

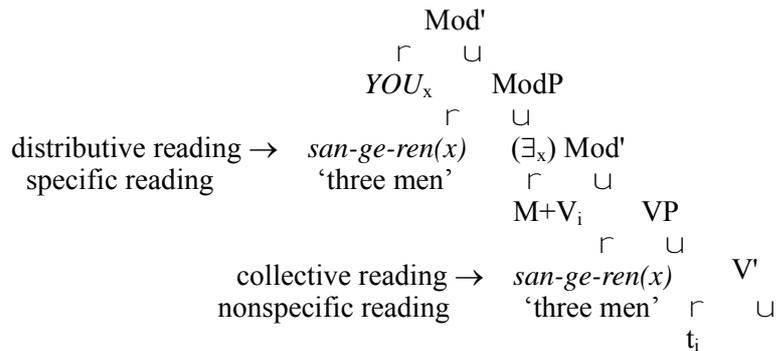
Mixed predicate

- (32) You san-ge ren keyi/neng taiqi yi-tai
have/exist three-CL persons can/can lift one-CL
gangqin.
piano
'There are three persons x such that each of x can lift a piano.'
(specific, distributive)

To account for the above distributions, I would like to suggest that the distributivity of the indefinite subject be syntactically derived from the position of the indefinite subject. That is, in the same vein of Tsai (2001) we assume that there should be certain positions corresponding to the collective-distributive interpretations. We assume that the distributive reading is licensed outside the nuclear scope, say, SpecModP or the Spec of some higher functional projection, DisP, for example. That is why the existential closure at Mod' cannot license it in the modal construction so that no distributive reading is allowed. With the addition of *you*, which is higher than the SpecModP, or the SpecDisP, the distributive reading is licensed as in (31) and (32). On the other hand, we suggest that the collective reading be licensed within the nuclear scope at some position lower than the Mod', say, SpecVP. That is why the modal constructions always license the collective reading as in (3), (28) and (30). Also, the fact that the specific reading goes with the distributive reading and that the nonspecific reading goes with the collective reading is now accounted for. They are basically under the same licensing schema:

-
- (i) Keyi/keneng/hui you san-ge ren taiqi yi-tai ganqin.
may/may/will have/exist three-CL person lift one-CL piano
'It may be the case that three (nonspecific) men will lift one piano.'

(33)



A problem arises with (29) as well as (5-6). That is, according to our theory, although the upper copy of the indefinite subject at SpecModP or SpecDisP corresponding to the distributive reading falls out of the licensing/binding domain of the existential closure, the lower copy corresponding to the collective reading can still be bound and thus get licensed. How come the collective reading is also ruled out?

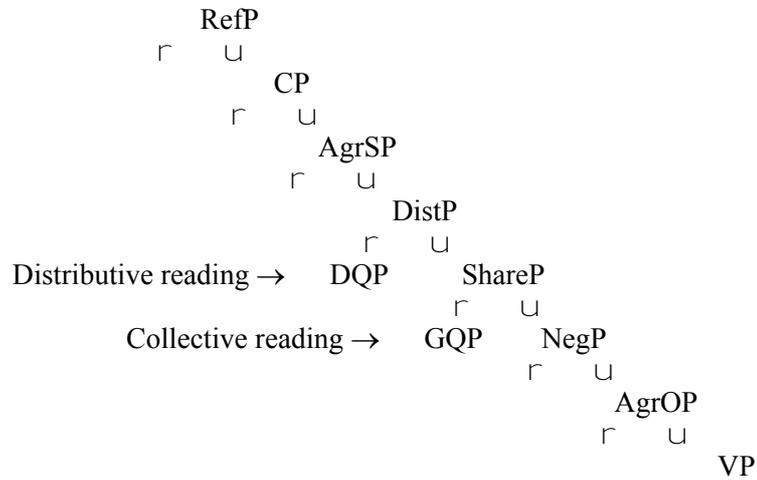
One solution is to suggest that it is due to the semantic conflict between the distributive predicate and the collective reading. Take (29). It is impossible for three men to collectively engage in a conduct of *chibao* 'eat and get full' since getting full is highly individualized. Others' eating cannot contribute to my getting full. Hence the ungrammaticality.

Another solution is to resort to syntactic difference. That is, we suggest that the distributive/collective predicate would require the indefinite subject to situate at its respective position, i.e., the upper position, say, SpecModP or SpecDisP, for the distributive reading and the lower position, say, SpecVP, for the collective reading. The ungrammaticality in (29) is simply because the distributive predicate *chibao* 'eat and get full' requires its indefinite subject to situate outside the nuclear scope, say, at the SpecModP or SpecDisP, so that it cannot be licensed by the existential closure. Only when the existential predicate *you*, which is even higher in position, is added can the distributive reading be licensed. In this sense, our analysis is in line with X. Li's (1997:181) suggestion that the distributive reading of the existential quantifiers, e.g., *san-ge ren* 'three men', in Mandarin Chinese is derived from a 'free-ride' to DisP which in turn is licensed by *you*.

It is not unprecedented to propose that different positions account for

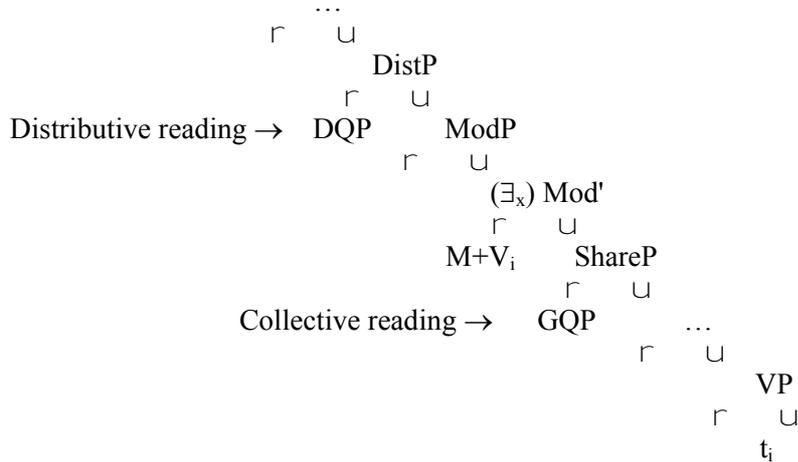
different interpretations of quantifier distributivity and that the position responsible for the distributive reading is higher than that of the collective reading. Beghelli and Stowell's (1997) rich system of functional projections in accounting for the quantifier scope is a good case:

(34) Beghelli and Stowell's (1997)



The Spec of DistP above accounts for the distributive reading while the Spec of ShareP, the collective reading. One might point out that Beghelli and Stowell's (1997) GQP (the collective reading) is located outside of VP, different from our version where the collective reading is derived within VP. In my opinion, such distinction does not pose any conflict to the above analysis as long as the dynamic version of nuclear scope is adopted (Tsai 1994, 2001). That is, assuming that the ModP is projected between the DistP and the ShareP so that when V-to-Mod movement occurs the GQP at ShareP (the collective reading) is licensed by the existential closure merged at Mod'. In this sense, Beghelli and Stowell's version is perfectly in line with our model.

(35)



I will not go into the details of these rich functional projections. Instead, the simple model in (33) serves well to illustrate my point. I will refer to the rich inflected model only when necessary.

Is there any evidence for the positional account that the indefinite subject of the collective predicate and the distributive predicate is generated at different positions? Huang's (1993) analysis helps to testify our claim. He proposes that the VP-internal subject hypothesis can be confirmed through the anaphoric relationship between the subjects and the object reflexives in the VP-fronting construction. Consider (36):

- (36) Piping taziji_{*i/j}, Zhangsan_i zhidao Lisi_j juehui bu hui.
 criticize himself Zhangsan know Lisi definitely not will
 'Criticize himself, Zhangsan knows that Lisi definitely will not.'

His reasoning is this. If the subject is originated from the SpecVP position (assuming VP-internal Subject Hypothesis), once the VP undergoes VP-fronting, the subject trace (or the copy if we adopt the Copy theory) at SpecVP will go with the fronted VP. Therefore, when the reconstruction applies to the embedded clause of a complex sentence, the fronted VP can only be reconstructed back to the embedded clause instead of the matrix clause because the reflexive object is already bound by the subject trace/copy within the fronted VP and the subject

trace/copy in turn is co-indexed with the embedded subject. Huang's analysis concludes that the VP-internal Subject Hypothesis also applies to Chinese.

Now, with this reasoning in mind, we may try to see if our proposal that the distributive reading be licensed at SpecModP, or some position above VP, and the collective reading be licensed at SpecVP. Consider the distributive predicate first. According to our assumption, the distributive predicate requires its subject to be base-generated at SpecModP or some position higher than VP. If that is the case, there will no subject trace/copy left within the fronted VP and the reflexives of the fronted VP can then be either co-indexed with the matrix subject or the embedded subject during reconstruction. Such is well attested:

- (37) a. Zhangdexiang taziji_{i/j}-de baba, Zhangsan_i renwei
resemble himself-Poss father Zhangsan think
Lisi_i juegui bukeneng.
Lisi definitely impossible
Lit. 'Resemble his own father, Zhangsan thinks Lisi is
definitely impossible.'
- b. Sengxia taziji_{i/j}-de xiaohai, Zhangsan_i
give-birth himself/herself-Poss baby Zhangsan
renwei Wangxiaojie_j juegui bu hui.
think Miss-Wang definitely not will
'Give birth to his/her own baby, Zhangsan thinks Miss
Wang definitely will not.'

The fronted predicates above are of the distributive type. In (37a) *tazijide-baba* 'his own father' can be referred to either the matrix subject *Zhangsan*'s father or the embedded subject *Lisi*'s. Similarly, in (37b) *taziji-de xiaohai* 'his/her own baby' can be referred to either *Zhangsan*'s or *Wangxiaojie*'s. This strongly suggests that the subject trace/copy of the distributive predicate is not within the fronted VP so that the reflexives of the fronted VP can freely co-indexed with either the matrix subject or the embedded subject during the process of reconstruction.

Now consider the collective predicate. According to our assumption, the collective predicate requires its subject to be base-generated at the SpecVP. If that is the case, there should be a subject trace/copy within the fronted VP. This subject trace/copy is already co-indexed with the

reflexive of the fronted VP. Therefore, the reflexive can only be referred to the embedded subject when undergoing reconstruction. Such is also attested, as (38) shows:

- (38) a. Hechang tamenziji_i-de xiaoge, [Zhangsan he Lisi]_i
choir themselves-Poss school-song Zhangsan and Lisi
renwei na-xie-xuesheng_j juegui bu yuanyi.
think that-CL-student definitely not willing
'Choir their own school song, Zhangsan and Lisi think those
students will definite not be willing to.'
- b. He duifang_i hezuo, [Zhangsan he Lisi]_i
with each-other cooperate Zhangsan and Lisi
renwei na-liang-ge-ren_j juegui bu hui.
think that-two-CL-person definitely not will
'Cooperate with each other, Zhangsan and Lisi think those
two people definitely will not.'

In (38a), the situation may be that there are some students who are all from a certain school. They do not like their school at all. Therefore, they will not agree to choir on their school song when asked to do so. The *tamenzijide xiaoge* 'their own school song' can only be referred to those student's school song instead of *Zhangsan* and *Lisi*'s. One may question that the judgment is too hard for (38a). If that is the case, let's try another reflexive *duifang* 'opposite-side'. The reflexive *duifang* in Chinese manifests the same locality effect, i.e., Binding Principle A, as *each other* in English. In (38b) it is obviously the case that the reflexive *duifang* 'each other' can only be referred to those two people, instead of *Zhangsan* and *Lisi*. Following the reasoning in Huang (1993), we may maintain that the subject trace/copy of the collective predicate is generated within VP and co-indexed with the reflexive.¹⁵

¹⁵ One thing to note, although Heycock (1995) suggests that the argument/predicate contrast as mentioned in Huang's (1993) paper is 'just a subcase of referential/nonreferential contrast in reconstruction,' the VP-internal trace account remains intact. Heycock points out that argument patterns with predicate when it is nonreferential and has to be obligatorily reconstructed back to where it is generated. This amounts to saying that the fronted VP is nonreferential so that it has to be obligatorily reconstructed back. Yet, we are not sure whether VP has anything to do with referentiality. Heycock does not explicitly point out whether VP reconstruction falls under the same referential/

Now, we know that the interpretation of the indefinite subject in Mandarin is not derived from the inherent lexical property of it. A lexical ambiguity approach cannot account for all the phenomena mentioned above. It is only through the compositional interaction among the different predicate types (collective, distributive, and mixed) and the existential licensors (the implicit existential closure \exists , the overt realization of the existential closure *you*, and the existential quantifier *YOU*) can the interpretation of the indefinite subject be clarified (cf. Partee 1995).

An anonymous reviewer provides some interesting counterexamples to the proposal made in this section:

- (39) a. Wu-ge ren ji yi-jian fang, keneng hui
five-CL person squeeze one-CL room possible will
shui-bu-zhao.
sleep-not-RC
Lit. 'Five persons squeeze into one room, (they) possibly
can not fall asleep.'
- b. Wu-ge ren chi yi-guofan, keneng hui chi-bu-bao.
five-CL person eat one-pot rice possible will eat-not-full
'Five persons eat one pot of rice, (they) possibly can not get
full.'
- c. Wu-ge bubing yiqi xunluo, keneng bijiao bu
five-CL foot-soldier together patrol possible more not
jinzhang.
nervous
'Five foot-soldiers patrol together, (they) possibly will be
less nervous.'

The reviewer suggests that the subject in the second clause may be a

nonreferential constraint as argument phrase and adjectival phrase do. Moreover, if VP is indeed nonreferential, we have no idea why we would still have the distributive/collective contrast as exemplified in (37) and (38). That is, we have no idea why the VP with collective predicate is nonreferential so that it has to be obligatorily reconstructed back to the embedded clause, whereas the VP with distributive predicate is referential so that the reconstruction is optional.

pro-dropped indefinite subject anaphoric to the subject in the antecedent clause. If it is so, the pro-dropped indefinite subject cannot survive in the modal construction and the sentence should be ungrammatical since the indefinite subject is not compatible with the distributive predicate like *shuizhao* 'fall asleep' or *chibao* 'eat-full' as already manifested in this section. How then is it possible for the implicit indefinite subject to go with the distributive predicate?

I would like to suggest that these counterexamples are only apparent and are reminiscent of the donkey sentence as the following example where the pronoun *he* and *it* in the second clause are anaphoric to the indefinite NP *a farmer* and *a donkey* in the antecedent clause respectively:

(40) If a farmer owns a donkey, he beats it.

The research of donkey sentence is abundant and I am not going to side with either the E-type pronoun approach (Evan 1977, 1980) or the DRT approach (Kamp 1981, Heim 1982). All I want to do is to suggest that the examples in (39) may be analogous to the donkey sentence in (40), only that the anaphoric pronoun in (39) is pro-dropped. That is, in (39) what is missing in the subject position of the second clause is not an indefinite NP, but a pronoun *tamen* 'they'. Since Chinese is a pro-drop language, it is not surprising that the subject is pro-dropped. In this sense, (39) does not pose any threat to our analysis any more.

In the remainder of this section, I would like to introduce a construction where no overt modal is observed whereas it patterns with the modal constructions mentioned above. Such construction always involves a relative clause, and it may serve as a good demonstration for the scope interaction in next section.

There is a construction in Mandarin Chinese which involves a relative clause with its subject being indefinite. Such construction denotes a sense of capacity which is instantiated through the "co-work" of the entities denoted by the subject. Consider (7), repeated below, where the indefinite subject is located within a relative clause and no subject specificity effect is observed:

(7) a. [DP [_{CP} San-ge ren xie] de wenzhang] bijiao
 three-CL person write DE article more
 youqu.

interesting
'Articles that three persons (collectively) write are more interesting.'
(nonspecific, collective)

- b. [DP [CP San-ge chushi zuo] de liaoli] yiding bijiao
three-CL cook do DE meal must more
haochi.
delicious
'Meals that three cooks (collectively) cook must be more delicious.'
(nonspecific, collective)

The indefinite subject *san-ge ren* 'three persons' yields the nonspecific collective reading in which any three persons can make a set to collectively engage in some activities. What is interesting here is that only the nonspecific collective reading is allowed with the mixed predicate, a phenomenon on a par with the modal constructions, while no explicit modal is around.¹⁶

¹⁶ An anonymous reviewer suggests that the interpretations of the indefinite subject NP in (7a) and (7b) are not surprising, because the main predicates in these two sentences are generic. It is the generic operator that licenses the non-specific collective reading. S/he further suggests that if the main predicate is turned into an episodic predicate, the sentence is ungrammatical:

- (i) *[DP [CP San-ge chushi zuo] de cai] bei reng-diao-le.
three-CL cook do DE meal Passive throw-away-Asp
'Meals that three cooks cook were thrown away.'

I agree with the reviewer that there may be some operator, possibly the generic operator, around to license the nonspecific reading of the indefinite subject in (7). Yet, I am not sure whether it is the episodic predicate that rules out (i), since an episodic predicate goes well with the following examples:

- (ii) San-ge ren da de qiaopai yijing guoshi-le.
three-CL person play DE bridge already out-of-date-Asp
'(The) bridge that three people play has already been out of date.'
- (iii) Si-ge ren shui de fangjian yijing bei ding-guang-le.
four-CL person sleep DE room already Passive book-out-Asp
Lit. 'Rooms that four people sleep have all been booked.' Or 'rooms for four

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Further examples of the collective predicate and the distributive predicate show that this construction do pattern with the modal constructions discussed so far:

Collective predicate

- (41) a. [DP [CP Wu-bai-ge ren baowei] de cangku]
five-hundred-CL person surround DE warehouse
yiding hen-da.
must very-big
'Warehouses that five hundred (nonspecific) persons surround
Must be very big.' (nonspecific, collective)
- b. [DP [CP San-ge ren kai de hui] mei
three-CL person convene DE meeting not
yisi.
interesting
'Meetings that three (nonspecific) persons attend are not
interesting.' (nonspecific, collective)

Distributive predicate

people
have all been booked.'

It may be the "capacity" or the "amount" construction that is at issue here. Meanwhile, although it may be plausible that the generic operator licenses the nonspecific reading, I have no idea why the generic operator would license the collective reading only. The following examples are of the generic type whereas the distributive reading is prominent:

- (iv) Gou you si-tiao tui.
dog have four-CL leg
'Dogs have four legs.'
- (v) Xiao laohu zhang-de-xiang mao.
little tiger grow-DE-like cat
'Little tigers resemble cats.'

Nonetheless, my purpose here is to explore the scope interpretation in next section. I would like to solve how come the indefinite NP in (7) is narrow scope with respect to the complex NP node, whereas in (8) it turns out to be wide scope (it has a narrow scope reading though).

- (42) a. *[_{DP} [_{CP} San-ge ren ting-dong] de yanjiang]
 three-CL person listen-understand DE lecture
 hen shenao.
 very deep
 'Lectures which three persons listen and understand are very
 deep.' (*nonspecific, *distributive)
- b. *[_{DP} [_{CP} San-ge ren shengxia] de nüer] hen
 three-CL person give-birth DE daughter very
 piaoliang.
 beautiful
 'Daughters that three persons give birth to are very beautiful.'
 (*nonspecific, *distributive)

Again, only the nonspecific collective reading survives, just like that in the modal constructions.

Why it is so is unclear to us. We may tentatively posit that an implicit modal is introduced by such construction and it has the same effect as the explicit modal. That is, they all induce the V-to-Mod raising which falls under the licensing schema discussed so far. Or it may be the generic operator that is at work here. The indefinite subject may introduce a variable for the generic operator to bind and get licensed akin to Heim (1982). We leave it open here. What is crucial for our study is that this construction helps to distinguish the scope interpretation of the indefinite subject, a less clear phenomenon usually mingled with specificity in general and the Scope Isomorphism (Huang 1982, Aoun and Li 1993) in particular.

4. SCOPE INTERPRETATION

For the past two decades the specificity of indefinite NPs has received much interest, mostly on their wide-scope taking potentials. In their well-known work, Fodor and Sag (1982) adopt the lexical ambiguity approach by referring indefinite NPs as either quantificational or referential. When being quantificational, they follow the QR constraint, namely, the clause-boundedness. When being referential, they are like referential pronominals which do not have any scope so that QR

is irrelevant. On the referential side, they are just like proper names that can be interpreted in-situ without undergoing movement though they seem to take the "widest scope". Yet, to say that the indefinite NPs are referential does not help much in providing an explanatory (or at least satisfactory) account for the seemingly "wide-scope" taking behavior.

The specificity versus scope issue receives further interests in 1990s. Abusch (1993-1994) points out that in many cases (most prominent with bound pronominals) we get an "intermediate scope" reading as well, in addition to the wide scope reading. Then Reinhart (1997) proposes a Choice Function analysis to derive the multiple scope phenomenon of indefinite NPs. Basically Reinhart's idea is that a choice function can pick up a unique individual from any non-empty set in its domain. The domain to which the choice function applies determines the "scope" of the indefinite NP. In this sense, all the scope readings, i.e. the widest, the intermediate, and the narrowest, may be freely generated (cf. Kratzer's (1998) modified version). However, as will be shown below, when it comes to Chinese examples, either account cannot well explain the scope phenomenon and we will proceed to propose that the seemingly wide scope indefinite is only an effect of specificity and distributivity.

Chinese is well known for its Scope Isomorphism (Huang 1982, Auon and Li 1993). Simply put, the LF scope interpretation is manifested at the Surface Structure following the General Condition on Scope Interpretation (Huang 1982).¹⁷ Therefore, while *everyone likes someone* in English is ambiguous in that either the subject QP (quantificational phrase) or the object QP may take the wide scope at LF, its Chinese counterpart can only have one reading where the subject QP scopes over the object QP.

Let's see some complex examples. Consider (7) again. This time we will focus on the scope interpretation.

- (7) a. [DP [CP San-ge ren xie] de wenzhang] bijiao
 three-CL person write DE article more
 youqu.
 interesting
 'Articles that three persons (collectively) write are more
 interesting.' (narrow-scope)

¹⁷ Huang (1982:220(70)):

Suppose A and B are both QPs or Q-NPs or Q-expressions, then if A c-commands B at SS, A also c-commands B at LF.

- b. [DP [CP San-ge chushi zuo] de liaoli] yiding bijiao
three-CL cook do DE meal must more
haochi.
delicious
'Meals that three cooks (collectively) cook must be more
delicious.' (narrow scope)

The scope of the indefinite subject above is limited within the relative clause. We term it "narrow" scope (or NP-internal, according to Huang (1982)) for ease of exposition.¹⁸

¹⁸ In Huang (1982: 210-212), he discusses constructions like (7), where the head noun is a bare noun. He mentions a positional contrast of the complex NP headed by a bare noun. That is, when the complex NP serves as an object, it yields both the NP-external and the NP-internal reading relative to the complex NP node as in (i) and (ii):

(Huang 1982: 210(47))

- (i) Wo kang-guo [[san-ge ren xie] de shu].
I see-Asp three-CL person write DE book
a. 'There are three men x such that I have read books that x wrote.'
b. 'I have read books each of which was written by three men.'

(Huang 1982: 210(48))

- (ii) Wo xihuan [[ta piping mei-ge ren] de wenzhang].
I like he criticize every-CL person DE article
a. 'For every man x, I like the articles in which he criticizes x.'
b. 'I like the articles in which he criticizes everybody.'

Meanwhile, when the complex NP serves as a subject, it yields only the NP-internal reading as in (iii) and (iv):

(Huang 1982: 211(50))

- (iii) [Ta xihuan mei-ge ren] Lisi bu xiangxin.
he like every-CL person Lisi not believe
'That he likes everyone, Lisi doesn't believe.'

(Huang 1982: 211(51))

- (iv) [[Ta piping mei-ge ren] de wenzhang] hen youqu.
he criticize every-CL person DE article very interesting
'Articles in which he criticizes everyone are very interesting.'

The situation gets more interesting when the existential predicate *you* 'have/exist' is added. Again we will focus on the scope interpretation. Consider (8), repeated below. It is claimed in the beginning that the complex NP is ambiguous in which the indefinite NP *san-ge-ren* 'three persons' may take either the wide (or NP-external) scope (8a) or the narrow (NP-internal) scope (8b) relative to the complex NP node:

- (8) [DP[CP You san-ge ren xie e_i] de wenzhang]
 have/exist three-CL person write DE article
 bijiao youqu.
 more interesting
 a. 'There are three persons *x* such that articles that each of *x* wrote are more interesting.'
 b. 'Articles that three persons wrote are more interesting.'

One may think that the narrow-scope reading is hard to get. If that is the case, let's try the following example where both the wide-scope reading and the narrow-scope reading are prominent.¹⁹

Huang concludes that somehow the locality condition may be operative in (iii) and (iv) but not in (i) and (ii). Though most of the examples he uses are of universal quantification, the same result applies to the indefinite NP as one may observe the contrast between (i) above and (v):

- (v) [[San-ge ren xie] de wenzhang] bijiao youqu.
 three-CL personwrite DE article more interesting
 'Books that three men co-authored are more interesting.'

¹⁹ Another way to distinguish the two readings is via the partitive specificity. In (ia) the indefinite subject has the partitive reading which is subsumed into Diesing's presuppositional reading or our specific reading. In (ib) the indefinite subject has the cardinal reading which denotes the cardinality/quantity only.

- (i) a. [DP[CP You san-zhi gou kangshou e_i] de fangzi] yiding
 have/exist three-CL dog watch DE house must
 hen anquan; qitade gou jiu cha-duo le.
 very safe other dog then less-much Asp
 'There are three dog *x* such that houses that each of *x* watches must be safe; the other dogs are much less so.'
- b. [DP[CP You san-zhi gou kangshou e_i] de fangzi] yiding

- (43) [DP[CP You san-zhi gou kangshou e_i] de fangzi]
 have/exist three-CL dog watch DE house
 yiding hen anquan.
 must very safe
 a. 'There are three dog *x* such that houses that each of *x* watches
 must be safe.'
 b. 'Houses that three dogs watch are safer.'

As shown in (43b) the narrow-scope reading is easy to derive. The situation for it can be that there is a house which is watched by three dogs. Therefore, the narrow scope reading does exist.

Although the Scope Isomorphism has little to say here because it regulates the interaction of two QPs rather than one, it is obvious that the general clause-boundedness constraint, i.e., QR is clause-bound, is still violated for the wide-scope reading. This suggests that if we adopt the QR approach, Chinese QPs may even move across the clause boundary to take the wide scope, a serious contradiction to the general clause-boundedness constraint on QR. Interestingly, the English counterpart has the same phenomenon:

- (44) Books that three men wrote are more interesting.

The *three men* may take either the wide scope reading just like (8a) or the narrow scope reading like (8b). Both (8) and (44) can be accounted for by adopting either Fodor and Sag's (1982) referential pronominal approach or Reinhart's (1997) Choice Function. For Fodor and Sag, the wide scope is derived when the indefinite subject is referential while the narrow scope is derived when the indefinite subject is quantificational. For Reinhart, the wide scope is derived when the choice function is applied at the matrix clause while the narrow scope is derived when the choice function is applied at the embedded clause. Nonetheless, the example (7) above raises a nontrivial problem because no wide scope

have/exist three-CL dog watch DE house must
 hen anquan; ziyou yi-zhi gou kangshou de fangzi jiu cha-duo le.
 very safe only one-CL dog watch DE house then less-much Asp
 'Houses that three dogs watch are safer ; houses that only one dog
 watches are much less so.'

reading is available, contrary to what is predicted by either account.²⁰ Meanwhile, it only has a nonspecific collective reading.

Here I would like to propose that the burden at issue here lie on the specificity and the distributivity of the indefinite subject. The seemingly wide-scope taking potential of the indefinite subject is only a disguise of the specific reading and the distributive reading. In other words, the general Scope Isomorphism in Chinese should be preserved and the clause-boundedness constraint is also obeyed.²¹ Let's see how the proposal works. First, the specific reading licensed by *you* provides an

²⁰ An anonymous reviewer suggests a normal variable analysis of indefinites as in Heim and Kamp. That is, if we treat the indefinite NPs in (7) as introducing free variables in the sense of Heim, it is very easy to explain the reading of (7). First, the main predicate of the sentence is generic. Therefore, an implicit generic or universal operator can be postulated. If we let bare noun introduce free variables too, then both the free variables introduced by the indefinites and the bare noun are bound by the universal operator, resulting the following logical representation:

(i) $\forall x \forall y [[\text{Linguists}(x) \wedge |x| = 3 \wedge \text{Articles}(y) \wedge \text{Write}(x,y)] \rightarrow \text{More-interesting}(y)]$

This not only explains the interpretation of the sentence under discussion but also accounts for why there is no scope interaction between the indefinite NP and the bare noun, both being bound by the same operator. Also on this analysis, we will only get the collective nonspecific reading. On the other hand, if the existential verb *you* 'have' is inserted, the variable introduced by the indefinite NP will be closed by *you*. Consequently, the implicit universal operator will no longer be able to bind the variable, which explains why the *you*-version doesn't have the universal non-specific reading.

I think the reviewer and I are of the same opinion that the indefinite subject (at least in this case) introduces some free variable that has to be bound to get licensed. Also, we are of the same opinion that the seemingly wide-scope taking potential for the indefinite subject here is an effect of specificity, instead of the scope interaction. I will thus not argue against his/her approach here. Instead, I want to point out that since the "narrow-scope" reading in (8b) and (43b) does exist, we will have to explain why with the *you*-insertion we still get the "universal non-specific reading" if we adopt the reviewer's solution. Moreover, we will also have to account for the four-way ambiguity in footnote 21. Meanwhile, as I point out in footnote 15, the main predicate can be episodic, rather than generic. Therefore, if we adopt the reviewer's suggestion, we will still have to account for the episodic event where the generic operator is missing.

²¹ I am not going to argue whether Chinese QPs may undergo QR in this paper, though I treat the indefinite subject as a variable which in essence cannot move at all. What is at issue here is that the scope of an indefinite subject is represented at the surface level which is subsumed under the Scope Isomorphism (Huang 1982).

important clue. When *you* is present, the indefinite subject may turn to be specific and we get a wide scope reading as in (8a) (and a narrow scope reading as well. This will be explained later.) When *you* is gone, the indefinite subject has only the narrow scope reading as (7) above shows. An interim conclusion here: if the indefinite subject is specific, we get a wide scope reading; if it is nonspecific, a narrow scope reading. Note that being specific is not a necessary condition for the wide-scope reading. It is only a sufficient condition.

Next, I would like to show that being distributive can also "trigger" the wide scope reading (p.c. Jowang Lin). The best way to test this idea is to exclude the interference of the specific reading which might also trigger the wide scope reading. The adverb *zonggong* 'altogether' helps to do so. *Zonggong* is used to denote quantity which is nonspecific.

- (45) [DP[CP Zonggong you san-ge xuesheng xie] de
altogether have/exist three-CL student write DE
lunwen] de-jiang.
paper win-prize
'There are three (nonspecific) students x such that papers that x
wrote have won the prize.'
- (46) Zhangsan zonggong gai-le [DP[CP san-ge xuesheng
Zhangsan altogether correct-Asp three-CL student
xie] de zuoye].
write DE homework
'There are three (nonspecific) students x such that Zhangsan has
altogether corrected homework that each of x wrote.'

The *three students* above only denotes quantity. It is nonspecific. It only asserts, not presupposes, the existence of the three students. In (45) if no student wins the prize, the sentence will be false. Yet, we get the wide scope reading easily. Please note that the distributive reading is prominent too. The *three students* in question each engages in the activity of writing homework/paper respectively. They did not co-author on the homework assignment. This suggests that the distributive reading also triggers the wide scope interpretation. The following example further testifies our observation if the predicate in (45) and (46) is replaced with a collective predicate:

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- (47) *_[DP]_[CP] Zonggong you san-ge xuesheng
altogether have/exist three-CL student
he-xie] de lunwen] de-jiang.
together-write DE paper win-prize
'There are three (nonspecific) students x such that papers that x
wrote together have won the prize.'
- (48) *Zhangsan zonggong gai-le _[DP]_[CP] san-ge xuesheng
Zhangsan altogether correct-Asp three-CL student
he-xie] de zuoye].
together-write DE homework
'There are three (nonspecific) students x such that Zhangsan has
altogether corrected homework that x wrote together.'

As are manifested by the above two examples, the wide-scope reading is gone when the predicate is replaced with a collective one. A second interim conclusion: if the indefinite subject is distributive, we get a wide scope reading; if it is collective, a narrow scope reading. Note again that being distributive is only a sufficient condition for the wide scope reading.

Things are getting interesting here. We now know that the specificity and distributivity may trigger the wide scope reading in Chinese. A natural consequence is that when both the specific reading and the distributive reading are gone, we get a narrow scope reading. (7) above is just the case we predict. Both examples have only the narrow scope reading (together with the nonspecific collective reading). As for the narrow scope reading in (8b), it follows the same vein when *you* serves as an existential closure licensing the nonspecific reading and the distributive reading is not available.²²

²² In fact, (8) is four-way ambiguous. In terms of specificity and distributivity, it may have the following combinations: the specific distributive reading (8a), the nonspecific collective reading (8b), the nonspecific distributive reading as exemplified in (45), and the specific collective reading below:

- (i) There are three persons x such that articles that x collectively wrote are more interesting.

Moreover, the scope interpretation can also be added to the above four readings. Recall that both the specific reading and the distributive reading can trigger the wide-scope

So what on earth is this specificity/distributivity-triggered wide-scope reading? We propose that it is the "scope-independent reading" (Liu 1997) or the "branching reading" (Barwise 1979, Fauconnier 1975) that is at issue here. Consider (49) (from Liu 1997:41(1)):

(49) Three students read five books.

The branching reading is derived when "there is a set S of students with three members and there is a set of books B with [five] members such that each of the students in S read each of the books in B" (Liu 1997:41). In other words, the domain to which the quantifier in question may apply is a presupposed set, i.e., a set S of students with three members and a set B of books with five members. The members of these two presupposed sets are fixed. Therefore, the scope independent reading is different from the "subject-wide" scope reading (Liu's O-dependent-on-S reading) where five books can be different collections of five books varying with the three students. Note that the three students here are not of a fixed set. Any three students can make a set to satisfy the subject-wide scope reading. Also, the scope-independent reading is different from the "object-wide" scope reading (S-dependent-on-O reading) where three students can be different groups of students varying with the five books. Again, the five books are not of a fixed set. Liu further points out that both Chinese and English has the scope-independent reading (p.58) in addition to the regular scope-dependent readings. In my opinion, the scope-independent reading is just the wide-scope reading (NP-external reading) mentioned in this section in the sense that the indefinite subject

reading. We thus have:

- (ii) a. Wide-scope specific distributive reading: triggered by specific reading;
- b. Narrow-scope nonspecific collective reading: no triggering reading around
- c. Wide-scope nonspecific distributive reading: triggered by distributive reading
- d. Wide scope specific collective reading: triggered by specific reading

I did not mention all the readings above for the glosses in example (8) for the ease of readability. The readers might get confused if all the readings are presented at the same time, which will also blur the main issue that is relevant there. Anyway, all the four readings in (ii) can be well accounted for by our analysis.

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in question refers to a presupposed set of entities each of which engages in some activities. The sentence will be false if different groups/collections of entities are applied to the domain of the indefinite subject.

With the notion of scope-independent reading, it turns out to be clear why specificity and distributivity may trigger the wide scope reading. That is, the wide scope reading is in fact the scope-independent reading whose definition involves both the specificity and distributivity. More specifically, "a presupposed set" is what specificity denotes and "each member engages in some activities" is what distributivity denotes. Meanwhile, when specificity and distributivity is gone as in (7), there is no way to license the scope-independent reading so that it naturally disappears. What is left is the only QP, the indefinite subject, remained within the complex NP and the QP has to follow the general clause-boundedness constraint. Hence the narrow scope reading.

Whether Chinese QPs may undergo QR or not is still debatable. Although in this paper I treat the indefinite QP as a variable which seems to suggest that the QR approach is not applicable in this case, I will not go further into this "to-QR-or-not-to-QR" debate since it is not the main issue here. What is clear is that the scope-independent reading is itself independent from the regular QP behavior which is either scope-isomorphic or clause-bound. The examples we provide in this section clearly single out the scope-independent reading which otherwise may pose as a puzzle in the scope interpretation.

5. CONCLUDING REMARKS

We have shown three aspects in licensing the interpretations of indefinite subjects in Mandarin Chinese. In essence, the indefinite subject is treated as a variable-like element which needs to be bound and thus licensed by its corresponding operators. The property of the operator then decides the specificity of the indefinite subject. In addition to the inherent property of the indefinite NP itself, we have also shown with evidence that the predicate distributivity plays a crucial role in licensing the indefinite subject. The collective/distributive reading is naturally accounted for due to the positional requirement of different predicates. Lastly, departing from the quantifier tradition, e.g., QR and the clauseboundedness, I propose that the puzzling wide-scope indefinite

reading is in fact the scope-independent reading (Liu 1997) licensed by the specificity and distributivity.

Following our demonstration in this study, it seems now to be incorrect to maintain that the indefinite subject (or the numeral NP) in Mandarin Chinese is itself ambiguous. Rather, we need to interpret its variability through the licensing from the predicate (the distributivity of predicate) and the context (or the corresponding operators). All in all, it is the interaction between the existential operators and the different types of predicates that causes the interwoven plot on the interpretation of the indefinite subject in Mandarin Chinese. Through a careful investigation into each component that contributes to the interpretation of the indefinite subject, i.e., specific/nonspecific, distributive/collective, and the wide/narrow-scope relations, the revelation on such intriguing (and sometimes confusing) topic seems to be promising.

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