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# Universal Quantification & Distributivity in Mandarin Chinese<sup>1</sup>

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## 0. Introduction

It has been a common observation about Mandarin Chinese that quantifiers in preverbal position generally occur with *dou* 'DOU'. As shown in (1), the sentence with a preverbal universal NP is ungrammatical without *dou*.

- (1) Mei-ge ren \*(dou) lai-le.  
every-CL man DOU come-LE  
'Every man came.'

*Dou* 'DOU', traditionally glossed as 'all', is an adverb that occurs pre-verbally only. As suggested in Lin (1998), *dou* may function as an overt realization of "a generalized distributive (D-) operator sensitive to 'contextual covers' (in the sense of Schwarzschild 1996)". Such a D-operator is generally assumed to be covert in a English sentences like (2) (cf. Lasnik 1998, etc).

- (2) The two men wrote a book.  
i. The two men wrote a book together. (*collective*)  
ii. The two men each wrote a book. (*distributive*)

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Based on the fact shown in (1), it has been suggested in the literature that Chinese may lack quantificational NPs altogether (Lee 1986, Li 1997, etc). And Lin (1998), in particular, argues for an essentially non-quantificational approach to Chinese *mei*-NPs - counterparts of English *every*-NPs. In this paper, we want to argue against this general view, by focusing on universal *mei*-NPs.

### 1. Lin (1998) on *Mei*

(3) Lin (pp.238):  $\|mei\| =$  that function  $f$  such that for all  $P \in D_{\langle e,t \rangle}$ ,  $f(P) = \cup \|P\| \langle \langle e,t \rangle, e \rangle$

According to the above meaning suggested by Lin, the determiner *mei* basically denotes a function that takes a predicate, and yields an entity which is a maximal collection of the individuals denoted by that predicate. This amounts to saying that Chinese *mei*-NPs semantically denote the same entity as plural definites, in that they both have no inherent quantificational force and no built-in distributivity, as summarized in (4):

- (4) Lin's (1998) central claims about Chinese *mei*-NPs:  $\|mei-NP\| = \|the N(pl)\|$
- i) no inherent quantificational force, with its apparent quantificational force coming solely from *dou*;
  - ii) no built-in distributivity, with *dou* being the only D-operator;
  - iii) denoting a plurality.

However, in this paper, we want to show that *mei*-NPs are universally quantified and inherently distributive, just like English *every*-NPs, and also show that our approach accounts for a wider array of facts about *mei* than a non-quantificational approach like the one suggested by Lin.

Before we go on, it should be noted that Lin's arguments are exclusively based on the behavior of *mei*-NPs in preverbal position. But there is evidence that universal NPs *do* also occur in post-verbal position. As discussed in Lee (1986), sentences involving post-verbal *mei*-NPs are grammatical, though sometimes less preferred than their object-preposed counterparts:

- (5) a. Wo mai le mei-ben shu. (270a-b), Lee (1986, pp.105)  
 I buy asp every-CL book  
 'I bought every book.'
- b. Mei-ben shu wo dou mai le.  
 every-CL book I DOU buy asp  
 'I bought every book.'

In fact, as reported by most native speakers we have consulted, there are many Chinese sentences involving post-verbal *mei*-NPs that are just as acceptable as their object-preposed counterparts, as shown in (6):

- (6) a. Zuotian wo baifang-le mei-ge pengyou.  
 yesterday I visit-LE every-CL friend  
 'Yesterday I visited every friend.'
- b. Zuotian mei-ge pengyou wo dou baifang-le.  
 yesterday every-CL friend I DOU visit-LE  
 'Yesterday I visited every friend.'

In this paper, we will investigate Chinese universal NPs at both pre-verbal and post-verbal positions, and present evidence from both contexts to support our claim.

## 2. Inherent Quantificational Force

### 2.1 Scope Interaction

In Chinese, quantifier scope is determined by the surface c-command relation of the relevant quantifiers (cf. Huang 1982, etc.). As shown in (7), *mei* participates in scope interaction just like other quantifiers in Chinese, that is, *mei* takes scope over another quantifier if and only if it c-commands the latter.

- (7) a. Mei-ben shu dou you yi-ge ren mei mai. (69a-b), Lin (1998, pp.239)  
 every-CL book DOU have one-CL man not buy  
 'Every book is such that someone did not buy it.' ( $\forall\text{book} > \exists\text{man}$ )
- b. You yi-ge ren meiyi-ben shu dou mei mai.  
 have one-CL man every-CL book DOU not buy  
 'Someone is such that he bought no book.' ( $\exists\text{man} > \forall\text{book}$ )

On the other hand, regular definites do not participate in scope interaction. As shown in (8a-b), if we replace the *mei*-NP with a definite, the scope interaction disappears:

- (8) a. Na-xie shu you yi-ge ren mei mai. (70a-b), Lin (1998, pp.240)  
 those<sup>2</sup> book have one-CL man not buy  
 'Someone didn't buy those books.'
- b. You yi-ge ren mei mai na-xie shu.  
 have one-CL man not buy those book  
 'Someone didn't buy those books.'

Under Lin's (1998) account, this contrast between *mei*-NPs and regular definites has to do solely with the presence and absence of *dou*. In particular, the universal force

<sup>2</sup> For the sake of simplicity, we use the gloss 'those' in this paper, which really should be 'that-CL(pl)'.

observed in (7a-b) comes solely from *dou*, and the lack of such a force in (8a-b) is due to the absence of *dou*.

However, if we consider sentences like (9a-b), they illustrate that even in the absence of *dou*, scope interaction is still available between *mei* and other quantifiers. It, therefore, seems necessary to attribute some kind of inherent quantificational force to *mei* that is independent of *dou*.

- (9) a. Wo song-le yi-ben shu gei mei-ge ren. ( $\exists$ book >  $\forall$ man)  
 I give-LE one-CL book to every-CL man  
 'There is some book that I gave everyone.'
- b. Wo song-le mei-ge ren yi-ben shu. ( $\forall$ man >  $\exists$ book)  
 I give-LE every-CL man one-CL book  
 'I gave everyone a (possibly different) book.'

## 2.2 Discourse Anaphora

*Mei*-NPs and regular definites also differ in their ability to block discourse anaphora, as shown in (10) below. While in (10a) the regular definite NP 'those men' does not block discourse anaphora of 'that book', in (10b) the *mei*-NP evidently can block such anaphora.

- (10) a. Yuehan songgei na-xie ren yi-ben shu<sub>1</sub>. Na-ben shu<sub>1</sub> haokan-ji-le.  
 John give those man one-CL book that-CL book very-interesting  
 'John gave those men a book<sub>1</sub>. The book<sub>1</sub> is very interesting.'
- b. Yuehan songgei mei-ge ren yi-ben shu<sub>1</sub>. \*Na-ben shu<sub>1</sub> haokan-ji-le.  
 John give every-CL man one-CL book that-CL book very-interesting  
 'John gave every man a book<sub>1</sub>. \*The book<sub>1</sub> is very interesting.'

Again, the above contrast arises only if the *mei*-NP is a quantified NP, and hence can make an NP within its scope incapable of binding any anaphora outside its scope.

## 3. Built-in Distributivity

### 3.1 Post-verbally

At a post-verbal position, whereas regular definites allow for a collective reading only, quantifiers including *mei* and *dabufende* 'most' have a distributive reading, as shown in (11-12):

- (11) Zuotian wo baifang-le na-xie pengyou. (collective only)  
 yesterday I visit-LE those friend  
 'Yesterday I visited those friends (together).'

- (12) a. Zuotian wo baifang-le mei-ge pengyou. (distributive only)  
 yesterday I visit-LE every-CL friend  
 'Yesterday I visited every friend.'
- b. Zuotian wo baifang-le dabufende pengyou. (distributive only)  
 yesterday I visit-LE most friend  
 'Yesterday I visited most friends.'

The generalization seems to be that in Chinese, for NPs occurring post-verbally, only quantified NPs allow for a distributive reading<sup>3</sup>. *Mei*-NPs, in this regard, behaves like a quantifier.

### 3.2 Pre-verbally

Further such evidence can be seen in pre-verbal contexts. As shown in (13b), *mei*-NPs force distributive readings in a context where non-quantifiers plus *dou* allow for both collective and distributive readings. In this regards, *mei* behaves exactly like English *every* as discussed in Gil (1995).

- (13) a. Naxie ren dou kang-zhe yi-ge da xiangzi, shang-le lou.  
 those man DOU carry-ZHE one-CL big box up-LE stairs  
 i. 'Each carrying a big box, those people went upstairs.' (distributive)  
 ii. 'Carrying a big box together, those people went upstairs.' (collective)
- b. Mei-ge ren dou kang-zhe yi-ge da xiangzi, shang-le lou<sup>4</sup>.  
 every-CL man DOU carry-ZHE one-CL big box up-LE stairs  
 'Carrying a suitcase, every one went upstairs.' (distributive only)

The fact that (13a), with the presence of *dou*, still allows for a collective reading further suggests that in (13b), it must be the universal NP itself, rather than *dou*, that has blocked the collective reading.

<sup>3</sup> Further evidence for the same point can be seen from the contrast shown in (I):

- (I) a. Yuehan songgei na-xie ren yi-ben butong-de shu. (collective)  
 John give those man one-CL different book.  
 'John gave a different book to those men (i.e. different from the one previously mentioned).'
- b. Yuehan songgei mei-ge ren yi-ben butong-de shu. (distributive)  
 John give every-CL man one-CL different book.  
 'John gave everyone a different book (i.e. different from what he gave to everyone else).'
- Here again, the meaning difference between (Ia) and (Ib) indicates that distributivity is triggered by a *mei*-NP, but not a regular definite.

<sup>4</sup> The meaning of Example (13b) can be contrasted from that of (II) below, where another universal NP - *shuoyoude ren* 'all the men' - clearly allows for a collective reading in the same context:

- (II) Shuoyoude ren dou kang-zhe yi-ge da xiangzi, shang-le lou.  
 all man DOU carry-ZHE one-CL big box up-LE stairs  
 i. 'Each carrying a big box, all the men went upstairs.' (distributive)  
 ii. 'Carrying a big box together, all the men went upstairs.' (collective)

Moreover, (14) shows that the contrast between a quantifier and a non-quantifier is still present when they are combined with collective predicates such as 'co-author':

- (14) a. *Naxie ren dou he-xie-le yi-ben shu.*  
 those man DOU co-write-LE one-CL book  
 i. 'Those people all co-authored a book (with somebody else).' (*distributive*)  
 ii. 'Those people co-authored a book together.' (*collective*)
- b. *Mei-ge ren dou he-xie-le yi-ben shu.*  
 every-CL man DOU co-write-LE one-CL book  
 'Everybody co-authored a book (with somebody else).' (*distributive only*)

The above fact about *mei* is rather reminiscent of English quantifiers such as *most*, as shown in (15):

- (15) *Most students co-authored a book.*  
 = 'Most students wrote a book (with somebody else).'  
 ≠ 'A group containing most students wrote a book together.'

As a null hypothesis, we can then assume that in Chinese, the distributive readings associated with *mei*-NPs come directly from these quantifiers, not from a distributive operator like *dou* (as is suggested in Lin 1998). In other words, Chinese quantifiers including *mei* have built-in distributivity, just like their English counterparts under a generalized quantifier approach. We assume, for now, that in the case of a pre-verbal quantifier, *dou* is required (cf. (1)) simply for syntactic licensing purposes, for a raised quantifier has a strong feature that needs to be checked off.

In what follows, we want to show three further dimensions along which *mei*-NPs must be distinguished from regular definites: 1) universality, 2) built-in definiteness, and 3) number marking.

#### 4. *Jihu* 'almost'

As has been noted by Partee (1995, pp.581), the distribution of possible modification by *almost* in English illustrates that universality is asserted in universal NPs such as *every man* or *all men*, but not in regular definites such as *the men*:

- (16) a. \*almost the men  
 b. almost every man / all men

Similar distribution facts in Chinese show that universality is asserted in *mei*-NPs, but not in regular definites:

- (17) a. (\**Jihu*) *Naxie ren dou lai-le.*  
 almost those man DOU come-LE  
 '(\*Almost) Those men all came.'

- b. (Jihu) Mei-ge ren dōu lái-le.  
 almost every-CL man DOU come-LE  
 '(Almost) Every man came.'

### 5. Lack of Built-in Definiteness

In a generic sentence, *mei*-NPs, like English *every*-NPs, allow for a generic reading, while regular definites in both languages block such a reading, as shown in (18):

- (18) a. Naxie gou dou you yi-tiao weiba. *(generic reading impossible)*  
 those dog DOU have one-CL tail  
 'Those dogs all have a tail.'
- b. Mei-zhi gou dou you yi-tiao weiba. *(generic reading possible)*  
 every-CL dog DOU have one-CL tail  
 i. '(In general) Every dog has a tail.'  
 ii. 'Each of the dogs has a tail.'

Presumably, the contrast is due to the fact that unlike regular definites, quantifiers in general lack contextually "anchored" interpretations for the common noun.

### 6. Number-Neutral

It is observed in Kamp & Reyle (1993, pp.350) that plural NPs cannot serve as antecedents to singular pronouns, as illustrated by such English examples as (19a-c):

- (19) a. The lawyers<sub>i</sub> hired a secretary who \*he<sub>i</sub> / they<sub>i</sub> liked.  
 b. Most lawyers<sub>i</sub> hired a secretary who \*he<sub>i</sub> / they<sub>i</sub> liked.  
 Cf. c. Every lawyer<sub>i</sub> hired a secretary who he<sub>i</sub> liked.

As shown in (20a-b), in Chinese, while plural definites<sup>5</sup> can only bind plural pronouns, *mei*-NPs can bind singular or plural pronouns, on a par with English *every*-NPs. It follows that *mei*-NPs are NOT plural NPs.

- (20) a. Na-xie ren<sub>i</sub> dou yiwei Mali xihuan \*ta<sub>i</sub> / tamen<sub>i</sub>.  
 those man DOU think Mary like he they  
 'Those men<sub>i</sub> all thought that Mary liked \*him<sub>i</sub> / them<sub>i</sub>'
- b. Mei-ge ren<sub>i</sub> dou yiwei Mali xihuan ta<sub>i</sub>.  
 every-CL man DOU think Mary like he  
 'Every man<sub>i</sub> thought that Mary liked him<sub>i</sub>.'

<sup>5</sup> While number marking is scarce in Chinese, there are some ways in which an NP can be overtly marked plural. For example, the suffix *-men* can be added to a human noun or a pronoun to indicate plurality, and the classifier *-xie*, when combined with a demonstrative, also indicates plurality.



As we will discuss next, *mei*-NPs are also different from ordinary singular NPs, in that they are allowed to occur in contexts where singular NPs are disallowed. This will lead to our conclusion that *mei*-NPs are number-neutral.

### 7. An Apparent Mystery: Occurrence with Collective Predicates

As illustrated in (21) below, Lin (1998) observes that unlike English *every*, Chinese *mei* can occur with some collective predicates - a puzzling fact, given our earlier discussion (in Section 3) about built-in distributivity in *mei*-NPs.

- (21) a. Na-xie ren dou mai-le yi-ben tongyang-de shu. (collective only)  
 those man DOU buy-LE one-CL same book  
 'Those men all bought (a copy of) the same book.'
- b. Mei-ge ren dou mai-le yi-ben tongyang-de shu. (collective only)  
 every-CL man DOU buy-LE one-CL same book  
 'Every man bought (a copy of) the same book.'

In the remainder of this paper, however, we want to argue that this fact does not really contradict what we have claimed so far, that is, *mei* is a universal quantifier with built-in distributivity.

Let us start with two descriptive generalizations about *mei*-NPs: 1) In a context allowing for both a collective and a distributive reading, *mei*-NPs force the distributive reading (cf. Example 13b); 2) In a context disallowing a distributive reading, collectivity may become available with *mei*-NPs (cf. Example 21b).

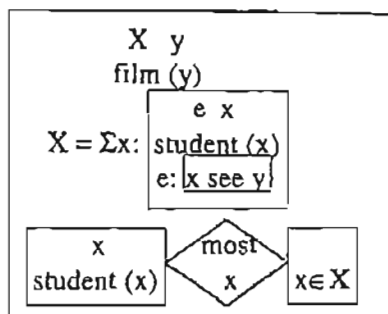
Interestingly, these apparently conflicting behaviors are not unique to Chinese *mei*. They remind us of a very similar case about English quantifiers such as *most*, as discussed elaborately in Chapter 4 of Kamp & Reyle (1993) and shown in (22-23):

- (22) a. The lawyers hired a new secretary. (distributive/collective)  
 b. Most lawyers hired a new secretary. (distributive only)
- (23) a. The students saw the same film. (collective only)  
 b. Most students saw the same film. (collective only)

Likewise, a question can be raised about English quantifiers such as *most*: Why should *most*, which normally forces a distributive reading, allow for a 'collective' reading when it is combined with a collective predicate?

In their book, Kamp & Reyle suggest an answer to this question in DRS representations. Without going into much detail, let's review their central ideas, as illustrated by a DRS structure in (24):

(24) A possible DRS for (23b): (Structure (4.273), pp. 477, Kamp et al)



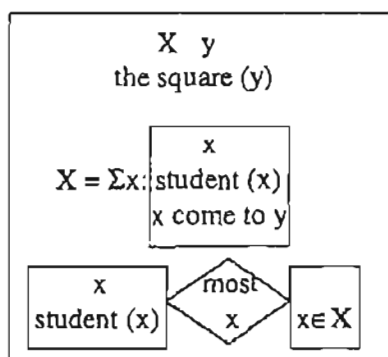
First, as shown in the structure, determiners like *most* are generalized quantifiers, and hence NPs headed by such determiners only introduce *individual* discourse referents, and never *set* discourse referents, no matter what predicates they combine with.

Secondly, the collective reading of (23b) actually arises from a collective event formed through a process of *abstraction* over individual events such as 'a student *x* saw a film *y*', each of which still expresses a relation between individuals. As a result, (23b) only means that the same film was seen by a majority number of students, with no commitment to its having been a joint viewing event by them as a group. In Kamp & Reyle's term, the collectivity of (23b) is of a comparatively "modest" sort, which is, in fact, distinct from true collectivity as shown in (22a).

The same account can be extended to other collective predicates such as *gather*, which, according to Kamp & Reyle, can be naturally paraphrased as 'come to the same place':

(25) a. Most students gathered in the square. (Example (4.260a), pp.471, Kamp et al)

b. A possible DRS for (25a): (Structure (4.279), pp.480, Kamp et al)



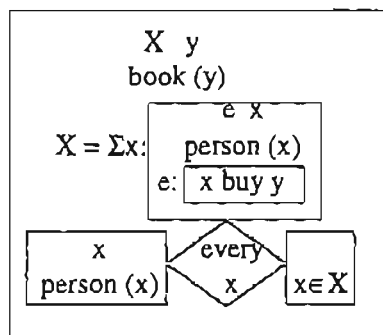
Back to the Chinese case, what we can conclude from Kamp & Reyle's analysis of English quantifiers is the following: The mere fact that a quantifier like *most* can combine

with a collective predicate does not entail that an NP headed by such a quantifier should introduce non-atomic discourse referents.

Assuming the same is true with Chinese quantifiers, we can extend the above quantificational approach to Chinese universal *mei*-NPs in a fairly straightforward fashion. As shown in (26), a similar DRS structure can be constructed for our earlier sentence (21b) (repeated below), where the apparent 'collective' reading can be derived from a collective event through abstraction over individual events such as 'a person  $x$  bought a book  $y$ '.

- (21) b. Mei-ge ren dou mai-le yi-ben tongyang-de shu.  
 every-CL man DOU buy-LE one same book  
 'Every man bought (a copy of) the same book.'

- (26) A possible DRS for (21b):



Another collective predicate that can occur with Chinese *mei*-NPs is *zhang-de hen xiang* 'look alike' (cf. Lin 1998). If we paraphrase the predicate as 'have the same look', we can derive the apparent 'collectivity' without having to deny the distributive nature of the quantifier *mei*.

It is worth noting, at this point, that unlike Chinese *mei*, English *every* can *never* occur with a collective predicate, not even under the apparent 'collective' reading, as shown in (27):

- (27) a. \*Every man looks alike.  
 b. \*Every student bought the same book.

In our view, the above contrast between the two universal quantifiers may be better explained in terms of *number distinction*, rather than any difference in distributivity for two reasons. First, we have just seen how the occurrence of *most* with a collective predicate does not entail true collectivity in the quantifier. The same can be true for *mei*.

Secondly, if we assume that overt singularity marking on a quantified NP blocks its occurrence with a collective predicate, then we have a way to explain the above

contrast between *mei* and *every*. In the English case, *every*-NPs, like other singular NPs (in (28)), cannot combine with a collective predicate, whereas *most*-NPs, marked plural overtly, can combine with a collective predicate (as in (29)). This clearly indicates that number marking, rather than distributivity, is the deciding factor here, as *most* is inherently distributive, just like *every*.

- (28) a. \*That man looks alike.  
 b. \*That man bought the same book.

- (29) a. Most men look alike.  
 b. Most students bought the same book.

In the Chinese case, it is then reasonable to assume that *mei*-NPs are not marked for singularity, unlike *every*-NPs. Given our earlier evidence (in (20b)) that they are not plural NPs either, we hereby conclude that Chinese *mei*-NPs are unmarked for number, or number-neutral, and this difference between the two universal quantifiers - *mei* and *every* - gives rise to their different distributions discussed above<sup>6</sup>.

### 8. Further Evidence for the Suggested Quantificational Approach

In this final section, we want to show that the suggested approach can lead to a natural explanation for facts that are otherwise mysterious, under a non-quantificational approach such as the one suggested in Lin (1998).

Another predicate Lin considers in his paper is *shi fuqi* 'being couples', as in (30):

- (30) Na-xie ren dou shi fuqi.  
 Those man DOU be couple  
 'Those people are all couples.'

However, if we replace the definite NP with a *mei*-NP, the sentence becomes ungrammatical (contra Lin's prediction):

- (31) \*Mei-ge ren dou shi fuqi.  
 every-CL man DOU be couple  
 '\*Every one is a couple.'

Interestingly, there is a contrast between (31) and (32), which minimally differ in the VP predicates they use, 'being couples' in (31) as opposed to 'being good friends' in (32) below.

<sup>6</sup> Note that Chinese bare NPs, which are unmarked for number, also can occur with collective predicates (cf. (I)). Yet, unlike *mei*-NPs, Chinese bare NPs cannot bind singular pronouns (cf. (II)):  
 (I) Xiaohaizi dou zhang-de hen xiang. (II) Xiaohaizi dou yiwei Mali xihuan \*ta<sub>i</sub> / tamen<sub>i</sub>.  
 child DOU look-DE very alike child DOU think Mary like he they  
 'Children look alike.' 'Children think Mary likes \*him<sub>i</sub>/them<sub>i</sub>.'

- (32) Mei-ge ren dou shi hao penyou.  
 every-CL man DOU be good friend  
 'All the people are good friends.'

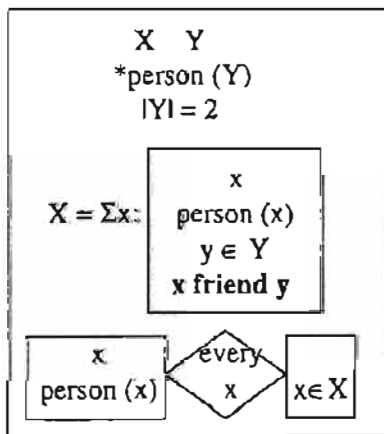
This shows that *mei*-NPs are allowed to occur with certain types of collective predicates only, which is a mystery for any account that does not distinguish between different types of collective predicates.

However, there is a natural explanation for the above contrast, under the suggested quantificational approach! To begin with, let's consider how the two predicates "being good friends" and "being couples" may be crucially distinguished, as shown in (33i-ii):

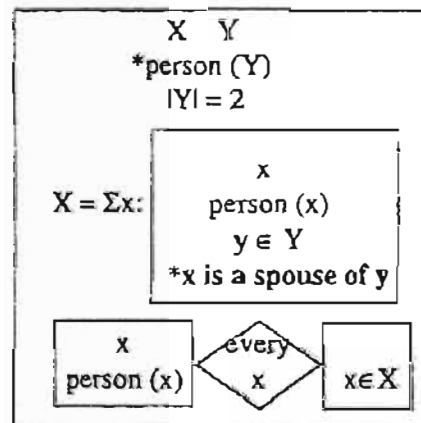
- (33) The crucial semantic differences between two collective predicates:  
 i) "being good friends" – can be true between *any* two people in a set; i.e. if {a,b,c,d} is the set of all individuals in the relevant domain, then (32) (at least) allows for a situation in which each pair in {{a,b}, {a,c}, {a,d}, {b,c}, {b,d}, {c,d}} is in the binary relation of "being good friends".  
 ii) "being couples" – can only be true between *disjoint* pairs of people in a set; i.e. if {a,b,c,d} is the set of all individuals in the relevant domain, then (31) can be true iff each pair in the three disjoint sets {{a,b}, {c,d}}, or {{a,c}, {b,d}}, or {{a,d}, {b,c}} is in the relation of "being a couple". This latter requirement, as it clashes with the strictly distributive nature of *mei*-NPs, would lead to a DRS structure that is doomed to fail (cf. (31') below).

And the DRS structures given in (32') and (31') illustrate how such a meaning contrast between the two collective predicates may lead to rather distinct results.

(32') A possible DRS for (32):



(31') An impossible DRS for (31):



Interestingly, a similar contrast in English can be observed, with a quantifier like *most*, as illustrated in (34). The contrast is predicted under our approach, as *most* is just like *mei* in being strictly distributive.

- (34) a. Most people (here) are good friends.  
 b. \*Most people (here) are couples.

Finally, (35) shows some more collective predicates that *mei*-NPs cannot occur with. These predicates have also been noted not to be able to occur with *most*-NPs (cf. Root 1986, etc.).

- |  |   |
|--|---|
| (35) a. weisu    buduo<br>number few<br>'be small in number' | b. zuchen yi-ge    hao duiwu<br>form one-CL good team<br>'form a good team' |
|--|---|

## 9. Conclusion

In this paper, we have argued for a quantificational approach to Chinese universal *mei*-NPs, and accounted for some facts about *mei*-NPs that are elusive under previous accounts. We have argued that semantically, Chinese determiner *mei* is like English *every* in that they both have inherent universal quantificational force and distributivity. But Chinese *mei*-NPs also differ from their English counterparts in one important aspect, that is, *mei*-NPs are number-neutral, while *every*-NPs are singular. This number difference has been argued to give rise to a significant contrast in their distribution of possible occurrence with collective predicates.

## References

- Cheng, L.: 1995, 'On *Dou*-Quantification', *Journal of East Asian Linguistics* 4, 197-234.  
 Gil, D.: 1995, 'Universal Quantifiers and Distributivity', In E. Bach, E. Jelinek, A. Kratzer and B. Partee (eds.), *Quantification in Natural Languages*, Kluwer Academic Publishers, Dordrecht, pp.321-362.  
 Huang, J.: 1982, *Logical Relations in Chinese and the Theory of Grammar*, Ph.D. dissertation, MIT.  
 Kamp, H. & U. Reyle: 1993, *From Discourse to Logic*, Kluwer, Dordrecht.  
 Lasersohn, P.: 1998, 'Generalized Distributivity Operators', *Linguistics and Philosophy* 21: 83-93.  
 Lee, T.: 1986, *Studies on Quantification in Chinese*, Ph.D. dissertation, Univ. of California, Los Angeles.  
 Li, A.: 1997, 'Structures and Interpretations of Nominal Expressions', ms. Univ. of Southern California  
 Lin, J.-W.: 1998, 'Distributivity in Chinese and its implications', *Natural Language Semantics* 6: 201-243.

- Partee, B.: 1995, 'Quantificational Structures and Compositionality', in E. Bach, E. Jelinek, A. Kratzer and B. Partee (eds.), *Quantification in Natural Languages*, Kluwer, Dordrecht, pp.541-601.
- Root, R.: 1986, *The Semantics of Anaphora in Discourse*, Ph.D. Dissertation, University of Texas Austin
- Schwarzschild, R.: 1996, *Pluralities*, Kluwer, Dordrecht.

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