

# Non-Quantifiable Nouns in Mandarin Chinese

Yufeng Ruan

College of Foreign Languages, Nankai University, Tianjin, China

**Abstract**—Addressing non-quantifiable nouns is an indispensable step to figure out numeral classifiers and (bare) nouns in Mandarin Chinese. Recognizing the dearth of studies on Mandarin non-quantifiable nouns, we initiate the work by discussing their denominations and definitions from a syntactic-semantic perspective. Subsequently, offering a huge and systematic set of linguistic examples, we conduct a comprehensive analysis of six typical types of non-quantifiable nouns: proper nouns, relative existence-denoting nouns, counting/measuring-denoting nouns, common nouns with uniqueness, nouns with morphemes in special relation, and idiomatic nouns. Based on the above analysis, we propose three fundamental semantic features of being a non-quantifiable noun, i.e. uniqueness, relativity, and counting/measuring-denoting feature, among which, the last two features can be attributed to the first one, that is, uniqueness. Furthermore, we divide uniqueness into absolute one and relative one based on whether the referents of non-quantifiable nouns are independent of contexts, and into external one and internal one based on where these referents are quantified.

**Index Terms**—classifiers, bare nouns, Chinese, non-quantifiable nouns, semantics

## I. INTRODUCTION

Although numerous studies on numeral classifiers (Cls for short) in Mandarin Chinese have been conducted (Gao, 1948; Chao, 1968; Zhu, 1982; Croft, 1994; He, 2000; Her, 2014), many questions remain unresolved. For example, one ongoing controversy pertains to the structure of Mandarin Cls (Li & Thompson, 1981; Lin, 1997; Li, 1999; Cheng & Sybesma, 1998, 2012), so does that of Mandarin bare nouns (Cheng & Sybesma, 1999). The limitations of the previous studies lie in the absence of an important perspective, namely, non-quantifiable nouns. We believe that addressing non-quantifiable nouns is an indispensable step to figure out Mandarin classifiers. Three reasons are given below for this step:

1. Nouns have a very close relation with Cls in Mandarin, just considering that in this typical Cl language<sup>1</sup>, nouns always co-occur with Cls in the representative pattern of numeral expressions: Numeral+Classifier+Noun (Nume+Cl+N). Therefore, in order to conduct research about Cls, we suggest studying their related nouns first, as other scholars have done and are continuing to do so.

2. To make the study of nouns more efficient, it is better to sort them first. In the literature, we have a huge number of standpoints concerning the classification of Mandarin nouns proposed from various perspectives. Roughly speaking, from a syntactic perspective, Mandarin nouns are divided into count ones and mass ones by Cheng and Sybesma (1998), whereas they are all viewed as non-count ones, which, however, are internally separated into mass ones and non-mass ones by Zhang (2013, p. 83). From a semantic approach, according to Chierchia (1998), Mandarin nouns are all mass ones.

However, the above classifications of Mandarin nouns cannot explain some different behaviors of different Mandarin Cls, for example, they cannot account for why Kind Cls are distinct in many aspects. We wonder whether there is another grouping idea of Mandarin nouns that could spell out the different behaviors of Mandarin Cls.

Besides, the previous works on Mandarin Cls seem to assume by default that all nouns can be modified by Cls (e.g. Zhang, 2013; Li, 2013). In other words, nouns in Mandarin are all quantifiable. Thereby, it is necessary to eliminate the above possible misunderstanding. Furthermore, there is only little support regarding non-quantifiable nouns, it is thus meaningful to do a lot of related research.

3. In addition to the above three sortations of Mandarin nouns, we have found a different one (e.g. Zhou, 2002; Chen, 2009; Zhang, 2012, 2016): Mandarin nouns are divided into quantifiable nouns and non-quantifiable nouns<sup>2</sup>. We are immediately attracted to this sortation. This is because Mandarin Cls are related to the quantification of nouns, in this sense, this sortation of Mandarin nouns is more relevant to Mandarin Cls than other proposals.

In brief, in order to grasp the essence of Mandarin Cls, it is necessary to investigate Mandarin non-quantifiable nouns. This rationale serves as the impetus to carry out this research.

This paper is organized as follows: Section II entails our preliminary work for the investigation of non-quantifiable nouns in Mandarin Chinese, focusing on their denomination and definition. Section III involves an in-depth examination on the related literature, especially on the works of Zhou (2002), Chen (2009), and Zhang (2012). Then, Section IV is dedicated to the representative non-quantifiable nouns in Mandarin Chinese, after which, the key features of these nouns are elucidated in Section V. Finally, in Section IV, we draw a conclusion.

<sup>1</sup> See the detailed description in Zhang (2013, pp. 1-2).

<sup>2</sup> For this type of nouns, there are different denominations. See Section II-A for detailed discussions.

## II. PRELIMINARY WORK

## A. Denomination of Non-Quantifiable Nouns

In Mandarin Chinese, most of the nouns can accept quantifying constructions, among which, there are two fundamental ones: numeral structure and quantifier structure, namely, “Nume+CL+N” and “Quantifier+Noun” (“Quant+N”), as seen in (1). However, some nouns reject the above patterns, as illustrated in (2).

- (1) a. *san ben shu*  
three CL<sub>volume</sub> book  
‘three books’
- b. *san ping shui*  
three CL<sub>bottle</sub> water  
‘three bottles of water’
- c. *henduo shu*  
many book  
‘many books’
- d. *henduo shui*  
much water  
‘much water’
- (2) a. \* *san ge dongfang/qianqi/duifang*  
three CL-General east/early phase/counterpart
- b. \* *henduo dongfang/qianqi/duifang*  
many east/early phase/counterpart

For nouns like *dongfang* ‘east’, *qianqi* ‘prophase’, and *duifang* ‘counterpart’ in (2), Chinese scholars have given diverse names, for example, *wuliang-mingci* ‘nouns without quantity’ (Yu et al., 2003), *bukelianghua-mingci* ‘unquantifiable nouns’ (Wang & Zhu, 2000; Wang, 2001), *feilianghua-mingci* ‘non-quantifiable nouns’ (Peng, 1996a; Fang, 2000; Zhou, 2002), and *feiliang-mingci* ‘non-quantity nouns’ (Zhang, 2012).

In the present work, we adopt the third one, i.e. non-quantifiable nouns (in Chinese: *feilianghua-mingci*), on the basis of the following three reasons:

1. All nouns have cognitive quantity. This is because referents of nouns must occupy some space, regardless of which type of spaces it is, spatial, temporal, conceptional ones, etc. Taking space means having (cognitive) quantity. Hence, it is not adequate the denomination of nouns without quantity (in Chinese: *wuliang-mingci*), which means nouns that do not have quantity. In addition, the name ‘non-quantity nouns’ (in Chinese: *feiliang-mingci*) is ruled out as well, because this term stands for all nouns except those having quantity.

2. A noun is possibly both quantifiable and non-quantifiable at the syntactical level. In other words, the identity of a noun in terms of quantification may be vague, as seen in (3) where the (proper) noun *Lei Feng* rejects quantifying structure, being a bare noun in (3a), while becomes a quantifiable noun, co-occurring with a numeral and a CL in (3b). As a consequence, we cannot adopt the denomination of unquantifiable nouns (in Chinese: *bukelianghua-mingci*), which means nouns that cannot be quantified forever, excluding the possible dual quantifying identity of nouns.

- (3) a. *Lei Feng shi women de hao bangyang.*  
Lei Feng be 1PL DE good example  
‘Lei Feng is a good example for us.’
- b. *Women de shehui xuyao qianwan ge Lei Feng.*  
1PL DE society need tens-of-millions CL Lei Feng  
‘Our society needs tens of millions of Lei Fengs.’

As for why we have finally selected the denomination of non-quantifiable nouns (in Chinese: *fei-lianghua-mingci*), the reason is that this term expresses all the nouns except quantifiable ones, including both the nouns that are absolutely not quantifiable, i.e. unquantifiable type, and the nouns that may be possibly quantified.

### B. Definition of Non-Quantifiable Nouns

Among extremely few studies<sup>3</sup> of non-quantifiable nouns in Mandarin Chinese, we have discovered some relevant definitions (Peng, 1996a; Fang, 2000<sup>4</sup>; Wang & Zhu, 2000; Wang, 2001; Zhou, 2002; Xing & Wang, 2003; Sun, 2003<sup>5</sup>; Chen, 2009; Zhang, 2012), and these definitions have tended to describe non-quantifiable nouns from a syntactic perspective: nouns that cannot be modified by “Nume+CL” structures<sup>6</sup> are not quantifiable.

In our view, the above definition is not very rigorous, just considering Example (2) where non-quantifiable nouns reject not only “Nume+Cl” but also “Quant”. Therefore, this definition could be revised. We propose that nouns that cannot be modified by neither “Nume+Cl” nor “Quant” are non-quantifiable nouns.

Viewing that a phrase has both underlying structure and surface structure (Chomsky, 1965, 1995), we have to clarify that our definition about non-quantifiable nouns is limited to their surface structures for the being time. As for their underlying constructions, only after having finished a series of studies can we give a statement.

To sum up, in this paper *non-quantifiable nouns* are nouns that cannot be syntactically modified by quantifying structures, i.e. “Nume+CL” and “Quant”, and they are bare at least in surface structure.

### III. LITERATURE REVIEW

To the best of our knowledge, there are no more than twenty works concerning Mandarin non-quantifiable nouns in the existing literature: Liu and Deng (1989), Peng (1996a, 1996b), Yu et al. (1998, 2003), Fang (2000), Wang and Zhu (2000), Wang (2001), Guo (2002), Zhou (2002), Zhou (2002), Xing and Wang (2003), Sun (2003), Yang (2004), Chen (2009), Zhang (2012, 2016). According to Zhou (2002), the earlier attention paid to non-quantifiable nouns in Mandarin dates back to Liu and Deng (1989). They enumerated a set of nouns that have no Cls to match with.

In our opinion, the studies on non-quantifiable nouns in Mandarin Chinese lack too much. This can be seen in the following three aspects:

1. The studies on this topic have started far later than those on quantifiable nouns, in fact the first writing in question we found is Liu and Deng (1989);
2. The number of the works involving non-quantifiable nouns is extremely small. As we mentioned before, it is less than twenty;
3. The number of the specific works on non-quantifiable nouns is even smaller. There are only four. In the previous literature, some investigations like Zhou (2002) are not a kind of linguistic academic writing because they aim at offering didactic grammar of Mandarin, while a majority of the remaining studies are indirect ones, such as Liu and Deng (1989), Yang (2004), Zhang (2004) and Long (2005), since their central topics are not non-quantifiable nouns. Excluding the above works, there are only four specific studies on Mandarin non-quantifiable nouns, and they are Zhou (2002)<sup>7</sup>, Chen (2009), and Zhang (2012, 2016).

As for research results, there is no general consensus. This is reflected in the following two aspects:

1. Regarding the classification between non-quantifiable nouns and quantifiable ones, almost every scholar has had his own opinion, and some of these opinions have even been opposing. It has often happened that a same word was sorted into quantifiable nouns by one scholar, whereas into non-quantifiable nouns by another. Furthermore, the total number of non-quantifiable nouns given by each scholar was considerably different. According to Liu and Deng (1989), the relevant number is more than 460; Peng (1996a, 1996b) 265; Wang (2001) 191; Wang and Zhu (2000) 274, and Zhou (2002) 665;
2. Concerning the sub-classification of non-quantifiable nouns, there has been a large divergence between these scholars (Yu et al., 1998, 2003; Fang, 2000; Wang & Zhu, 2000; Wang, 2001; Zhou, 2002; Xing & Wang, 2003; Sun, 2003; Yang, 2004; Chen, 2009; Zhang, 2012, 2016). Moreover, each proposal has obviously been problematic. Here we restrict attention only to the following three sorting suggestions: Zhou (2002), Chen (2009), and Zhang (2012), which are relatively systematic and complete, compared with others. Even so, they are still problematic: first, the classifying results are divergent, especially those between Zhou (2002) and Chen (2009). Second, these suggestions are questionable: non-quantifiable nouns are divided into too many sub-types, and there is the overlap between these sub-types. In addition, some nouns are confusingly classified (into a sub-type or into “others”) (Zhang, 2012, p. 38), or they are sorted on the basis of mixed angles, such as semantics plus pragmatics (Zhou, 2002, pp. 53-54). Third, the sorting system probably does not cover all of the Mandarin non-quantifiable nouns.

In short, in light of the number of works and research results on non-quantifiable nouns in Mandarin Chinese, the existing literature is not sufficient to discover what is the fundamental factor for being a non-quantifiable noun, hence, further studies are needed to be done.

<sup>3</sup> See the relevant literature review in Section III.

<sup>4</sup> Although Fang’s (2000) definition has been expressed in Chinese traditional linguistic terms, it is essentially the same with other definitions given in popular linguistic terms.

<sup>5</sup> In fact, Sun (2003) has not intended to provide a definition about non-quantifiable nouns, but his description has involved this: “Generally speaking, not all nouns can be modified by ‘Nume+CL.’”

<sup>6</sup> Note that here the expression “Nume+CL” structures comes from the literature, and this does not mean that we agree that in Mandarin Chinese a numeral and a classifier form a constituent.

<sup>7</sup> Zhou (2002) is commonly recognized as the first work that has investigated Mandarin non-quantifiable nouns directly and systematically.

## IV. “REPRESENTATIVE” NON-QUANTIFIABLE NOUNS IN MANDARIN CHINESE

Following the spirit of the previous works to approach non-quantifiable nouns, we will present six “representative” types of non-quantifiable nouns in Mandarin Chinese in this section. These non-quantifiable nouns are “representative” because they have all been established in Zhou (2002), Chen (2009), and Zhang (2012), which have done relatively systematic and complete sorting works on non-quantifiable nouns. Precisely speaking, in Zhou (2002, pp. 51-53), based on semantic criteria, non-quantifiable nouns in Mandarin are grouped into five types. In Chen (2009, pp. 16-24), on the basis of sense, origin, and non-quantificational degree, they are sorted into five, four, and three classes, respectively. In Zhang (2012, pp. 29-41), according to word-formation, sense, and animacy, they are divided into uncertain, seven, and two classes, respectively. In a word, from a semantic perspective, non-quantifiable nouns in Mandarin Chinese are separated into five through seven types, as summarized in Table 1<sup>8</sup>.

TABLE 1  
“REPRESENTATIVE” NON-QUANTIFIABLE NOUNS IN MANDARIN CHINESE

	L. Zhou (2002)	Chen (2009)	W. Zhang (2012)
a.	<b>Special use for particular types:</b> proper nouns; non-proper nouns	<b>Human or object-denoting:</b> proper nouns; human or object-denoting common nouns and body parts-denoting nouns; appellation-denoting	<b>Special use for particular types:</b> proper nouns; non-proper nouns
b.	<b>Weakening/generalization-derived-denoting:</b> extended meaning; relation synthesis; metonymy-derived-denoting; combination-generalized-denoting; group-denoting	<b>Time-denoting:</b> time order-denoting; time itself-denoting; age	<b>Weakening/generalization-derived-denoting:</b> combination-generalized-denoting; relation synthesis; metonymy-derived-denoting; group-denoting
c.	<b>Relative existence-denoting:</b> relative space-denoting; relative time-denoting; relative relation-denoting	<b>Relative existence-denoting:</b> relative place-denoting; relative relation-denoting	<b>Relative existence-denoting:</b> relative space-denoting; relative time-denoting; relative relation-denoting <sup>9</sup>
d.	<b>Fixed counting/measuring-denoting:</b> nouns containing numerals ; nouns containing morphemes related to counting/quantity meaning; nouns whose referents are directly related to numerals	<b>Counting/measuring-denoting:</b> nouns containing numeral morphemes; nouns in close relation with measurement	<b>Fixed counting/measuring-denoting:</b> nouns containing morphemes that denote counting/quantity meaning; nouns containing numeral/quantifier meaning offered by contexts; nouns that semantically contain numeral/quantifier meaning
e.	<b>Concept-property-denoting:</b> field-denoting; abstract-property-denoting	<b>Whole-denoting:</b> nouns containing whole-denoting morphemes; nouns composed of contrastive morphemes	<b>Concept-property-denoting:</b> field-denoting; abstract-property-denoting
f.			<b>Appellation-denoting</b>
g.			<b>Others</b>

Despite the divergence between the three sorting proposals shown in Table 1, they have all focused on the sub-types as follows: proper nouns, relative existence-denoting nouns, counting/measuring-denoting nouns, common nouns with uniqueness, nouns with morphemes in special relation, and idiomatic nouns, which implies that these six sub-types of non-quantifiable nouns are so typical that they deserve being analyzed. Consequently, we will introduce these six sorts of non-quantifiable nouns in Mandarin Chinese, and try our best to explore their common and fundamental semantic features.

## A. Proper Nouns

Nouns for particular persons or objects<sup>10</sup> that are universally recognized (except those for common persons or objects), such as *Lei Feng* ‘Lei Feng’, *Torre di Pisa* ‘Leaning Tower of Pisa’, *Mao Zedong sixiang* ‘Mao Zedong’s thought’. The characteristic of these nouns is that their referents have uniqueness, therefore these nouns and their referents have a one-to-one relation.

Compared to a proper noun, a common person’s name behaves like this: if in the world there were 3000 persons

<sup>8</sup> In Table 1, we do not show every author’s classification in the original order, so as to better confront these classifications and to discover the differences and similarities between them easily.

<sup>9</sup> This subtype not only includes the human-human relation, but also contains the human-objects relation.

<sup>10</sup> Here proper nouns is a traditional notion, and it represents exactly particular proper nouns. We adopt the notion of proper nouns in Ruan (2018, pp. 41-43).

named *Li Ming*, it would be concluded that *Li Ming* and its referents have a one-to-many relation. On the basis of this relation, we can generate a numeral expression like (4). However, it is not possible to treat a proper noun in the same way unless its uniqueness is eliminated, as seen in the precedent (3b), repeated here as (5). Here *Lei Feng* denotes<sup>11</sup> persons with *Lei Feng*'s personal quality, spirit, etc. Hence, it does not have uniqueness.

- (4) 3000 ge *Li Ming*  
 3000 CL-General Li Ming  
 '3000 Li Mings'
- (5) *Women de shehui xuyao qianwan ge Lei Feng.*  
 1PL DE society need tens-of-millions CL-General Lei Feng  
 'Our society needs tens of millions of Lei Feng.'

### B. Relative Existence-Denoting Nouns

#### (a). Relative Space-Denoting Nouns

- (6) a. *guo-nei* *guo-wai*  
 country-inside country-outside  
 'internal part of a country' 'external part of a country'
- b. *dongfang* *xifang* *nanfang* *beifang*  
 east west south north  
 'east' 'west' 'south' 'north'

Semantically speaking, the two words such as in (6a) form a pair based on each other's referent, having a feature of relative existence in space. For such terms, Zhou (2002) has explained that the relative spatial existence of these nouns eliminates their counting property (i.e. individual feature); Chen (2009) has accounted that the fact that they are located based on each other's spacial position reduces their individual independence and makes them not have individual countability anymore, thus they cannot accept the modification of numeral/quantifier structure.

However, we argue that it is not the relative existence that offsets counting property or individual countability of these nouns, but that it is exactly this relativity that makes them take each other as a reference<sup>12</sup>, and therefore they are mutually unique and both have relative uniqueness.

So is (6b), but the only difference between (6a) and (6b) is that nouns in the latter case do not take each other as reference, but have a common reference, compared to which each of them is relatively unique. In a word, nouns like (6b) have also relative uniqueness.

The same account can cover the following sub-types of non-quantifiable nouns: relative time-denoting type, relative relation-denoting type and relative concept-denoting type.

#### (b). Relative Time-Denoting Nouns

- (7) a. *guoqu* *weilai*  
 past future  
 'past' 'future'
- b. *qianqi* *zhongqi* *houqi*  
 early phase middle phase late phase  
 'early phase' 'middle phase' 'late phase'

In (7a), it regards making reference to each other and they are mutually unique; in (7b), the three nouns have a common reference "the whole period", for which they are unique, respectively.

#### (c). Relative Relation-Denoting Nouns

##### 1. Persons to Persons

<sup>11</sup> In this paper, we do not distinguish *denote* from *express*, despite the fact that some scholars would prefer to say *express sense* and *denote reference*.

<sup>12</sup> Here *reference* is not a semantic term. It has the meaning that is usually used in Physics, such as *reference frame*.

(1). *Blood Relationships*

- (8) *fuqin*                      *erzi/nü'er*  
 father                      son/daughter  
 'father'                      'son/daughter'

(2). *Non-Blood Relationships*

- (9) a. *jiefang*    *daifang*<sup>13</sup>  
 debtor    creditor  
 'debtor'    'creditor'
- b. *qizi*    *zhangfu*  
 wife    husband  
 'wife'    'husband'
- c. *duifang*    *duifang*  
 counterpart    counterpart  
 'counterpart'    'counterpart'
- d. *shi-jiao*<sup>14</sup>    *shi-jiao*  
 generation-friend    generation-friend  
 'friendly family for two or more generations'    'friendly family for two or more generations'
- e. *pengyou*<sup>15</sup>    *pengyou*  
 friend    friend  
 'friend'    'friend'

In contrast to relative space or time-denoting nouns, relative human-denoting ones are fairly special in terms of the ratio between reference point and referents of nouns, that is, besides the one-to-one ratio that the former two have, relative human-denoting nouns also have another possible ratio: one-to-many. The above two possible ratios are derived from the fact that for relative space or time-denoting nouns, their denotations have the feature of uniqueness, whereas for the human type, it is not necessary to have uniqueness,<sup>16</sup> which can be seen in (10) through (12).

- (10) a. *Xiaoming de muqin shi shanghaiaren.*  
 Xiaoming DE mother be shanghaiense  
 'Xiaoming's mother is shanghaiense.'
- b. *Xiaoming de yangmu dou zhu-zai Beijing.*  
 Xiaoming DE adoptive-mother both live-in Beijing  
 'Xiaoming's adoptive mothers both live in Beijing.'

In (10a), *Xiaoming* and *muqin* 'mother' are in one-to-one relation, *Xiaoming* is the reference point of *muqin* 'mother'. In (10b), *Xiaoming* and *yangmu* 'adoptive mother' are in one-to-many (two) relation, *Xiaoming* is the reference point of both *yangmu* 'adoptive mothers'.

<sup>13</sup> We suggest that different from *jiefang* 'debtor', *daifang* 'creditor', nouns such as *shuangfang* 'two parties', *duofang* 'multi-parties' should not be classified as relationship nouns. This is because these nouns express a holistic meaning of personal relationships, which is not the case we are discussing at all.

<sup>14</sup> Zhou (2002), Chen (2009) and Zhang (2012) believe that *shijiao* belongs to non-quantifiable nouns, but from the web query result, there are sentences like *wo you ji ge shijiao*/1SG have several CL generation-friend/ 'I have several shijiaos'.

<sup>15</sup> Note that nouns like *pengyou* 'friend' are also quantifiable, since it is grammatical to say numeral expressions such as *san ge pengyou*/three CL-General friend/ 'three friends'.

<sup>16</sup> Human biological nature determines that the quantity of some blood relatives is only one, such as biological father, biological mother, but it is not always the case. More precisely, the superior blood kinship-denoting nouns result in uniqueness, for instance, *fuqin* '(biological) father', *muqin* '(biological) mother', and *zufu* '(biological) grandfather'; however, the inferior ones do not necessarily bring out uniqueness, such as *erzi* '(biological) son', *sunzi* '(biological) grandson' etc.

- (11) a. *Ta shi Xiaoming de pengyou.*  
 3SG be Xiaoming DE friend  
 ‘He/She is Xiaoming’s friend.’  
 b. *Ta shi Xiaoming de yi ge pengyou.*  
 3SG be Xiaoming DE one CL friend  
 ‘He/She is one of the Xiaoming’s friends.’

In (11a), *Xiaoming* and *pengyou* ‘friend’ are in one-to-one relation<sup>17</sup>, *Xiaoming* is the reference point of *pengyou* ‘friend’. In (11b), *Xiaoming* and *pengyou* ‘friends’ are in one-to-many relation, *Xiaoming* is the reference point of all of the *pengyou* ‘friends’ including *ta* ‘he/she’.

(10a) and (10b) show that the blood kinship may yield the uniqueness of nominal referents. (11a) and (11b) are both grammatical because in the first sentence, *Xiaoming* and *pengyou* ‘friends’ have a relative relationship and they are unique to each other, whereas in the second sentence, *Xiaoming* and *pengyou* ‘friends’ have the same relationship mentioned above, but not the only one for each other. Cases like (11) demonstrate that the referents of non-blood relationship nouns do not necessarily have uniqueness. Furthermore, it is most likely that they are not unique, such as *tongshi* ‘colleague’, *tongxue* ‘classmate’.

## 2. Human to Objects

- (12) *renlei*                      *dongwu*                      *ziran*  
 human                      animal                      nature  
 ‘human’                      ‘animals’                      ‘nature’

## 3. Objects To Objects

- (13) a. *xiaoxue*<sup>18</sup>                      *chuzhong*                      *gaozhong*                      *daxue*  
 primary school                      junior school                      high school                      university  
 ‘primary school’                      ‘junior school’                      ‘high school’                      ‘university’  
 b. *jijian*<sup>19</sup>  
 own opinion  
 ‘own opinion’

## (d). Relative Concept-Denoting Nouns

- (14) *zhengzhi*                      *yishu*  
 politics                      art  
 ‘politics’                      ‘art’

Summarizing, for the relative existence-denoting nouns, no matter they are solitary words<sup>20</sup>, couple words or group words, and no matter they take each other as reference or have a common reference point, the important thing is that every nominal referent is always unique, compared to its reference point.

## C. Quantifying-Denoting Nouns

### (a). Counting-Denoting Nouns

That is, nouns whose first morphemes are numerals, such as *ling* ‘zero’, *yi* ‘one’, *bai* ‘hundred’, *qian* ‘thousand’, *ban* ‘half’. In this sense, they also can be called numeral-included nouns, as seen in (15) where all examples are selected from Zhang (2012, p. 29).

<sup>17</sup> If the phrase *Xiaoming de pengyou* ‘Xiaoming’s friend’ express concrete instantiations, not abstract property.

<sup>18</sup> Here these nouns do not denote physical entities but abstract educational levels.

<sup>19</sup> Although *jijian* ‘own opinion’ seems to be alone, not having its relative noun, indeed, there is its opposite part, namely, *bieren de yijian*/other DE opinion/ ‘opinion of others’ that is not written in Example (13b), since it is a nominal phrase, not a simple noun.

<sup>20</sup> This type of nouns appears to be alone, but it always has a hidden reference. For example, *jijian* ‘own opinion’ in (13b), as we mentioned before, its hidden reference point is *bieren de yijian*/other DE opinion/ ‘opinion of others’.

(15)	<i>ling-fengxian</i>	<i>yi-sheng</i>	<i>si-ji</i>	<i>wan-wu</i>	<i>ban-sheng</i>
	zero-risk	one-life	four-season	ten thousands-thing	half-life
	'zero risk'	'one life'	'four seasons'	'all the things'	'half of life'

(b). *Measuring-Denoting Nouns*

That is, nouns whose first morphemes are quantifiers, in this sense, they are also called quantifier-included nouns. Notice that our quantifiers include not only classic ones such as *quanbu* 'all', but also those such as *di* 'low'. These quantifiers can express various types of quantities, for instance, total, major, small, and fractional amount. Besides, unlike the existing literature, we exclude nouns within which there are morphemes denoting the stability of a status, such as *heng* 'constant' in the word *heng-wen*/ constant-temperature/ 'constant temperature'. This is because linguistic elements denoting a stable status have nothing to do with quantifiers. See (16) where all instances are picked out from Zhang (2012, p. 30).

(16)	<i>quan-min</i>	<i>zong-ti</i>	<i>di-jia</i>	<i>wei-li</i>
	whole-people	total-individual	low-cost	fractional-profit
	'all the people'	'totality'	'low cost'	'meager profit'

(c). *Quantifying-Dimension-Denoting Nouns*

Such a noun is rather special, in that it does not contain counting or measuring-denoting morphemes, but instead expresses itself as a certain quantifying dimension of its related nouns, such as *changdu* 'length'. The expression *Changdu san mi*/length three CL<sub>meter</sub>/'The length is three meters.' does not mean that the quantity of the length is three meters, but that the length of the referents of a certain noun is three meters, for instance, the length of a referent of *zhuozi* 'table'.

Accordingly, such terms are characterized by being apparently associated with numeral/quantifier constructions or measuring degree adjectives<sup>21</sup>, but being essentially not modified by these above quantifying expressions.

Based on the relation of position regarding the above quantifying expressions, these nouns are divided into three subcategories:

1. *Nouns Followed by Numeral/Quantifier Structures or Measuring Degree Adjectives*

(17)	a.	<i>changdu</i>	<i>chanzhi</i>	<i>hanliang</i>	<i>feilü</i>	<i>nianling</i>
		length	output value	enormous amount	rate	age
		'length'	'output value'	'enormous amount'	'rate'	'age'
	b.	<i>Changdu san mi.</i>			<i>Changdu hen chang.</i>	
		length three CL <sub>meter</sub>			length very long	
		'The length is three meters'			'The length is very long.'	

2. *Nouns Followed by Measuring Degree Adjectives Only*

(18)	a.	<i>chengdu</i>		<i>fudu</i>
		degree		amplitude
		'degree'		'amplitude'
	b.	<i>Chengdu gao.</i>		<i>Fudu da.</i>
		degree high		amplitude big
		'The degree is high.'		'The amplitude is big.'

3. *Nouns Preceded by Numerals*

<sup>21</sup> For example, *da* 'big', *xiao* 'small', *qiang* 'strong', *ruo* 'weak'.



- |      |                |                                   |                     |
|------|----------------|-----------------------------------|---------------------|
| (19) | <i>xing-ji</i> | <i>zhou-sui</i>                   | <i>hua-dan</i>      |
|      | star-level     | full-age                          | glorious-birthday   |
|      | ‘star rating’  | ‘full year of life’ <sup>22</sup> | ‘glorious birthday’ |

#### D. Common Nouns With Uniqueness

##### (a). Human Common Nouns With Uniqueness

The referents of this kind of noun are unique only in specific contexts, as seen in (20) where the appellations such as *lingzun* ‘your beloved father’, *laofu* ‘I’ are not quantifiable in its relevant context.

- |      |               |                      |                       |                                |
|------|---------------|----------------------|-----------------------|--------------------------------|
| (20) | <i>bi-zhe</i> | <i>zhang-sun</i>     | <i>ling-zun</i>       | <i>lao-fu</i>                  |
|      | pen-person    | first-grandson       | nice-father           | old <sup>23</sup> -mature male |
|      | ‘the author’  | ‘the first grandson’ | ‘your beloved father’ | ‘I’                            |

##### (b). Objects Common Nouns With Uniqueness

- |      |                       |                |
|------|-----------------------|----------------|
| (21) | <i>ben-wen</i>        | <i>laojia</i>  |
|      | this-article          | native place   |
|      | ‘the present article’ | ‘native place’ |

##### (c). Body Parts-Denoting Nouns

- |      |             |                 |
|------|-------------|-----------------|
| (22) | <i>duzi</i> | <i>xiongkou</i> |
|      | belly       | chest           |
|      | ‘belly’     | ‘chest’         |

#### E. Nouns With Morphemes in Special Relation

##### (a). Nouns With Morphemes in Contrary Relation

###### 1. Nouns With Adjective Morphemes in Contrary Relation

- |      |                      |                             |                        |
|------|----------------------|-----------------------------|------------------------|
| (23) | <i>an-wei</i>        | <i>gao-di</i>               | <i>chang-duan</i>      |
|      | safe-dangerous       | high-low                    | long-short             |
|      | ‘safety and danger’  | ‘level’                     | ‘length’               |
|      | <i>da-xiao</i>       | <i>yi-tong</i>              | <i>lao-shao</i>        |
|      | big-small            | different-same              | old-young              |
|      | ‘size’ <sup>24</sup> | ‘difference and similarity’ | ‘old and young people’ |

###### 2. Nouns With Verbal Morphemes in Contrary Relation

- |      |                 |                     |                    |
|------|-----------------|---------------------|--------------------|
| (24) | <i>ai-zeng</i>  | <i>gong-qiu</i>     | <i>cheng-bai</i>   |
|      | love-hate       | supply-demand       | succeed-fail       |
|      | ‘love and hate’ | ‘supply and demand’ | ‘succeed and fail’ |

<sup>22</sup> It represents real age which is in contrast to nominal age.

<sup>23</sup> The age ought to be beyond seventy, according to Baidu (Last checked: 18 May, 2023). <https://baike.baidu.com/item/%E8%80%81%E5%A4%AB/2917221?fr=aladdin>

<sup>24</sup> We thank Prof. Arcodia for offering this translation.

### 3. Nouns With Nominal Morphemes in Contrary Relation

(25)	<i>ben-mo</i>	<i>biao-li</i>	<i>cheng-bai</i> <sup>25</sup>
	root-treetop	outside-inside	success-failure
	'major and minor'	'outside and inside'	'success and failure'

### (b). Nouns With Morphemes in Related Relation

(26)	<i>chang-wei</i>	<i>xue-rou</i>	<i>xin-chang</i>
	intestine -stomach	blood-flesh	heart-intestine
	'digestive system'	'blood and flesh'	'heart' <sup>26</sup>
	<i>tao-li</i>		<i>feng-yun</i>
	peaches-plums		wind-cloud
	'excellent students educated by a teacher'		'unpredictable situation'

### F. Idiomatic Nouns

(27)	<i>leichi</i>	<i>baopiao</i>	<i>hu-kou</i>
	Leichi <sup>27</sup>	guarantee	tiger-mouth
	'forbidden zone'	'guarantee'	'dangerous place'

## V. SEMANTIC FEATURES OF NON-QUANTIFIABLE NOUNS IN MANDARIN CHINESE

Based on the above analysis of the six "representative" types of Mandarin non-quantifiable nouns, we claim that the referents of these nouns involve at least three crucial features: uniqueness, relativity, and counting/measuring-denoting feature.

### A. Relativity

Viewing the relative existence-denoting nouns in Section IV-B, we can draw the conclusion that relativity is essentially uniqueness.

For nouns with the feature of relativity, such as relative space, relative time, relative relationship, relative concept (single words like *jijian* 'own opinion', couple words like *jiefang* 'debtor' - *daifang* 'creditor', group words like *dongfang* 'east' - *xifang* 'west' - *nanfang* 'south' - *beifang* 'north'), their referents are all unique with respect to their reference points.

Among such nouns, we also discovered a special class of nouns, that is, kinship nouns. Given the biological property they have, some of them are absolutely unique, such as *shengfu* 'biological father', whereas the others' uniqueness is not clear, such as *qingsheng erzi* 'biological son' which may be not unique.

In brief, relativity ultimately boils down to uniqueness, no matter whether this uniqueness is relative or absolute.

### B. Counting/Measuring-Denoting Feature

For counting-denoting nouns, i.e. they contain inside a numeral morpheme which generally helps them to get unique referents. For example, *siji* 'four seasons' which takes the four seasons as a whole part, creating a new noun that is different from *chun* 'spring', *xia* 'summer', *qiu* 'autumn', and *dong* 'winter', and this word refers to the unique entity 'four seasons' (Section IV-C). The same is true of measuring-denoting nouns (also called quantifier-included nouns), such as *quanmin* 'all the people', *dijia* 'low price'.

Henceforth, based on these two kinds of nouns above, we can say that the counting-denoting feature and the quantifier-denoting feature can be attributed to uniqueness as well.

However, for quantifying-dimension-denoting nouns, such as *changdu* 'length', *chengdu* 'grade', *xingji* 'star level', unlike Zhou (2002), Chen (2009), and Zhang (2012), we do not believe that they are non-quantifiable nouns.

On the one hand, following Zhou, Chen, and Zhang's spirit, such a noun represents a certain quantifying dimension

<sup>25</sup> *Chengbai* can be considered as both verbal and nominal sub-types because of their morphemes' vagueness in respect of word classes.

<sup>26</sup> Here *heart* has an abstract meaning, such as in the expression *He has a kind heart*.

<sup>27</sup> It is the name of a lake locating in Anhui Province. For a historic event, it now refers to certain confines that cannot be passed through.

of its related noun that may not appear literally, as shown by one example of (17), repeated here in (28).

- (28) a. *Changdu san mi.*  
length three CL<sub>meter</sub>  
'The length is three meters'
- b. *Changdu hen chang.*  
length very long  
'The length is very long.'

The example (28) implies that the length of the associated noun's referent is three meters or very long, such as the length of a referent of *zhuozi* 'table'. In cases like this, such nouns are thus not quantified, but the associated nouns are.

On the other hand, we can offer many examples like (29) where quantifying dimensions modified by "Nume+Cl" are grammatical.

- (29) a. *san zhong changdu*  
three CL<sub>kind</sub> length  
'three kinds of lengths'
- b. *san zhong chengdu*  
three CL<sub>kind</sub> grade  
'three kinds of grades'
- c. *san zhong xingji*  
three CL<sub>kind</sub> star rating  
'three kinds of star ratings'

(29) shows that quantifying-dimension-denoting nouns are quantifiable at least in aspect of "kinds". Viewing they are quantifiable, we can thus put them aside temporarily. The important point is that the counting-denoting feature and the quantifier-denoting feature are essentially uniqueness.

### C. Uniqueness

We believe that the two key features of non-quantifiable nouns, i.e. relativity and counting/measuring-denoting feature, are fundamentally the third key feature, namely, uniqueness. Thereby, it's worth looking into it in depth.

#### (a). Absolute uniqueness and relative uniqueness

We divide the uniqueness of non-quantifiable nouns into two types: absolute uniqueness and relative uniqueness. This division is on the basis of the relation between such a noun and its referents: if this relation is independent of contexts, then this noun has absolute uniqueness; otherwise, it has relative uniqueness.

The absolute uniqueness: taking *Mao Zedong*<sub>1</sub><sup>28</sup> 'Mao Zedong' for example. Human beings (at least the Mandarin community) use it to refer to the man that led the Chinese people to establish the new China in 1949. This stabilized reference is valid for any context.

The relative uniqueness: taking couple nouns *shinei* 'inside of city' - *shiwai* 'outside of city'. Their referents vary according to specific contexts. For example, for the two interlocutors living in Beijing, *shinei* 'inside of city' is very likely to refer to the inside of Beijing, *shiwai* 'outside of city' the outside of Beijing.

All in all, based on whether non-quantifiable nouns' referents are dependent on contexts, there are two types of uniqueness: absolute one and relative one.

#### (b). External uniqueness and internal uniqueness

In general, nouns<sup>29</sup> are used to name objects<sup>30</sup>/substances, all referents of each noun form a set, and every set is distinct from each other because each noun has a different property. For instance, *shu* 'book' has book-property and all its referents compose a book-set; *pingguo* 'apple' has apple-property and all its referents compose an apple-set. Every property that a noun expresses is diverse, in this sense these nouns have uniqueness.

In addition to the outside of a set, we think that the inside of this set should also be paid attention to: these referents

<sup>28</sup> This noun has various meanings, so different numeral subscripts are used to distinguish these meanings: *Mao Zedong*<sub>0</sub>, as a common proper name, indicates any one whose name is *Mao Zedong*; *Mao Zedong*<sub>1</sub>, as a particular proper noun, represents the man who has led the Chinese people to establish the new China in 1949; *Mao Zedong*<sub>2</sub>, as a commonized proper noun, refers to persons that have some similar or same natures with *Mao Zedong*<sub>1</sub>.

<sup>29</sup> Except two sub-types of proper nouns: common proper nouns such as *Xiaoming*<sub>0</sub> and particular proper nouns such as *Huawei*<sub>1</sub> (the name of a famous Chinese company). See Ruan (2018, pp. 41-43) for details.

<sup>30</sup> Here *objects* also involve the human.

may be quantified in terms of another property or quantity<sup>31</sup>. For example, at the inside of book-set, there are three types of books in terms of colour-property, ten books in terms of book-entirety. When in this set, there is only one book in both the two aspects above, the noun has uniqueness.

With regard to a set of nouns' referents, we would like to call its outside the external level of nouns, and its inside the internal level of nouns. If a noun's property is unique at external level, then the noun has external uniqueness; if a noun's referent is unique at internal level, then the noun has internal uniqueness.

Let's look at some examples shown in (30).

- (30)
- |    |                                       |   |
|----|---------------------------------------|---|
| a. | <i>pingguo</i><br>'apple'             | At external level, the noun's property is unique with respect to other nouns' properties like <i>shu</i> -property 'book-property'. But at internal level, the noun's referents have kinds or quantity, that is, the amount of its kinds and its quantity are not one. Hence, <i>pingguo</i> 'apple' has external uniqueness, but no internal uniqueness. |
| b. | <i>changwei</i><br>'digestive system' | At external level, the noun's property is unique with respect to other nouns' properties like <i>shu</i> -property 'book-property'. And at internal level, the amounts of its kinds and its quantity are both one. Thereby, it has both external uniqueness and internal uniqueness.  |
| c. | <i>jiufa</i><br>'addition'            | At external level, the noun's property is unique with respect to other nouns' properties like <i>shu</i> -property 'book-property'. And at internal level, the amounts of its kinds and its quantity are both one. Hence, it has both external uniqueness and internal uniqueness.  |

In brief, almost all nouns<sup>32</sup> have external uniqueness because the properties that they express are distinct from one another. On the other hand, these nouns may or may not have internal uniqueness.

Syntactically, when nouns are at external level, they refuse the modification of numeral/quantifier structures, as shown in (31a) and (32a); whereas when they are at internal level, they require quantifying structures if the amount of internal kind (IK for short) or internal quantity (IQ for short) is not equal to one, as illustrated in (31b), (31c), and (32b). In other words, nouns refuse quantifying structures if the amounts of internal kind (IK) and internal quantity (IQ) both equal one, that is, if nouns have internal uniqueness, as seen in (32c).

- (31)
- |    |  |
|----|--|
| a. | <i>Women xuyao kongqi he shui.</i><br>1PL need air and water<br>'We need air and water.'                         |
| b. | <i>Women xuyao san zhong shui.</i><br>1PL need three CL <sub>kind</sub> water<br>'We need three kinds of water.' |
| c. | <i>Women xuyao san bei shui.</i><br>1PL need three CL <sub>cup</sub> water<br>'We need three cups of water.'     |
- (32)
- |    |   |
|----|---|
| a. | <i>Wo xihuan pingguo.</i><br>1SG like apple<br>'I like apples.'   |
| b. | <i>Wo chi-le ji ge pingguo.</i><br>1SG eat-PRF several CL-General apple<br>'I ate several apples.'<br>Context: there is a book, a cup on the table. |
| c. | <i>Shu hen xin.</i><br>book very new<br>'The book (on the table) is very new.'  |

As for the two sub-types of proper nouns, i.e. common proper nouns and particular proper nouns, these nouns cannot stay at external level, since they do not express a property and do not have external kind (EK for short). In spite of this,

<sup>31</sup> Here, "quantity" means quantity of entities/substance. For example, if we mention the quantity of books, water, expressions like *three books*, *many books*, *three bottles of water*, *much water* primarily come out rather than those like *three sorts of books/water*. It is a daily life concept of quantity. See Ruan (2018, pp. 38-40) for the conception of quantity in a broad sense.

<sup>32</sup> Except two sub-types of proper nouns: common proper nouns and particular proper nouns.

they can stay at internal level, so we can consider their internal kind or internal quantity. In terms of internal quantity (IQ), the amount sometimes is one (i.e. [+IQ1]) and sometimes is greater than one (i.e. [-IQ1]). For example, the common name *Xiaoming*<sub>0</sub>, in a concrete context, its referent may be the only one and also may be not, as shown in (33). Prof. Liu of Class A may say expressions like (33a), Prof. Wu of Class B may say sentences like (33b), and the schoolmaster of the school may say expressions like (33c).

- (33) Context: in a school there are three students named *Xiaoming*, one of which is in Class A and the other two in Class B.
- a. *Xiaoming*<sub>1</sub> *xihuan dushu, er Li Hua*<sub>1</sub> *xihuan tiaowu.*  
*Xiaoming* like reading, but *Li Hua* like dancing.  
 ‘*Xiaoming* likes reading, but *Li Hua* likes dancing.’
- b. *Liang ge Xiaoming*<sub>0</sub> *dou xihuan dushu, er Li Hua*<sub>1</sub> *xihuan tiaowu.*  
 Two CL-General *Xiaoming* both like reading, but *Li Hua* like dancing.  
 ‘The two *Xiaomings* both like reading, but *Li Hua* likes dancing.’
- c. *San ge Xiaoming*<sub>0</sub> *dou xihuan dushu, er Li Hua*<sub>1</sub> *xihuan tiaowu.*  
 Three CL-General *Xiaoming* all like reading, but *Li Hua* like dancing.  
 ‘The three *Xiaomings* all like reading, but *Li Hua* likes dancing.’

As shown in (33), *Xiaoming* in (33a) with [+IQ1] is in contrast to the one in (33b) and (33c) with [-IQ1]. The former has internal uniqueness but the latter do not.

(c). Cognitive impacts on uniqueness

On cognitive selection, see examples (31) and (32): for nouns in (31a) and (32a), the external level of nouns’ referents is chosen; whereas for nouns in (31b), (31c), and (32b), the internal level is selected.

Regarding cognitive range, see example (33) where different speakers have different cognitive ranges.

Concerning cognitive level, see the following example (34).

- (34) a. If we found other suns, then we would say:  
*Wo kanjian-le san ge taiyang.*  
 1SG see-PRF three CL-General sun.  
 ‘I saw three suns.’
- b. If a child thought that there were many moons in the world, she/he would say:  
*Zhe ge yueliang hao piaoliang.*  
 DEM CL-General moon very beautiful.  
 ‘This moon is very beautiful.’

And so do adults. Suppose that speaker A did not know that speaker B has only one son, then A would say sentences like this: “How many sons do you have?”

To sum up, human beings’ cognition may change the uniqueness identity of nouns’ referents: unique or not. First, cognitive selection decides at which level nouns stay: if a noun is at external level, its referent is unique. Second, cognitive level and range are likely to change the amount of kinds or quantity of nominal referents, so as to change their status of uniqueness.

## VI. CONCLUSION

In this paper, we commenced with an analysis of different denominations and definitions for Mandarin Chinese nouns like *dongfang* ‘east’, *siji* ‘four seasons’ from a syntactic-semantic perspective, and attempted to establish a syntactic definition for these nouns (called *non-quantifiable nouns* in this paper), that is, nouns that cannot be syntactically modified by quantifying structures, i.e. “Nume+CL” and “Quant”. Then, we analyzed six types of Mandarin non-quantifiable nouns that are commonly recognized in the literature. These nouns are proper nouns, relative existence-denoting nouns, counting/measuring-denoting nouns, common nouns with uniqueness, nouns with morphemes in special relation, and idiomatic nouns. Based on the above analysis, we proposed three fundamental semantic features of being a non-quantifiable noun, i.e. uniqueness, relativity, and counting/measuring-denoting feature, among which, the last two features can be attributed to the first one, that is, uniqueness. Furthermore, we divided uniqueness into absolute one and relative one based on whether the referents of non-quantifiable nouns are independent of contexts, and into external one and internal one based on where these referents are quantified. It is important to acknowledge that human beings’ cognition may change the uniqueness identity of nouns’ referents and this change can be yielded from three dimensions: cognitive selection for nouns’ referents, cognitive range for nouns’ referents, and cognitive level of human beings.

## ACKNOWLEDGEMENTS

This work has been supported by a research grant under “Syntax of Nominal Quantification in Italian and Chinese from the Perspective of Generative Grammar” [Project Number: TJWWQN19-002] from Tianjin Leading Group Office for Philosophy and Social Science Work, China.

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**Yufeng Ruan** was born in Anhui, China in 1987. She received her Ph.D. degree in Linguistics from University of Florence, Italy in 2018.

She is currently an assistant professor in the College of Foreign Languages, Nankai University, Tianjin, China. Her research interests include syntax and semantics with special attention to the analysis of Chinese and Italian. She also concerns herself with issues relating to second language acquisition. Email: yufeng.ruan@nankai.edu.cn