

Three Types of Existential Quantification in Chinese

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0. A Puzzle

Chinese *you* 'have', when construed as existential, is traditionally analyzed as a modal verb or an auxiliary (see Y.-C. Li 1972, R. Cheng 1978, Huang 1988, L. Cheng, 1991, Tsao & Y. Cheng 1997, among many others). Nevertheless, problems arise when we take a closer look at *you* in terms of both its syntactic distribution and semantic interpretations. There are actually three variants of existential *you*, presentational *you* in (1a), partitive *you* in (1b), and specific plural *you* in (1c):¹

- (1) a. *you ren lai-le.*
have person come-Inc
'There is/are a person/people coming.'
- b. *you-de ren lai-le.*
have-DE person come-Inc
'Some of the people are coming.'
- c. *you-(yi)-xie ren lai-le.*
have-one-some person come-Inc
'Some people are coming.'

When presentational *you* and partitive *you* are instead put in a postverbal object position, the sentences are simply bad, as evidenced by (2a,b) respectively:

- (2) a. **Akiu pian-le you ren.*
Akiu cheat-Prf have person
'Akiu cheated someone.'

¹ The abbreviations used in this paper are glossed as follows: Acc: accusative case; Inc: inchoative aspect; Past: past tense; Prf: perfective aspect; Top: topic marker.

b.* Akiu pian-le you-de ren.
Akiu cheat-Prf have-DE person
'Akiu cheated some of the people.'

c.? Akiu pian-le you-(yi)-xie ren.
Akiu cheat-Prf have-one-some person
'Akiu cheated some people.'

Specific plural *you*, in contrast, may marginally appear postverbally, as evidenced by (2c). On the other hand, while presentational *you* is systematically blocked from preverbal object positions, partitive *you* and specific plural *you* are allowed in the same position, as shown by the contrast between (3) and (4,5):

(3) a.* Akiu dui you ren bu manyi.
Akiu to have person not satisfied
'Akiu is not satisfied with someone.'

b.* Akiu ba you ren pian-le.
Akiu BA have person cheat-Prf
'Akiu cheated someone.'

c.* Akiu bei you ren pian-le.
Akiu by have person cheat-Prf
'Akiu was cheated by someone.'

(4) a. Akiu dui you-de ren bu manyi.
Akiu to have-DE person not satisfied
'Akiu is not satisfied with some of the people.'

b.? Akiu ba you-de ren pian-le.
Akiu BA have-DE person cheat-Prf
'Akiu cheated some of the people.'

c.? Akiu bei you-de ren pian-le.
Akiu by have-DE person cheat-Prf
'Akiu was cheated by some of the people.'

- (5) a. Akiu dui you-(yi)-xie ren bu manyi.
 Akiu to have-one-some person not satisfied
 'Akiu is not satisfied with some people.'
- b. Akiu ba you-(yi)-xie ren pian-le.
 Akiu BA have-one-some person cheat-Prf
 'Akiu cheated some people.'
- c. Akiu bei you-(yi)-xie ren pian-le.
 Akiu by have-one-some person cheat-Prf
 'Akiu was cheated by some people.'

In this paper, we argue that while presentational *you* counts as a sentential unselective binder, partitive *you* and specific plural *you* are to be treated as determiners. Section one examines the status of *you* from a historical perspective, proposing that the partitive and specific plural readings derive from a pronominal construal of *you* in Archaic Chinese as a result of grammaticalization. In section two, we show that the presentational reading is only one of a few construals licensed by sentential unselective binding, which may range over either individuals or events. Section three proceeds to taking on the issue where the specificity and the plurality come from in presence of *youxie*-NP. In section four, we argued for a head-first analysis of *youde*-NPs, which is independently motivated by a structural distinction between measure words and genuine classifiers in Chinese.

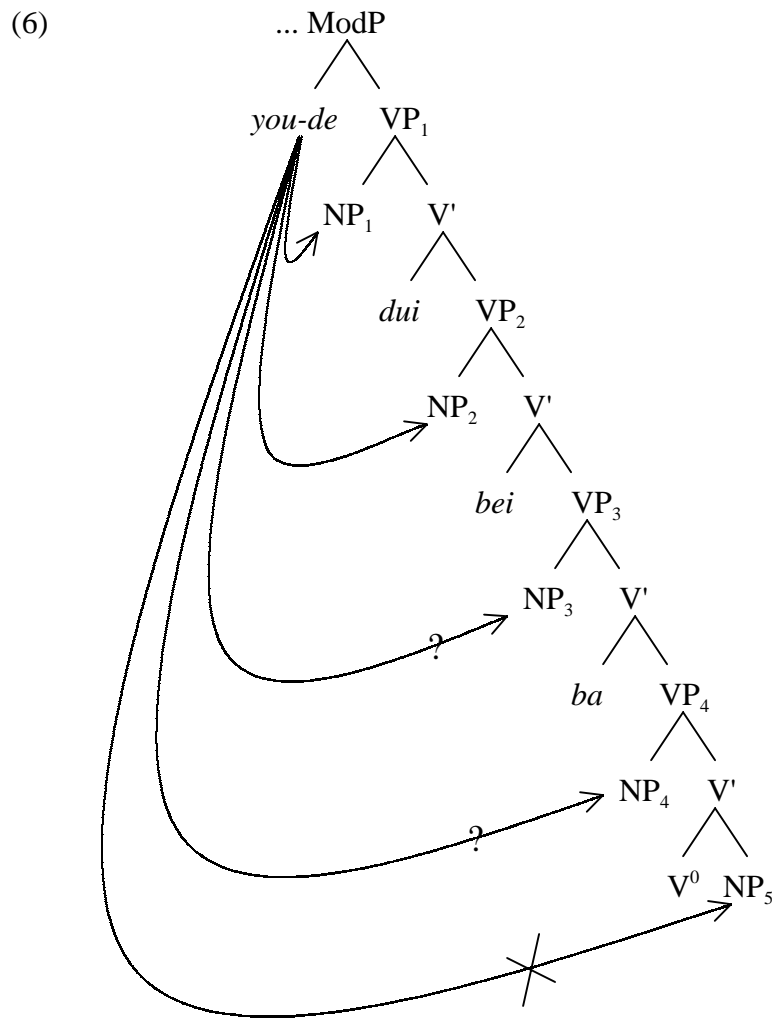
1. Predicate *you* on the fly: a historical perspective

To start with, we summarize the spectrum effects observed throughout (1-5) in the following table:

Table 1.

| <i>you</i> -reanalysis | <i>you</i> -NP | <i>you-de</i> -NP | <i>you-(yi)-xie</i> -NP |
|-------------------------|----------------|-------------------|-------------------------|
| NP1: internal subjects | ok | ok | ok |
| NP2: <i>dui</i> -NPs | * | ok | ok |
| NP3: <i>bei</i> -NPs | * | ? | ok |
| NP4: <i>ba</i> -NPs | * | ? | ok |
| NP5: postverbal objects | * | * | ? |

On the surface, it looks as if Chinese *you* has undergone a downward incorporation into the argument NP to its right: the closer the argument is, the more likely the incorporation will succeed. This supposedly diachronic process is visualized in the tree diagram (6), where I assume that *dui* 'to', *ba*, and *bei* 'by' are light verbs in Chinese:



Here we may explore the intuition by claiming that the chance of *you* being incorporated into an argument NP to its right should be rated against the distance in-between, as sketched in the following descriptive generalization:

(7) The possibility of reanalysis diminishes as the distance increases.

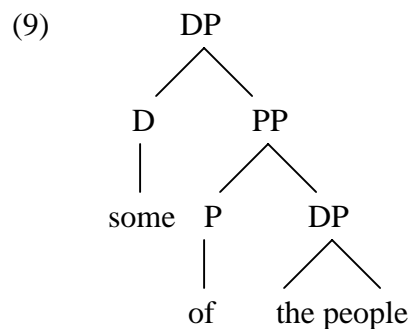
However, it is unclear how to formulate the idea in a productive manner. Therefore, we would like to try out an alternative based upon some solid historical fact: In Archaic Chinese, predicate *you*

has evolved into a pronoun, akin to *some* in English. Grammaticalization of this sort started as early as the pre-Qin period, as evidenced by (8a) and (8b) (cf. Yang & He 1992):

(8) a. ri you shi zhi. (from *Shijing* [The Book of Odes])
 sun have eat it
 'The sun, someone ate it.'

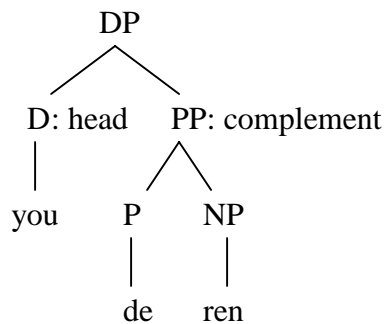
b. you yun zi tian. (from *Yijing* [The Book of Change])
 have fall from sky
 'Something fell from the sky.'

In light of this observation, we may well assimilate partitive *you* to its English counterpart in (9):



Under this approach, partitive *you* is treated as a pronoun, occupying a D position, while the remain material in a *youde*-NP is analyzed as a PP complement, as illustrated below:

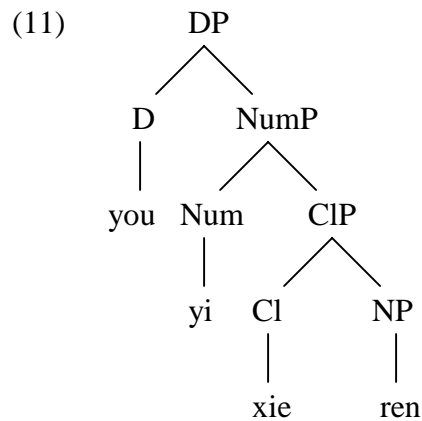
(10) *first approximation:*



We may reasonably assume that this is the first step of the historical development. Here I will take *you* as the de facto head of the entire DP, followed by a PP complement. Nonetheless, this cannot

the entire story, as there is no evidence whatsoever to support the preposition status of *de*. We will return to address this issue in section four.

Now how about specific plural *you*? It is generally accepted that a D can be occupied either by a determiner or by a pronoun. It is therefore highly possible that partitive *you* has undergone further grammaticalization, changing into a genuine determiner. The result is the specific usage of *you*:

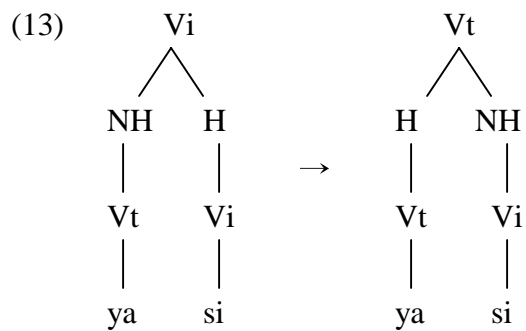


The position is supported by that the fact that specific plural *you* behaves very much like typical determiners such as *mou* 'certain' in (12b), *zhe* 'this' in (12c), and *na* 'that' in (12d):

- (12) a. you-(yi)-xie (*de) ren lai-le.
 have-one-some DE person come-Inc
 'Some people are coming.'
- b. mou-(yi)-xie (*de) ren lai-le.
 certain-one-some DE person come-Inc
 'Certain people are coming.'
- c. zhe-(yi)-xie (*de) ren lai-le.
 this-one-some DE person come-Inc
 'These people are coming.'
- d. na-(yi)-xie (*de) ren lai-le.
 that-one-some DE person come-Inc
 'Those people are coming.'

When expressing plurality, all of the above determiners cooccur with *yi-xie* 'one-some', and cannot take the modifier marker *de*. The plurality of a *you-xie* NP is then attributed to *yi-xie*. We will examine its property more closely, and provide a fine-grained semantics in section three.

Questions remain when we consider the general word order in Chinese nominals: Do we really want to say that Chinese NPs could be head-first as sketched in (10)? As a matter of fact, Huang (1995) has proposed that, as Chinese evolved into its modern age, the head-parameter setting also changed, shifting from head-final to head-first. The diachronic evidence comes from Mei's (1991) observation that a verb-complement compound like *ya-si* 'crush-die' are intransitive in Ancient Chinese, but transitive in Modern Chinese, as illustrated in the following derivation:



The idea is that if we view the transitivity as a change of headness, everything will fall out naturally. That is, since Ancient Chinese is head-final, the intransitive verb *si* 'die' is the head, and the entire compound inherits its intransitivity. On the other hand, modern Chinese is head-first, and it is the transitive verb *ya* 'crush' which counts as the head. As a result, the entire compound becomes transitive. On the synchronic front, Huang elicits support from Y. Li's finding that a verb-complement compound can only be intransitive in Japanese, which is a typical head-final language. This is shown by the contrast between (14a) and (14b):

- (14) a. John-wa Mary-o naguri-korosi-ta.
 John-Top Mary-Acc beat-kill-Past
 John beat and killed Mary.
- b.* John-wa Mary-o naguri-shin-da.
 John-Top Mary-Acc beat-die-Past
 John beat Mary, and she died.

All in all, it seems safe to assume that Chinese nominals has shifted into the head-first setting in a gradual and subtle manner. What is lacking here is a fine-grained syntax and semantics of the

three types of *you*, which is imperative for making our case here. We will begin with presentational *you* in the next section.

2. *You* as an unselective binder

An ideal testing ground for the quantificational property of presentational *you* is so-called Taiwanese Mandarin. Standard Mandarin, a dialect spoken around the Beijing area, employs a suffix *-le* to express perfective aspect, as in (15a), whereas perfective *you* only occurs optionally in negation, as in (15b):

- (15) a. Akiu qu-le Beijing.
Akiu go-Prf Beijing
'Akiu has gone to Beijing.'
- b. Akiu mei (you) qu Beijing.
Akiu not have go Beijing
'Akiu has not gone to Beijing.'
- c. Akiu you qu Beijing. (Taiwanese Mandarin)
Akiu have go Beijing
'Akiu has indeed gone to Beijing.'

This phenomenon of functional replacement has been noted long time ago by Wang (1965). Now under the influence of Taiwanese, a dialect of Southern Min, *you* is "resurrected" as an aspect marker in Taiwanese Mandarin, behaving in line with perfective *have* in English. Since here perfective *you* serves as an existential quantifier ranging over a Davidsonian event argument rather than the subject NP (cf. (1a)), it would be interesting to see whether it is "unselective" enough to license other elements in a given sentence.

The answer seems to be positive. First consider (16a), a typical Taiwanese Mandarin sentence:

- (16) a. Akiu you chi dongxi. (Taiwanese Mandarin)
Akiu have eat thing
'Akiu has indeed eaten something'
(non-specific reading + perfective aspect)

b. $you_E, \exists_x, chi(Akiu, dongxi(x), E)$

The postverbal object *dongxi* 'thing' gets a typical existential closure reading, which means that it is interpreted as non-specific. On the other hand, *you* triggers existential quantification over the event argument associated with *chi* 'eat', which licenses the perfective reading of (16a), as illustrated by (16b).² When object shift occurs, as in (17a), *you* quantifies over the fronted NP instead, and the perfective aspect is replaced by a generic tense, as in (17b):

(17) a. Akiu you dongxi chi.
Akiu have thing eat
'There is something for Akiu to eat.'
(non-specific reading + generic tense)

b. $Gen_E, you_x, chi(Akiu, dongxi(x), E)$

Crucially, *you* patterns with existential closure in licensing the non-specific reading of (17a), a sure indication of the presence of unselective binding.

Another piece of evidence has to do with the fact that *youde*-NPs and *youxie*-NPs require contrastive focus construals when object shift occurs:

(18) Akiu you-de dongxi chi, *(you-de dongxi bu chi).
Akiu have-DE thing eat have-DE thing not eat
'Akiu eats some of the things, and does not eat the others.'

(19) Akiu you-(yi)-xie dongxi chi, *(you-(yi)-xie dongxi bu chi).
Akiu have-one-some thing eat have-some thing not eat
'Akiu eats some things, and does not eat some other things.'

The *youde*-NP of (18) as a whole is under focusing, where *you* 'have' is an integrated part of the focused constituent. The same thing happens to the *youxie*-NP in (19). Our theory thus predicts that *you*-NPs cannot appear in contrastive focus constructions, since the unselective binding (i.e., non-specific) construal of (17a) is incompatible with contrastive focusing. This is indeed the case, as evidenced by (20):³

² See Huang (1988) for an analysis of perfective *you* in the same spirit.

³ Note that (20) may improve when a partitive reading is intended. This is because, for some Chinese speakers, *de* can be dropped under contrastive construals like (18). Hence the confusion.

- (20) * Akiu you dongxi chi, you dongxi bu chi.
 Akiu have thing eat have thing not eat
 'There is something which Akiu eats, and there is
 something which Akiu does not eat.'

Moreover, since the *you*-NP is not a constituent, the preverbal object should be able to shift further. This prediction is again borne out by the definite construal of *dongxi* 'thing' in (21a):

- (21) a. Akiu dongxi you chi. (Taiwanese Mandarin)
 Akiu thing have eat
 'Akiu has indeed eaten the thing.'
 (definite reading + perfective aspect)

- b. $you_E \text{ chi}(Akiu, \iota_x \text{ dongxi}(x), E)$

Being scoped over by *dongxi*, *you* again serves as an unselective binder of the event argument, as illustrated by the semantic representation (21b). The bare NP object, on the other hand, get interpreted as definite.⁴

All in all, this versatility of *you* confirms that unselective binding works in a sentential magnitude for Chinese (Tsai 1994, 1999). Similar conclusions has been drawn by Huang (1997) and T.-H. Lin (1997) concerning lexical operators such as *mei* 'have-not' and *ge* 'each' respectively.

3. *You* as a strong determiner

To understand the behavior of specific plural *you*, it is imperative to understand the syntax and semantics of its sidekick *yi-xie* 'one-some'. Our hunch here is that *yi-xie* NPs are essentially collective, i.e., either as members of a group, as in (22), or as a single unit, as shown by the contrast between (23a) and (23b):

- (22) zhe-(yi)-xie xuesheng pici piping.
 this-one-some student mutually criticize
 'Members of this group of students criticized each other.'

⁴ As for how the bare NP receives the definite interpretation, see Cheng & Sybesma (to appear) and A. Li (1997) for a syntactic treatment a la Longobardi (1994).

- (23) zhe-(yi)-xie xuesheng he na-(yi)-xie xuesheng pici piping.
 this-one-some student and that-one-some student mutually criticize
 a. This group of students and that group of students criticized each other.
 b.# This group of students criticized each other, and that group of students criticized each other

In other words, when *yi-xie* appears before a noun, the noun behaves just like a collective noun in English.

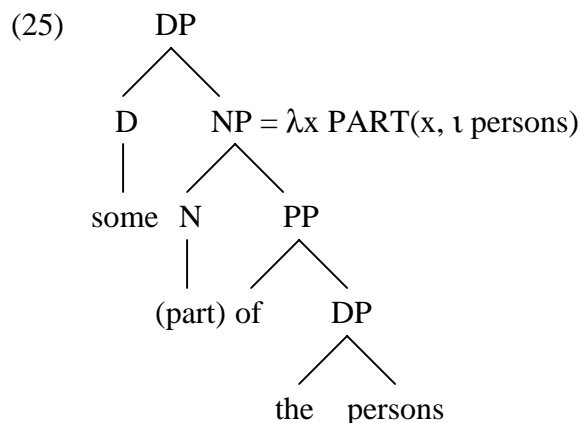
In light of the above observation, we would like to entertain the possibility that *yi-* 'one' serves a collective operator rather than a cardinal predicate, mapping the plurality associated with *-xie* 'some' into an atom, i.e., aggregating members of the set of students into a single unit. This operation results in the group interpretation in Landman's sense. Similar usage can be found in the sentential adverbial *yi* of (24):

- (24) ta yao yi tong jiang-hu.
 he want one rule river-lake
 'He want to unite the lands as one.'

It follows that what *you* contributes to a *youxie*-NP is the specificity, which in turn qualifies it as a strong quantifier in Milsark's (1974) sense.

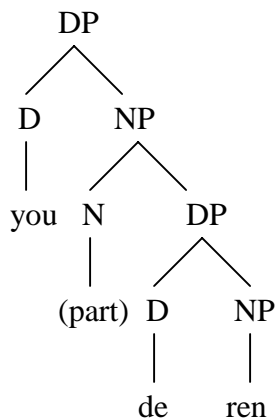
4. *You* as a partitive determiner

Now how about partitive *you*? As noted by Gennaro Chierchia (p.c.), in a English partitive construction, *some* can be decomposed into *some* and an implicit head noun denoting the relation "part-of", as illustrated below:



The same analysis, in our opinion, carries over to its Chinese counterpart but with a twist, as represented by the following diagram:

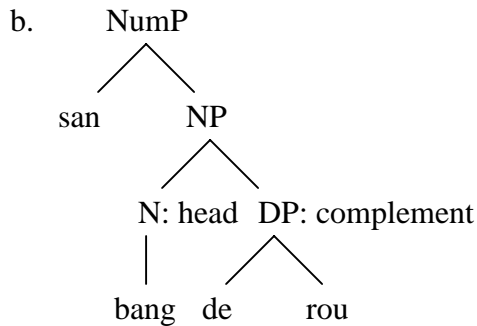
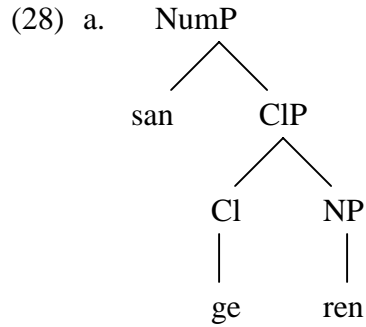
(26) *second approximation:*



Here we will tentatively adopt Simpson's (1998) view that *de* should be treated as a determiner. At the first glance, this move seems to be a long shot, as it is widely held that Chinese NPs are head-final. In the following discussion, we will demonstrate that there is strong evidence suggesting that Chinese NPs are not uniformly head-final. First compare (27a,b):

- (27) a. san ge ren
 three CL person
 'three persons'
- b. san bang (de) rou
 three pound DE meat
 'three pounds of meat'

There are essentially two groups of classifiers in Chinese. The first group are classifiers in the true sense, as in (27a), which are unique to the so-called classifier languages (cf. Tang 1990, Cheng & Sybesma 1998, A. Li 1998). The other may be called measure words, as in (27b), which co-occurs with an optional *de*, and can be found across languages. The intuition we would like to explore here is that the *de* factio head of (27a) is *ren* 'person', denoting individuals, whereas that of (27b) is *bang* 'pound', denoting quantities, as illustrated by (28a,b) respectively:



Under this view, classifiers are essentially functional categories, individuating a mass denotation into countable atoms or minimal parts, given that Chinese nouns are uniformly mass *a la* Chierchia (1995). On the other hand, measure words are lexical categories, expressing quantities or amounts with respect to some form of measurement.⁵ It follows that the phrase-final noun of (27b) can be nothing but the head of the complement of *bang* 'pound', as in (28b).

As Jim Huang (p.c.) points out, the following sentence is ambiguous between the individual reading of (29a) and the amount reading of (29b):

- (29) Akiu zuotian he-le san-bei shui.
 Akiu yesterday drink-Prf three-cup water
 a. 'Akiu drank three cups of water yesterday.'
 (denoting individuals)
 b. 'Akiu drank three servings of water yesterday.'
 (denoting quantities)

The intuition can be further sharpened by considering the contrast between (30) and (31), whose interpretations correspond to (29a) and (29b) respectively:

⁵ In essence, we are saying that there is no mass-count distinction for Chinese classifiers, contra Cheng & Sybesma's (1998, to appear) proposal to distinguish classifiers from massifiers (mass classifiers).

(30) Akiu zuotian ba san-bei (*de) shui he-le.
Akiu yesterday BA three-cup DE water drink-Prf
'Akiu drank three specific cups of water yesterday.'
(denoting individuals)

(31) Akiu yi-tian he san-bei (de) shui.
Akiu per-day drink three-cup DE water
'Akiu drinks three cups of water per day.'
(denoting quantities)

In (30), the BA-construction requires a specific object, and thereby disambiguates the sentence. Only the individual reading is available. By contrast, the generic context of (31) is incompatible with the individual reading, and prefers the amount reading.

An even stronger argument for our treatment can be built upon the distribution of Chinese demonstratives. First we distinguish two types of demonstratives in Chinese, one is contrastive, as in (32a); the other is appositive, as in (32b):

(32) a. wo yao jian na-ge Akiu, bu shi zhe-ge Akiu.
I want meet that-CL Akiu not be this-CL Akiu
'I want to meet that Akiu, not this Akiu.'
(contrastive)

b. jiao na-ge Akiu lai zher!
ask that-CL Akiu come here
'Ask that Akiu to come here'
(appositive)

Now the prediction is that a quantity-denoting nominal should be unable to take a contrastive demonstrative, since there is no such notion as "this quantity" vs. "that quantity" if we are talking about exactly the same amount. This is indeed the case. First compare (33a) and (33b):

(33) a. wo zuotian mai-le san dai mi.
I yesterday buy-Prf three bag rice
'I bought three (specific) bags of rice yesterday.'
(denoting individuals)

- b. wo zuotian mai-le san dai (de) mi.
 I yesterday buy-Prf three bag DE rice
 'I bought (the amount of) three bags of rice yesterday.'
 (denoting quantities)

Dai 'bag' functions as a classifier in (33a), resulting in the specific reading. On the other hand, *dai* is a measure word in (33b), hence the amount reading. The same distinction is maintained between (34a,b), where the demonstrative can only be interpreted as contrastive in the former, and appositive in the latter:

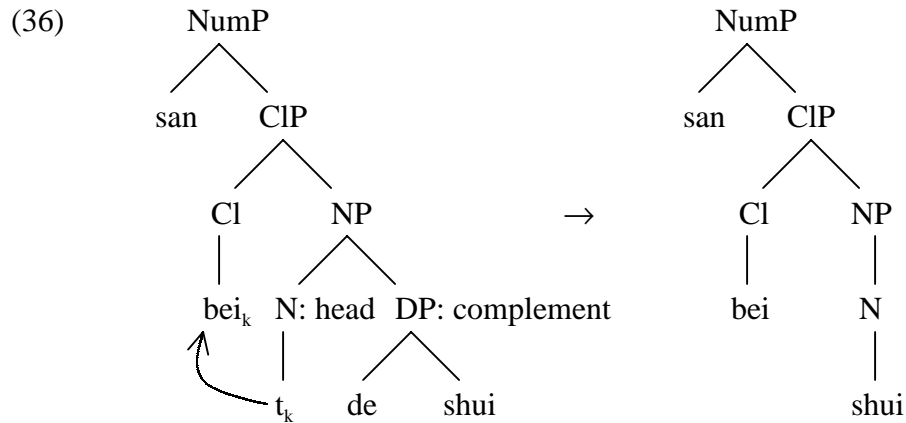
- (34) a. wo yao na san dai mi.
 I want that three bag rice
 'I want those three bags of rice.'
 (individuals → contrastive)

- b. wo yao na san dai (de) mi.
 I want that three bag DE rice
 'I want that rice, the amount of which is three bags.'
 (quantities → appositive)

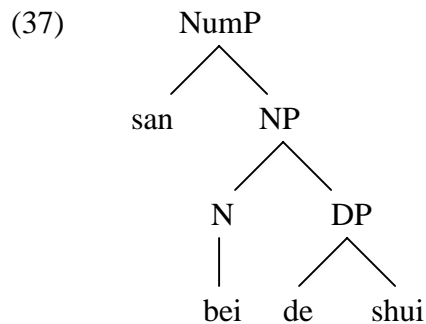
It is therefore established that the individual readings are compatible only with a contrastive demonstrative, while the quantity readings get along only with an appositive one. We also correctly predict that the typical measure word *bang* 'pound' is blocked in the presence of a contrastive demonstrative:

- (35) a. wo yao na san bang (de) rou.
 I want that three pound DE meat
 'I want that meat, the amount of which is three pounds.'
- b.* wo yao na san bang (de) rou, bu shi zhe san bang (de) rou.
 I want that three pound DE meat not be this three pound DE meat
 '* I want these three pounds of meat, not those three pounds of meat.'

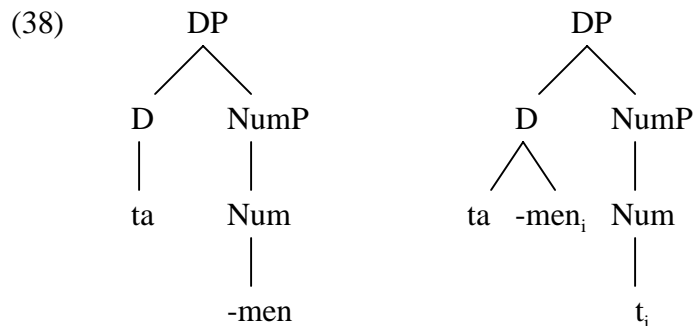
Furthermore, it may well be the case that measure words like *bei* 'cup' or *dai* 'bag' are on the fly to their true classifierhood: As illustrated by (36), *bei* 'cup' becomes a genuine classifier by raising to a classifier head, and the remnants collapse into one single head noun:



If *bei* stays in-situ, then it remains as a measure word, resulting in the quantity interpretations:⁶



The last piece of evidence comes from the syntactic behavior of *-men*, a plural/collective suffix for [+human] NPs. A. Li (1998) argues quite forcefully that *-men* serves as the head of a number projection (NumP), standing higher than CIP but lower than DP. Now consider the third person plural pronoun *ta-men* 'they', which is formed by adjoining the plural suffix *-men* from Num to D, as sketched below:

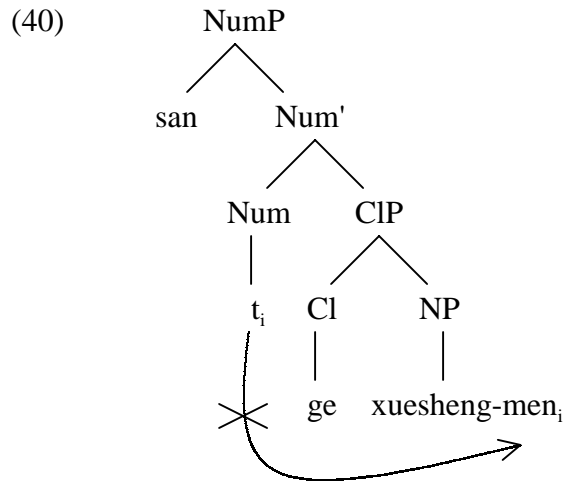


⁶ For a comprehensive discussion of the historical development of Chinese classifiers, see Peyraube (1997).

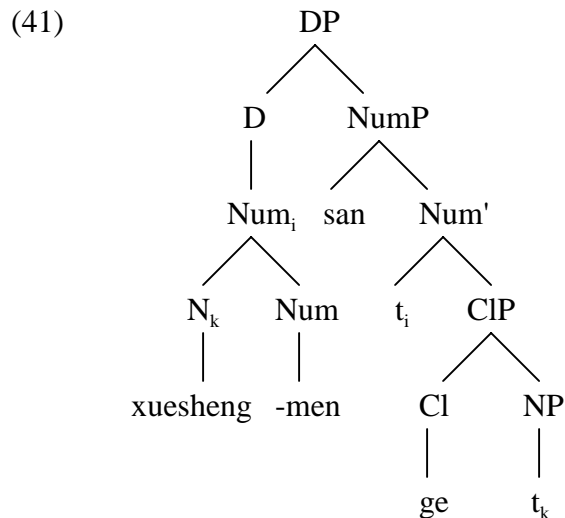
This proposal correctly predicts that sentences like (39a,b) are bad:

- (39) a. * wo dui san-ge xuesheng-men tebie hao.
 I to three-CL student-MEN especially nice
 'I am especially nice to three students.'
- b. * wo dui xuesheng-men san-ge tebie hao.
 I to student-MEN three-CL especially nice

(39a) is ruled out because *-men* cannot undergo lowering to its right, as sketched below:



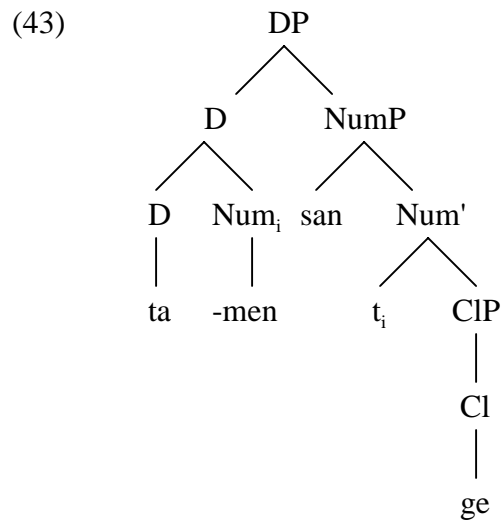
(39b) is ruled out in violation of relativized minimality, where the successive head movement skips an intervening head, i.e., the classifier *ge*, as illustrated in (41):



Moreover, her analysis correctly rules in sentences like (42):

- (42) wo dui ta-men san-ge tebie hao.
 I to he-MEN three-CL especially nice
 'I am especially nice to them three.'

As illustrated below, nothing gets in the way of the Num-to-D raising:



If Li's treatment proves to be on the right track, the following contrast between measure words and classifiers receives a straightforward account under our approach. That is, (44b) is ruled out along with (39a) for reasons just mentioned:

- (44) a. na san-ge xuesheng hen youxiu.
 that three-CL student very outstanding
 'Those three students are very outstanding.'

- b.* na san-ge xuesheng-men hen youxiu.
 that three-CL student-MEN very outstanding

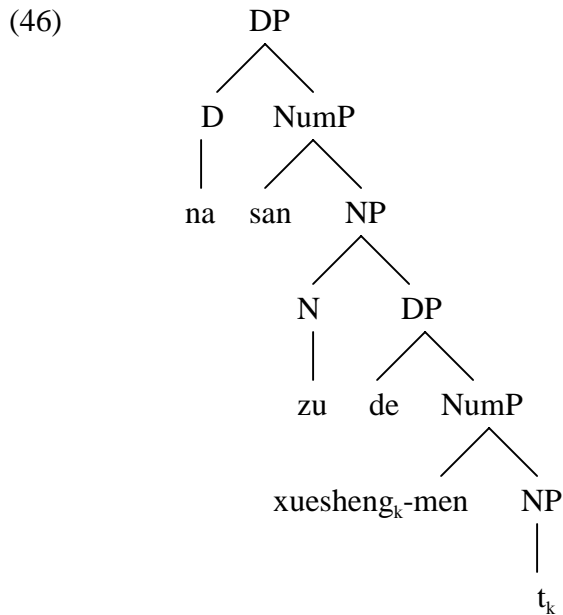
In contrast, when we substitute a measure word *zu* 'group' for the classifier *ge* in (44b), the sentence improves dramatically, as evidenced by (45b):

- (45) a. na san-zu xuesheng hen youxiu.
 that three-group student very outstanding

'Those three groups of students are very outstanding.'

- b. na san-zu (de) xuesheng-men hen youxiu.
 that three-group DE student-MEN very outstanding

The phenomena receives a straightforward account once we adopt the view that the subject NP of (45b) assumes the following structure:



Here *xuesheng-men* 'students' is viewed as a subcategorized complement of the measure word *zu*, and *-men* as part of the complement DP. In contrast to the invalid derivation in (35), where the classifier *ge* creates a blocking effect for head movement, nothing prevents N from joining Num in the complement DP of (46).

5. Conclusion

To sum up, we now have a much clearer picture of what's going on in the three types of Chinese existential constructions, which can be decomposed as follows:

- | | | |
|------------------------|--|-------------------|
| <i>you</i> NP | → sentential operator ... bare NP | → presentational |
| <i>you-de</i> NP | → determiner + (part) + DP complement | → partitive |
| <i>you-(yi)-xie</i> NP | → determiner + collective operator + head noun | → specific plural |

Nevertheless, this only provides a partial account of the dilemma we encountered in section one: At one end of the spectrum, presentational *you* counts a sentential unselective binder, and therefore cannot be adjacent to an object except when subject raising and object shift both occur (cf. (17)). At the other end, since *you* has become an integrated part of a *youxie*-NP, it may appear in virtually any NP position. The gray area surrounding *youde*-NPs, however, does not have an obvious solution from the fine-grained syntax presented in section four. In other words, the synchronic analysis cannot be the whole story. It should be supplemented by our finding on the diachronic front: In comparison with specific *you*, partitive *you* is only halfway grammaticalized. The ambiguous structural status of *you* in (26) should be correlated with its "on-the-fly" character from a historical point of view. We therefore reach the conclusion that the head parameter cannot be uniformly set in Chinese, not only for VPs, as already suggested in the literature, but also for NPs.

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