

Topicality and (Non-)Specificity in Mandarin*

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1. Overview: An idea about specificity

Current analyses of specificity are unable to provide an explanatory account for why specific and nonspecific uses of indefinites are available. While Abusch (1994), Reinhart (1997), and Kratzer (1998) provide successful mechanisms for deriving specific readings, they do not provide a fundamental explanation for the availability of this mechanism. This is due to the fact that specific indefinites are treated as involving an interpretive component or procedure unique to themselves: storage (Abusch) or choice function (Reinhart and Kratzer),¹ for example. It would be preferable if specific indefinites could be understood as deriving from the use of independently motivated meaning components and interpretive mechanisms.

Here I will pursue the idea, building on Portner & Yabushita (1998), that specificity has to do with the indefinite's interaction with a topical domain (note similarities with the proposals of Enç 1991, Cresti 1995, and Schwarzschild 2000). In this conception, specificity is a matter of degree: the narrower the topical domain, the more specific the indefinite. More precisely, sentences containing specific indefinites will be understood as involving ordinary existential quantification in combination with a topical domain function:

- (1) [Top_i [Mary met a_i certain man]]
 $\exists x[(f_i \cap \text{man})(x) \ \& \ \text{met}(m, x)]$
- (2) [Top_i [Every professor rewarded every student who read some_i book he had reviewed for the *New York Times*]] (Kratzer 1998)
 $\forall x[\text{professor}(x) \supset \forall y[(\text{student}(y) \ \& \ \exists z[(\text{book} \cap f_i(x))(z) \ \& \ \text{read}(y,z)]) \supset \text{rewarded}(x,y)]]]$

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¹ There are also analyses which treat all indefinites as choice functions (Winter 1997, von Heusinger 2000, for example), but of course in that case specific indefinites can't be analyzed as deriving from a "choice function reading". I'm not sure whether my ideas about topicality could be combined with this pure choice function view to give an explanation of the Chinese data parallel to mine.

This analysis is very similar to the choice function approach. The latter would have (2)' in place of (2):

$$(2)' \quad \forall x[\text{professor}(x) \supset \forall y[(\text{student}(y) \ \& \ \text{read}(y, f_i(x))) \supset \text{rewarded}(x,y)]]]$$

The two ideas are equivalent in the case where $f_i(x)$ in (2) is the characteristic function of a singleton set. If it represents a larger set, the indefinite will be “less specific”; it is hard to judge through intuition whether allowing this possibility is a good thing. Apart from this, the approach in (2) has the significant advantage of not needing to grant indefinites a novel type of meaning, one different from that which they exhibit in non-specific cases. Rather, specificity is the combination of the ordinary semantics for indefinites plus the independently needed pragmatic concept of topic.

2. Evidence from Mandarin Chinese

Mandarin Chinese provides evidence that this approach to specificity is correct. At the most straightforward level, Wu (1998) points out contrasts of the form in (3):

- (3) a. You yi xie xuesheng chuxi.le huiyi. (Wu 1998, ex. (1))
 exist one CL student attend meeting
 ‘There are some students who attended the meeting.’
- b. Xuesheng you yi xie chuxi.le huiyi.
 student exist one CL attend meeting
 ‘Some of the students have attended the meeting.’

The common noun in a quantificational structure may be overtly topicalized, and this leads to a reading involving a pre-established domain of quantification, “specific” in Enç’s sense. (Portner & Yabushita 1998 discuss similar cases in Japanese.) However, this type of data provides only indirect evidence for the idea that specific indefinites without overt topicalization can be explained in a similar way. In this talk, I’ll look for further support based on the interpretation of indefinites whose common noun part has not been overtly topicalized.

I will discuss two types of data involving a semantic interaction between indefinites and another quantificational element, the distributive operator *dou*.

Sec. 2.1. The interpretation of indefinites in the scalar *lian...dou* ‘even...all’ construction.

Sec. 2.2. Some interactions among *mei* ‘every’, *dou* ‘all’, and indefinites, and the effects of these interaction on specificity.

Some key properties of Mandarin:

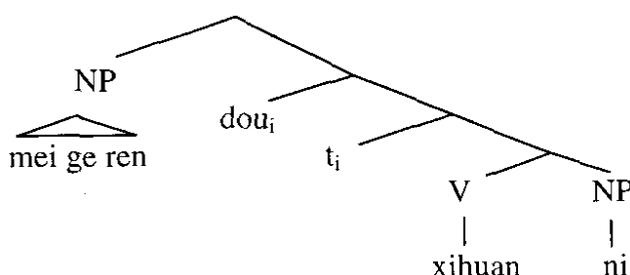
1. Mandarin commonly employs topics, both overtly and covertly.

2. Mandarin does not show scope ambiguity in ordinary active sentences (e.g., S. F. Huang 1981, C.-T. Huang 1982, Aoun & Li 1993, Liu 1997).
3. Cases of apparent scope ambiguity in such sentences actually involve specificity (C.-T. Huang 1993, Liu 1997; contra S.-Z. Huang 1996).

The type of specificity relevant to point 3 (labeled *G-specificity* by Liu) at first glance seems rather broad for our purposes, in that it also includes phrases like *mei*+NP ‘every NP’. However, given their occurrence with the distributive marker *dou*, Lin (1998) shows that these are better treated as involving reference to (or in some cases indefinite quantification over) a group. For example, *mei* (‘every’)+NP refers to the supremum of the set denoted by the NP, $SUP(\| NP \|)$.

- (4) Mei ge ren / zhe xie ren dou xihuan ni.
 every CL person this CL person DM like you
 ‘Everyone likes you.’/‘everyone in this group of people likes you.’

$$\| dou \| = [\lambda P . \lambda G . \forall y [(C(y) \& G(y)) \supset P(y)]]$$



$$\| [dou([\lambda x . like(x, you)])](mei(person)) \| \approx \forall y [(C(y) \& SUP(person)(y)) \supset like(y, you)]$$

The ability to associate with the distributive marker *dou* can be seen as diagnostic for *G-specificity*, except for some complex cases which we’ll discuss in section 2.1. In addition, *dou* has some other properties we’ll need to keep in mind. The example in (5)-(12) below are from Liu (1997).

The associate of *dou* can be a sentence-initial topic:

- (5) Quanbu de laoshi wo dou yujian.le.
 all DE teacher I DM meet.ASP
 ‘I met all of the teachers.’

Contrasting with (5), *dou* must follow its associate:

- (6) *Wo dou yujian.le quanbude laoshi.
 I DM meet.ASP all DE teacher

Dou is obligatory with certain determiners (with an exception to be discussed in section 2.2):

- (7) Mei ge ren *(dou) xihuan Laowang.
 every CL person DM like Laowang
 ‘Everybody likes Laowang.’

Dou’s associate can be a referential noun phrase:

- (8) Women dou mai.le yi zhang hua.
 We DM buy.ASP one CL picture
 ‘We all bought a picture.’

Dou’s associate must be plural (with certain exceptions discussed in section 2.1 below):

- (9) *Wo dou mai.le yi zhang hua.
 I DM buy.ASP one CL picture

With a few interesting exceptions to be discussed below, *dou*’s associate must be what Liu calls “G-specific”. This explains the facts in (10)-(12). First, *liang ge xuesheng* (‘two CL student’) can only be interpreted as ‘both students’:

- (10) Liang ge xuesheng dou pao.le.
 two CL student DM run.ASP
 ‘Both students ran.’

Second, a bare noun is interpreted as a definite:

- (11) Xuesheng dou zou.le.
 student DM leave.asp
 ‘The students all left.’

And third, approximative quantifiers are impossible, as they are plausibly incompatible with a specific interpretation:

- (12) *San dao wu ge xuesheng dou pao.le
 three to five CL studentDM run.ASP

2.1 The *lian...dou* Construction

Though in general *dou* doesn’t associate with singular NPs, in a few cases it may. The scalar *lian...dou/ye* construction in (13) is one example; also possible are similar sentences without *lian*, as in (14).

- (13) Lian wo dou/ye zhidao.le, ta dangran zhidao.(Liu 1997:96)
 even I DM/also know.ASP he of course know
 ‘Even I have come to know it, of course he knows it too’
- (14) Wo yi ge ren dou bu jie dai.
 I one CL person DM NEG host
 ‘I didn’t host a single person.’

These indefinite+*dou* constructions show that the domain of quantification for indefinites may be represented via a possibly covert topic, thus supporting the proposed analysis.

In these examples, *dou* can be seen as having its ordinary meaning, but contributing this meaning to the sentence’s implicature, rather than its truth-conditional semantics. We’ll focus on the examples with *lian* here.

Example (15a) shows an instance in which *dou*, in a *lian...dou* structure, appears to associate with, and quantify over, the sentence’s topic. (15b) is a similar case in which the topic is, according to Liu (1997), covert:

- (15) a. Wo de pengyou lian yi ge dou mei lai.
 I DE friend even one CL DM NEG come
 ‘As for my friends, not even one has come.’
- b. (Wo) lian yi ge ren dou bu jian. (Liu 1997: 97)
 I even one CL person DM NEG see
 ‘I don’t even see a single person.’

Notice that *lian*+indefinite is an NPI.²

- (15) c. *Wo lian yi ge ren dou jian.
 I even one CL person DM see

(15c) shows that it won’t quite do to say simply that *dou* in (15a) quantifies over the set of friends. If we simply say that (15a) means ‘all of my friends haven’t come’, there is no reason why (15c) couldn’t be interpreted in a similar way as ‘I see everyone’. Instead, we need to take into account the scalar nature of *lian*, making clear that the NP marked by *lian* is ranked at as ‘least likely’ of all of the elements quantified over by *dou*. This works out in a reasonably straightforward fashion with (13), where the element marked by *lian* is referential, but in the *lian*+indefinite cases like (15a), it’s unclear how to place the quantifier *yi ge (ren)* (‘a person’) into a scale with the set of individuals (or property of individuals) denoted by *wo de pengyou* (‘my friends’). Thus, a more sophisticated account is called for.

² As pointed out to me by Jingqi Fu (p.c.), example (15c) can occur on a modalized reading like ‘I am willing to see even one person.’ In such a case, the implicit modal would presumably license *lian yi ge ren*. A slight modification of (15c) which disallows such an interpretation is (i):

(i) Lian yi ge ren dou kan *(bu) jian. / even one CL person DM look NEG see

(16) outlines a basic semantic analysis for *lian...dou*, based on the idea that, when *lian* marks an indefinite, *dou* quantifies over a set of alternative domains of quantification for this indefinite:

- (16) D_i [[*lian* X] [*PRED* ...*dou*_{*i*}...]], D an implicit topical set of alternatives to X and X at the extreme end of a contextually given scale on D:
 (i) asserts *PRED*(X).
 (ii) implicates $\forall x \in D$ [*Pred*(x)].

Here, the topical set consists of alternative domains of quantification for *yi ge ren*. Via *lian*'s scalar implicature, each of these is wider than the original domain $person \cap C$. Then, *dou* quantifies over this set, as illustrated in the following analysis of (15b):

- (17) Assertion: $\sim \exists y$ [$person \cap C(y)$ & see(I, y)]
 Implicature: $\forall X \in D$ [$\sim \exists y$ [$y \in X_i$ & see(I, y)]],
 where $D \subseteq \{X : X \text{ is a group of people}\}$ and the elements of D are ranked as in:
 $\langle person \cap C < \dots < \{x : x \text{ is a person of whatever sort}\} \rangle$.

Notice that *yi ge ren* ('one person') is interpreted under the scopes of negation and *dou*, so that *dou* quantifies over the set X of alternative domain sets. Though *dou* is not quantifying over the object's denotation $\|yi ge ren\|$, this noun phrase must nevertheless precede it. I propose that this is so for syntactic reasons: in general, *dou* must follow a noun phrase associated with what it quantifies over. On *dou*'s ordinary usage, this noun phrase directly denotes the set which *dou* quantifies over, as in (4)-(12). But in the pragmatic *lian...dou* case, *dou* quantifies over a set of contextually given alternatives based on the focus structure of this "associate" noun phrase. And when this associate is an indefinite, the alternatives are sets or properties which function as alternative domains of quantification.

The semantic analysis outlined above is supported by the ungrammaticality the corresponding non-negative sentence (15c). If non-negative, the sentence's implicature would be entailed by what it asserts, since if I see a person relative to some small domain D_1 (the assertion), I necessarily see a person relative to any wider domain D_2 (the implicature). This explains *lian yi ge ren*'s status as an NPI.

2.2. A Constraint on Specific Readings

S.-Z. Huang (1996) points out that *mei* 'every' may occur without *dou* if an indefinite occurs in its scope:

- (18) Mei yi ge haizi dou mi yi ge gexing. (Huang 1996: 48-9)
 every one CL child DM take-fancy one CL singing-star
 'Every child takes a fancy to a singing star.'
- (19) Mei yi ge haizi mi yi ge gexing.
 every one CL child take-fancy one CL singing-star
 'Every child takes a fancy to a singing star.'

Moreover, while (18) allows *yi ge gexing* ‘a singing star’ to have a specific interpretation, (19) does not. Thus, it appears that a non-specific indefinite can (but a specific indefinite cannot) serve whatever need of *mei* that *dou* otherwise does.

The fact that only non-specific indefinites license *mei* can be explained in terms of the idea that this licensing sets up a dependency between the *mei* NP and the indefinite. This dependency can be represented using the notion of domain function. This in turn supports the analysis of specificity in terms of the properties of such a domain function.

Huang takes this pattern as evidence that specific readings in Mandarin are actually cases of wide scope indefinites. She proposes that *mei* ‘every’ must have an indefinite in its scope and assumes that *dou* is a type of temporal indefinite. Her idea runs counter to the arguments that Mandarin SVO sentences do not, in general, exhibit scope ambiguity.³

Supporting evidence comes from *ba* sentences. Using *ba* allows an object to be positioned before the verb, and requires that this object receive a specific or definite interpretation:

- (20) Mei yi ge xuesheng *(dou) ba yi/zhe ge laoshi dezui.guo.
 every one CL student DM BA one/this CL teacher upset.ASP
 ‘Every student upset a/this teacher.’

Yi ge laoshi is always specific in this structure, as confirmed by the fact that *dou* is obligatory. Yet it is able to vary with the subject, and on this reading the sentence implies that each student has upset a particular teacher, e.g. just one in her/his life. This shows that the sense of specificity for the object associated with the presence of *dou* is not wide scope, but rather is better analyzed in terms of a functional relationship, as in the present theory or the choice-function approach.

In terms of the idea that *dou* is typically needed in conjunction with *mei* because *mei* requires a distributor, we would interpret (18)-(19) as showing that non-specific indefinites can introduce a distributive operator parallel to *dou*. This might be something like a null version of *each* in *The girls met a boy each*.

- (21) [Mei yi ge haizi]_i [DM_i [_{t_i} mi [yi t_i ge gexing]]]



every one CL child DM t fancy one t CL singer

³ See Liu (1997: 54-63) for a clear discussion. A compelling point is that if we replace *yi ge gexing* with an NP that doesn't support specificity (non-G-specific in Liu's terms), the result is not ambiguous in the way (18) is:

(i) Mei ge xuesheng dou dadui.le suiduodao ti. (Liu 1997: 63)
 every CL student DM answer-correctly.ASP ten:more:CL question
 ‘Every student answered about ten or more questions correctly.’

Here, the movement of *dou* and its coindexation with the subject represents the dependency between universally quantified subject and indefinite object which licenses the subject and simultaneously renders the specific reading unavailable. Note that the derivation in (21) leads to a structure in which the subject is coindexed with a trace inside the indefinite (as well as its own trace inside the verb phrase)⁴. I propose that such a trace is interpreted as an argument of the indefinite's domain function (roughly, "a singer particular to t_i "). Thus, if the indefinite is associated with a topical domain function, we have the following:

- (22) $TOP_j [Mei.yi.ge\ haizi]_i [DM_i [t_i\ mi\ [y_i\ t_i\ ge\ gexing]]]$
 $DM([\lambda x . \exists y[(f_j(x) \cap singer)(y) \ \& \ fancy(x, y)]])(mei(child)) =$
 $\forall x[(C(x) \ \& \ SUP(child)(x)) \supset \exists y[(f_j(x) \cap singer)(y) \ \& \ fancy(x, y)]]$

The fact that the topical domain function takes as an argument the variable x universally bound by the DM pragmatically implicates that the function varies with x . That is, it is strongly preferred that f_j provides different singers for different choices of children. But this means that the various children do not all fancy the same singer; that is, the indefinite cannot be specific in the strong sense.⁵

One problematic issue has to do with cases parallel to (19) but with a referential subject instead of a universally quantified one:

- (23) *Zhe xie haizi xihuan yi ge laoshi.*
 this CL child likes one CL teacher
 'These children like a teacher.'

Given the analysis above, one might expect that a covert distributive marker inside *yi ge laoshi* could raise to the VP and provide the subject with a distributive interpretation. However, such a reading is not available. I propose that this is because the necessary movement of the distributive marker would not be syntactically licensed; more precisely, since *zhe xie haizi* ('this CL child'), in contrast to a universally quantified subject like *mei yi ge haizi* ('every one CL child') in (19)/(21), does not syntactically require a distributive marker, there is no syntactic motivation for such a movement in (23). Under a minimalist conception of movement, if a movement operation is not necessary, it is impossible. Thus, in a case of "merge over move", the only way to get a distributive reading of the subject in (23) would be to have the distributive marker *dou* directly generated on VP.

⁴ Aoun & Li (1993) argue, based on the lack of scope ambiguity in SVO sentences, that Chinese subjects originate in the IP domain. If this is correct, a slightly more complex interpretation for the distributive marker in (21) would be needed. The opposite position with regard to VP internal subject in Chinese has been argued as well.

I would also point out that treating the relationship between the indefinite and DM in terms of movement is only a matter of convenience. We could express the same analysis in terms of the idea (Choe 1987) that when distributivity is marked (here on the "distributed share", in Choe's terminology), this simply signals that a distributive operator is to be introduced in the semantics.

⁵ It could, however, be intermediate-scope specific like (2)

3. Conclusion

We have seen evidence that (i) an overtly topical domain for an indefinite leads to specificity, (ii) the co-occurrence of *dou* with indefinites can be understood in terms of a covert alternative-set of domains, and (iii) the fact that specific indefinites cannot license *mei* 'every' can be explained in terms of introducing a dependency between the *mei* NP and the indefinite's domain function. Together these three points lend support to the hypothesis that a topical domain function is often present with indefinite NPs in Mandarin, and that specificity or non-specificity results from its properties.

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