

# SPECIFICITY AND THE LICENSING OF SUBJECTS IN MANDARIN SENTENCES

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## 1. Introduction

In this work, we consider the question of how the TP is labeled in Mandarin. Chomsky (2013, 2015) proposes that when two maximal projections XP and YP are merged, either one of them must move away, or a feature shared by XP and YP is selected as the label; for instance, the TP in English is labeled  $\langle \phi, \phi \rangle$  and a *wh*-clause  $\langle Q, Q \rangle$ . Mandarin is a language without  $\phi$ -feature agreement; it is therefore a question how the grammar of Mandarin labels the TP. We argue that the subject DP and TP of a Mandarin sentence indeed share a feature: *specificity* -- the finite tense T in Mandarin sentences must denote a specific time interval, and, the subject in Mandarin sentences must be definite or specific. We therefore propose both the T and the subject DP in a Mandarin sentence share the specificity feature SPE, so the Mandarin TP is labeled  $\langle \text{SPE}, \text{SPE} \rangle$ . We draw evidence for the following phenomena: (i) the finite tense island for quantifier scope in Mandarin and (ii) the definiteness or specificity requirement of Mandarin subject DP. We also suggest some extensions of our theory. First, since specificity is not referential in nature and does not require a one-to-one correspondence like  $\phi$ -features, the labeling algorithm permits multiple DPs to merge to a TP, resulting in recursive labeling of TP, generating sentences with multiple subjects. Second, there are other analytic languages in the greater East Asian region that lack  $\phi$ -feature agreement, too, such as Vietnamese and Thai. It is expected that they may use the specificity feature SPE to label TPs. This expectation appears to be true: both Vietnamese and Thai exhibit the definiteness/specificity effect with the subjects, and they also permit multiple subjects in a sentence.

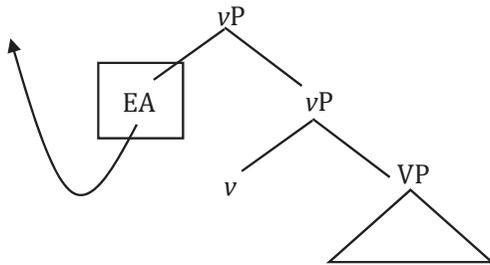
This paper is organized as follows. Section 2 introduces the question of labeling of TP. Section 3 argues for the specificity of the tense and the subject DP in Mandarin sentences. Section 4 provides a further explication for the labeling of TP in Mandarin sentences. Section 5 discusses possible extensions of the proposed theory.

## 2. Labeling

Chomsky (2013, 2015) adopts the anti-symmetry approach to structure building (Kayne 1994) and proposes that symmetry-breaking motivates movement (Moro 2000). In addition, the theory of projection also changes significantly. In the framework of Chomsky (1995), when two syntactic objects  $\alpha$  and  $\beta$  are merged, either  $\alpha$  or  $\beta$  projects. In the framework of Chomsky (2013, 2015), Merge is defined as a simple operation of set formation, and a labeling algorithm LA determines the label, i.e. the identity, of the set. Several sub-cases are distinguished. When

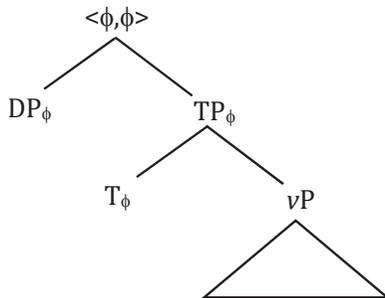
a head H is merged with a maximal projection XP, the head H projects and labels the new syntactic object. When two maximal projections XP and YP are merged, one of two situations happens. In the first situation, since XP and YP form a symmetrical structure, LA cannot determine the label of the resulting syntactic object, and one of the two maximal projections must be moved away to break the symmetrical structure. Suppose that XP moves. This leaves YP in place, and the label of the structure is still YP. An example is the merger of the external argument to *v*P, as in (1).

(1)

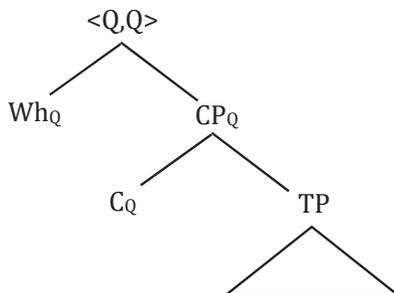


In the second situation, a *riterial feature* is retrieved from both XP and YP; the feature helps to “freeze” XP in place and serves to label the resulting syntactic object (Rizzi 2010, 2016; Chomsky 2013, 2015). TP and interrogative CP are examples. Chomsky (2013, 2015) suggests that the external argument (the subject DP) and the TP to which it is merged share the  $\phi$ -features, so the TP in English is labeled as  $\langle \phi, \phi \rangle$ , as in (2). In an interrogative CP, where a *wh*-phrase is merged to a CP, the feature Q is shared by both the *wh*-phrase and the interrogative C. Thus, an interrogative CP is labeled  $\langle Q, Q \rangle$ , as shown in (3).

(2)

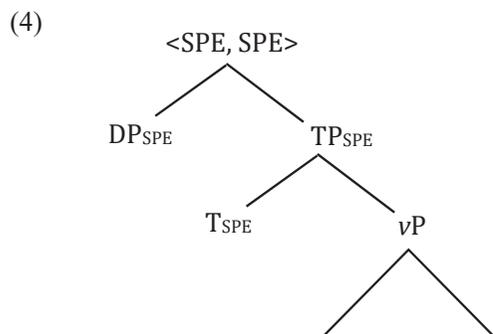


(3)



Now we ask the following question. In languages that have no  $\phi$ -feature agreement, how can a TP be labeled? Mandarin (and other analytic languages such as Vietnamese and Thai) is known to lack both case and agreement (Markman 2009, Lin 2011). Mandarin is argued to have syntactic tense (Sybesma 2007, Lin 2011, 2015), which projects a TP. How is the Mandarin TP labeled? What feature helps to freeze the external argument as it is merged to TP?

We suggest that the feature is *specificity*. In particular, we propose that a finite tense in a Mandarin sentence must be specific, and the subject DP of a Mandarin sentence must be definite or specific, too. It is the feature of specificity, SPE, in the subject DP and the finite T that labels the TP in Mandarin.<sup>1</sup> See (4), in which TP is labeled <SPE, SPE>.



In the next section, we will argue for the specificity of the finite T and the subject DP in Mandarin sentences.

### 3. Specificity of T and subject DP in Mandarin sentences

In this section, we look into two sets of phenomena in Mandarin sentences: (i) the finite tense island for quantifier scope and (ii) the subject definiteness/specificity.

#### 3.1. The subject-object asymmetry in quantificational scope

A proposal of Lin (2013) provides evidence for the specificity of the tense in Mandarin sentences. Lin (2013) observes that, though a finite sentence in Mandarin with a quantificational subject and a quantificational object does not exhibit scope ambiguity, they may exhibit scope ambiguity in a nonfinite clause, e.g. the complement clause of a subjunctive verb. Look at the following examples.

- (5) a. Mou-yige yisheng zhaogu mei-yige bingren.  
 certain-one.CL doctor take.care every-one.CL patient  
 ‘A certain doctor took care of every patient.’ ( $\exists > \forall$ ,  $*\forall > \exists$ )

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<sup>1</sup> Our current analysis does not directly account for how a non-finite TP or a stative sentence in MC is labeled. We will see how our analysis for labeling finite MC TP can account for them for future research.

- b. Yuanzhang yaoqiu mou-yige yisheng zhaogu  
 director ask certain-one.CL doctor take.care  
 mei-yige bingren.  
 every-one.CL patient

‘The director asked that a certain doctor take care of every patient.’ ( $\exists > \forall$ ,  $\forall > \exists$ )

In (5a), the existential subject asymmetrically scopes over the universal object. In (5b), where the same clause as (5a) is embedded under the subjunctive verb *yaoqiu* ‘ask’, either the existential subject or the universal object may take the wide scope over the other. A major difference between (5a) and (5b) is that, in (5a), the quantifiers occur in a finite context, whereas in (5b), they occur in a nonfinite context. Scope ambiguity arises in (5b) but not in (5a). Lin (2013) provides the following explanation for this contrast. It is assumed that the finite tense in Mandarin sentences denotes a specific time interval, and the projection of the tense, namely TP, constitutes a *specificity island* and exhibits the specificity condition effect (see Fiengo and Higginbotham 1981 and Manzini 1992, among others; see also Huang 1982 for the proposal of factive island). The parametric difference between English and Mandarin, according to Lin (2013), is that the tense in English sentences is located in C (and is inherited by T; see Chomsky 2013, 2015), whereas the tense in Mandarin sentences is located in T. As a consequence, TP is a specificity island in Mandarin, while CP is a specificity island in English. Since a quantificational object needs to QR to TP to out-scope the subject, when a quantificational object in a Mandarin sentence QRs to TP, it necessarily violates the specificity condition (as adjunction to TP amounts to moving outside of TP, as not all segments of the category TP dominates the quantifier; see May 1985, Chomsky 1986, Kayne 1994, among others). Thus, a quantificational object in a Mandarin sentence can only QR to  $vP$  and take the narrow scope relative to the subject. In sentences like (5b), on the other hand, the quantificational subject and object are in an embedded clause with a subjunctive tense. Since the subjunctive tense denotes an indefinite future-oriented time rather than a specific time interval, a subjunctive clause does not form a specificity island. So, the embedded quantificational object can QR to the embedded TP and scope over the embedded subject. See the following examples for demonstration.

- (6) a. \* $[_{TP} \text{Object}_i [_{TP} \text{Subject } T_{\text{FINITE}} [_{vP} \dots \text{Verb } e_i]]]$   
 (Violating the specificity condition)  
 b.  $[_{TP} \text{Object}_i [_{TP} \text{Subject } T_{\text{NON-FINITE}} [_{vP} \dots \text{Verb } e_i]]]$   
 (Not violating the specificity condition)

What is important is that, if Lin’s (2013) theory is correct, the tense of a finite clause in Mandarin must be specific, because only a specific head projects a specificity island. Thus, this provides evidence for the proposal that the tense in Mandarin sentences is specific.

### 3.2. Definite/specific subjects

Li and Thompson (1981: 20) note that subjects, topics, and objects that are pre-posed to pre-verbal positions in Mandarin sentences need to be definite or specific. For example, the

unaccusative verb *lai* ‘come’ in the following sentences may take the theme argument *ren* ‘person’ either pre-verbally or post-verbally, but *ren* has to be interpreted as definite when it appears pre-verbally.

(7) a. Ren lai le.  
 person come PERF  
 ‘The person(s) has/have come.’

b. Lai-le ren le.  
 come-PERF person PERF  
 ‘Some person(s) has/have come.’

Tsai (2001: 129-130) also observes that an indefinite numeral subject is unacceptable in Mandarin, in sharp contrast with the case of English:<sup>2</sup>

(8) A man arrived yesterday.  
 a. A certain man arrived yesterday. (specific)  
 b. One man (rather than two) arrived yesterday. (nonspecific)

(9) ?Akiu yiwei yige ren dao le  
 Akiu thought one.CL person arrive PERF  
 ‘Akiu thought a certain person arrived.’ (?specific reading; \*nonspecific reading)

These phenomena show that Mandarin does not permit non-specific or indefinite subjects. The subjects must be either definite or specific.<sup>3</sup>

To conclude, we have shown that the tense of the Mandarin sentences is specific, and the subject of Mandarin sentences is definite or specific. Thus, specificity is a shared feature of T and the subject DP of Mandarin sentences.

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<sup>2</sup> The grammatical judgments of (7)-(8) are from Tsai (2001).

<sup>3</sup> An exception is predicates that semantically license a quantity subject. The following examples are from Li (1998: 695).

(i) a. Sanzhi gunzi gou ni da ta ma?  
 three.CL stick enough you hit him Q  
 ‘Are three sticks enough for you to hit him (with)?’  
 b. Sange baomu jiu zhaogu ni yige xiaohai a?  
 three.CL babysitter only care you one child PART  
 ‘Three babysitters took care of you, only one child?’

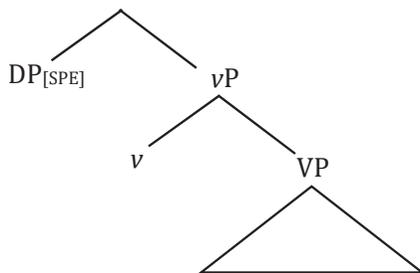
For details, see (Li 1998).

#### 4. Specificity as the label of Mandarin TP

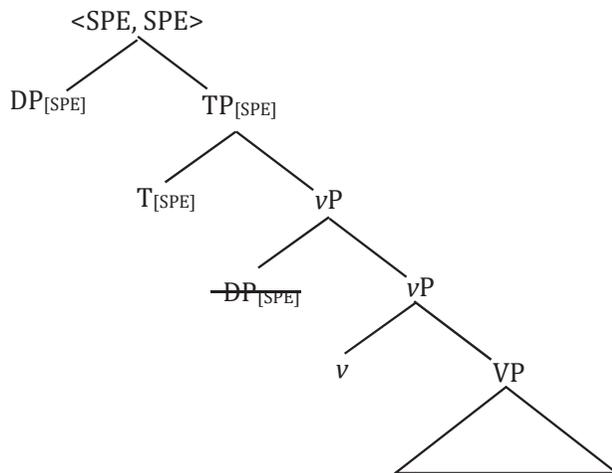
Having shown that specificity is a shared feature of T and the subject DP of Mandarin sentences, we propose that the feature of specificity, SPE, labels the Mandarin TP. One might question whether specificity, a semantic attribute, is an appropriate feature to be used in syntactic operations. We have several reasons to believe that this is warranted. First, the specificity effects in English and the finite tense island in Mandarin indicate that specificity, empirically, can affect syntactic operations. Second, using semantic features in syntactic operations is not unprecedented. For example, Thompson (2006) argues that the checking of the feature [bounded] in the projection AspP determines the telicity of a sentence (also see MacDonald 2008). Alexiadou (2005) (and also references cited therein) assumes that the feature of definiteness participates in Spec-Head agreement in genitive constructions. Thus, there is no a priori reason to exclude the feature of specificity from syntactic operations.

We suggest the following derivation for the labeling of Mandarin TP. When the subject DP is merged to vP, a symmetrical configuration is created. See (10a). Since there is no feature shared by the two maximal projections, one of them, specifically the subject DP, must move away. Along with the merger of the head T, the subject DP moves to TP. Now the same symmetrical configuration obtains. But now, the feature SPE is available in both the subject DP and TP. LA searches and selects SPE, and labels the resulting syntactic object as <SPE, SPE>. This is shown in (10b).

(10) a.



b.

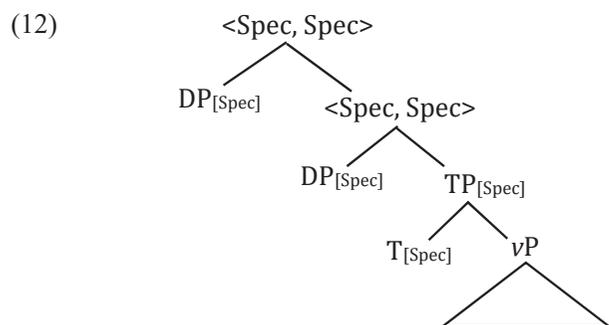


This proposal has the following merits. First, it accounts for the grammatical phenomena in Mandarin discussed in the previous section, namely the specificity island effect of the finite tense clause, and the definiteness-specificity of the subjects of Mandarin sentences. They have been seen as separate phenomena independent of each other, but under the present proposal, they are unified in a principled account along with the labeling of the Mandarin TP.

Second, this theory can provide a basis for an account of the multiple-subject sentences in Mandarin. Li and Thompson (1981: 92-93) note that Mandarin sentences can take two subjects.<sup>4</sup>

- (11) a. Xiang bizi chang.  
elephant nose long  
'Elephants' noses are long / Elephants have long noses.'
- b. Wuge pingguo liangge huai le.  
five.CL apple two.CL spoil PERF  
'(Of) the five apples, two are spoiled.'
- c. Jiaju jiu-de hao.  
furniture ole-NMZ good  
'[Regarding] furniture, old ones are good.'

We suggest that multiple subjects are possible in Mandarin sentences because the feature of specificity does not require one-to-one correspondence. In English, the TP is labeled by the  $\phi$ -features. The  $\phi$ -features are referential in nature and can function as a pronominal (Alexiadou and Anagnostopoulou 1998). Thus, they require one-to-one correspondence with the nominal that they agree with. But the feature SPE in Mandarin does not require one-to-one correspondence. Specificity is a feature that restricts the possible denotation of a nominal; it is not referential itself. As a consequence, additional subjects can be merged to a TP with recursive labeling of  $\langle$ SPE, SPE $\rangle$  as long as the subjects are definite or specific.<sup>5</sup>



<sup>4</sup> Li and Thompson call them “double-subject sentences.”

<sup>5</sup> We assume that the acceptability of multiple subjects in a Mandarin sentence and the possible semantic relation between the subjects are determined by semantics and world knowledge, which is not directly relevant to the recursive labeling of TP and the feature SPE.



this work.<sup>8</sup>

Japanese is also a language that permits multiple subjects in a sentence. (See Kuno 1973; also see Kishimoto 2017.) See the following examples, where the subjects are marked with the nominative case marker *-ga*.

- (15) a. Zoo-ga hana-ga naka-i.  
elephant-NOM trunk-NOM long-PRES  
'As for the elephant, its trunk is long.'
- b. Bunmeikoku-ga dansei-ga heikinzyumyoo-ga mizika-i.  
civilized.country-NOM man-NOM average.life.span-NOM short.PRES  
'It is in the civilized countries that males' average life span is short.'

Saito (2016) argues that case in Japanese is an "anti-labeling device," in the sense that an XP that is marked by a case is invisible to the search of LA. That is, when  $\alpha$  and  $\beta$  are merged to form  $\gamma$ , if  $\alpha$  is marked with case, this makes  $\alpha$  invisible for labeling and  $\beta$  provides the label for  $\gamma$  (Saito 2016: 131).

- (16)  $\gamma = \{\alpha\text{-Case}, \beta\}$

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<sup>8</sup> There are actually occasions in which a numeral subject in Mandarin can take a quantity reading. In the following example, the subject of the answering sentence denotes a quantity rather than two specific students.

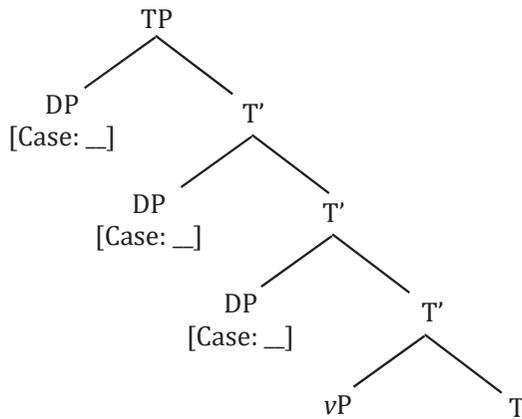
- (i) a. Duoshao xuesheng lai le?  
how.many student come PERF  
'How many students have come?'
- b. Liangge xuesheng lai le.  
two.CL student come PERF  
'Two students have come.'

This reminds us of Li's (1996) proposal, that number expressions should be divided into two groups with respect to two different interpretations: (i) a quantity interpretation or (ii) a non-quantity indefinite individual-denoting interpretation. According to Li, quantity-denoting number expressions can occur in the topic and subject positions, whereas individual-denoting number expressions cannot. This explains why when having a quantity reading, a numeral subject as shown in (ib) is allowed.

In such sentences, however, the subject is still not an indefinite. Note that the quantity reading of the subject in (ib) comes as an answer to the preceding question sentence, which inquires about the number of students that have come. Thus, the quantity reading of the subject of (ib) should be understood as a *focus expression* that excludes other possible quantities. In the focus reading, the subject numeral is not an indefinite (because a focus nominal is a strong quantifier), even though it denotes a quantity. Tran, N. Phan (personal communication) points out that numeral subjects in Vietnamese exhibits the same phenomenon.

Saito analyzes the multiple subject construction in Japanese in the following way. He adopts Bošković's (2007) theory that a DP can probe a head for case valuation. In Japanese, a multiple-subject sentence has the following structure (Saito 2016: 135):

(17)



Since case is an anti-labeling device, the DP subjects in the structure are not visible to LA; the syntactic object created by the merger of each DP is recursively labeled as T' or TP. The DP subjects then probe the case value provider T and have their case features valued as nominative.

To conclude, we suggest that languages may use features that are available to them for labeling purposes, which may be different from language to language. In English,  $\phi$ -features are available for T and the subject DP, so it is used as the criterial feature for the labeling of TP. Mandarin has no  $\phi$ -feature agreement; however, the feature of specificity is available, and therefore it is employed for the labeling of TP in Mandarin. Some languages, nevertheless, might fall outside of the scope. Same as Mandarin, Japanese is also a language that lacks  $\phi$ -feature agreement. As proposed by Saito, it is likely that Japanese labels its TP via another mechanism, namely the anti-labeling device. There are many interesting questions that bear on this issue; we will leave them for future studies.

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