Evidence for Tense Heads in Mandarin Chinese (Beijing Dialect) [*]

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1. Introduction

That Mandarin Chinese doesn't have a syntactic projection of Tense has been argued by Cheng and Tang (1996). Recent works by Sybesma (2004), and Nghia (2006), Tsai (2006) argue for the existence of Tense in Cantonese and Mandarin respectively. The present paper argues for the existence of Tense by presenting evidence from sequence of tense phenomenon seen in temporal words such as *jing-tian* 'to-day', *san tian qian* 'three days ago/before', and their syntactic structures. Data are drawn from the variety of Mandarin spoken in Beijing (a Northern Mandarin dialect, henceforth BJD).
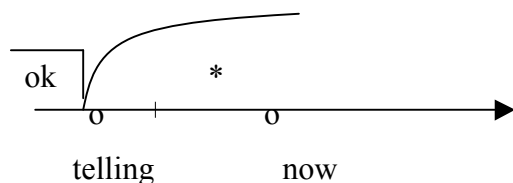
1.1   The Need of a Node for Tense

In BJD, one finds in indirect speech, where a Past tense is embedded under another Past tense, a sentence like (1).

(1)   *Nana gaosu wo ta   ma   qu Xinjiang le*.
         Nana tell   I   3sg mom go Xinjiang le2
         'Nana told me that her mom went to Xinjiang.'

The embedded 'travelling' event can only be interpreted as having taken place before the '*telling*' event in the matrix clause. It cannot be interpreted as *travelling* after *telling* (2).

(2)

ok   *

o   o

telling   now

If both the matrix past tense and the embedded past tense take their reference from the discourse, we would expect that in (2) interpreting the *travelling* as occurring in the interval between *telling* and *now* would be grammatical. But it is not the case.

The interpretation of the embedded past tense is obligatorily shifted prior to the matrix tense. Therefore, I propose there is a Fin[2] head (analogue to the Comp in Enç, 1987) in the embedded clause, which can make reference to the matrix tense (t_1) and relate the tense of the complement (t_2), and shift t_2 prior and prior only to the matrix tense t_1 in (1).

1.2   Special Lexical Items

Temporal expressions in BJD, such as those listed in (3), can occur between a high speaker oriented adverb and a low manner adverb (4b). However, Cinque (1999: 87) doesn't use temporal adverbs *ieri* 'yesterday', *domani* 'tomorrow' etc. to test the position for T(Past) and T(Future), because they 'cannot appear within the IP functional "space"' in Italian (4a).

(3)   a.   *qu   nian*   b.   *san   dian*
                  go   year   three clock
                  'last year'   'three o'clock'

         c.   *qian tian*   d.   *tou   tian*
                  front day   head day
                  'the day before yesterday'   'the day before/yesterday'

         e.   *ming tian*   f.   *ming tian   wanshang*
                  'tomorrow'   'tomorrow evening'

         g.   *ji   tian qian*   h.   *shi tian qian*
                  several day front   ten day front
                  'several days ago/before'   '10 days ago/before'

         i.   *qian   xie   tian*
                  before some day
                  'several days before/ago'
           ......

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[2] Kuong (2006) argues for the existence of Finiteness in Chinese. However, he considers Chinese as a tenseless language. How to map the Fin (as well as T and Fin*) to the Fin found in Topicalization and left dislocation is left open.

(4)   a.   *Gianni sarà (probabilmente) domani   (stupidamente) licenziato.
             Gianni will (probably)   tomorrow (stupidly)   fired

       b.   keneng   John zuotian   bei xilihutu-de kaichu le.
             probably John yesterday be stupid-ly   fired   le2.
             'Probably John was stupidly fired yesterday.'[3]

1.3 Outline of the Paper

Zuo-tian 'yesterday' types of words are conventionally categorized as Temporal Noun Phrases (Zhu 1982). I will provide evidence for the nominal status of these words in being able to satisfy the [EPP] of Tense (§2.1), and their special syntactic positions (§2.2). Section 3 shows semantic differences of TpNPs in past tense embedded under past tense. We can see two types of TpNPs: the ones that can modify the shifted interval $T(t_2, t_1)$, as well as modify an interval that refers to the Utterance Time (UT t^*), i.e. $T(t_2, t^*)$, are (optional) non-deictic TpNPs; and the ones that can only modify $T(t_2, t^*)$ are deictic TpNPs. Non-deictic reading is defined here as modifying a shifted interval. Section 4 presents the internal structural difference between non-deictic TpNPs and the deictics. A non-deictic TpNP has a preposition *yi* 'by', probing NumP to move from T to Fin, and checks the unvalued Tense [*u*-T] feature in Fin. Deictic TpNPs don't have this predicate, thus don't undergo T-to-Fin movement. In §5, I show that with constituent negation, a non-deictic meaning of TpNPs is not available; all TpNPs behave like deictic TpNPs.

2 TpNPs
2.1 [+N] in TpNPs

Traditionally the temporal expressions in (3) are not considered as adverbs because they can be subjects of a sentence. (The blank '___' in (5) indicates the position for TpNPs).

(5)   a.   *(*zai)* ___   you   ge hao   jiemu.
           (*at) ___   have CL good program
           'There is/have been/will be/was a good program ___.'

       b.   *(*zai)* ___   shi ge hao   tian.
           (*at) ___   be CL good day.
           'It's/It will be/ It was a good day ___.' (i.e. good weather.)

This property makes the temporal expressions look like nouns rather than verbs. However, they are not able to be modified by Numeral-classifiers (6), which gives them a special status in the NP family.

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[3] The on-line database provided by Center for Chinese Linguistics PKU http://ccl.pku.edu.cn:8080/ccl_corpus/jsearch/index.jsp?dir=xiandai is extremely helpful in writing up the present paper.

(6)   a.   *san   ge qian-tian   b.   *san   ge wu tian qian
             three CL before-day   three CL five day before

Therefore, the standard analysis considers them as having a nominal status (i.e. not predicative status Zhu, 1982). I will refer to them as temporal expressions with a [+N] feature (henceforth TpNP), to differentiate them from the temporal adverbs that don't have the ability of being subjects.

2.2 TpNP Must Precede T(emporal) Adverbs

Huang (1990) shows that when adverbs occur in preverbal positions, they generally obey a fixed sequence: Force (incl. probability) >> Tadv >> Quantificational (e.g. *only*) >>… >>Manner>>V. Leaving the problem of negation (Ernst 1995) aside, Yuan (2004) confirms that the adverbial sequence in Chinese matches Cinque's first approximation of the universal hierarchy (the Italian and English internal ones, as in Cinque 1999: 34). However, for Huang and Yuan, TpNPs are temporal words, of different categories from adverbs, thus are not taken into the ordering relation.

       TpNPs must precede the Tadv *ceng-(jing)* 'once-(already) (*once* as in *once upon a time*)' (7a), an adverbial modified modal *jiu yao* 'soon will'[4] (7b) or a preverbal aspectual marker *zheng* '-ing' (7c). The reversed order is ungrammatical (7a', b', c')

(7)   a.   *wo **<u>qian   ji   tian</u> ceng** du   le   ni de lunwen.*
              I   before several day once read le1 you 's paper
              'I'd read your paper some days ago.'

      a'.   **wo ceng <u>qian   ji   tian</u>** du   le ni   de lunwen.*
               I   once before several day read le1 you 's paper

      b.   *wo **<u>mingtian</u> jiu** yao qu Meiguo   le.*
              I   tomorrow soon will go American le2
              'I will go to the States tomorrow.'

      b'.   *wo **jiu** (yao) **<u>mingtian</u>** (yao) qu Meiguo   le.*
               I   soon (will) tomorrow (will) go   American le2

      c.   *wo **<u>xianzai</u> zheng** da   dianhua ne.*
              I   now   -ing call phone   NE
              'I'm making a phone call now.'

      c'.   *wo **zheng <u>xianzai</u>** da   dianhua ne.*
               I -ing   now   call phone   NE

All TpNPs have a PP counterpart, namely with the addition of a preposition *zai* 'at' (8b).

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[4] On the property of Tadv c.f. Lu and Ma (1999).

(8) a.   b.

jin-tian	'to-day'	*zai jin-tian*	'at to-day'
ming-tian	'to-morrow'	*zai ming-tian*	'at to-morrow'

qian   liang tian   *zai qian   liang tian*
before two   day   at before two   day
     'a couple of days ago/before'

liang tian qian   *zai liang tian qian*
two   day before   at two   day before
     'two days ago/before'

san   tian hou   *zai san   tian hou*
three day after   at   three day after
     'after three days/three days later'
…….

     The PPs in (8) behave fairly differently from their TpNP counterparts: they cannot satisfy the EPP and become a subject as shown in (5) and they are much freer than the TpNPs in their linear positioning (9).

(9)   a.   *wo **ceng** zai qian   ji   tian du   le ni   de lunwen.*
              I   once at   before several day read le1 you 's paper
              'I'd read your paper some days ago.'

        b.   *wo zai qian   ji   tian **ceng** du   le ni   de lunwen.*
              I   at   before several day once read le1 you 's paper
              'I'd read your paper some days ago.'

        c.   *?wo **ceng** renrenzhenzhen-de zai qian   ji   tian du   le ni de lunwen.*
              I   once very careful-ly   at   before several day read le1 you 's paper
              'I'd read your paper very carefully some days ago.'

(10)

Subj   _____**Tadv**_____ AspP

        TpNP   ***TpNP**

         PP   PP

     A summary is given in (10) for the distribution of TpNPs in comparison to their PP counterparts. TpNPs have a more rigid position than temporal phrases headed by a preposition. TpNPs must precede T(emporal) adv(erbs), but their PP counterparts can

follow Tadv-s. Although both TpNPs and the corresponding PPs have temporal status ([+TEMP]), only TpNPs have a [+N] feature that can satisfy [EPP] of T. The canonical position of TpNPs is higher than Tadv and lower than the subject.

Some TpNPs denote past intervals, carrying [Past-TEMP] feature. Their interpretation can vary in embedded clause.

3. The Interpretation of TpNPs in Past>>Past Embedded Clause
3.1 The Obligatorily Shifted Specified Interval

One can add TpNPs into a Past tense embedded under Past tense like (11).

(11)   *Shang ge yue,   mama gaosu wo ta _____ qu Xinjiang le.*
       Up   CL month, mom   tell   I   3sg _____go Xinjiang le2
       'Last month, mom told me that she went to Xinjiang_____.'

If we add *qian xie tian* 'several days ago/before' into (11), the embedded clause maintains the obligatorily shifted reading, and specifies the shifted interval (12). Namely in (12) the *travelling* event took place *several days* prior to the matrix *telling* time.

(12)   *Shang ge yue,   mama gaosu wo ta qian   xie   tian qu Xinjiang le.*
       Up   CL month, mom   tell   I   3sg before some day go Xinjiang le2
       'Last month, mom told me that she went to Xinjiang several days before.'

However, sentences (13a) and (13b) show that it is ungrammatical to add *zuo-tian* 'yesterday' and *jin-tian* 'today' into (11).
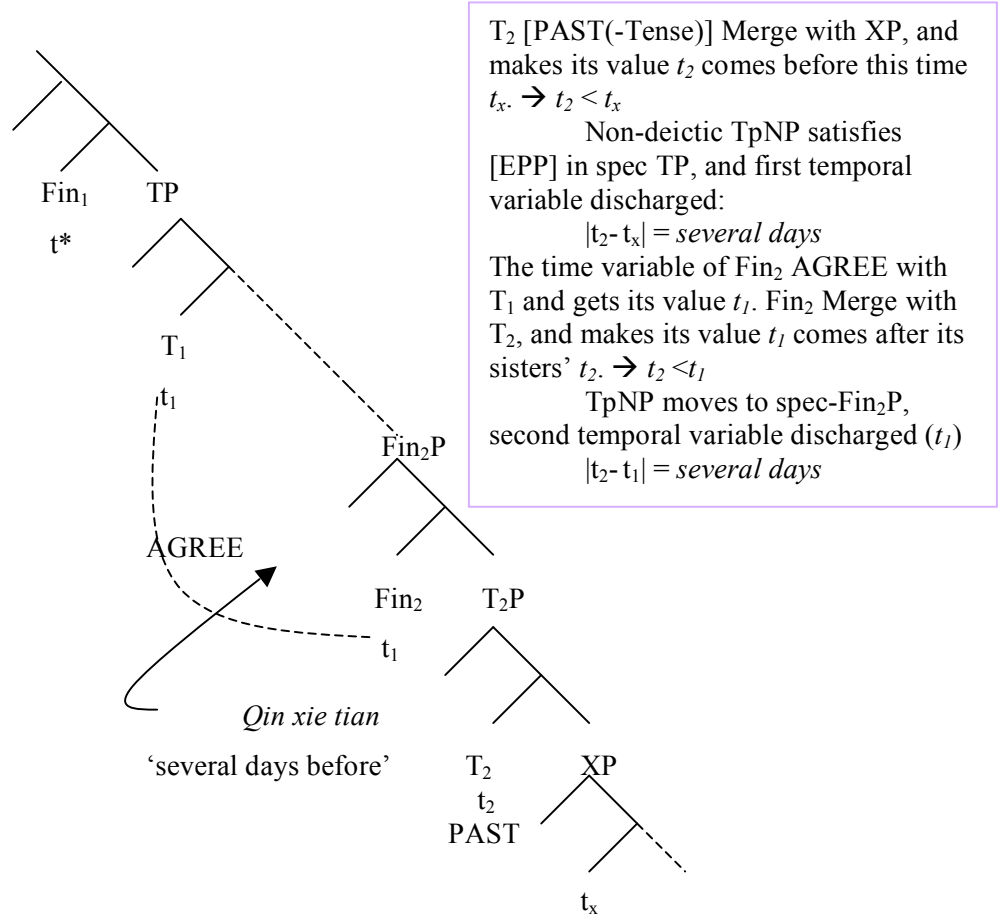
(13)   a.   **Shang ge yue,   mama gaosu wo ta zuo-tian qu Xinjiang le.*
              Up   CL month, mom   tell   I   3sg yesterday go Xinjiang le2

       b.   **Shang ge yue,   mama gaosu wo ta jin-tian qu Xinjiang le.*
              Up   CL month, mom   tell   I   3sg today   go Xinjiang le2

Recall in §1, we saw that the past embedded under another past tense is obligatorily shifted to a time prior to the matrix time t_1. The embedded TpNP in (12) specifies the exact length of the interval T (t_2, t_1): the lexical content of *qian xie tian* 'several days ago/before' bounds the interval. On the other hand, TpNPs such as *zuo-tian* 'yesterday' and *jin-tian* 'today' are lexically specified as relating directly to the UT. In (13a), *zuo-tian* 'yesterday' shifts the complement tense t_2 directly to one day before the UT (t^*). Meanwhile the past tense shifter also anchors on the complement tense, and wants to shift it prior to the value of t_1: *last month*. The embedded tense cannot be simultaneously prior to *last month* and *one day before* the t*, the derivation crashes!

The identification requirement for tense in Enç (1987) is called the Anchoring Principle, namely, "Each tense must be anchored", and the Anchor is its local Comp. In the split CP (Rizzi, 1997) hypothesis, Fin(iteness) is the lowest C head.

In the matrix clause the Fin is valued as the UT (t*), in Past tense, it shifts t_1 prior to t* $(t_1 < t^*)$[5]. In the embedded clause, Fin gets the value of the matrix tense t_1 via Agreement. In Past tense, it shifts the embedded tense t_2 prior to t_1 (the matrix clause).

(14)

T_2 [PAST(-Tense)] Merge with XP, and makes its value t_2 comes before this time t_x. → $t_2 < t_x$

Non-deictic TpNP satisfies [EPP] in spec TP, and first temporal variable discharged:
$|t_2 - t_x| = $ *several days*

The time variable of Fin$_2$ AGREE with T_1 and gets its value t_1. Fin$_2$ Merge with T_2, and makes its value t_1 comes after its sisters' t_2. → $t_2 < t_1$

TpNP moves to spec-Fin$_2$P, second temporal variable discharged (t_1)
$|t_2 - t_1| = $ *several days*

Non-deictic TpNPs have a [+N], they can satisfy the [EPP][6] of T and move to Fin to satisfy the [EPP] of Fin (Taraldsen 2002).

3.2 More on Past>>Past

Now if we change the TpNP in the matrix clause to one that is closer to the UT (15).

(15)   *Shang libai, mama gaosu wo ta _____qu Xinjiang le.*
     Up   week, mom tell   I   3sg _____go Xinjiang le2
     'Last week, mom told me that she went to Xinjiang_____.'

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[5] In the present hypothesis (i.e. Fin>>Tense>>….>>X), I assume there is an unpronounced THE SPEAKER SAID THAT in the matrix finite clause. Christer Platzack (p.c) points out to me a finite sentence relates to the intuition of *saying* a sentence, rather than a sentence that is written out on the blackboard.

[6] The subject, after base generated inside little *v*, could rest in the spec of Topic.

Then adding *qian xie tian* 'several days before/ago' will lead to ambiguity.

(16)   *Shang libai, mama gaosu wo ta   qian   xie   tian qu Xinjiang le.*
          Up   week, mom tell   I   3sg before some day go Xingjiang le2
          'Last week, mom told me that she went to Xinjiang several days before.'
Or   'Last week, mom told me that she went to Xinjiang several days ago.'

The interpretation of (16) can be the (a) *travelling* event happens *several days* prior to the *telling* event or (b) *several days before* 'today'.

      As long as the time denoted by TpNP of the embedded clause precedes the matrix time, deictic TpNP *zuo-tian* 'yesterday' can be licensed and *travelling* happened on *yesterday* (17).

(17)   *jintian zaoshang, mama gaosu wo ta zuo-tian   qu Xinjiang le.*
          today morning, mom tell   I   3sg yesterday go Xinjiang le2
          'This morning, mom told me that she had gone to Xinjiang yesterday.'

      Let me illustrate the ambiguity blocking and unblocking effect with (18) and (19).

(18)   a.   *Shang libai liu, mama gaosu wo ta **liang** tian qian   qu Xinjiang le.*
                Up   week 6, mom tell   I   3sg **two** day before go Xinjiang le2
                'Last Saturday, mom told me that she went to Xinjiang two days before.'

        b.   *Shang libai liu, mama gaosu wo ta **shi** tian qian   qu Xinjiang le.*
                Up   week 6, mom   tell   I   3sg **ten** day before go Xinjiang le2
                'Last Saturday, mom told me that she went to Xinjiang 10 days before.'
or   b'   'Last Saturday, mom told me that she went to Xinjiang 10 days ago.'

(19)   a.

b.
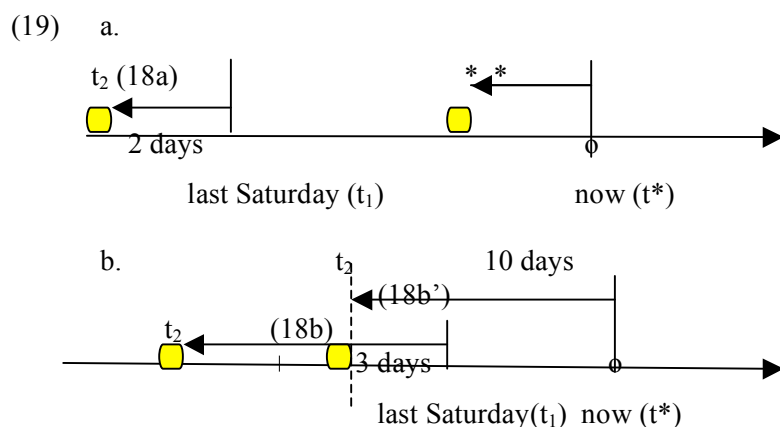
      (18a) and (18b) minimally differ from each other in the TpNP of the embedded clause. (18a, 19a) illustrates the familiar fact that when *two days ago* is not prior to *last Saturday*, it can only get a shifted reading. (18b) and (19b) show as long as the TpNP in the embedded clause denotes an interval (shaded box) prior to the matrix temporal point,

i.e. *10 days ago* is at least *3 days* further back than *last Saturday*, the meaning of *10 days before the UT* can survive. And the other shifted meaning, *10 days before* the matrix time is also available. Ambiguity arises.

Past tense (T-PAST) shifts the embedded time prior to the matrix time. Non-deictic TpNPs can modify this shifted intervals; the TpNP that only shifts the embedded time prior to UT are deictic.

In this section, we've seen that in sentences with past embedding past, the embedded evaluation time gets an obligatorily shifted reading if no TpNPs is present. If the embedded clause has a TpNP, then when the time that is TpNP shifted ($|t_2\text{-}t_x|$) is prior to the time that is past tense shifted ($|t_2\text{-}t_1|$), both deictic meaning and non-deictic TpNPs can be licensed. Deictic TpNPs don't lead to ambiguity; while non-deictic TpNPs can have both a shifted and a simultaneous reading. If the time that is TpNP shifted ($t_2\text{-}t_x$) is **not** prior to the time that is past Tense shifted ($t_2\text{-}t_1$), only non-deictic TpNPs can be licensed, with an obligatorily shifted reading.

4. Internal Structures of (Obligatorily) Deictic and (Possibly) Non-deictic TpNPs

Tian 'day', *nian* 'year', *zhou* 'week' are temporal classifiers in Mandarin. They can co-occur with numerals and demonstratives (20).

(20)   *Zhei wu tian/nian/zhou (shijian)   zhuan-yan   jiu   guo qu le*.
       This five day/year/week (time)   twinkle-eye   soon   pass go ASP.
       'The five days/years/weeks (' time) passed away in the twinkling of an eye.'

Xingqi, *libai* 'week', *yue* 'month, moon', *shiji* 'century' are nouns that require a classifier *ge* (21).

(21)   *Zhei liang ge xingxi/yue   /shiji   hen leng*.
       This two   CL week/moon/century very long
       'These two weeks/months/centries are very long.'

Obligatorily deictic TpNPs, i.e. those that are not able to modify a shifted interval, are formed out of *tian* 'day', *xingqi* 'week', *nian* 'year' by having an extra modifier (22).

(22)   a.   *jin-tian*, 'to-day' *zuo-tian*, 'yesterday', *ming-tian* 'to-morrow'
       b.   *zhei libai* 'this week' *zhei zhou* 'this week'
       c.   *ben zhou* 'this week'

The prenominal (noun/classifier) modifiers can have the same form as demonstrative (22b), or elements that are normally postpositions, but are used pre-nominally here (3a, 3c, 3d, 23).

(23)   a.   *Qian nian*   b.   *Shang (ge) libai*
          front year   up   CL   week
          'the year before last'   'last week'

Prenominally, the modifiers share more similarity with absolute adjectives (Sproat and Shih 1991) in being *de*-less (24) and can be modified by *da* 'big' (25).

(24) a. *Qian de nian*   b. *Shang de libai*
    front DE year   up DE week

(25) *Da qian tian*
  big front day
  'three days ago'

Although the degree modification for *shang* 'up' headed TpNP (26) is different from *qian* 'front'[7] (25), since reduplication is a typical derivation for adjectives to be degree modified, *shang* 'up' in TpNPs can still be considered as adjective.

(26) a.	*Shang shang (ge) libai /xingqi*	b.	*Shang shang zhou/yue*
	up up CL week		up up week/month
	'the week before last'		'the week/month before last'

All of the deictic TpNPs share a property as the modifier (demonstrative or adposition) of the noun/classifier is to the left of the noun/classifier, the canonical position where adjectives occurs (27a).

(27) a. *qian* NP   (obligatory deictic)
   b. NumP *(yi) qian* (optional non-deictic)

In the optionally non-deictic TpNPs, the adposition appears postnominally with an optional morpheme *yi* (27b, 28).

(28) a. *San nian (yi)-qian*   b. *Wu ge yue (yi)-qian*
     three year (by)-front   five CL month (by) front
     'three years a-go/be-fore'   'five months a-go/be-fore'

The optionally pronounced (preposition) *yi* 'use, by' in non-deictic TpNPs, probing (Kayne 2004) for the NumP, triggers the movement of NumP (29).

(29) (yi) [*qian* NumP] → move NumP to the spec of *yi* 'use, by'
   NumP$_i$ (yi) [*qian* t$_i$]

I assume that the structure internal to a DP is the same as that of a CP. In the clausal structure, the non-deictic meaning is derived via two operations on three temporal variables t$_1$, t$_2$and t$_x$. Three heads Fin, T and X are responsible. DP internally, there are

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[7] Correlated with the fact that *shang* 'up' can be used verbally (i).
(i) wo shang ke ne.
    I up class Progressive-ASP
    'I am having a class.'

two adpositions (*qian* 'front' and *yi* 'by') and altogether four pronounced lexical items: Numeral, classifier/noun, *yi* and *qian*. Taking Partee (1973)'s intuition on the similarity between Tense and DP (pronoun) and the proposed analogy of Pesetsky and Torrego (2001) in Ioannidou and den Dikken (ms), part of the DP structure assumed here has the following heads: D (FinP), D_x (TP), A (XP), Num (Asp), CL(assifier) (Asp) and NP.

The derivation of (28a) is illustrated in (30).

(30) $[_{CLP}$ *nian*$_i$ 'year' $[_{PP}$ *san* 'three' $[_{P'}$ *qian* 'front' $[_{NP}$ t$_i$]]] $\rightarrow$ Move *san* 'three' to spec-Num, Merge *yi* 'by' as A head, Move *qian* 'front' to spec-A:
$[_{AP}$ *qian*$_k$ 'front' (yi 'by') $[_{NumP}$ *san*$_j$ 'three' $[_{CLP}$*nian*$_i$ 'year' $[t_j$ $[t_k[t_i]]]$ $\rightarrow$ Move *yi* 'by' to spec D_xP, Move the remnant NumP to spec-D:
$[_{DP}[_{NumP}$ *san*$_j$ 'three'$[_{CLP}$ *nian*$_i$ 'year' $[t_j$ $[t_k[t_i]]]]]_l[_{Dx}$ *(yi)* 'by' $[_{AP}$ *qian*$_k$ 'front' $[t_l]]]]$

The DP internal movement of *qian* 'front' to preposition (yi) and the remnant movement of NumP to the spec of the preposition *(yi)* 'by' are realizations of the clausal XP-to-T and T-to-Fin, respectively.

From the derivation of DP structure, we can see the movement of X-to-T and that of T-to-Fin are of different nature. The moved *qian* 'front' governs its trace, namely, in X-to-T, the variables in X and T co-varies. The movement of NumP is remnant movement, in which a moved copy doesn't govern its trace. Therefore in (14) we see the T-to-Fin movement is an operation on two variables (embedded tense and matrix tense).

The generalization in (27b) has one exception: when the numeral is approximative *ji*[8] 'some' or *liang* 'a couple of', *qian* can occur to both sides of the NumP (31).

(31)	a.	*qian*	*ji*	*nian*	b.	*qian*	*liang*	*ge*	*yue*
		front	some	year		front	couple	CL	month
	a'	*ji*	*nian (yi) qian*		b'.	*liang*	*ge*	*yue*	*(yi) qian*
		some	year (of) front			couple	CL	month (of) front
		'some years ago/before'				'a couple of months ago/before'			

Following Kayne (2006), I assume approximatives *ji* have an extra preposition than numerals. The non-deictic meaning is licensed by either overt or covert preposition *yi* 'use, of' or by the preposition in the approximatives.
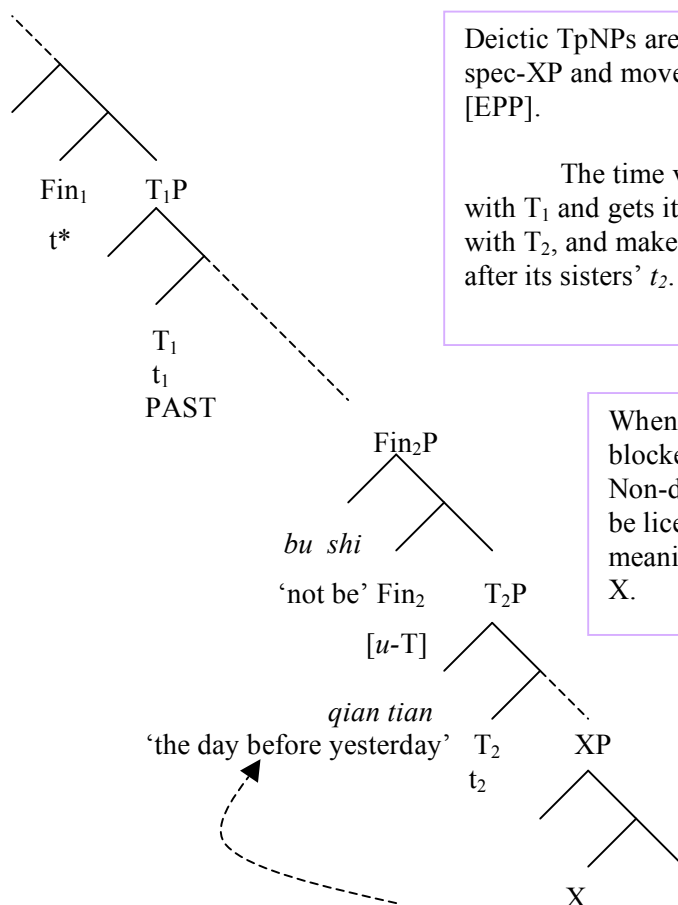
The derivation for deictics (23a) is simpler than that of non-deictic TpNPs (32).

(32) $[_{CLP}$ *nian*$_i$ 'year' $[_{PP}$ $[_{P'}$ *qian* 'front' $[_{NP}$ t$_i$]]] $\rightarrow$ Move *nian* 'year' to spec-CL, Merge A head, Move *qian* 'front' to spec-A:
$[_{AP}$ *qian*$_k$ 'front' $[_{NumP}$ *san*$_j$ 'three' $[_{CLP}$*nian*$_i$ 'year' $[t_j$ $[t_k[t_i]]]$

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[8] *Ji* can be an approximative meaning 'several': *shi-ji* 'ten-some' [11-19], *ji bai* 'some hundred(s)' [200-900], etc. And it can also be used in an interrogative *ni shi-ji le?* (You ten-some ASP) 'How old from 11-19 are you?) or *ji tian le*? (several day ASP) 'How many days (have passed)?').

In the DP structure of obligatorily deictic TpNPs, there are one or two pronounced lexical items (Classifier and NP) and one preposition. Without the second preposition *yi* 'by', NumP movement cannot be licensed. Deictic meanings of TpNPs don't modify the shifted time. Since the shifted interval ($|t_2 - t_1|$) is not bound, there isn't any T-to-Fin movement in the licensing of the deictic meaning (33).

(33)

Fin$_1$ T$_1$P

t*

T$_1$
t$_1$
PAST

Fin$_2$P

bu shi

'not be' Fin$_2$ T$_2$P

[*u*-T]

qian tian
'the day before yesterday'   T$_2$ XP

t$_2$

X

Deictic TpNPs are based generated at spec-XP and move to TP to check the [EPP].

The time variable of Fin AGREE with T$_1$ and gets its value t_1. Fin Merge with T$_2$, and makes its value t_1 comes after its sisters' t_2. → $t_2 < t_1$

When the movement is blocked by Neg-be *bu shi*, Non-deictic meaning can't be licensed, and deictic meaning is licensed at spec-X.

5 Constituent Negation[9]

A non-deictic TpNP has a preposition *yi* 'by', probing NumP to move from T to Fin, and checks the unvalued Tense [*u*-T] feature in Fin. Deictic TpNPs don't have this predicate,

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[9] For sentence (18b), one can negate the event with negative particle *mei* 'not.have' (i) and modify it with a specific temporal interval.
(i)   *Shang libai liu, mama gaosu wo ta   shi tian qian   **mei**   qu Xinjiang.*
       Up   week 6,   mom   tell   I   3sg 10 day before **not**.have go Xinjiang
       'Last Saturday, mom told me that she didn't go to Xinjiang 10 days before.'
The ambiguity between deictic and non-deictic meaning of TpNP remains in (i). For obligatorily deictic TpNPs, previous constraints also carry over to negation (ii).
(ii)   *Shang libai liu, mama gaosu wo ta   qu nian /*zuo-tian **mei**   qu Xinjiang.*
       Up   week 6,   mom   tell   I   3sg last year /*yesterday **not**.have go Xinjiang
       'Last Saturday, mom told me she didn't go to Xinjiang last year.'

thus don't undergo T-to-Fin movement. When the T-to-Fin movement is blocked, only deictic meaning can be licensed (34).

(34) *Shang libai liu, mama gaosu wo ta* **bu shi** *shi tian qian   qu **de** Xinjiang.*
      Up   week 6, mom tell   I   3sg not be 10 day before go DE Xinjiang
      'Last Saturday, mom told me that **it was not** 10 days ago **that** she went to
Xinjiang.'

In constituent negation, when we negate the embedded TpNP, the embedded TpNP cannot modify the interval between the embedded time and the matrix time any more. The interval shifted by past tense cannot be constituently negated without using a relative clause. The non-deictic TpNPs start behaving like deictic words. Namely, only the deictic meaning of TpNPs, under the condition of prior to t_1, can be constituent negated.

I assume the failure in licensing non-deictic meaning is due to the negative copular *bu shi* 'not be' carries Tense information. It values the unvalued Tense feature [*u*-T] in Fin, thus blocks the movement of T-to-Fin.

Non-deictic TpNPs have a NumP and two prepositions, which make the X-to-T-to-Fin possible. The T-to-Fin movement is blocked in constituent negation.

6. Conclusion

Echoing recent research, I present data from sequence of tense phenomenon to argue that Mandarin, being the same as other languages, has a syntactic Tense node.

What's more, the phrasal status of TpNPs, other than tense agreement suffix (e.g. *–s* in English, Kayne 1989), makes it easier to see the interaction between DP internal structure and the clause structure. Interpretation change of TpNP and the structural difference between two types of TpNPs help us to see the fine-grained structure of Tense. T-to-C movement (Pesetsky and Torrego 2001) exists only when the non-deictic meaning of TpNPs is licensed, i.e. as part of (X)-to-T-to-Fin movement.

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