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## Discourse-pragmatic principles for temporal reference in Mandarin Chinese conversation\*

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This study investigates the Mandarin temporal system in ordinary conversations. It is found that during the dynamic time course of interaction, Mandarin speakers tend to rely more heavily on certain underlying principles, rather than on overt markers, to convey temporal location: In a narrative context, temporal reference is almost always established at the beginning of the story and is not subsequently changed, provided that there is a continuity of action across the verbs. In contexts where turn-by-turn talk is at work, speakers tend to establish the time reference through the inherent semantics of the verbs being employed. The data also suggest that other factors, such as shared knowledge and discourse co-text, appear to play a significant role in helping disambiguate the temporal standpoint of utterances which otherwise have potentially competing temporal anchors.

### 1. Introduction

Two claims about the temporal system of Mandarin Chinese (hereafter Mandarin) have been put forth in the recent literature (e.g., Comrie 1976; Li & Thompson 1981; Smith 1991, 1997). First, Mandarin is known as an aspect language, rich in aspect expressions but lacking grammatical tense. Temporal location in Mandarin has therefore been claimed to be conveyed directly by temporal adverbials and indirectly by the use of aspectual markers and modal auxiliaries. Second, due to the surface indeterminacy of Mandarin, the conditions for the use of these temporal adverbials, aspectual markers, and modal auxiliaries have been claimed to be decidable on the basis of pragmatic conventions, although what exactly these pragmatic conventions are remains to be resolved.

Despite these two general claims and a great number of studies of the temporal system of Mandarin, the majority of the literature in this area has focused almost exclusively on the investigations of the distributions and/or functions of individual aspectual markers (e.g., Chen 1978; Chen 1979; Chan 1980; Li & Thompson 1981; Li, Thompson & Thompson 1982; Fan 1984; Chang 1986; Chen 1987a, 1987b; Chu & Chang 1987; Mangione 1987; Huang 1988; Chu 1989; Huang & Davis 1989; Light 1989; Shi 1990; Mangione & Li 1993; Yeh 1993; Ross 1995, *inter alia*). In addition, very few of these studies (with the exceptions of Chang 1986 and Chu & Chang 1987<sup>1</sup>) have gone beyond the sentence level to examine the actual occurrence of these temporal markers in conversation. To provide a more complete descriptive picture of the temporal system of Mandarin, it is essential to investigate how temporal reference is managed by native speakers in actual natural discourse. As a first step, the present study examines how temporal reference is established, maintained, and switched in natural Mandarin conversation, with a specific focus on speakers' use of three temporal markers, namely, temporal adverbials, modal auxiliaries, and aspectual markers, in opposition to the use of no marking. As will be shown in this paper, despite the claim that temporal location in Mandarin is conveyed directly by temporal adverbials and indirectly by the use of aspectual markers and modal auxiliaries, temporal markers are found to be used very sparingly in conversation among Mandarin speakers. During the dynamic time course of interaction, Mandarin speakers tend to rely more heavily on certain underlying principles, rather than on explicit temporal markers, to get their meaning across.<sup>2</sup>

## 2. Methodology

### 2.1 Data

The data used in this study come from two ordinary conversations among native speakers of Mandarin, collected as the participants went about their daily routines — talking to friends over the phone, chatting with roommates, etc. — in their homes. Participants in these conversations were aware that they were being recorded, but were neither provided with a topic to talk about, nor informed of what would be examined in these conversations. Below are more detailed descriptions of the two conversations.

*TWO GIRLS (TG)*: a 20-minute telephone conversation between two Taiwanese female friends, pseudonamed as Helen and Susan. They were

graduate students in their late twenties when the conversation was recorded. The topics of this conversation center around some friends they both know of, as well as Susan's description of her prior training experience at school and her comments on the career of dance in general.

*ROOM TALK (RT)*: a face-to-face conversation between two female roommates from Taiwan, pseudonamed as Terry and Jenny. Both of them were graduate students in the US and were in their late twenties when the conversation was recorded in their room. The conversation is mainly about their prior school experiences and is full of narratives (as defined in Section 3.2). The total length of this conversation is around 40 minutes, of which only 25 minutes were transcribed and used for the analysis.

These two conversations are comparable in that (1) they are conducted among people who know each other, (2) all of the speakers have a higher education, (3) all of the speakers are from Taiwan, and (4) they were all in their late twenties and had been in the US for less than one year when the data were collected. In addition, these conversations also complement each other because one is a telephone conversation and the other is a face-to-face conversation.

### 2.2 Coding

To get an overview of how temporal reference is established, maintained, and switched in the conversations, the data were transcribed and then broken down into clauses. Except for (1) clauses showing irrealis (e.g., hypothetical conditional clauses; subjunctive clauses), (2) incomplete clauses, (3) repetitions, (4) conversational repairs, and (5) short formulaic emphatic expressions (e.g., *tai hao le* 'great'; *ni zhidao* 'y'know'), which do not explicitly show temporal location, all of the main clauses in the data were counted. They were also coded with respect to (1) whether they were marked by temporal adverbials (i.e., adverbial clauses and time adverbs),<sup>3</sup> aspectual markers (i.e., *le*, *guo*, *zai*, *zhe*),<sup>4</sup> and/or modal auxiliaries (e.g., *yao* and *hui*); and (2) whether they had a past-time, present-time, or future-time reference.<sup>5</sup> It needs to be noted, however, that as several researchers (e.g., Comrie 1985) have pointed out, it is relatively rare for a situation to be exactly commensurate with the present moment. For the purpose of the present study, a clause is coded as having a present-time reference if that clause involves a situation which holds at the present moment.<sup>6</sup> What is termed "present" in this study, then, is but a general category, which may refer to a genuine present time reference, a habitual reading, or generic truth.

Given that indication of temporal location is not obligatory in Mandarin, it comes as no surprise that there are cases in which temporal reference is potentially ambiguous and remains indeterminate, despite the information available from the context. This occurs most frequently in the present corpus when a clause containing an atelic verb (i.e., a state or an activity verb) follows a sequence of clauses with past time reference. Excerpt (1), from the *TG* data, provides a case in point.<sup>7</sup>

**Excerpt (1) Indeterminate temporal reference**

((This excerpt comes at the end of a narrative in which Susan, a dance major, criticizes and complains about the extravagant ways in which one of her colleagues has acted during events leading up to her graduation performance — an exit requirement for all the dance majors. *TG*))

070@ S: suoyi ta hai %pay%<sup>8</sup> gei tamen  
so she also pay to them  
'So she %paid% them additional money,'

071@ S: you mai liwu gei tamen  
also buy gift to them  
'(and) also bought them gifts'  
ni zhidao  
you know  
'y'know.'

072? S: na- yinwei ta bijiao you qian ←  
then because she relatively have money  
'(But) then- because she is/was richer,'

073? S: ta keyi zhe yangzi zuo a ←  
she can this way do PRT  
'she can/could afford this.'

S: na xia yi-  
then next one  
'Then (people) next year-'

The temporal references of lines 72 and 73 are considered indeterminate — between a past-time and present-time interpretation — for it is not clear whether this colleague's financial well-being is a state which is restricted just to the time when she was preparing the performance (i.e., the "past"), or one which continues and still holds at the moment of speech (i.e., the "present"). Cases like lines 72 and 73 are coded as "indeterminate" in the present study.<sup>9</sup>

### 3. General principles in the contexts of narrative and non-narrative

#### 3.1 General observations

Table 1 displays the distribution of unmarked and marked clauses in the two conversations. There are several observations that can be made about these results. First, of a total of 667 clauses in these two conversations, the great majority, 77.5%, are not marked by any temporal adverbials, modal auxiliaries, or aspectual markers. In addition, in terms of the distribution of the marked and unmarked clauses, the clauses with future-time reference are almost always marked, whereas the majority of clauses with present-time reference and past-time reference are unmarked. It is also interesting to note that despite the low frequency of temporal markers, there are proportionately very few clauses whose temporal reference can be considered ambiguous or indeterminate.<sup>10</sup> These observations, as Table 1 also shows, hold for both conversations.

**Table 1.** Distribution of marked and unmarked clauses (by temporal adverbials, modal auxiliaries, and/or aspectual markers) in the two conversations

	Marked			Unmarked			Total
	TG	RT	subtotal	TG	RT	subtotal	
Present	19	8	27 (10.8%)	166	57	223 (89.2%)	250 (100%)
Past	44	60	104 (28%)	108	159	267 (72%)	371 (100%)
Future	14	2	16 (88.9%)	2	0	2 (11.1%)	18 (100%)
Indeterminate	3	0	3 (10.7%)	12	13	25 (89.3%)	28 (100%)
Total	80	70	150 (22.5%)	288	229	517 (77.5%)	667 (100%)

Given the low frequency of clauses with explicit temporal marking, and given the low frequency of clauses with ambiguous or indeterminate temporal reference, it is clear that there seem to be some underlying discourse-pragmatic principles which enable the coparticipants in the conversations to correctly infer temporal reference even in the absence of overt temporal devices. I will show some of these principles, first in narratives (Section 3.2) and then in non-narratives (Section 3.3).

#### 3.2 Narrative

For the purpose of this paper, I follow Labov's (1972) definition of narrative. According to Labov (1972: 359–360), narrative is defined as "one method of

Table 2. Distribution of marked and unmarked clauses in narratives

Marked			Unmarked	Total
temporal adverbials	aspectual markers	both		
47	15	4	186	
	66 (26.2%)		186 (73.8%)	252 (100%)

recapitulating past experience by matching a verbal sequence of clauses to the sequence of events which (it is inferred) actually occurred." Based on this definition, two narratives embedded in *TG* and eleven in *RT* are identified, totaling 252 clauses. The distribution of the unmarked and marked clauses in these narratives is shown in Table 2.

As Table 2 shows, only 26.2% of the clauses in these narratives are marked. Of the 66 marked clauses, 47 are marked by temporal adverbials alone. A closer examination of the data shows that these temporal adverbials are used consistently to accomplish three major functions: to establish a time frame at the beginning of a narrative, to switch a time frame, and to provide specific temporal information. I will use a lengthy narrative in *TG* to illustrate these functions, as well as to show how temporal reference is managed in the context of narrative.

**Excerpt (2) Distribution and functions of temporal markers in narrative**  
 ((In this excerpt, Susan, a dance major, describes how the school where she used to study forced the students to control their weight. *TG*))

181@ S: *yiqian zai xuexiao cai haowan ne*  
 before at school just funny PRT  
 '(When we were) at school before, it was just funny.'

→ To establish the time frame

S: *pang yi gongjin*  
 gain:weight one kilogram  
 '(If you) gained one kilogram of weight,'

S: *fa wubai kuai*  
 fine five:hundred dollar  
 '(you would be) fined 500 dollars.'

182@ S: *women jiu<sup>11</sup> shuo*  
 we then say  
 'We then said,'

S: *wua shangdeng rou*  
 wow high-class meat  
 "Wow, first-class meat!"

S: *yinwei women gang kai:xue de:shihou*  
 because we just school:start when  
 'Because when school first started,'

183@ S: *hui liang a*  
 AUX weigh PRT  
 '(they) would weigh (us).'

→ To establish the time frame

S: *biru:shuo*  
 for:example  
 'for example,'

184@ S: *women xinsheng you yi ge xinsheng xunlian*  
 we freshmen have one C freshmen orientation  
 'We freshmen had an orientation.'

185@ S: *ta shenme xinsheng xunlian dou mei you*  
 it what freshmen orientation all NEG have  
 'It (the school) didn't have any orientation.'

186@ S: *jiu jiao ni chuan jinshenyi*  
 just ask you wear tights  
 '(They) just asked you to wear tights,'

187@ S: *ranhou zhan zai bangchen shangmian*  
 then stand at scale top  
 'and then to stand on the scale.'

188@ S: *ta jiu kan nide shengao*  
 he then see your height  
 'Then he looked at your height,'

189@ S: *ranhou jiu suan yi suan*  
 then then calculate one calculate  
 'and then calculated (the ratio).'

190@ S: *jiieguo ta jiu gen wo jiang*  
 consequently he then toward I speak  
 'And then he told me,'

191@ S: *wo nashihou hen shou*  
I then very skinny  
'I was very skinny at the time.'

192@ S: *wo nashihou sishisan gongjin*  
I then forty-three kilogram  
'I was 43 kilograms at the time.'

→ To provide specific temporal information

193@ S: *ta jiu shuo*  
he then said  
'Then he said,'

S: *ni yao gei wo pang dao sishiwu gongjin*  
you have:to for me gain:weight RVC forty-five kilogram  
'You have to gain weight to 45 kilograms.'

((From lines 194–208, Susan mentions that she kept on eating, but she was so nervous that the more she ate, the skinnier she got.))

S: *jieguo kai:xue de:shihou*  
consequently school:start when  
'And then when school started,'

S: *kai:xue na tian*  
school:start that day  
'The day when school started,'

209@ S: *women liang tizhong*  
we weigh weight  
'we were weighed.'

→ To switch the time frame

S: *jieguo zhan shangqu de:shihou*  
consequently step RVC when  
'And then when (I) stepped on the scale,'

210@ S: *wo shao yi gongjin*  
I insufficient one kilogram  
'I was one kilogram too light.'

→ To provide specific temporal information

211@ S: *wo fa wubai kuai*  
I fine five:hundred dollar  
'I was fined five hundred dollars.'

((From lines 212–223, Susan describes how her other classmates controlled their weight.))

S: *ranhou jieguo di:er nian de:shihou*  
then consequently the:second year when  
'Then in my second year,'

S: *wo you zhan shangqu de:shihou*  
I again step RVC when  
'when I stepped on (the scale) again,'

224@ S: *ta jiu shuo*  
he then say  
'then he said,'

→ To switch the time frame

((From lines 225–228, Susan describes what happened after she stepped on the scale in the second year.))

S: *jieguo kai:xue huilai de:shihou*  
consequently school:start RVC when  
'and then when (I) came back when school started,'

229@ S: *pang le yi gongjin*  
gain:weight ASP one kilogram  
'(I) was one kilogram too heavy.'

→ To switch the time frame

230@ S: *you bei fa wubai kuai*  
again bei fine 500 dollar  
'(I) was fined 500 dollars again.'

In this narrative, Susan, a dance major, describes how her school forced students to control their weight. There are 50 main clauses in this narrative, out of which only 8 are marked by temporal markers. The temporal adverbials were first used at lines 181 and 183, where Susan was trying to initiate her story and to establish the time frame. Temporal adverbials were not subsequently used until lines 191 and 192. Here, Susan supplies background information to her listener before resuming her story in line 193. It needs to be noted that the use of overt temporal markers in lines 191 and 192 is crucial for understanding the story correctly. Lines 191 and 192 contain state verbs and immediately follow a verb of saying (*jiang* 'speak' in line 190). If the temporal marker, *na shihou* 'then', had not been used to express a temporal juncture between lines 190 and 191, these two clauses could have been interpreted as having the reference point

of the neighboring clauses and be misread as "he told me that I was very skinny." Note that after the possible ambiguity was resolved, Susan did not use any temporal markers until line 209, where she shifted the time frame from the day when they had their orientation, as established earlier at line 183, to the day when school first started. The function of switching the time frame can also explain the occurrences of temporal adverbials at line 224 and line 229.

The infrequent yet consistent uses of temporal adverbials, as illustrated in Excerpt (2), are not too surprising, given the sequentially-ordered nature of narratives. That is, since narratives, by definition, are past events told in sequence, speakers do not really need to explicitly mark temporal reference — unless they perceive a need to, such as to establish, switch, or disambiguate a time frame.

However, while temporal adverbials are used infrequently in narratives, a peculiar feature of the narratives found in the present corpus is the recurrent appearance of *jiu* (e.g., in lines 182, 188, 189, 190, 193, 224 in Excerpt (2)).<sup>12</sup> As a linking device,<sup>13</sup> it has been argued that *jiu* serves to relate two propositions in an antecedent-consequent relation (e.g., Li & Thompson 1981; Biq 1988; Liu 1993), and when this antecedent-consequent relationship is temporal, its essential function has been proposed to "assert a direct, or immediate relation between an event/state and a temporal reference, by signaling an extremely short interval" (Liu 1993: 82–83, 85–86). In the data at hand, this antecedent-consequent relation signaled by *jiu* is observed to be exploited to serve a unique discursive function in Mandarin narratives; that is, *jiu* is systematically inserted in "foregrounded clauses" (Hopper 1979; Hopper & Thompson 1980) — clauses which continue the main story line — in order to indicate or otherwise reinforce the temporal structure of a narrative, by signaling sequentiality.

What we have seen in this section, then, is that, similar to the findings from research on other languages where tense markers are not used obligatorily (cf. Givón 1982; Andersen 1990), temporal markers occur very infrequently in narrative contexts in Mandarin, presumably because of the sequentially-ordered nature of narratives. As Excerpt (2) has shown, temporal markers are always used at the beginning of a narrative to establish the time frame and then are no longer used until the speaker perceives a need either to switch the time frame, to make the time frame explicit or to disambiguate possible confusion about temporal reference. As Excerpt (2) has also shown, other devices,<sup>14</sup> such as the frequent insertion of *jiu* in foregrounded clauses, appear to help structure and reinforce the sequentiality of a narrative.

### 3.3 Non-narrative

If the sequentially-ordered nature of narratives makes explicit temporal marking redundant, questions then arise as to why the great majority of clauses in non-narratives are also not marked with any temporal devices, as shown in Table 3.

Table 3. Distribution of marked and unmarked clauses in non-narratives

Marked	Unmarked
84 (20.2%)	331 (79.8%)

To account for this phenomenon, I will be looking at the temporal devices in temporal juncture clauses in non-narratives. For the purpose of this study, temporal juncture clauses are defined as clauses in which there is a recognizable shift in time reference from the prior one. Excerpt (3) demonstrates two examples of temporal juncture clauses.

#### Excerpt (3) Temporal juncture clauses

((In this excerpt, Susan and Helen have just finished talking about what they think of the career of dancing in line 333 and Helen initiates another new topic in line 334. TG))

- 333% S: *tiaowu shizai shi tai lei le*  
dance really be too tiring CRS  
'Dance is really too tiring.'
- 334% H: *weisheme nimen jia xianzai zhi you ni yi ge ren ne*  
why you home now only have you one C person PRT  
'How come you're home by yourself now?'
- 335% S: *yinwei Naiqian jintian bu yong shangban*  
because (name) today NEG need work  
'Because Naiqian doesn't have to work today.'
- 336@ S: *hui jia qu*  
return home RVC  
'(She) went home.'
- 337@ S: *ta hui ta ayi jia pei , ta meimei*  
she return she aunt home accompany her younger:sister  
'She went to her aunt's house to keep her younger sister company.'

←  
(Shift to the past)

H: *uh huh*  
*uh huh*  
*'uh huh'*

338@ S: *na- na ge wo lingwai yi ge shiyou qu Davis kan ta xiansheng*  
 that that C I another one C roommate go (place) see her husband  
 'The- the- another roommate of mine went to Davis to see her husband.'

339% H: *Naiqian de meimei shi zai zheli nianshu ma* ←  
 (name) ASSC younger:sister be at here study Q (*Shift to the present*)  
 'Is Naiqian's sister studying here?'

In Excerpt (3), line 336 and line 339 exemplify two temporal juncture clauses. There is a shift to the past-time reference and a shift to the present-time reference at lines 336 and 339 respectively. In neither case is the shift of time frame indicated by any temporal markers.

Table 4, below, shows the frequency of unmarked and marked temporal juncture clauses in non-narrative.<sup>15</sup>

As Table 4 demonstrates, except for the cases where temporal reference is shifted to the future, it is the unmarked form rather than the marked form that appears to be the prototypical form for the shift of time frame. This observation suggests that even when there is a lack of continuity of action and/or topic across the clauses, Mandarin speakers rely more frequently on the use of some underlying principles, rather than on temporal markers, to achieve or identify time shifts. A closer look at the data reveals that crucial here is the inherent semantic property associated with a verb. To illustrate this point, a further breakdown of the verb types present in the temporal juncture clauses with past-time reference and present-time reference is in order.

For the purpose of this study, I follow the classification system of inherent semantic aspects of verbs proposed by Vendler (1967) and classify all of the verbs in the temporal juncture clauses into four types: state, activity, accomplishment

**Table 4.** Distribution of marked and unmarked temporal juncture clauses in non-narratives

	Marked	Unmarked	Total
Shift to Present	12 (19%)	51 (81%)	63 (100%)
Shift to Past	22 (35.5%)	40 (64.5%)	62 (100%)
Shift to Future	16 (100%)	0 (0%)	16 (100%)

and achievement.<sup>16</sup> In this four-way distinction, state verbs denote situations which have duration but no dynamics; they continue without additional energy being applied (e.g., *have, like*). Activity verbs denote situations which are durative and atelic; they require energy to continue (e.g., *run, pull*). Both accomplishment verbs and achievement verbs denote telic events; however, whereas accomplishment verbs denote telic events which involve a process (e.g., *build a house, paint a picture*), achievement verbs denote telic events which are punctual (e.g., *realize, win the race*).

There are only a few studies to date that have attempted to apply Vendler's categorization scheme to examining lexical aspect of verbs in Mandarin. In the few existing accounts (e.g., Tai 1984; Smith 1989, 1991, 1997; Li 1998, 2000), they all agree that there are some differences between English and Mandarin in terms of the linguistic realization of event types, especially with respect to the use of resultative verb constructions (RVC).<sup>17</sup> However, they do not always agree on whether Mandarin has the grammatical category of accomplishments, nor as to how RVCs should be categorized.

Tai (1984), for example, has argued that Mandarin does not have accomplishment verbs. In addition, he proposes that Vendler's achievements are realized in Mandarin in the form of RVCs. On the other hand, both Smith (1989, 1991, 1997) and Li (1998, 2000) take the position that Mandarin does have the category of accomplishments. However, while Li (1998, 2000) treats all of the Mandarin RVCs as a subclass of achievement verbs, Smith (1997) argues that RVCs are compatible not only with achievements, but with activities and accomplishments as well.

In this paper, I follow Smith (1989, 1991, 1997) and Li (1998, 2000), and retain the category of accomplishments. However, unlike these studies, I categorize RVCs into two categories: accomplishments and achievements. RVCs which are coded as accomplishment verbs involve a durative event with an end point, whereas RVCs which are coded as achievement verbs involve just an instantaneous event or change of state. This distinction, as Smith (1989, 1997) has suggested, can be borne out by a compatibility test with *hua* 'spend.' Consider:

- (4) *Fei dao Meiguo hua le ta shiwu ge xiaoshi.*  
 fly RVC US spend ASP him fifteen C hour  
 'Flying to the US took him fifteen hours.'
- (5) \**Kan jian ta hua le wo yi fenzhong.*  
 see RVC him spend ASP I one minute  
 'Seeing him took me a minute.'

As (4) and (5) demonstrate, RVCs which behave like accomplishment verbs (e.g., *fei dao* 'fly to') are compatible with the use of *hua* as the main verb, whereas the combination of an RVC which behaves like an achievement verb (e.g., *kan jian* 'see') with *hua* is either ungrammatical or odd.

In coding the verb types in the temporal juncture clauses, grammatical aspect is removed from analysis and only "bare" verbs (or verbal predicates) are taken into consideration. The only exceptions in such coding apply when there is an interaction between lexical and grammatical aspect, and when that interaction in effect changes the category of the given verb. This occurs primarily with what Smith (1991, 1997) has termed "semelfactives", as well as what Li (1998, 2000) has termed "mixed telic-stative verbs", illustrated by (6a-b) and (7a-b) respectively.

- (6) a. *Xiaoli qiao men.*  
(name) knock door  
'Xiaoli knocked on the door.'  
b. *Xiaoli zai qiao men.*  
(name) ASP knock door  
'Xiaoli is/was knocking on the door.'

(6a) and (6b) exemplify a semelfactive verb, *qiao men* 'knock on the door', with and without the progressive marker, *zai*. As Smith (1991) and Li (1998, 2000) have argued, the addition of the progressive marker (such as (6b)) indicates that the event being described is a continuous, repeated action of knocking on the door, rather than a one-time knocking action. In the present study, cases like (6a) are coded as achievements, whereas cases like (6b) are coded as activities.

(7a) and (7b) illustrate the use of a telic-stative verb, *chuan yi jian hong waitao* 'wear/put on a red overcoat.' According to Li (2000:98), telic-stative verbs encode "either the process of a telic action" (such as (7a)), "or the state resulting from that action" (such as (7b)):

- (7) a. *Ta zai chuan yi jian hong waitao.*  
he ASP wear one C red overcoat  
'He is putting on a red overcoat.'  
b. *Ta chuan zhe yi jian hong waitao.*  
he wear ASP one C red overcoat  
'He is wearing a red overcoat.'

Cases like (7a) are coded as accomplishments, while cases like (7b) are coded as states in this study.

Table 5. Distribution of four types of verbs in temporal juncture clauses

		State	Activity	Accomplishment	Achievement
Shift to Present	Marked	6	4	0	2
	Unmarked	48	2	1	0
	Subtotal	54 (75%)	6 (66.7%)	1 (12.5%)	2 (5.6%)
Shift to Past	Marked	9	2	6	5
	Unmarked	9	1	1	29
	Subtotal	18 (25%)	3 (33.3%)	7 (87.5%)	34 (94.4%)
Total		72 (100%)	9 (100%)	8 (100%)	36 (100%)

Table 5 provides the results of a further breakdown of the verb types in the temporal juncture clauses with past-time reference and present-time reference.

As Table 5 shows, there is an interesting distributional difference between state verbs and achievement verbs in temporal juncture clauses with present-time reference and past-time reference. We can note that while the great majority (75%) of temporal juncture clauses containing a state verb correlate with a shift of the time frame to the present, the great majority (94.4%) of temporal juncture clauses containing an achievement verb correlate with a shift to a past time frame.<sup>18</sup> We can note additionally that in both these two categories (i.e., present-time temporal juncture clauses with state verbs, and past-time temporal juncture clauses with achievement verbs), it is the temporally unmarked form, rather than the marked form, that is the prototypical form. These results suggest that there seems to be a great tendency for an unmarked achievement verb to be understood as indicating a past event, and for an unmarked state verb to be understood as having present-time reference as a default, which makes it redundant to mark an achievement verb if it is used to refer to a past event or to mark a state verb to index a present-time reference.

The strong association of an unmarked state verb with the present time and an unmarked achievement verb with a past time may account for another interesting finding that has been discussed earlier in this paper, namely, that the majority of clauses with future-time reference receive explicit temporal markers. In ordinary non-narrative discourse, all clauses are understood as oriented to Speech Time; therefore, if there is a great tendency for an unmarked verb denoting a clear end result or endpoint (i.e., achievement verbs and accomplishment verbs)<sup>19</sup> to be associated with a past time, and if there is a tendency for an unmarked state verb to be understood as a present state, it is more than natural for speakers to feel the need to explicitly signal and mark clauses referring to a future event.

### 3.4 Summary and crosslinguistic implication

Before we conclude this section, it is worth noting that the patterns observed here — especially the close relationship between present time reference with unmarked state verbs and past time reference with unmarked achievement verbs — are not unique to Mandarin. Welmers (1973:346–347), for example, has noted that in West African languages, such as Yoruba and Igbo, a reference to present time for statives may use the same construction that refers to past time if an active verb is used. He refers to this construction as “factitive”, since it “expresses the most obvious fact about the verb in question, which in the case of active verbs is that the action was observed or took place, but for stative verbs is that the situation obtains at present.” Similarly, in Bickerton’s (1975, 1981) characterization of the creole tense-modality-aspect (TMA) system, he argues, among other things, that the stative-non-stative distinction plays a crucial role in the creole TMA system: While the unmarked form of a verb indicates “simple past” for action verbs, the same unmarked form indicates “non-past” for state verbs.<sup>20</sup> In this regard, our observation about Mandarin temporal reference appears to be congruent with the typological generalizations that have been made in the above-mentioned literature — viz., that in languages without obligatory tense marking, the default interpretation of statives is a present-time or non-past reference, and of dynamics a past-time reference; and that overt past marking is more common with statives and imperfectives.

In summary, we have seen in this section how Mandarin speakers tend to rely more heavily on certain underlying principles, rather than on overt markers, to convey the temporal location. In a narrative context, temporal reference is almost always established at the very beginning of the story and is not subsequently changed, provided that there is a continuity of action or temporal reference across the verbs. In non-narrative contexts, where turn-by-turn talk is at work, the tacit reference point is Speech Time. Conversational coparticipants, therefore, are able to identify the time reference through the inherent semantics of the verbs the speaker chooses. Most often, with a state verb, the unmarked form will be understood as a present state. With an achievement verb, which has an inherent end point, the unmarked verb will be interpreted as carrying with it a past time reference.

## 4. Other factors affecting temporal reference in Mandarin

In addition to the inherent semantic aspect of verbs and the sequentially-ordered nature of narrative, certain other factors have also been observed to play a role in the identification of time in spontaneous Mandarin conversation. In this section, I will discuss two of these factors: (1) shared knowledge, and (2) discourse co-text.

### 4.1 Shared knowledge

In this paper, shared knowledge refers to information that is commonly shared by at least two co-participants in the conversations, whether explicitly stated or not. It may refer to world knowledge, knowledge that the co-participants have brought to the conversation, or knowledge that has been established through the turn-by-turn talk (cf. Jucker & Smith 1996). In the Mandarin conversational data at hand, shared knowledge is found to play an important role in identifying the temporal standpoints for clauses which have high topic relevance to a narrative but cannot be counted as part of the narrative as defined by Labov (1972). Excerpt (8) illustrates one of these examples:

#### Excerpt (8) The role of shared knowledge

((In this excerpt, Jenny is complaining about a teaching assistant that she had. RT))

- 018@ J: *na ge zhujiao shi yi ge cong Datong gong xueyuan*  
that C TA be one C from (school) industrial institute  
*lai de*  
come NOM  
'That TA came from the Datong Industrial Institute.'
- 019@ J: *ranhou na ge zhujiao ye bu hui a*  
then that C TA also NEG know PRT  
'Then that TA also didn't know (how to solve the problem).'
- 020@ J: *mei ci ta xie de daan dou bei laoshi da yi ge da*  
every C he write ASSC answer all bei teacher place one C big  
*ca ou*  
CROSS PRT  
'The answers that he wrote every time were all crossed out by the teacher.'

- J: *ou ranhou- ranhou ta mei ci hou*  
 PRT then then he every C PRT  
 'Oh, then- then- he- every time'
- 021@ J: *ta- ta- na ge- kan bu dong a*  
 he he that C see NEG understand PRT  
 'He- he couldn't understand it.'
- 022@ J: *suoyi ta jiu kan na ge na ge ranhou shumuzi a*  
 so he then see that C that C then number PRT  
 'So he then took a look at that- that- then- number.'
- J: *zuihou de daan a*  
 final NOM answer PRT  
 'the final answer'
- J: *na yinwei butong de*  
 that because different NOM  
 'then- because different'
- J: *xiang na zhong dongxi de:hua*  
 like that C stuff if<sup>21</sup>  
 'like that kind of stuff'
- J: *bu neng*  
 NEG AUX  
 '(you) cannot'
- J: *butong de %approach% butong de fangfa* ←  
 different NOM approach different NOM method  
 '(with) a different %approach%, a different method.'
- 023% J: *nide na ge chu lai de jieguo yiding bu yiyang* ←  
 your that C come RVC NOM result definitely N same  
 'the result that you figure out is definitely different.'
- 024@ J: *jieguo wo mei ci chu lai de na ge jieguo yiding gen ta*  
 result I each C come RVC NOM that C result definite with he  
*bu yiyang*  
 N same  
 'Consequently, the results that I figured out every time were definitely different from his.'

Excerpt (8) is part of a long narrative in which Jenny was complaining about her teacher and teaching assistant in college. Note that although there is a recognizable shift from the past-time reference to present-time reference at line 23, what

contributes to the shift of time frame here is not the occurrences of any temporal markers, but the shared understanding that the proposition of this clause is a generic truth, which always takes a present standpoint by default.

Like line 23, the vast majority of cases where shared knowledge is needed for identification of the time frame involve clauses which contain a state verb. This phenomenon may be accounted for by the fact that although an unmarked state verb is generally understood as located at Speech Time in non-narrative, the temporal reference of an unmarked state verb can be ambiguous if its neighboring clauses all refer to a past scenario, which then may lead to a competing temporal frame. In such cases, if there is not enough relevant shared knowledge, it will be very hard, if not impossible, to identify the temporal anchor and to interpret the temporal reference of that clause, as illustrated earlier in Excerpt (1).

#### 4.2 Discourse co-text

Following Halliday (1978: 133), we refer to discourse co-text as "the relevant textual environment at any point." It has frequently been argued in the literature (e.g., Halliday 1978; Brown & Yule 1983) that discourse co-text has the effects of both enabling and limiting the interpretation of what follows. Brown & Yule (1983: 79), for example, have pointed out:

There is, for most conversational fragments, a set of discourse-internal elements which are derived from the conversation prior to the particular fragment being studied. These elements are introduced in the preceding co-text and form part of what has been described as 'the domain of discourse.'

In the present corpus, co-textual features, such as parallel constructions and repetition of lexical items,<sup>22</sup> are found to contribute to the identification of temporal reference — especially in cases in which the temporal standpoint of a clause cannot be easily identified by the general principles discussed in Section 3. Excerpt (9) provides a case in point.

#### Excerpt (9) The role of discourse co-text

((In this excerpt, Jenny has just finished a narrative in which she complained about her teacher and teaching assistant in college at line 250. At line 251, the topic was suddenly moved back to a humiliating and irritating flunking experience of Jenny's that had been talked about earlier in the conversation. RT))

- 250% J: *wo juede*  
I think  
'I think.'
- J: *ni zuoye genben jiu bu yong zai nabian shang lai shang*  
you homework basic just N need at there teach ASP teach  
*qu de*  
ASP NOM  
'You don't need to be teaching the homework at all.'
- J: *dui bu dui?*  
right NEG right  
'Right?'
- J: *ni jiu zhijie ba daan fa xialai*  
you just directly ba answer return RVC  
'You just distribute the answers directly.'
- J: *wo jiu zhidao le*  
I then know ASP/CRS  
'I then know (how to solve the problems).'
- J: *langfei wode shijian*  
waste my time  
'(That's really) wasting my time.'
- T: *uhm*  
uhm  
'uhm.'
- 251\* J: *na ge nanhaizi wo yongyuan jide* ←  
that C boy I forever remember (Popping back to  
'That boy I (will) remember for ever.' an earlier topic)
- J: *lian ni dou kao zhe yang*  
even you all exam this way  
"Even you got such (a high mark)!"
- 252@ T: *dajia dou zhidao ni mei guo ou* ←  
everybody all know you NEG pass PRT  
'Everybody knew that you didn't pass?'
- J: *dagai ba.*  
probably PRT  
'Probably.'

- J: *wo bu zhidao tamen*  
I NEG know they  
'I don't know they-'
- 253% J: *wo bu zhidao tamen zhi bu zhidao wo mei guo*  
I NEG know they know NEG know I NEG pass  
'I don't know whether they knew I didn't pass or not,'
- 254@ J: *buguo na ge ren yiding zhidao* ←  
nevertheless that C person definite know  
'but that person certainly knew (about it).'
- 255% J: *na ge ren xianzai zai Pu- Pulinsidun*  
that C person now at (school)  
'That person is now in Prin- Princeton.'

Note that lines 252 and 254 are among the relatively few cases in the data where an unmarked state verb in non-narrative is understood as carrying with it a past-time reference, as shown earlier in Table 5. Interesting to note is that although lines 252, 253, and 254 all contain the same main verb *zhidao* 'know', line 253 follows the general principle for an unmarked state verb and is interpreted as a present state, while line 252 and line 254 can only be interpreted in the past time frame. A closer examination of the conversation reveals that the utterances at lines 252 and 254 syntactically and semantically parallel those at lines 204 and 205, which are part of a narrative where Jenny talks about a humiliating experience of hers:

- 204@ J: *ta shuo* ←  
he say  
'He said,'
- J: *lian ni dou kao name gao* ←  
even you all exam that high  
"Even you got such a high mark!"
- T: *na shi sheme yisi*  
that be what meaning  
'What does that mean?'
- J: *ta yisi jiu shi shuo*  
he meaning just be say  
'What he meant was'
- J: *ni weijifen dou guo bu liao*  
you Calculus all pass N RVC  
'even Calculus you couldn't pass.'

205@ J: *yinwei wo nashihou weijifen bei dang de-* ←  
 because I then Calculus *bei* flunk NOM  
 'because (that) I had flunked Calculus at that time'

J: *dagai- dagai- wo kan hen duo ren ye zhidao ma.* ←  
 probably probably I suppose very many person also know PRT  
 'probably- probably- I suppose, very many people also knew.'

Since it has long been recognized in the literature that parallel constructions tend to be interpreted in a parallel fashion (e.g., Grober, Beardsley & Caramazza 1978; Prince 1981; Haiman 1985; Kuno 1987; Huang 1994), the use of parallel construction and the same key lexical items at lines 252 and 254 appear to be what has led to the strong association of these utterances with the time frame of the "flunk" scenario, which is apparently located in the past time.

In this section, we have considered "deviant" cases in the present corpus; that is, cases which are not easily explained by the general patterns discussed in Section 3. It was suggested that shared knowledge, as well as discourse co-text, such as parallel constructions and repetition of lexical items, appear to contribute to the identification of temporal reference in these cases.

## 5. Conclusions

In conclusion, this paper reports on the findings from an exploratory study on how temporal reference is established, maintained, and switched in natural Mandarin conversation. We found that, contrary to some widely-held beliefs about how temporal reference is managed in an aspect language, Mandarin speakers tend to rely more heavily on underlying discourse-pragmatic principles, rather than on explicit temporal markers, to establish and switch the time frame. In a narrative context, temporal reference is almost always established at the very beginning of the story and is not subsequently changed, provided that there is a continuity of action or temporal reference across the verbs. In non-narrative contexts, where turn-by-turn talk is at work, the tacit reference point is Speech Time. Conversational coparticipants, therefore, are able to identify the time reference through the inherent semantics of the verbs the speaker chooses. Most often, with a state verb, the unmarked form will be understood as a present state. With an achievement verb, which has an inherent end point, the unmarked verb will be interpreted as carrying with it a past time reference. The patterns observed for Mandarin in this study are thus congruent with typological

generalizations that have been made in the literature about languages without obligatory tense marking, such as in some West African languages observed by Welmers (1973) and creole languages by Bickerton (1975, 1981).

In addition to these general principles, this study has shown that other discourse-pragmatic factors, such as shared knowledge and discourse co-text, also play a significant role in helping identify the temporal standpoint of utterances which have competing temporal anchors and would have otherwise been left with an indeterminate temporal reference.

## Notes

\* Earlier versions of the present text have been presented at a number of venues, including the International Conference on Functional Approaches to Grammar (1995), the fourth UCSB East Asian Linguistics Workshop (1995), the American Association for Applied Linguistics Annual Conference (1996), and the second Annual Meeting of the Association for Linguistic Typology (1997). An earlier version of this paper was also twice nominated (in 1999 and 2000) for the Young Scholar Award by the International Association of Chinese Linguistics. I am deeply indebted to Roger Andersen for introducing me to the field of tense and aspect, without which this paper would never have been started. I am also indebted to Sandra Thompson for a series of most helpful discussions while I was preparing this paper for publication. Thanks also to Roger Andersen, Sandra Thompson, and two anonymous reviewers for their helpful comments on an earlier version of this paper, and to Joan Bybee for her assistance in locating relevant literature. I alone am responsible for the problems that remain.

1. Chang (1986) and Chu & Chang (1987) investigate the discourse functions of the Mandarin aspectual marker *le* by examining its occurrences in newspaper articles and editorials, textbook lessons, popularized historical tales, natural conversations and student writings.
2. Based on the framework of Wu (1995), an exploratory, cross-linguistic study on Mandarin, Malay, and Thai (Wu, Meepoe & Yap 1997) has also shown that speakers of these three "tenseless" languages rely more heavily on the inherent semantics of verbs, rather than on explicit temporal markers, for clarification of temporal reference in conversation.
3. Temporal adverbials coded for this study include what Smith (1991:137) has termed (i) "deictic" temporal adverbials — adverbials oriented to the moment of speech — such as *mingtian* 'tomorrow'; (ii) "anaphoric" temporal adverbials — adverbials relating to a previously established time — such as *na shihou* 'at that time'; and (iii) "referential" temporal adverbials — adverbials referring to a time established by clock or calendar — such as *shier yue ershi wu hao* 'December 25.' Adverbials which are not used to mark temporal reference *per se*, but which may indirectly contribute to the interpretation of temporal reference — such as frequency adverbials (e.g., *changchang* 'often'), place adverbials (e.g., *zai jia* 'at home'), and discourse markers (e.g., *ranhou* 'and then') — are noted but not included in the statistics.

4. Only the four most studied and recognized Mandarin aspectual markers — the perfective *le*, the experiential *guo*, the progressive *zai*, and the durative *zhe* — are coded for this study. Clear cases of “sentential *le*” (e.g., *Tiaowu shizai shi tai lei le* ‘Dance is really too tiring LE’) are not included in the statistics because sentential *le* has been proposed (e.g., Li & Thompson 1981; Chang 1986; Chu & Chang 1987) to frequently serve functions other than marking aspect. In the present study, the four aspectual markers are coded as temporal devices because, as already noted, it has been claimed in the literature that temporal location in Mandarin can be conveyed by the use of aspectual markers. Smith (1991:366), for example, has argued that in Mandarin, “there is a conventional association of the imperfective with the Present time and the perfective with Past time”, in the absence of other temporal information.

5. In this study, I follow Smith (1991) and hold the position that all sentences have a temporal standpoint, which is equivalent to Reference Time in Reichenbach’s classificatory system (1947). The temporal standpoint of a sentence may be specified by a temporal marker or a subordinate clause; in the absence of these, the standpoint of a sentence may be recovered from context.

6. Although this is similar to the definition of the present tense proposed by Comrie (1985), I wish to make clear that this definition is operationalized to account for the data at hand; it is not my intention to claim or imply that Mandarin has the grammatical category of tense.

7. For a list of coding conventions and glossing conventions employed in the transcript excerpts in this paper, cf. Appendix 1. To facilitate reading, all temporal markers (i.e., temporal adverbials, modal auxiliaries, and aspectual markers) in the transcript excerpts are boldfaced.

8. Words surrounded by the “%” signs represent code-switching — i.e., they are produced in languages other than Mandarin, such as English.

9. “Indeterminate” in this study thus refers to cases whose temporal reference is judged as potentially ambiguous by the researcher. Whether the participants themselves treat them the same way is beyond the scope of the present study.

10. Of the 28 indeterminate cases, the three cases in which the temporal reference is taken as overtly marked, yet still indeterminate, all involve cases marked with a *zai* — an aspectual marker which signals the progressive, or durative, nature of an event (cf. Li & Thompson 1981; Smith 1991). Similar to the majority of other indeterminate cases in the corpus, these three clauses occur at the boundary of a narrative. It is not clear from the context whether they are used to refer to a single, particular stage of an event just talked about, or to refer to an ongoing state or a habitual event which has the moment of speech as its temporal standpoint. These three cases, although interesting, are too involved to be explicated in this paper; a fuller explication will have to be left for another occasion.

11. While *jiu* is translated as *then* here (as well as in lines 188, 189, 190, 193, 224), it needs to be made clear that the Mandarin *jiu* and the English *then* are not necessarily equivalents. The basic function of *jiu* is not to encode temporal reference *per se* (hence it is not coded as a temporal marker in this study). Rather, it has generally been proposed as an adverb pertaining to logical reasoning in relation to the speaker’s expectation, or to the relationship between two propositions. (For a comprehensive review of studies of *jiu*, see Liu (1993).) Of the various functions proposed for *jiu*, what is closest to the usage here is the use of *jiu* as a

linking device, which “may relate two propositions in an antecedent-consequent relation and always occurs with the consequent clause” (Liu 1993:82–83). As Liu (1993:85–86) has also pointed out, the relationship between the antecedent and consequent may be temporal; in this temporal linking use, *jiu* “does not merely provide temporal information of the event, since the unmarked form of temporal coding would simply be a juxtaposition of the event and the time. The essential function of *jiu* is to assert a direct, or immediate relation between an event/state and a temporal reference, by signaling an extremely short interval.”

12. In the present corpus, 54 of the 667 clauses are marked by the temporal-linking *jiu*; 41 of them are in narratives and 13 are in non-narratives.

13. Cf. Note 11.

14. As one reviewer pointed out, *ranhou* ‘then’ (e.g., in lines 187, 189, 224 in Excerpt (2)) — a Mandarin discourse marker — appears also to serve to help reinforce the sequentiality of a narrative. In the present corpus, 33 of the 667 clauses are marked by *ranhou*; 22 of them are in narratives and 11 are in non-narratives.

15. Non-narrative here refers to all clauses in the turn-by-turn talk. It excludes all clauses in the narratives (as defined in Section 3.2) but includes the first clause of each narrative, where the conversational coparticipant manages to initiate the story.

16. As many researchers have noted (e.g., Vendler 1967; Comrie 1976; Andersen 1990; Smith 1991), the inherent lexical aspect is not necessarily associated with a verb alone, but often with its entire predicate or even the entire proposition. For this reason, the classification system used in this study is based on the entire predicate of a verb, rather than on the single verb itself. For convenience of reading, however, the term “verbs” (e.g., “state verbs”, “activity verbs”, and so forth) is used as shorthand for the otherwise relatively clumsy term “verbal predicates” (e.g., “state verbal predicates”, “activity verbal predicates”, and so forth) in this paper.

17. In the Mandarin resultative verb construction (RVC), a verb takes a complement from a set of optional, independent morphemes which signal some result of the action or process conveyed by the verb (cf. Li & Thompson 1981; Smith 1991). There are several different kinds of results that can be conveyed by the use of the RVC — e.g., cause (e.g., *wo ba men da kai le* ‘I opened the door.’), and achievement (e.g., *ta ba nei ben zidian fanyi cheng Zhongwen le* ‘S/he translated that dictionary into Chinese’; *wo zuotian xie wan le yi feng xin* ‘I finished writing a letter yesterday.’), among others. As several researchers (e.g., Li & Thompson 1981; Tai 1984; Smith 1991) have pointed out, in Mandarin it is the use of the RVC, rather than the perfective morpheme *le*, that can unequivocally indicate the notion of completion in Mandarin.

18. In fact, as Table 5 suggests, there seems to be a tendency for the majority of temporal juncture clauses containing atelic verbs (i.e., state verbs and activity verbs) to correlate with a shift to the present time, and for the majority of temporal juncture clauses containing telic verbs (i.e., accomplishment verbs and achievement verbs) to correlate with a shift to a past time, except that the numbers of the activity verbs and accomplishment verbs in the temporal juncture clauses in the present corpus seem too small to venture making a generalizable conclusion.

19. Even though the great majority of temporal juncture clauses with accomplishment verbs correlate with a shift to a past time frame (see Footnote 18), it may appear surprising that 6 out of the 7 accomplishment verbs with past time reference in the present corpus are marked. A close examination of the data shows that 3 of the 6 marked past-time accomplishment verbs are in fact marked with a perfective marker, such as *le* or *guo* (e.g., *women yijing bang le yi ge da mang le* 'we already did (her) a big favor'). In the other three cases (e.g., *wo qunian yi nian zai Taiwan yan le liang bai duo chang* 'I did more than two hundred performances in Taiwan last year'), temporal reference is provided in order to specify the time period in which the action was accomplished.

20. I am not unaware that Bickerton's (1975, 1981) characterization of the creole TMA system has been questioned by some scholars (e.g., Givón 1982; Sankoff 1990). I do not intend to enter the debate on this issue; I simply wish to note the relevance of his claim to the typological point I am making.

21. *De:hua* can be literally translated into *if* in English (cf. Li & Thompson 1981). For this particular speaker, however, *de:hua* appears to be used overwhelmingly as a topic marker throughout this conversation. (For a discussion of the relationship between conditionals and topic markers, see Haiman (1978).) Clauses like this one (and their associated clauses) are not treated as hypothetical conditional clauses in this study.

22. Parallel constructions and repetition of lexical items have also been found to be useful in locating/identifying the intended antecedent of personal reference in Mandarin (Huang 1994).

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## Appendix 1: Coding and glossing conventions

### Coding conventions

% — clauses with reference to the present

@ — clauses with reference to the past

\* — clauses with reference to the future

? — clauses with indeterminate temporal reference

number with an underline (e.g., 181) — clauses explicitly marked by temporal marker(s)

### Glossing conventions

ASSC associative (*de*)

ASP aspectual marker

AUX auxiliary

*ba* the *ba* marker in the *ba* construction

*bei* the *bei* marker in the *bei* construction

C classifier

CRS currently relevant state (*le*)

NEG negator

PRT particle

Q question

RVC resultative verb complement

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