

## Constraints on embedded time reference in Mandarin: zero vs. overt aspect

Hamida Demirdache and Hopyuan Sun, University of Nantes

This paper investigates constraints on the time reference of embedded clauses in Mandarin, a language with no overt grammatical tense. We show that (i) while Mandarin relative clauses (RCs) with *bare*/aspectually unmarked eventive predicates yield *temporal free readings* even in intensional contexts, (ii) RCs with *overt* perfect(ive) aspectual marking do not allow *forward-shifted readings* in *intensional* contexts, as is also the case for RCs in languages with overt (past) tense such as English. (ii), but not (i), validates the Upper Limit Constraint (ULC, Abusch 1994) according to which the tense of the embedding clause is an *upper bound* on the tense of an embedded clause. What is the source and the implications of this contrast?

We take this contrast between bare vs. aspectually marked eventive predicates in Mandarin to show that the ULC is a constraint on overt temporal items (tense /aspect), not on silent semantic TENSE. This generalization strongly supports proposals seeking to state constraints on temporal reference as constraints on phonological *tense*—not semantic TENSE. Adapting Stowell’s (1993) analysis of *past tense* as a Past Polarity Item and extending Sun (2014), we argue that Mandarin *perfect(ive) aspects* are **Non-Future Polarity Items**.

### 1. English RCs and the ULC

English RCs in extensional contexts yield *temporally independent* construals. The *speech* event in (1) is temporally ordered relative to Utterance Time (UT) by the past tense in the RC, but remains unordered relative to the matrix past meeting event: the past speech event can either be backward or forward shifted wrt (fall before or after) the past meeting event.

(1) Rosa met a professor who gave a speech at *Chronos*.

In intensional contexts, however, the forward-shifted reading of RCs is available only if the DP is interpreted *de re* (Abusch 1988). Under a *de re* construal, (2) means that there is a specific professor, say Prof. Smith, that Rosa was looking for, and Prof. Smith may have given a speech at *Chronos* before or after Rosa’s looking for him. In contrast under a *de dicto* reading (where Rosa was looking for *any* professor who gave a speech at a *Chronos* conference), the forward-shifted reading (where the speech follows the searching event) is blocked. This contrast has been taken to provide evidence for a scopal analysis of free interpretations of RCs: the DP containing the RC moves out of the scope of the matrix past tense to license a temporally independent *de re* construal (Stowell 1993, Ogihara 1996).

(2) Rosa was looking for a professor who gave a speech at *Chronos*.

That forward-shifted readings of RCs are banned under a *de dicto* reading in intensional contexts is expected under Abusch’s ULC, since the ULC only holds of embedded tense.

### 2. Bare eventives and the ULC in Mandarin

The ULC does not carry over to RCs with bare eventive predicates. A forward-shifted reading is available, as the glosses for (3) and (4) show, even on a *de dicto* construal.

(3) *Context*: Last Friday, 3 ballet dances were performed by 3 different groups at 8pm, 9pm and 10pm. At 9:05, while the girls of the 2<sup>nd</sup> group were dancing, Lulu was looking for any dancer.

Shàngzhōu, Lùlù zài zhǎo [RC yí-ge tiào bālěiwǔ de nǚhái.]

last.week Lulu PROG look-for one-Cl dance ballet DE girl.

‘Last week, Lulu was looking for a girl who had danced/was dancing/**would** dance ballet.’

(4) Qùnián, Lǐsì xiǎng qǔ [RC yí-ge yíng mǎlāsōng de nǚzǐ].

last.year Lisi want marry one-Cl win marathon DE girl

‘Last year, Lisi wanted to marry a girl who had won/**would** win the marathon.’

There appears to be no constraint on the temporal anchoring of the embedded dancing event in (3). Likewise, a forward-shifted construal is also available in (4): last year in May, Lisi wanted to marry any girl who would win the marathon in July. The ULC nicely correlates the scope taking properties of DPs with constraints on time reference: assuming that the relativized DP in (2) on its *de dicto* construal remains *in situ*, within the scope of the matrix

past, a forward shifted reading of the embedded past is excluded by the ULC. The RC in (5) headed by the Negative Polarity Item *rèn hé xuéshēng* ‘any student’ (which as any NPI is restricted to occurring in the scope of a downward entailing operator, negation in (5), further corroborates the claim that Mandarin RCs with bare eventive predicates allow temporal free readings even when the DP containing the RC is required to be *in situ* (be it in extensional or intensional contexts), and thus cannot escape the ULC by scoping out of the matrix IP.

- (5) Lùlù \**(méi)* zhǎo/kànjiàn [<sub>RC</sub> *rèn hé zuò bàogào de xuéshēng*].  
 Lulu NEG.PFV look.for/see any do presentation DE student

‘Lulu didn’t look for/see any student who gave/was giving/would give a talk.’

What then is the source of this striking contrast between Mandarin and English RCs? Could it be that the ULC does not hold in Mandarin because it is a tenseless language? No, because as we shall see, the ULC is enforced with predicates bearing overt aspectual marking.

### 3. Aspectually marked eventives and the ULC in Mandarin

There are 2 correlated differences between the RCs in (6) vs. (3): (i) morphologically, the verb in the RC is overtly marked by perfect aspect *guo*, (ii) semantically, the RC no longer allows temporally free construals when read *de dicto*: the dancing must have occurred *prior* to the matrix searching event, thus excluding both simultaneous and forward-shifted readings.

- (6) Shàngzhōu, Lùlù zài zhǎo yí-ge tiào-**guo** bāléiwǔ de nǚhái.  
 last.week Lulu PROG look-for one-CL dance-PFT ballet DE girl.

‘Last week, Lulu was looking for a girl who danced ballet.’

Mandarin RCs with overt perfect aspect, unlike bare RCs, but just like English past-tensed RCs do not allow forward-shifted readings in intensional contexts, in keeping with the ULC. Crucially, the same correlation is at work in Mandarin (finite) complement clauses (CCs): (i) morphologically, eventive predicates in CCs must bear overt aspectual marking on their episodic construal, such as perfective *le* in (7), (ii) semantically, Mandarin CCs do not allow temporally free construals: the wining in (7) must have occurred *prior* to the matrix searching event, thus excluding both a simultaneous and a forward-shifted reading of the CCs.

- (7) Dāngshí Lùlù yǐnwéi/shuō Lǐsì yíng **\*(le)** bǐsài  
 at.that.time Lulu think/say Lisi win PFV match

‘At that time, Lulu thought/said that Lisi had won the match.’

This contrast between the temporal interpretation of eventives *with* vs. *without overt* (perfective) *aspect* in Mandarin suggests that the ULC is a constraint on overt temporal items (tense /aspect), but not on silent semantic TENSE. We take this generalization to provide in turn strong support for models of temporal interpretation seeking to state constraints on temporal reference as constraints on phonological tense, not semantic TENSE, such as Stowell (1993). Thus, on Stowell’s proposal, *past* tense, which spells out (semantic) PAST, is a *Past Polarity Item* (PPI) — that is, a polarity item that must fall in the scope of PAST. The contrasts between Mandarin (3)-(5) vs. English (2) or Mandarin (6)-(7), fall out nicely on this approach. In a nutshell, while a forward-shifted construal of the English RC in (2) is excluded because the embedded *past* must fall in the scope of PAST and the relativized DP remain *in situ* when read *de dicto*, forward-shifted construals of the Mandarin RCs in (3)-(5) are licensed because there is no phonological *tense* and thus no restrictions on the interpretation of the embedded (silent) TENSE even when the DP remains *in situ*. In contrast, forward-shifted construals will be excluded in Mandarin (6)-(7), because there are constraints on the distribution of perfect *le/guo*: they cannot fall in the scope of a future modal, as shown in (8).

- (8) (Míngtiān) Lùlù **huì** xiě **\*(le)** yì-fēng xìn. (9) Lùlù xiě **le** yì-fēng xìn.  
 Tomorrow Lulu MOD write PFV one-CL letter Lulu write PFV one-CL letter

Intended: ‘Lulu will have written a letter tomorrow.’ ‘Lulu wrote a letter.’

Building on Sun’s (2014) proposal that Mandarin is a tensed language with a silent NON-FUTURE TENSE (as opposed to a silent PAST or PRESENT), we argue that the perfect(ive) markers *guo/le* are not PPIs, but *Non-Future Polarity Items* (NFPI) — that is, polarity items

restricted to falling in the scope of NON-FUTURE, as the grammaticality of (9) vs. the ungrammaticality of (8) shows.