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Chapter 6 Conclusions

The research presented here is notable in that it is devoted to the temporal construals of bare predicates in Mandarin, an important issue that is underrepresented in previous studies of temporal reference. It contributes novel generalizations and analyses supported by empirical evidence.

We take the core and original contribution of this thesis to be that it provides the first systematic investigation and detailed theoretical analysis of the temporal interpretations of Mandarin sentences with *bare* predicates, that is without morphological aspect, neither verbal aspectual markers or sentence final markers.

The temporal construals of sentences *with* overt morphological aspect in Mandarin have been largely studied in the literature. We have tried to show how a careful investigation of the temporal construals of sentences *without* overt morphological aspect can lead to novel, insightful generalizations about temporal reference in Mandarin. The key generalizations of this thesis, which any theory of tense and aspect in Mandarin should account for, are recapitulated below, as G1-G7 in Section 6.1.

We have then sought to account for these generalizations with an elegant and parsimonious set of theoretical hypotheses recapitulated below as H1-H7.

The generalizations uncovered and the proposals put forward here point towards interesting semantic variation in temporal reference both internal to Mandarin - in particular, in regard to temporal interpretation across subordinated clauses, see Section 6.2.1 below - and external to Mandarin, that is in comparison to other tenseless languages, see Section 6.2.2.

More generally, the theoretical investigation carried out here should prove to be of empirical and theoretical interest to the cross-linguistic analysis of tenselessness.

6.1 General conclusions

This thesis investigated the temporal interpretation of sentences with bare predicates (BPs) in Mandarin. The data explored at the very beginning concerning BPs in root clauses (see Chapter 3) showed that:

- G1. Root clauses with stative BPs yield *stative* readings;
- G2. Root clauses with eventive BPs yield *generic* construals;
- G3. All stative predicates can appear without aspect;
- G4. All episodic uses of eventive predicates in root clauses involve overt aspect;
- G5. Time adverbials cannot by themselves fix the temporal reference of sentences with eventive BPs, yielding episodic readings.

These generalizations follow from the hypotheses that:

- H1. Stative predicates are properties of times (of type $\langle i, t \rangle$);
- H2. Eventive predicates are properties of events (of type $\langle v, t \rangle$);
- H3. Aspect must be overtly marked in root clauses in Mandarin.

Since stative predicates are of type $\langle i, t \rangle$ (cf. H1), they can combine directly with a time (of type i), which temporally anchors the state described by the predicate, giving rise to the stative construal of the sentences (cf. G1). Stative predicates can thus form a felicitous sentence without aspect (cf. G3). H1 thus correctly predicts G1 and G3.

In contrast, if eventive predicates are of type $\langle v, t \rangle$ (cf. H2), they are expected not to combine directly with a time (of type i), and consequently an aspect (of type $\langle vt, it \rangle$) is required, which maps properties of events to properties of times. This is why episodic readings are only licensed by aspect, and not time adverbs (cf. G5). Since aspect must be overt in root clauses (cf. H3) to license episodic readings for eventive predicates, there must be overt aspectual marking (cf. G4). This is how H2 correctly predicts G4 and G5.

The theoretical simplicity of the analysis should be emphasized. That is, H1 and H2 are theoretical assumptions that already exist in the literature, independently very well grounded (Katz 2003, Kratzer 1998). H3 is the only language specific hypothesis. Note also that on this proposal, the parametric difference between Mandarin and other languages is not semantic but lies merely in the morphosyntax

semantics mapping, since H3 merely requires that aspect be overtly spelled out in Mandarin.

The only remaining issue so far is G2, namely, the generic construals of sentences with eventive BPs. The proposals put forth in Chapter 4 are stated below:

- H4. The generic readings of sentences with eventive BPs are derived from an overt quantification adverb or a covert operator Q.
- H5. The Q-adverb and the covert operator Q are of the same semantic type $\langle vt, it \rangle$, that is, they take properties of eventualities denoted by the eventive BPs and return generic properties.

Note yet again that it is a standard assumption in the literature that a quantificational element contributes to the derivation of generic construals. In particular, Wilkinson (1991) claims that some generic sentences involve quantificational adverbs. H4 and H5 above are largely inspired by the analyses put forth in Krifka et al. (1995), Paslawska & von Stechow (2003), Kaufmann (Scheiner 2003) and others (see Chapter 4, Section 4.2 for discussion). According to H4 and H5, overt Q-adverbs and the covert Q operator play a similar role to aspect: they covert $\langle v, t \rangle$ types to $\langle i, t \rangle$ types, which can then combine with a time (type i). This is how G2 is made to follow H4 and H5.

Finally, the last chapter of this thesis explored the “future” construals of bare sentences and pointed out an asymmetry between future time adverbs and past/present time adverbs in the temporal anchoring of bare sentences:

- G6. *Past* and *present* time adverbs can fix the temporal reference of states or generic properties described by bare sentences, while *future* time adverbs cannot.

Interestingly,

- G7. Sentences with eventive BPs allow episodic future readings without overt aspect.

The asymmetry between past/present *vs.* future time adverbs in G6 can be accounted for by H6, and the episodic future readings of bare sentences by H7.

- H6. Mandarin has a covert tense NONFUT restricting the temporal reference of bare root clauses to non-future times.
- H7. Bare root clauses yielding future construals in Mandarin are similar to futurate sentences in English: they both contain a modal ingredient involving a *plan*. Mandarin differs from English/French in that Mandarin bare future sentences asserts not a *present*, but a *non-future* plan.

Again, the proposal rests on a small set of theoretically well-grounded assumptions:

H6 extends the proposal of Matthewson (2006) and that of Jóhannsdóttir & Matthewson (2007) for other tenseless languages (St'át'imcets Salish and Gitksan) to Mandarin, suggesting that we might be dealing here with a universal, though this would require obviously systematic large-scale investigation to establish.

As for H7, it is the null hypothesis once we assume H6 together with the natural assumptions that all languages have *futurates*. Note that the prediction would be that St'át'imcets and Gitksan would pattern exactly like Mandarin in licensing non-future futurates.

6.2 Future research

6.2.1 Variation across embedded clauses in Mandarin

This thesis focused on the temporal interpretation of bare predicates in Mandarin *root clauses*, and has shown that root clauses with bare predicates yield either *stative* or *generic* readings, as shown in (1a) and (1b). These generalizations (stated as G1-2 above) follow from the generalization in G4 according to which all episodic uses of eventive predicates require overt aspect, illustrated in (1c).

- (1) a. Lǎoshī xiànzài hěn máng.
 professor now very busy
 'The professor is now very busy.'

- b. Nà-ge nǚhái tiào bālěiwǔ.
that-CL girl dance ballet
'That girl dances ballet.'
- c. Nà-ge nǚhái *(zài) tiào bālěiwǔ.
that-CL girl PROG dance ballet
'That girl is dancing ballet.'

The properties of bare predicates in subordinate clauses, which are not examined in this thesis, would be a highly interesting topic for future research.

In particular, bare predicates in *complement clauses* like (2) show similar behaviors as those in root clauses: stative BPs allow stative readings ((2a)), and eventive BPs allow generic readings ((2b)). The episodic readings of complement clauses with eventive predicates are only licensed by overt aspect, as illustrated in (2c).

- (2) a. Xiàoxiao zhīdào [lǎoshī xiànzài hěn máng].
Xiaoxiao know professor now very busy
'Xiaoxiao knows that the professor is now very busy.'
- b. Xiàoxiao shuō/tīngshuō [nà-ge nǚhái tiào bālěiwǔ].
Xiaoxiao say/hear that-CL girl dance ballet
'Xiaoxiao said/heard that that girl dances ballet.'
- c. Xiàoxiao shuō/tīngshuō [nà-ge nǚhái *(zài) tiào bālěiwǔ].
Xiaoxiao say/hear that-CL girl PROG dance ballet
'Xiaoxiao said/heard that that girl was/is dancing ballet.'

Notice that the English counterparts of the Mandarin complement clauses in (2) are all *tensed* complement clauses, as shown in (3).

- (3) a. Xiaoxiao knows that the professor is now very busy.
b. Xiaoxiao said/heard that that girl dances ballet.
c. Xiaoxiao said/heard that that girl was/is dancing ballet.

Interestingly, bare complement clauses such as those in (4a-c) pattern differently from the bare root clauses illustrated in (2)-(3) above: eventive BPs seem to allow episodic readings in these complement clauses, and no restrictions are found in the temporal interpretation of the eventuality described by the complement: the

event time of the complement clause can either follow ((4a)), precede ((4b)) or overlap ((4c)) the matrix event time.

- (4) a. Zhǔrèn shuìfú le Xiǎoxin [lái
 director persuade PERF Xiaoxin come

běijing gōngzuò].

Beijing work

‘The director persuaded Xiaoxin to come to work in Guangzhou.’

- b. Xiǎoxin hěn hòuhuǐ [lái běijing].

Xiaoxin very regret come Beijing

‘Xiaoxin regrets coming to Beijing.’

- c. Wǒmen zài tīng Xiǎoxin [jiǎng gùshi].
 1PL PROG listen Xiaoxin tell story

‘We are listening to Xiaoxin telling a story.’

Notice that the English counterparts of the complement clauses in (4a-c) are all *tenseless* – that is, would correspond to *non-finite* clauses in languages like English.

- (5) a. The director persuaded Xiaoxin to come working in Guangzhou.
 b. Xiaoxiao regrets coming to Beijing.
 c. We are listening to Xiaoxin telling a story.

The contrast between the temporal construals of Mandarin complement clauses in (2) and those in (4), which correlates with the tensed / tenseless split in English complement clauses, is very interesting. We claim that one should make a connection between the examples in (2a-c) and English examples with tensed clauses in (3a-c), on the one hand, and between the examples in (4a-c) and English examples with tenseless clauses in (5a-c), on the other hand.

More investigation is needed in order to shed light on the source of this intriguing contrast as well as the correlation between Mandarin and English, thus contributing to the lively debate in the literature as to whether Mandarin has a *finite* / *non-finite* distinction (cf. Huang 1984, Li 1990, Simpson & Wu 2002, Hu, Pan, & Xu 2001).

Among the studies on temporal interpretation of Mandarin complement clauses in the literature, Li (1999) focuses on complement clauses with overt aspect markers such as *zhe*, *le* and *guo*, and argues that these aspect markers behave like relative tenses giving rise to different temporal readings of complement clauses. Lin (2003), in contrast, extends his investigation to complement clauses without overt aspect and claims that the temporal reference of complement clauses is constrained by the lexical meaning of the matrix verb. Although this claim is supported by empirical evidence, Lin gives no detailed analyses. See also Mallet-Jiang (2012) for similar proposals.

Unlike root clauses, relative clauses with bare predicates allow not only *stative / generic* readings but also *episodic* readings, as is extensively discussed by Sun (2015). (6) below, repeated from (5) in Chapter 1, contains a relative clause, which receives *either a generic or an episodic* reading.

- (6) Mǎlì pāishè-guó [_{NP} tiào bāléiwǔ de nǚhái].
 Mali film-PERF dance ballet DE girl.
 ‘Mali filmed a / the girl who dances ballet.’
 ‘Mali filmed a / the girl who is dancing / danced / will dance ballet.’

Sun (2015:76)

The contrast observed above raises the question of why sentences containing the same bare predicate receive different temporal interpretations according to whether they are root clauses, complement clauses or relative clauses. More precisely, why do bare eventive predicates only allow generic readings in root clauses, while they also allow episodic readings in relative clauses and complement clauses? In other words, why must aspect be overt in root clauses, but not necessarily in relative clauses in licensing episodic readings?

Future insights will be gained through a careful analysis of temporal interpretation across subordinate clauses. This, however, remains beyond the scope of this thesis. Given the important variation in the properties of bare predicates across embedded clauses (as compared to root clauses), we leave these issues open for future investigation.

6.2.2 Cross-linguistic variation

Another intriguing and fundamental issue that was not developed in the current study is the issue of cross-linguistic variation in the temporal construal of bare predicates.

Bare predicates do not have uniformly the same temporal interpretation across all languages with no morphological tense (cf. Chapter 1, Section 1.1). Let's take bare activities for instance. To illustrate, Sun (2010) identifies three patterns of temporal construals of bare activity predicates across tenseless languages:

- i) *generic* construals in Haitian Creole (HC), Jamaican Creole (JC) and Mandarin, as in (7);
- ii) *episodic past* or *present* readings in St'át'imcets and Skwxwú7mesh, as illustrated in (8);
- iii) *episodic past* readings in Capeverdean, as shown in (9).⁶⁹

These patterns are illustrated below:

Generic readings

- (7) a. Pyè vann bèf.
 Pyè sell cattle
 'Pyè sells cattle.'

Haitian Creole (Déchaine 1991:37)

- b. Jan nyam aki.
 John eat ackee
 'John eats ackee.'

Jamaican Creole (Durrleman 2007:149)

- c. Zhāngsān xiě xiǎoshuō.
 Zhangsan write novel
 'Zhangsan writes novels.'

Mandarin (Sun 2010)

⁶⁹ More data on the variation of temporal construals of bare predicates cross languages can be found in Sun (2010).

Episodic present or past readings

- (8) a. sáy'sez'-lhkan.
 play-1SG.SUBJ
 'I played / I am playing.'

St'át'imcets (Matthewson 2006:676)

- b. chen xay-m.
 1SUBJ.SG laugh-INTR
 'I laughed.'/'I am laughing.'

Skwxwú7mesh (Bar-el 2005:123)

Episodic past readings

- (9) Djon kanta.
 Djon sing
 'Djon sang.'

Capeverdean (Pratas & Hyams 2010:379)

The question then arises of how to account for the attested variation reported in Sun (2010) in the temporal interpretation of bare predicates across languages without morphological tense. Is it due to some covert tense that gives rise to differences in temporal interpretation (eg. One could stipulate that while Capeverdean zero tense would be a covert true *past* tense, St'át'imcets zero tense would be a covert *non-future* tense (Matthewson 2006))? Or is the variation due to the cross-linguistic difference in the lexical meaning (eg. While Mandarin eventive predicates would denote non-count, mass-like eventualities, just like nouns, which have been argued to be all mass in Mandarin (Chierchia 1998), Salish and Capeverdean eventive predicates would denote count eventualities)?

What is obvious is that the "default aspect" approach à la Bohnemeyer & Swift (2004), extensively discussed in Chapter 3 (Section 3.5.1), would fail to capture this variation, because if the telicity of the predicate determines the temporal interpretation of the sentence, we do not expect cross-linguistic variation in temporal readings of sentences containing bare predicates of the same class (eg. Bare activities yield generic construals in Mandarin, present/past episodic readings in St'át'imcets and Skwxwú7mesh, and past readings in Capeverdean).

Interestingly, we find similar variation in the temporal interpretation of activities in languages *with* grammatical tense: English *vs.* French. The English present-tensed sentence in (10) with an activity ‘play tennis’ only allows a *generic* reading, while its counterpart in French also allows an *ongoing episodic* reading, as shown in (11).

(10) He plays tennis.

(11) Il joue au tennis.
 3SG play.PRES.3SG at tennis
 ‘He plays tennis.’
 ‘He is playing tennis.’

On this perspective, the intriguing question that arises is how to explain the cross-linguistic variation in the temporal readings of (bare) activities, be it in languages with or without tense morphology. That is, the question is not that of why and how tenseless languages differ in the distribution of temporal readings, but rather and more generally, how and why bare predicates in tenseless languages, just like present-tensed predicates in tensed languages, differ in the distribution of episodic (ongoing) *vs.* generic construals.

It goes without saying that further systematic investigation is required to answer these questions.

We hope, however, to have shown how the empirical and theoretical proposals put forth here (as recapitulated above in G1 to 7 and H1 to 7), which stem from the particular perspective adopted here, namely the choice to focus our investigation of Mandarin Tense on bare predicate sentences, can lead to novel and original insights on Mandarin temporal reference. These insights extend beyond Mandarin to other tenseless languages, and crucially also to tensed languages, raising new puzzles, questions and hypotheses for future theoretical and typological research to empirically assess and answer.