Non-future Tense vs. Two Null Tenses: A Reconsideration of Plural Eventualities in Different Temporal Locations

Yuyin He, Harvard University
NELS 51, 6-8 November 2020, UQAM

1. Introduction
Some superficially tenseless languages are analyzed to bear covert tense(s). For example, languages such as St’át’imcets (Matthewson 2006) and Mandarin (Sun 2014) are argued to bear a covert non-future tense (\textit{NONFUT}) that constrains the reference time to be non-future intervals. Languages such as Blackfoot (Reis Silva \\& Matthewson 2007) are proposed to possess a null version of the English tense system: a covert present and a covert past. Previous studies suggest that the \textit{NONFUT} is superior to two null tenses in accounting for plural eventualities in different temporal locations (PEDT henceforth). For instance, the St’át’imcets sentence in (1) is feasible in a context where John was starving in the past and Fred is starving now (Matthewson 2006). The Mandarin example in (2) is natural to describe a past state of the dead (Hawking) and a present state of the living (Yang) (Sun 2014). To capture PEDT, \textit{NONFUT} succeeds in providing an interval that covers past and present while the latter fails to offer two different temporal locations.

\begin{enumerate}
\item (wa7) zúqw-cen s-John múta7 s-Fred
\begin{itemize}
\item IMPF
\item die-foot
\item NOM-\text{John and}
\item NOM-\text{Fred}
\end{itemize}
\text{‘John and Fred were/are starving.’ (not at the same time).} \hspace{1cm} (\text{St’át’imcets, Matthewson 2006})
\item Huojin \text{he} Yang Zhenning dou dui wuli ganxingqu.
\text{‘Hawking and Yang Zhenning DOU to physics interest’}
\text{‘Hawking and Zhenning Yang were/are interested in physics.’} \hspace{1cm} (\text{Mandarin, adapted from Sun 2014})
\end{enumerate}

We argue that PEDT in a superficially tenseless language does not necessarily rule out a two-null-tenses analysis. A non-future tense is preferred if PEDT mostly occurs in perfective constructions like St’át’imcets. But for languages like Mandarin in which PEDT is only observed in some imperfective constructions but is blocked in others, they are not committed to a \textit{NONFUT} tense.

2. The mixed pattern in Mandarin: blocking effect of stage-level statives
Though Mandarin allows PEDT in (2) in which the stative is individual-level (i-stative), PEDT is blocked when the predicate is stage-level (s-stative), a pattern unattested in St’át’imcets. In the same context for the St’át’imcets sentence in (1), the Mandarin counterpart in (3) only allows either a past or a present interpretation. Similarly, a sentence in (4) with exactly the same structure as the one in (2) but with a s-stative prohibits PEDT. With a dead experiencer in the coordinated subject, only the past reading is available. The data in (2)-(4) pose a challenge for analyses extending a St’át’imcets-type \textit{NONFUT} to Mandarin (cf. Sun 2014). If \textit{NONFUT} is compatible with PEDT, it is unclear what blocks it in (3)-(4).

\begin{enumerate}
\item John \text{he} Fred dou hen e.
\text{John and Fred DOU very hungry}
\text{‘John and Fred are/were very hungry.’ ‘#John was very hungry and Fred is very hungry.’}
\item Huojin \text{he} Yang Zhenning dou hen lei.
\text{Hawking and Yang Zhenning DOU very tired}
\text{‘Hawking and Zhenning Yang were/are tired.’ ‘#Hawking was tired and Zhenning Yang is tired.’}
\end{enumerate}
3. The two-null-tense account for Mandarin  A two-null-tense account also correctly captures (2)-(4). Following Partee (1973), we assume tense to be referential. A tense operator carries a numerical index to pick out a context salient time \( g(7) \) via the assignment function \( g \), iff \( g(7) \) satisfies some prepositional constraints. The English-like PRES and PAST are shown below.

\[
(5) \quad \text{PRES}^c_w.g = g(7), \text{iff } g(7) = t_c.
\]

\[
(6) \quad \text{PAST}^c_w.g = g(7), \text{iff } g(7) < t_c.
\]

The instantaneous PRES (Bennett & Partee 1978) in (5) returns \( t_c \) and the PAST in (6) requires \( g(7) \) to precede \( t_c \) (\( t_c \) is often the instantaneous utterance time \( s^* \) in a matrix clause). We assume that though (3)-(4) are morphologically unmarked by aspect markers, they possess a covert imperfective aspect IPFV (Lin 2006), with a standard semantics in (7). Following Liu (2018) and Xiang (2020), we propose that the distributive reading comes from a covert distributive operator (Schwarzschild 1996) with the semantics in (8). Dist requires a given property \( P \) to hold for any atom of a plural entity \( x \). Dou in (2)-(4) is a focus particle whose contribution is irrelevant here.

\[
(7) \quad \text{IPFV} = \lambda P \lambda t \lambda w \exists e[P(e)(w) \land t \subseteq \tau(e)]
\]

With the structure in (9a) for (3)-(4), the denotations in (9b-c) require \( g(7) \) to be in the runtime of two states by different experiencers, which can only be satisfied when the two states overlap. Therefore, PEDT is excluded. Either present or past reading is available depending on the tense. S-statives like ‘hungry’ and ‘tired’ presuppose that the experiencer is alive if the state holds (Musan 1997, Magri 2009), hence the present reading is infelicitous if one of the experiencers is dead in (4).

\[
(9) \quad \begin{align*}
&\text{a. } [\text{FocP } \text{dou } [ \text{coordinated subject } [\text{DistP } \text{Dist } [\lambda x [\text{TP TENSE}^7 [\lambda \text{AspP IPFV } [\lambda \text{AdjP } ]]]]]] \\
&\qquad \forall x[(x \subseteq f \land \text{Atom}(x)) \rightarrow \exists s[\text{hungry}(s,x,w) \land g(7) \subseteq \tau(s)]] \\
&\qquad \forall x[(x \subseteq h \land \text{Atom}(x)) \rightarrow \exists s[\text{tired}(s,x,w) \land g(7) \subseteq \tau(s)]]
\end{align*}
\]

The sentence in (2) is compatible with two null tenses, too. The argumentation favoring NONFUT makes two assumptions: i. the temporal projection of a noun referring to the dead must be in the past; ii. the temporal projection of the nominal domain is the same as the verbal domain. The second assumption is not necessarily true (Enç 1981, Tonhauser 2006). Moreover, English apparently possesses two tenses and it allows a dead subject to go with present tense, as shown in (10). Other than that, English allows the ‘historical present’ usage in which present tense is compatible with a past narration. Hence an account for English is possible to extend to Mandarin.

\[
(10) \quad \begin{align*}
&\text{a. } \text{Mammoths first appeared in Africa 3 million to 4 million years ago...But while they have 58 chromosomes and elephants 56...} \\
&\qquad \text{(Mittwoch 2008: 168 footnote 1)} \\
&\text{b. } \text{Dinosaurs are a group of reptiles that dominated the land for over 140 million years...} \\
&\qquad \text{(google: https://www.nhm.ac.uk/discover/what-are-dinosaurs.html)}
\end{align*}
\]

4. St’tá’t’imcets: imperfectivity and the Split operator  The imperfective aspect marker \( \text{wa7} \) in (11) is optional. According to Matthewson (2006), predicates not overtly marked by \( \text{wa7} \) is assumed to bear a null perfective aspect PFV. With the definitions of PFV and NONFUT in (11) and (12), Dist correctly captures PEDT in perfective sentences: (13b) says that for any atomic subpart \( y \) of the plural subject ‘John and Fred’, there is a starving state of \( y \) in a non-future time \( g(7) \). However, the imperfective version of (11) would exclude PEDT according to (9d), contrary to facts.

\[
(11) \quad \text{PFV} = \lambda P \lambda t \lambda w \exists e[P(e)(w) \land \tau(e) \subseteq t] \\
(12) \quad \text{NONFUT}^c_w.g = g(7), \text{iff } g(7) \leq t_c.
\]

\[
(13) \quad \begin{align*}
&\text{a. } [s \text{ s-John múta7 s-Fred } [\text{DistP Dist } [\lambda x [\text{TP NONFUT}^7 [\lambda \text{AspP PFV } [\lambda \text{AdjP } ]]]]]] \\
&\quad \forall y[(y \subseteq f \land \text{Atom}(y)) \rightarrow \exists s[\text{be starving}(s,y,w) \land \tau(s) \subseteq g(7)], \text{iff } g(7) \leq t_c]
\end{align*}
\]
One possible way to capture the St’át’imcets data is to assume that St’át’imcets imperfective sentences possess a covert operator \textit{Split} to license PEDT. In (14a), \textit{Split} takes a property \(P\), an argument \(x\) and returns true if \(P\) holds for a contextually-split subpart of \(x\). With the structure in (14b), (14c) correctly predicts that there is a contextually partitioned part of \(g(7)\) within each runtime of the states for John and Fred.

\begin{align}
(14) & \quad [\text{Split}]^c = \lambda P. x \exists y [y \subseteq x \land \text{Part}_{c,x}(y) \land P(y)] \\
& \quad [s \text{ s-John múta7 s-Fred} [\text{DistP Dist} [\lambda x [\text{TP NONFUT}7 [\text{SplitP Split} [\text{AspP wa7 [vP źųqw-cen ]]]]]]]] \\
& \quad \forall y [y \subseteq j \oplus f \land \text{Atom}(y) \rightarrow \exists t \exists s [t \subseteq g(7) \land \text{Part}_{c,g(7)}(t) \land \text{be starving}(s,y,w) \land t \subseteq \tau(s)]]
\end{align}

5. Conclusions This talk offers an analysis to derive the different patterns of PEDT in Mandarin and St’át’imcets. For Mandarin in which PEDT occurs with imperfectivity, the two-null-tense approach works equally well with no worries about the blocking effect of s-statives. St’át’imcets imperfective sentences perform a different PEDT pattern because it bears a \textit{Split} operator.

**Selected references**