Temporal semantics in a “tenseless” language

(1) UT: The time the sentence is uttered.
RT: The time about which a claim is made.
ET: The time at which the relevant event takes place.

(3) A: What did you notice when you looked into the room?
B: The light was flickering. (adapted from Klein, 1994)
RT: the time at which B looked into the room (e.g., 9 pm yesterday)
ET: the time at which the light was flickering (e.g., from 8–11 pm yesterday)

(4) a. táyt-kan
hungry-1SG.SUBJ
'I was hungry / I am hungry.'
b. k’á-c-an’-lhkan
dry-DIR-1SG.SUBJ
'I dried it / I am drying it.'
c. sáy’séz’-lhkan
play-1SG.SUBJ
'I played / I am playing.'

Adverbials can be used to provide tense, but NOT future:

(5) a. táyt-kan
hungry-1SG.SUBJ
now
'I am hungry now.'
b. k’á-c-an’-lhkan
dry-DIR-1SG.SUBJ
when-PAST-ONE.DAY.AWAY-3CONJ
'I dried it yesterday.'
c. sáy’séz’-lhkan
play-DIR-1SG.SUBJ
when-PAST-Friday-3CONJ
'I played on Friday.'

(6) a. * táyt-kan
hungry-1SG.SUBJ
one.DAY.AWAY
zánúcwem
'will be hungry tomorrow / next year'
b. * k’á-c-an’-lhkan
dry-DIR-1SG.SUBJ
one.DAY.AWAY
zánúcwem
'I will dry it tomorrow / next year'
c. * sáy’séz’-lhkan
play-1SG.SUBJ
one.DAY.AWAY
zánúcwem
'I will play tomorrow / next year.'

For a future-time interpretation, overt marking is required. The most common marking of the future is the second-position clitic *kelh, illustrated in (7). *kelh may optionally co-occur with future-time adverbials.

(7) a. táyt-kan
hungry-1SG.SUBJ
kelh
*I was hungry / * I am hungry / * I will be hungry.'
b. k’á-c-an’-lhkan
kelh
dry-DIR-1SG.SUBJ
kelh
*I dried it / * I am drying it / * I will dry it.'
c. sáy’séz’-lhkan
kelh
play-1SG.SUBJ
kelh
*I played / * I am playing / * I will play.'
Basics in both languages

(11) \([\textsc{past}_i]_{\text{ge}}\) is only defined if \(g(i) < t_c\) (the utterance time). If defined, \([\textsc{past}_i]_{\text{ge}} = g(i)\).

(12) a. Mary walked.
    i corresponds to the reference time; \(g(i)\) is the contextually determined assignment function.
    b. \[ \begin{array}{c}
    \text{TP} \\
    \text{T} \quad \text{AspP} \\
    \text{PAST}_i \quad \text{Asp} \quad \text{VoiceP} \\
    \text{PERF} \quad \text{Mary walk} \end{array} \]

(13) \([\textsc{tense}_i]_{\text{ge}}\) is only defined if no part of \(g(i)\) is after \(t_c\). If defined, \([\textsc{tense}_i]_{\text{ge}} = g(i)\).

(14) matq [kw s-Mary]
    walk [DET NOM-Mary]
    ‘Mary walked / Mary is walking.’

(15) a. \[ \begin{array}{c}
    \text{TP} \\
    \text{T} \quad \text{AspP} \\
    \text{TENSE}_i \quad \text{Asp} \quad \text{VoiceP} \\
    \text{PERF} \quad \text{matq kw sMary} \end{array} \]
    b. \([\text{((15a))}]_{\text{ge}}\) \(= \lambda w \exists e [\text{walk}(e)(w) \& \text{agent(Mary)}(e)(w) \& \tau(e) \subseteq g(i)]\) (where no part of \(g(i)\) follows \(t_c\)).
    c. There is an event \(e\) of Mary walking, whose running time \(\tau\) is included in the contextually salient non-future time \(g(i)\).
• English *will* necessarily places the reference time after the utterance time.
• English *would* places the reference time after some earlier time, but not necessarily after the utterance time.
  • The time at which Susan’s claimed husband-leaving takes place is after the utterance time in (29a), but before it in (29b).
• Some linguists refer to this as the abstract morpheme WOLL

$$[[\text{WOLL}]] = \lambda P. \lambda t. \lambda x. \exists t' \ [t<t' \& [[P(t')(x)]] = 1]$$
Let λ instantiate the predicate variable P with the predicate sneeze.
$$[[\text{WOLL sneeze}]] = \lambda t. \lambda x. \exists t' \ [t<t' \& [[\text{sneeze}(t')(x)]] = 1]$$
$$[[\text{WOLL Mary sneeze}]] = \lambda t. \lambda x. \exists t' \ [t<t' \& [[\text{sneeze}(t')(x)] = 1](Mary)$$
$$\quad = \lambda t. \exists t' \ [t<t' \& [[\text{sneeze}(t')(Mary))] = 1](\text{now})$$
$$\quad = \exists t' \ [\text{now}<t' \& [[\text{sneeze}(t')(Mary))] = 1]$$

(28) a. A child was born who *will* become ruler of the world.
    b. A child was born who *would* become ruler of the world. (Kamp, 1971)

(29) a. Susan said 2 weeks ago that she *will* leave her husband in one week.
    b. Susan said 2 weeks ago that she *would* leave her husband in one week.
Embedded *kelh*

- Analogous elicitations from St’át’imcets speakers:

  (30) Situation: Mike Leech is currently chief of T’it’q’et. His (deceased) mother was called Julianne.21

  zwát-en-as s-Julianne [k-wa-s] kúkwpi7 *kelh*
  know-DIR-3ERG NOM-Julianne [DET-IMPF-3POSS] chief *kelh*
  ta skūza7-s-a i kwis-as
  DET child-3POSS-DIT when.PAST fall-3CONJ

  *‘Julianne knew when he was born that her child would become chief.’*

  "born" "become chief" \( t_e \)

  (31) tsut tu? kw s-Susan i ánwas-as xetspášq’et lhel
  say tu? DET NOM-Susan when.PAST two-3CONJ week from
  lhkúnsa [kw s-lhwád-en-as *kelh* ta
  now [DET NOM-leave-DIR-3ERG *kelh* DET
  kwáltams-s-a l-ku píls7 xetspášq’et]
  husband-3POSS-DIT in-DET one week]

  *Susan said 2 weeks ago that she’ll leave her husband in one week from now / would leave him one week from then.*

  "say" \( t_e \) "leave"

  Embedded *kelh* allows readings like English WOLL
Matrix *kelh*: like English WOLL

- Gives future readings in simple sentences
- Allows *would* readings like English does
- Disallows simultaneous future readings
- Shifts forward the evaluation time of an embedded clause
Interpretation of *kelh*

(37) $\matq \ kelh \ [kw \ s-Mary]$
  walk $\mathbf{WOLL} \ [\text{DET} \ \text{NUM-Mary}]$
  ‘Mary will walk’.

(38) a. $\text{TP}^{23}$
  \[
  \begin{array}{c}
  \text{T} \quad \text{kelhP} \\
  \text{TENSE}_i \quad \text{kelh} \\
  \text{AspP} \\
  \text{Asp} \quad \text{VoiceP} \\
  \text{PERF} \quad \matq \text{kw} \text{Mary}
  \end{array}
  \]

b. $[[\text{AspP}]]^{g_c} = \lambda t. \lambda w. \exists e \ [\text{walk}(e)(w) \ & \ \text{agent}(\text{Mary})(e)(w) \ & \ \tau(e) \subseteq t]$  

c. $[[\text{kelhP}]]^{g_c} = \lambda t. \lambda w. \exists t' \ [t < t' \ & \ \exists e \ [\text{walk}(e)(w) \ & \ \text{agent}(\text{Mary})(e)(w) \ & \ \tau(e) \subseteq t']]$  

d. $[[\text{TP}]]^{g_c} = \lambda w. \exists t' \ [g(i) < t' \ & \ \exists e \ [\text{walk}(e)(w) \ & \ \text{agent}(\text{Mary})(e)(w) \ & \ \tau(e) \subseteq t']$  
  (where no part of $g(i)$ follows $t_e$)  

e. There is an event $e$ of Mary walking, whose running time $\tau$ is included in a time $t'$ which follows the contextually salient non-future time $g(i)$.

- It’s an overt manifestation of the morpheme WOLL
- Even though St’át’imcets and English are typologically very distant, the similarity in this respect is striking.
- Semantically the analysis is straightforward given the techniques we’re studying.
- It’s actually modal (but that’s a story for another time).