A syntactic approach to tense in complementation and beyond

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This talk

- Syntactic model of Tense in complementation
- First steps towards Tense in adverbial clauses
- Certain conclusions about the position of adverbial clauses based on Tense
- Broader context:
  - Teasing apart morphology, syntax, semantics of Tense
  - Clarifying/defining notions such as “dependent”, “anaphoric” Tense
  - Syntax as a hub for Tense: derives mismatches and Tense differences in different types of clauses
  - Differences between finite and non-finite Tense
Section 1

Background, Model
A syntactic model of Tense

  - Stowell: Zeit phrase [ZPs]
  - Similar to DP arguments, ZPs can be modified, bound, and/or controlled

- **(Neo-)Reichenbachian system of temporal notions** (Reichenbach, 1947; Klein, 1994, 1995):
  - Utterance Time [UT] (also called Speech Time)
  - Reference Time [RT] (also called Topic or Assertion Time)
  - Event Time [ET]

- **Aspect** (Klein, 1994, 1995; Demirdache and Uribe-Etxebarria, 2004):
  - Tense relates a RT to the UT
  - Aspect relates the ET to a RT or a RT to another RT
Example derivation: Future statement
Tense, future modality

- **UT** in main clauses (and non-integrated clauses): determined contextually—the time of the statement (cf. unbound pronouns).
- **PAST**: situates lower time, **RT1**, before higher time, **UT**
  - **PRES**: makes the two time arguments simultaneous (more concretely, the **RT** overlaps the **UT**)
  - **WOLL**: situates the lower **RT** after the higher **RT** (in addition to possibly also contributing other modal flavors)
Aspect, morphology

- PERFECTIVE: requires the ET to be included in the RT (Pancheva and von Stechow, 2004; Todorović, 2015)

- IMPERFECTIVE and PROGRESSIVE: require the RT to be included in the ET (other differences are set aside here)

Morphology

- WOLL + PRES: will
- WOLL + PAST: would
- WOLL: zero
Aspect restrictions

- Perfective/non-Progressive is excluded when the RT interval is too short to include the ET

\[ RT \approx UT \]

<table>
<thead>
<tr>
<th>[ ]</th>
<th>[ ]</th>
<th></th>
<th>[ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>ET</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1)  
 a. Nova sings in the kitchen. only habitual  
b. Nova is singing in the kitchen right now. ongoing possible
Section 2

Tense dependencies
Dependent tense

- All complement clauses are Tense-dependent (finite and non-finite alike).
- We return to relative and adverbial clauses later, where things are different.
(In)dependent Tense

- Embedded complement *past*:
  - not necessarily before the matrix UT (PAST is relative)
  - must be before the matrix ET (just being before the matrix UT is not necessarily sufficient)

<table>
<thead>
<tr>
<th>Complement <em>past</em></th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent (relative): after matrix UT</td>
<td>✓</td>
</tr>
<tr>
<td>Independent: after matrix PAST</td>
<td>no</td>
</tr>
</tbody>
</table>
(2) Nova is pregnant and her due date is in 5 weeks. She doesn’t want to tell people yet, but she will announce in 6 weeks that she was pregnant and had a baby.
No independent PAST

(3)  a. A year ago, Nova claimed that she got married *yesterday/two years ago.
    
    b. A year ago, Nova claimed to have gotten married *yesterday/two years ago.
Complement Tense

- A time argument is always related to the most local higher time argument (Stowell, 2007) in a complement clause.
- The local time argument for the highest embedded time argument is the matrix ET.
- Embedded UT can be related to the matrix ET extensionally (the actual time) or intensionally (the time that the attitude holder believes it is when they hold a belief or make a claim).
- Direct binding of UT by ET (de re), or mediated via the intensional verb (de se)
Complement structure

ET1

V(i)

claim/believe

CP

UT2

NOW

T

[BEFORE]

AspP

RT2

Asp

[PFV]

ET2

VoiceP
Aspect restrictions

(4)  

a. Nova claims that Grey sings in the kitchen.  
   → Nova claims that Grey is singing in the kitchen right now.  
   only habitual

b. *Nova claimed that Grey sang in the kitchen when the mailman knocked.  
   → Nova claimed that Grey was singing in the kitchen when the mailman knocked.  
   *ongoing
Section 3

Temporal modification
Modifiers

She left yesterday.

- Temporal AdvPs, PPs, CPs modify/restrict RT
- PAST: RT1 is before UT
- AdvP: RT1 coincides with *yesterday*
- PFV: ET is included in RT1

Modifier of RT or ET?

- Hornstein (1990); Demirdache and Uribe-Etxebarria (2004):
  - Simple PP/AdvP modifiers can modify RT or ET.
  - Clausal modifiers can only modify RT.
- Why is this the case? Is it?

(5) Maddi had left school at 5 p.m.  
[Demirdache and Uribe-Etxebarria (2004): 157, (21)]

(6) John had left the office when Sam walked in at 3 p.m.  
[Demirdache and Uribe-Etxebarria (2004): 165, (37)]
Modification is always of RT

```
CP
  UT
    C
    TP
      T
        [PAST]
      PerfP
        Perf
          [HAVE]
        AspP
          Asp
            [PFV]
          ET
        VoiceP
          RT2{+PP}
            at 5pm
        RT1{+PP}
            at 5pm
```
Ambiguous modification

- PAST: RT1 is before UT
- PERF: RT2 stretches back from RT1
- PFV: ET is included in RT2
Modification: PP modifies RT1

- **RT1**: before UT & coincides with 5pm
- **RT2**: before/stretches back from 5pm
- **ET**: included in an interval before 5pm
Modification: PP modifies RT2

- **RT1**: before UT
- **RT2**: before/stretches back from RT1 & coincides with 5pm
- **ET**: included in 5pm
Temporal clauses: relativization

- Demirdache and Uribe-Etxebarria (2004): Temporal clauses are ZPs where the RT is relativized.

(7) Nova was reading when the mailman knocked at 10am.
    ↦ Nova was reading at the time of the mailman’s knocking, which was at 10am.

- Since Demirdache and Uribe-Etxebarria (2004) do not distinguish between Perfective/Imperfective in their structures, RT and ET are typically identical for them.
- If we add Aspect, it seems that it is the ET that is relativized.
When clauses: Aspect matters

- Once Aspect is taken into consideration (both in the matrix and embedded clauses), we also find that the configurations are ambiguous.

(8) John had left the office when Sam walked in at 3 p.m.
    only (?) J’s leaving before S’s walking in

(9) John had been leaving the office when Sam walked in at 3 p.m.
    leaving and walking in can overlap

(10) John had left the office when Sam was reading.
     leaving and walking in can overlap
When clauses are no different

Diagram:

- CP
  - UT
  - C
  - TP
  - T
    - [PAST]
  - PerfP
    - RT1{+ZP}
      - when...
    - Perf
      - [HAVE]
  - AspP
    - Asp
      - [PFV]
      - ET
      - VoiceP

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When clause structure

(11) John *had left* the office when Sam *walked* in at 3 pm.
\[ \rightarrow \text{ET}_\text{emb} (\text{walk-in}) = \text{RT}_2\text{matrix} \] very short; cannot include
\[ \text{ET}_\text{matrix} (\text{leaving}); \text{*non-progressive} \]

(12) John *had been leaving* the office when Sam *walked* in at 3 pm.
\[ \rightarrow \text{ET}_\text{emb} (\text{walk-in}) = \text{RT}_2\text{matrix} \] very short; can be included
in \[ \text{ET}_\text{matrix} (\text{leaving}); \text{progressive} \]
When clause structure

(13) John **had left** the office when Sam **was reading.** \( \rightarrow \) \( ET_{emb} \)
(reading) = \( RT_{2matrix} \) longer interval; can include \( ET_{matrix} \)
(leaving); OK non-progressive
Section 4

Non-complement clauses
Tense (in)dependencies as evidence for structure

- If PAST in an adverbial clause can be understood as after the UT, then it is evaluated in relation to the matrix RT/ET.
  - The adverbial clause must be in the scope of matrix RT/ET.
- If PAST in an adverbial clause must be understood as before the UT, then it is evaluated in relation to UT.
  - The adverbial clause must be outside the scope of matrix RT/ET.
- Note: SOT contexts do not allow us to distinguish between dependent and independent tense; they are therefore ignored here in favor of the two other (in)dependence tests.
(In)dependent Tense

<table>
<thead>
<tr>
<th>past</th>
<th>Complement</th>
<th>Relative</th>
<th>because</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent: after matrix UT</td>
<td>✓</td>
<td>✓</td>
<td>no</td>
</tr>
<tr>
<td>Independent: after matrix PAST</td>
<td>no dependent</td>
<td>✓ dependent or independent</td>
<td>✓ independent?</td>
</tr>
</tbody>
</table>
Relative clauses

(14)  
\begin{enumerate}  
\item A year ago, Nova \textbf{claimed} that she \textbf{got} married \textbf{*yesterday/two years ago}.  
\item A year ago, Nova \textbf{met} a teacher who \textbf{got} married \textbf{yesterday/two years ago}.  
\item In a week, Nova \textbf{will} only invite the friends who \textbf{congratulated} her on her birthday two days before.  
\end{enumerate}
Dependent Tense
Relative clause/DP dislocation

- Relative clauses or the DPs they modify (Fox and Nissenbaum, 1999) can move overtly or covertly to a higher position.
- Embedded UT is outside the scope of the matrix ET/RT (as well as the matrix verb)
- Correlation with obligatory de re construals of the content of the relative clause in such cases (Abusch, 1988; Ogihara, 1996)
- Dislocation is optional—relative clauses can also be construed de dicto (Abusch, 1988; Stowell, 2007), in which case no dislocation would take place and the embedded Tense is ordered with respect to the matrix ET.
Independent Tense

```
CP
   UT
   TP
      TP
         T
         Asp
            RT
            Asp
               VoiceP
                  ET1
                     V
                        t
                           met
```

Background, Model  Tense dependencies  Temporal modification  Non-complement clauses  Broader context

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Because clauses

(15) Nova and Grey are planning to secretly get married in a week. I found out and wanted them to tell people, which they refused. But they promised me yesterday that they will/would tell their family after their honeymoon in two weeks that they eloped and got married a week before.

(16) *Nova and Grey are planning to secretly get married tomorrow. I found out and wanted them to tell people, which they refused. But they promised me that they will/would tell their family in two weeks because they were on their honeymoon before that.

(17) *Nova is pregnant and her due date is in 5 weeks. She doesn’t want to see her family while she is pregnant. But she said that in 6 weeks, she would invite them again, because she had her baby by then.
Because clauses: absolute PAST
Is there more to the syntax?

- **past** under **past**: embedded **PAST** understood as after **matrix PAST** (but still before **UT**).

- Judgments are not entirely clear; relative ranking: e. is better than d.; d. is better than c.; c. is perhaps not as * as b.

(18) a. Three months ago, Nova **got** a flu shot from a doctor who **went** to Africa last week.

b. *Three months ago, Nova **announced** that she **went** to Africa last week.

c. ??Three months ago, Nova **got** a malaria shot since/because she **went** to Africa last week.

d. ?Nova **got** a malaria shot three months ago since/because she **went** to Africa last week.

e. Since/because she **went** to Africa last week, Nova **got** a malaria shot three months ago.
Height of adverbial clauses

- Adverbial clauses differ regarding their degree of integration into the matrix clause.
- Central vs. peripheral adverbial clauses (Haegeman, 2012; Endo and Haegeman, 2019)
- Clauses attach at different heights in the structure.
  - Peripheral: *whereas, although*
  - Central: *before, after clauses*
  - Ambiguous: *since, while*
- Tense can be seen as a further diagnostic for that, that confirms the distinction.
  - Peripheral: e.g., CP; outside the scope of all RTs
  - Central: modify RTs, or may be in the scope of RT (*because*)
(19) a. Nova got married a year ago, whereas Grey got married two years ago/yesterday.
b. Nova wrote her vows 3 years ago, although she only got married last year.
c. While Grey cooked the main course, Nova made desert. ambiguous
d. Nova had morning sickness three years ago while she only got pregnant last year. only concessive while
e. Nova cleaned the house last week since Grey visited yesterday. only rational since
Section 5

Broader context
The many notions of Tense

- $tense_M$, $TENSE_Sy$, $TENSE_{Se}$

- Syntactic TENSE:
  - Value (e.g., PRES, PAST) in a syntactic head such as T
  - T may also be involved in case assignment
  - Subject agreement, and the morphology of the next lower verbal element

- Semantic TENSE: the feature in T is interpreted as
  - a BEFORE/AFTER/WITHIN relation
  - an operator
  - a pronoun

- Morphological tense: overt marking on a verbal element, typically as a tense morpheme
Mismatches

- Tense is pronounced, but not interpreted
  - Sequence of tense [SOT]: the embedded \textit{PAST/past} does not trigger a \textit{BEFORE} relation of the embedded event with respect to the matrix event
  - Semantically vacuous (‘fake’) \textit{PAST/past} in counterfactual conditionals or wishes

(20) Nova said that she was pregnant.

(21) a. If Mary knew the answer, she would be the only one.

[Iatridou, 2000: 244, (47b)]

b. I wish I had/*have a car (at present).

[Iatridou, 2000: 239, (25a,b)]
Mismatches

- Tense is interpreted, but not pronounced
  - PRES in English (and many other languages); syntactically behaves like PAST in all the activities T engages in (Case, agreement); also shows an effect in semantics
  - Tense in infinitives: some involve an obligatory forward-shifted interpretation, but do not allow overt Future elements

(22) a. Nova decided yesterday [ to leave (today/tomorrow/*a week ago) ].
b. *Nova decided to have left.
c. *Nova decided to will leave.
No overt Tense (despite finiteness)

(23) a. *Apofasise oti θa agorasi to vivlio. 
   decided.PST.3SG that FUT buy.PFV.3SG DET book 
   ‘She decided that she will buy the book.’

b. Apofasise na agorasi to vivlio 
   decided.PST.3SG NA buy.PFV.3SG DET book 
   ‘She decided to buy the book.’

c. *Apofasise na θa agorasi to vivlio 
   decided.PST.3SG NA FUT buy.PFV.3SG DET book 
   ‘She decided to buy the book.’ [Ioannis Katochoritis, p.c.]
Conclusion

- In the model here, the syntactic TENSE components are not determined by semantics.
- Syntax computes structure based on independent syntactic properties.
- But nonetheless there is an interaction—different syntactic structures feed differently into the semantic computation of TENSE.
- Syntax is responsible for:
  - the general Tense dependency in complement clauses
  - size and height differences of different types of (complement as well as adverbial) clauses (which may also impose constraints on the availability of elements such as operators, de se TENSE, embedded UT, and/or WOLL)
  - PF–LF mismatches
Illustration: SOT

(24) Nova said that she was pregnant.
By carefully separating the notions *tense/TENSE/TENSE*, and by considering the different components of Tense, in particular also the syntactic structure, many things fall into place and a consistent system of the temporal properties of different clause types can be formulated.
Thank you!
Section 6

Appendix: Infinitives
Non-finite Proposition complements
Non-finite Situation complements #1
Non-finite Situation complements #2

ET1ᵢ

Vᵢ
decided

UT2
NOWᵢ

CP

C

TP

T

[∅]

PF: to

LF: []

ModP

Mod

[WOLL]

AspP

Asp

RT2ᵢ

RT3

ET2

VoiceP
Non-finite Event complements #1
Non-finite Event complements #2
References I


References II


References III


References IV

