Background
SOT as Pronominal Tense
Semantics
Core cases
Tricky residue
Absence of SOT
Conclusions

Pronominal tense and anaphora

evidence from sequence of tense

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CLA Annual Meeting, May 30–June 1 2018

Introduction

This talk is about **sequence of tense** (SOT)

= the interpretation of tense in embedded clauses.

The puzzle: languages **vary** in how tense is interpreted in embedded clauses.

Proposal: variation results from a difference in the **representation** of tense.

- In some languages, tense is **pronominal**, and so the temporal anchoring of a clause is accomplished in T^0 → this gives rise to SOT effects
- In other languages, tense is **quantificational**, and so the temporal anchoring of a clause is accomplished higher, in C^0 → in these languages tense can be relative to a higher clause, giving rise to the absence of SOT effects.

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Structure of today's talk

1. Background on SOT
2. Towards a pronominal-tense analysis of SOT
   - The semantics of tense
   - Core cases: SOT as independent tense
   - Tricky residue: SOT as hypothetical (CF) past
3. Absence of SOT as quantificational tense
4. Conclusions

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Section 1

Background on SOT

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What is Sequence of Tense?

- SOT is essentially a **matching effect** between matrix and embedded tense.
  (in some languages)
- Visible if we compare **direct** and **indirect** speech:

(1) Sarah said: "It **is** cold." $\longrightarrow$ Sarah said that it **was** cold.

(2) On Monday, Sarah told me: "Allison **leaves** on Tuesday."
$\longrightarrow$ On Monday, Sarah said Allison **left** on Tuesday.

This is SOT: **past-under-past** used to report **simultaneity**
$\rightarrow$as long as the embedded clause is **imperfective** or **stative**.

Non-SOT languages

Compare this with **Non-SOT languages**, where embedded tense is **relative**:
Simultaneity is reported by **present-under-past**:

(3) jaan uqa-lauq-tuq miali singai-∅-ngmat
Jaan say-PAST-PTCP.3SG Mary pregnant-PRES-CAUS.3SG
"John said that Mary was pregnant." [S. Baffin Inuktitut: Hayashi, 2011]

(4) John-wa [Mary-ga byooki-da to] it-ta.
John-TOP [Mary-NOM be.sick-PRES that] say-PAST
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(5) Hän sanoi, että vene on siellä rannassa.
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Further complications

Non-SOT languages **also** allow past-under-past to report simultaneity:

(6) Hän sanoi, että vene **oli** siellä rannassa.
3SG say-IMPF that boat **be.PAST** there-ADE shore-INE
"They (SG) said that the boat was there on the shore."
[Finnish: P. Koskinen p.c.; see also Russian, Hungarian, Japanese]

And **SOT** languages allow present-under-past to report simultaneity
...but with **double-access** interpretations.

(7) Sarah said it **is** raining.
(Only possible if was raining when she spoke and is **still** raining.)

And in **both** types of languages, tense in **relative clauses** is always independent.

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A typological observation:

SOT languages: English, Dutch, German, Swedish, Norwegian, French, Italian, Latin...

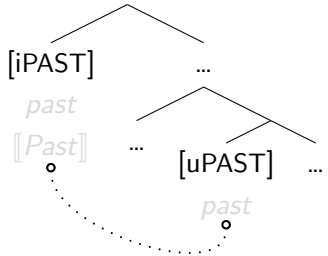
Non-SOT languages: Russian (Comrie, 1985), South-Baffin Inuktitut (Hayashi, 2011), Japanese (Ogihara, 1995), Hebrew (Sharvit, 2003), Finnish, Hungarian...

SOT has been described only for a **subset of the Indo-European family.**

- Any account of SOT effects must extend to languages where it is not attested.

Standard view of SOT

The standard view of embedded past in SOT is that it is semantically **vacuous**:



- [PAST] = formal syntactic feature
- *past* = past tense morphology
- ⟦*Past*⟧ = past tense interpretation

Embedded vacuous *past* is:

- Inserted/deleted by a rule: (Ross, 1967; Ogihara, 1995)
- Licensed in a long-distance dependency with matrix past: (Abusch, 1994; Stowell, 1996; Grønn and von Stechow, 2010; Zeijlstra, 2012, a.o.)

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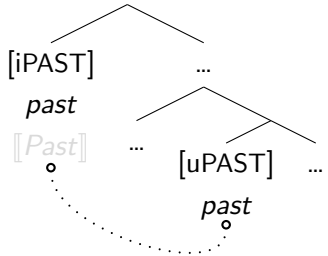

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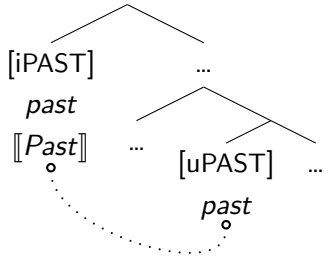

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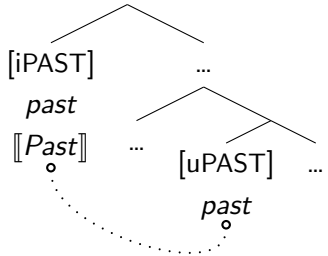

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A different view

Licensing accounts of SOT face a number of challenges:

- Lack of syntactic locality
- SOT effects determined by aspect of embedded clause
- Typological restrictions

Alternative proposal:

- SOT must involve independent past tense $\rightarrow$ tense is **pronominal**, and SOT effects arise from pragmatics of attitude reporting.
- In non-SOT languages, tense is **quantificational**, and thus vulnerable to shifting by attitude verbs.

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Section 2

Towards a pronominal-tense analysis of SOT

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The semantics of temporal relations

- Temporal relations involve (at least) **three times**:
  - Anchoring Time (AT) ($\sim$ Utterance Time)
  - Topic Time (TT)
  - Event Time (ET)
- Neo-davidsonian event semantics $\rightarrow$ *v*P corresponds to an event description.
  - "Event Time" is thus a misnomer: verbs do not take temporal arguments.
- Temporal relations involve (at least) **two functional heads**: T and Asp
  - Asp is *quantificational*: binds event of *v*P + locates it with respect to a time (the Topic Time).
  - What about T? Is it also quantificational?

The semantics of Tense

Debate: is tense **quantificational**, **pronominal**, or **relational**?

- If AspP = a predicate of times
  - Quantificational tense **existentially closes** AspP's time argument, relating it to some other time (creating a new predicate of times) (Kusumoto, 1999, a.o.)
  - Pronominal tense **saturates** the time argument of AspP (Partee, 1973, a.o.)
  - Relational tense relates two syntactically represented times (cf. prepositions) (Zagona, 1990; Stowell, 1996; Demirdache and Uribe-Etxebarria, 2007)

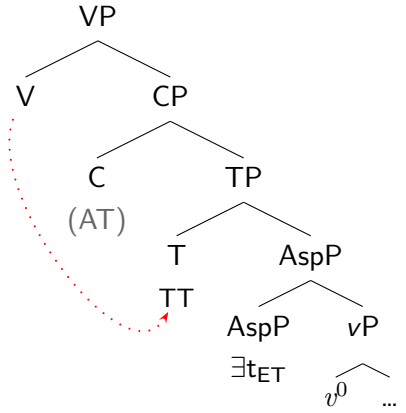
Tense must always be **anchored** to the context (i.e. to AT):

- If tense is **quantificational**, this happens **above T**—plausibly in the left periphery.
- If tense is **pronominal**, this happens **in T**, since T is itself a time pronoun.

If anchoring occurs in C, then it can be **accessible** to an embedding verb.
If anchoring occurs in T, then it is **insulated** from an embedding verb.

This is the difference tween SOT and non-SOT languages.

SOT:


VP
V
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(AT)
TP
T
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AspP
AspP
∃t_ET
vP
v^0
...

Non-SOT:

VP
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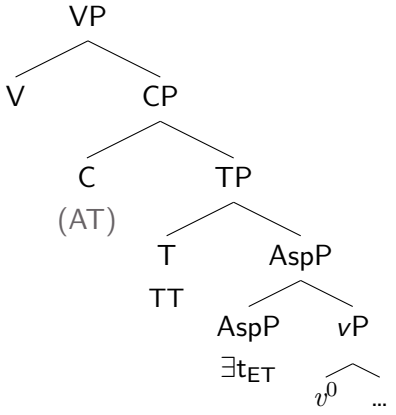
SOT: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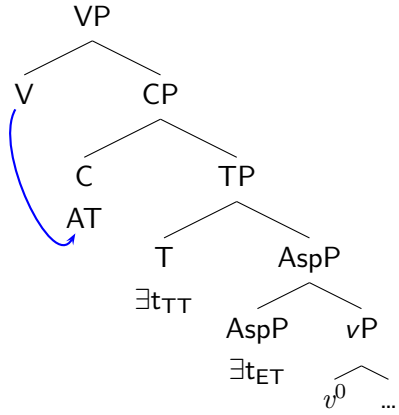
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Recall the profile of SOT

- Past-under-past allows simultaneous (=present) readings.
- Present-under-past requires double-access reading.
- Pluperfect-under-past requires backshifted reading.

The puzzle: How does embedded past allow simultaneous interpretations, if it's not *dependent*?

Proposal: Embedded past is independent (in SOT languages); restrictions arise as pragmatic effects.

Past-under-past

The two readings of embedded past in SOT:

(8) Sarah said it **was** cold. → Sarah said: "It **is** cold." or "It **was** cold."
not "It will be cold."

- Embedded TT must be prior to now: **semantics of [PAST]**
- Embedded TT is not later-than-matrix: pragmatics of attitudes
  - For a later-than-matrix reading, original attitude would have to be **modal**.
  - A modal attitude cannot be reported with a simple indicative, which attributes a stronger commitment to the original attitude-holder. (cf. von Fintel and Iatridou, 2009; Cowper, 1996).
- Embedded TT **can** be prior to matrix TT, but disfavoured by competition from pluperfect.

Past-under-past: later-than-matrix marked but possible

Consider the following scenario:

> *Sarah is a friend of yours who lives in another city, and she is uncannily accurate in her weather predictions. Talking to her on the phone last Friday, she said: "It **will be** cold here this weekend."*

If a friend asks you today what the weekend weather was like in Sarah's city, you can report Sarah's prediction as in (9)—**iff** you have total faith in her accuracy:

(9) Sarah told me it **was** cold on the weekend where she lives.

- This meaning is usually reported to be unavailable—perhaps because it arises only in this comparatively marked context.

Present-under-past: double access reading

Recall the **double access** reading:

(10) Sarah said it **is** cold.

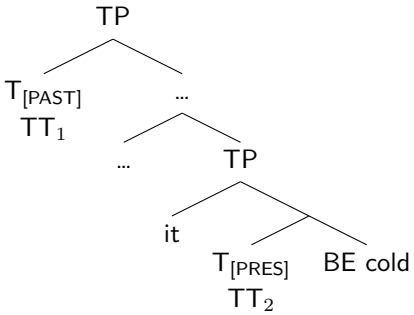
= Sarah said: "it **is** cold" **and it is still cold now.**

Accounting for the double access reading in (10):

- Embedded TT must be simultaneous with NOW: semantics of [PRES]
- Embedded TT must be simultaneous with or prior to with the matrix ET: same pragmatics that disallow later-than-matrix interpretations of past-under-past.

Present-under-past: double access reading

(22a) Sarah said it **is** cold. = Sarah said: "it **is** cold" **and it is still cold now.**



- Embedded TT must refer to the present.
- For the attitude to be pragmatically felicitous, must also have held at the matrix ET.

(N.B. Independent interpretation should also be available here, though pragmatically odd.)

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A complication: past-under-modals

So far I have proposed a deictic tense analysis of SOT.

- Embedded tenses are pronominal, always relative to NOW.
- Classic SOT effects arise from the pragmatics of attitude reports.

This predicts that embedded [PAST] is always prior to NOW...

...except that in some contexts it isn't.

Future-referring embedded Past

The strongest evidence against the deictic analysis of tense has been examples like the following:

(11) A week ago, Sarah decided that in 10 days time she would tell her mother they **were** having their last meal together. (Abusch, 1988)

(12) (Earlier today) John wanted to buy a fish that **was** alive (tomorrow). (Ogihara, 1989)

A deictic analysis of embedded tense must distinguish these in some way.

Proposal: These are not in fact examples of SOT.

→instead they involve **hypothetical** (=CF) [PAST].

Unlicensed future-referring [PAST]

- (11) and (12) have been given as key evidence that SOT past is **dependent**.
- But in precisely these enviornments, "SOT" is possible without any licenser:

(30) A week ago, Sarah decided that in 10 days time she would tell her mother they **were** having their last meal together.

→ %In three days she might tell her mother they **were** having their last meal together.

(31) (Earlier today) John wanted to buy a fish that **was** alive (tomorrow).

→ John's desire to buy a fish that **was** alive remains mystifying.

Future-referring [PAST] as hypothetical

If future-referring [PAST] is not SOT, what is it?

- Only possible under **hypothetical** modals:
  - *would*
  - *might*
  - *could*
  - future-oriented non-finite *to*
- In fact, this is a familiar context for *past*: **future-less-vivid CFs**

Abusch (1994): Possible objection from the distribution of the **subjunctive**.

- Future-less-vivids allow (or require) the **subjunctive** past.
- Future-referring "SOT" clauses are **never** subjunctive.

Future-referring [PAST] as hypothetical

(13) a. She wishes she **were** meeting her mother for the last time.
b. He wishes the fish **were** alive.

(14) a. A week ago, Sarah decided that in 10 days time she would tell her mother she **was/*were** meeting her for the last time.
b. John wanted to buy a fish that **was/*were** alive (tomorrow).

Response: though some CFs can be subjunctive, it does not follow that all are. Consider **fictional** past: clearly hypothetical, but also never subjunctive.

(15) The year **was/*were** 2028, and Sarah **was/*were** meeting her mother for the last time.

Section 3

Absence of SOT as quantificational tense

The absence of SOT

Two components to the analysis of SOT:

- Tense is **pronominal**.
- The context for calculating tense meanings is the **matrix** context.

Adjusting either of these could account for the absence of SOT effects.

- Possibility 1: SOT languages are unusual in having pronominal tense. Non-SOT languages have quantificational tense, which can be shifted by the semantics of attitude verbs.
- Possibility 2: Non-SOT languages calculate tense relative to an embedded context ($\rightarrow$there are **tense monsters** in Non-SOT languages).

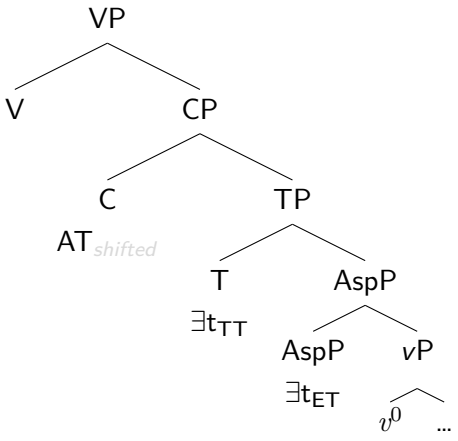
The profile of non-SOT languages

Recall that languages without SOT languages **usually** have relative tense, but **can** exhibit independent tense, as in SOT languages:

(16) Hän sanoi, että vene **on** / **oli** siellä rannassa.
3SG say-IMPF that boat **be.PRES** / **be.PAST** there-ADE shore-INE
"They (SG) said that the boat was there on the shore."
[Finnish: Sulkala and Karjalainen, 1992 and P. Koskinen p.c.]

This is described as having to do with the **perspective** on the event (Grønn and von Stechow, 2010)

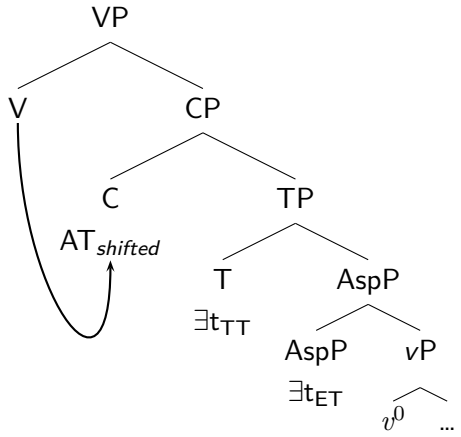
Quantificational tense and left-peripheral anchoring



Option 1: Composition of V with AT allows shifting of context.

Option 2: Presence vs. absence of AT in the left periphery correlates with independent perspective for the embedded clause

Quantificational tense and left-peripheral anchoring



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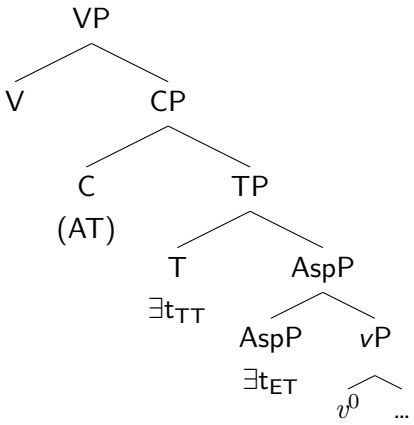

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Section 4

Conclusions

- The **standard view** of SOT has been that it is **syntactically licensed**.

  (Mostly among semanticists...)
- But from a morphosyntactic perspective, **SOT cannot result from licensing**.
  - SOT is non-local.
  - SOT is possible in the absence of a potential licenser
- This motivates an **independent** analysis of embedded past.
  - SOT effects fall out as conditions on coreference.
  - Apparent exceptions distinguished as modal (=CF) pasts.
- **Typology** of embedded tense: SOT cannot be a parameter of feature transmission. Instead, the semantics of tense may differ in a deep way across languages.

Thank you!

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