

**Simultaneous under Past:
English Present-under-Past in CP/VP-fronted constructions***

1. Present-under-Past in complement CPs

It has been long observed that English Present-under-Past in complement CPs has a so-called *double-access* reading (Smith, 1978):

- (1) *Double-access*: the time of the eventuality described in the embedded clause must overlap the attitude holder's subjective 'now' as well as the speaker's 'now'.

Given (1), the Present-under-Past attitude report in (2) cannot be true in a context like (3):

(2) John said that Mary is smoking a cigar.

(3) *Context*: Two days ago at noon, John said: "Mary is smoking a cigar".

Sentence (2) is false in context (3) because:

- *Double-access* requires that smoking be simultaneous with John's 'now' as well as the speaker's 'now'.
- According to Context (3), smoking is *simultaneous* with the time when John speaks.
- Under normal assumptions, smoking a cigar cannot last two days.
- So, the time of smoking cannot overlap the speaker's 'now'.
- Therefore, (2) is false in (3).

In order to correctly describe Context (3), a report with a Past-under-Past report must be used:

(4) John said that Mary was smoking a cigar.

Past-under-Past in English has a *simultaneous* reading:

- (5) *Simultaneous reading*: the time of the eventuality described in the embedded clause overlaps the attitude holder's 'now' (and can, but is not required to, overlap the speaker's 'now').

Such observations lead many researchers to interpret the Present tense in English as necessarily overlapping the context or the utterance time (the UT), i.e. having an *indexical* interpretation (e.g. (Ogihara, 1989; Schlenker, 2003; von Stechow, 2003)

(6) $\|Pres\|^c = c(\text{time})$

For the same reasons, English Present has been denied a *relative* interpretation that would allow it to overlap the local 'now' of the clause, when it occurs in an embedded CP:

(7) $\|Pres_i\|^{\text{t},c} = g(i)$, defined iff $g(i) \subseteq t^1$

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¹ Here, I am assuming a pronominal theory of tense (Heim, 1994; Kratzer, 1998; Partee, 1973) but what I'll say also applies to quantificational theory of tense that assumes a deictic component (Stechow, 1995).

2. Novel Data: Embedded Present in Fronted VP attitude reports

A fronted CP Present-under-Past attitude report in (8) only has a *double-access* reading just like its non-fronted counterpart in (2):

(8) That Mary is smoking a cigar, John said.

However, a fronted VP version of (2) can have both the *double-access* and the *simultaneous* reading:

(9) Say that Mary is smoking a cigar, John did.

In other words, (9) can be true in Context (3).

This means that, in (9), the embedded Present can have an *indexical* as well as a *relative* interpretation.

3. Problems for the Standard View

3.1. The Standard View in a Nutshell

Theories that require English Present to have an indexical interpretation also assume the existence of a '*zero-tense*' that is interpreted as a relative Present (locally bound within the embedded CP) but does not have its own morphology and borrows it at a level of syntactic representation that feeds the PF and is not seen at LF and which will be referred to here, for simplicity, as "PF" (Kratzer, 1998, 2008).

A *zero-tense* has the interpretation of a relative Present and is required to be locally bound at LF:

(10) $\|\emptyset_i\|^t = g(i)$, defined iff $g(i) \subseteq t$

Temporal morphology is borrowed in the process of Feature Transmission at the level of syntactic representation that feeds the PF and is different from LF. Two general requirements are assumed for this relevant syntactic structure:

(11) Conditions for Feature Transmission:

- C-command: the matrix T^0 must c-command the embedded T^0 .
- Binding: the embedded tense must be locally bound.

A sentence like (12) is known to have a simultaneous reading:

(12) John will say that Mary is smoking a cigar.

This sentence is usually considered to have the LF in (13):

(13) $[_{TP} \lambda t_0 [_{TP} Past^0_1 [_{VP} John [_{VP} say [\lambda t_2 [_{CP} that \emptyset_2 Mary be smoking a cigar]]]]]]]$

In (13), Past bears two indices and has the following interpretation (I borrow the notation from (Ogihara & Sharvit, 2012)):

$$(14) \|\text{Past}^i_j\| = g(j), \text{ defined iff } g(j) < g(i).$$

The simultaneous interpretation in (12) is usually explained in the following way:

- In the syntax, the matrix ‘will’ is analyzed as a combination of Present tense and a tenseless verb stem ‘woll’.
- At PF, the ‘zero’-tense is locally bound at CP-level.
- At PF, the matrix T^0 c-commands the embedded T^0 .
- At PF, temporal features are transmitted from the matrix T^0 to the embedded T^0 .

Therefore, according to the Standard View:

- At LF, the zero-tense is interpreted.
- At LF, the Present tense morphology is not interpreted.
- The Present tense morphology is transmitted to the embedded T^0 at PF.

The Standard Approach also successfully accounts for the simultaneous reading of the most embedded Past in (15) (Abusch, 1994, 1997):

(15) A week ago, John decided that, in ten days at breakfast, he would tell his mother that they were having their last meal together.

In (15), the time of the meal can be understood as simultaneous with the time of telling because:

- At LF, the most embedded T^0 contains a locally bound zero-tense that necessarily has a relative interpretation.
- At PF, the zero-tense is c-commanded by a higher Past.
- Feature Transmission occurs.
- At PF, Past tense morphology is used in the most embedded clause.

3.2. The Challenge of the Fronted Constructions for the Standard View

The novel data provided above and repeated here seems to be problematic for the Standard View:

- (8) That Mary is smoking a cigar, John said.
(9) Say that Mary is smoking a cigar, John did.

Problems:

- The relative embedded Present in (9) cannot be interpreted as a ‘zero’-tense because the sentence does not have a higher Present, from which the morphology could be borrowed.
- Even if we grant that the Present tense morphology in (9) is a default morphology for the ‘zero-tense’ when it is not c-commanded by any matrix tense at the relevant level of syntactic representation, the contrast between (8) and (9) remains unexplained.

4. Two Main Puzzles of the New Data

Puzzle 1: How can fronting make a simultaneous reading possible?

Puzzle 2: Why is it only VP-fronting and not CP-fronting that licenses a simultaneous reading?

5. Solution to Puzzle 1: Relative Present-under-Past

Assumption 1: the Present tense in English is relative as defined in (16) with the upper index necessarily bound at LF:

$$(16) \|\text{Pres}_j^i\| = g(j), \text{ defined iff } g(j) \subseteq g(i)$$

A relative interpretation of an embedded Present tense obtains when the Present tense is bound locally.

An indexical interpretation of an embedded Present tense is obtained when the Present tense is bound globally.

Assumption 2: English has a mechanism of Feature Transmission at PF (Cable, 2015; Kratzer, 1998):

(17) Rules of Feature Transmission:

- (i) *Tense Lowering:* Tense features are lowered from T^0 onto the verb.
- (ii) *Predication:* If the sister of a node that bears a tense feature has a λ -operator in its specifier, transfer the tense feature from the node onto the λ -operator.
- (iii) *Feature Transmission Under Binding (FTUB):* If a binder contains tense features, the tense features are transferred onto the bindee.

Assumption 3: Sequence of Tense Rule:

(18) SOT-Rule:

When Past and Present features are stacked, temporal morphology is determined by the Past tense feature (the Past tense feature is passed onto the verb).

Analysis

Consider again the sentence in (9) under the simultaneous reading:

(9) Say that Mary is smoking a cigar, John did.

Assuming that fronted VPs reconstruct at LF, the LF of (9) is:

(19) [λt_0 [$_{TP}$ Past⁰₁ [$_{VP}$ John [$_{VP}$ say [λt_2 [$_{CP}$ that Pres²₃ Mary be smoking a cigar]]]]]]]²

The structure in (19) gets an interpretation, according to which the embedded Present is interpreted relatively.

However, at PF, the VP remains fronted:

(20) [λt_0 [$_{VP}$ say [λt_2 [$_{CP}$ that Pres²₃ Mary be smoking a cigar]]] [$_4$ [$_{TP}$ Past⁰₁ [$_{VP}$ John] t_4]]]

Feature Transmission cannot apply in (20) because the matrix Past does not c-command the embedded Present tense.

Just like (9), the sentence in (4) under a simultaneous reading can have the LF in (19).

(4) John said that Mary was smoking a cigar.

But, at PF, (4) is different from (20) because the VP is not fronted.

Feature Transmission takes place in (21):

(21) [λt_0 [$_{TP}$ Past⁰₁ [$_{VP}$ John [$_{VP}$ say_[Past] [λt_2 _[Past] [$_{CP}$ that {Pres²₃, Past} Mary be_[Past] smoking a cigar]]]]]]]

Feature transmission (Tense lowering) *FT (Predication)* *Feature transmission (FTUB)* *Feature transmission (Tense lowering)*

- The Past tense feature is transferred from the matrix T⁰ onto the embedded T⁰.
- Temporal features get stacked at the embedded T⁰.
- According to the SOT-rule, the Past tense feature determines the morphology.

In (2), the matrix Past tense c-commands the embedded T⁰ but Feature Transmission does not occur:

(2) John said that Mary is smoking a cigar.

This means that the conditions for Feature Transmission in (11) did not obtain. Given that matrix Past tense c-commands the embedded T⁰, the only remaining option is that the embedded Present is not locally bound.

Therefore, (2) is predicted to have only a *double-access* reading with the LF in (22):

(22) [λt_0 [$_{TP}$ Past⁰₁ [$_{VP}$ John [$_{VP}$ say [$_{CP}$ that Pres⁰₃ [Mary be smoking a cigar]]]]]]]

² For a more detailed version of the LF, see (31) below.

6. Solution to Puzzle 2: the Contrast between VP and CP fronting

In order to account for the observed contrast between (8) and (9), I make two more assumptions:

- (8) That Mary is smoking a cigar, John said.
- (9) Say that Mary is smoking a cigar, John did.

Assumption 4: The binder of embedded tense is CP-external.

The binder of a relative tense is an operator (λt_k) that is CP-external and can optionally be merged between the attitude verb and the CP as schematized in

$$(23) [\text{TP } T^0 [\text{VP } V^0 [\lambda t_k [\text{CP } \dots]]]]$$

Assumption 5: Fronted CPs are base-generated in the high position (following (Moulton, 2013)).

For (8), the LF as well as the PF are predicted to be as follows:

$$(24) [\lambda t_0 [\text{CP } \text{that Pres}^0_3 \text{ Mary be smoking a cigar}] [\lambda P [\text{TP } \text{Past}^0_1 [\text{VP } \text{John say P}]]]]$$

In (24), the CP is base-generated in the high position. The local temporal binder is unavailable for the embedded Present and so its only option is to be bound by the matrix binder, which results in a *double-access* reading.

In (9), the fronted VP is predicted to be able to contain the local temporal binder in the fronted constituent. This allows the embedded tense to get a relative interpretation.

Comment:

The position of the local temporal binder has to be below the attitude verb and not above it. It cannot be associated with a higher node that could be fronted together with VP in (9), e.g. the viewpoint aspect.

Associating the occurrence of the local temporal binder with a position (like that of the viewpoint aspect) above the verb would make the binder independent of the attitude verb and predict availability of a relative reading of the embedded Present in a sentence like (25), contrary to fact:

$$(25) \text{Meet a man who is smoking a cigar, John did.}$$

Sentence (25) does not allow for a relative interpretation of the embedded Present.

7. Further Predictions: The Past Tense in Fronted Constructions

The theory presented here disallows Feature Transmission from the matrix tense onto the embedded tense if the embedded tense is in a fronted CP/VP.

This makes an immediate prediction for Past-under-Past attitude reports. The embedded Past tense in such reports must indicate a time that precedes the local ‘now’ of the clause. It cannot be a Present tense underlyingly.

Compare the sentence (15), known from (Abusch, 1994) and repeated below, to its CP and VP fronted versions in (26) and (27), respectively:

(15) A week ago, John decided that, in ten days at breakfast, he would tell his mother that they were having their last meal together.

(26) That they were having their last meal together, John decided a week ago that he would tell his mother in ten days.

(27) Tell his mother in ten days that they were having their last meal together, John decided a week ago that he would.

Native speakers report that neither (26) nor (27) can have a reading, according to which the time of having the last meal overlaps the time of telling.

The prediction is borne out.

Appendix

The CP-external position of the temporal binder naturally follows from (Abusch, 1994)

The pronominal theory of tense treats tenses on a par with personal pronouns making their reference dependent on the assignment function with respect to which an expression is evaluated.

This makes the denotation of tenses independent on the world of evaluation.

Thus, in the scope of an attitude verb, a tense has an extensional interpretation no matter whether its interpretation is indexical or relative.

Interpreting a referential expression in the scope of an attitude verb extensionally puts the system in danger of double-vision counterexamples (Quine, 1956). One way to avoid double-vision counterexamples is to give such attitude reports a *de re* interpretation.

Anchoring an embedded tense under a relative interpretation to the local ‘now’ of the attitude holder leads to incorrect predictions. Consider (28) against the context in (29):

(28) John said that Mary arrived.

(29) *Context*: At a time in the past, John said: “Mary arrived”.

The relative semantics for the Past tense allows us to interpret the embedded Past tense in (28) w.r.t. the local ‘now’ of the embedded clause. In that case, (28) is predicted to have the following LF:

(30) [λt_0 [_{TP} Past⁰₁ [_{VP} John [_{VP} say [λt_2 [_{CP} that Past²₃ [Mary arrive]]]]]]]]

In (30), the embedded Past anchors to the binder λt_2 . If this binder is CP-internal and associated with the attitude holder’s ‘now’, then the interpretation of (30) will require that g(3) precede John’s subjective ‘now’.

But since g(3) is perceived by John under the guise of some concept or other, it is not guaranteed that the bearer of that temporal concept in each of John’s say-alternatives will also precede the ‘now’ of that alternative. Thus, anchoring an extensionally interpreted embedded tense to the attitude holder’s ‘now’, represented by a CP-internal binder, necessarily leads to vulnerability from double-vision counter-examples.

Therefore, the anchor of an embedded tense should also be extensional. And this anchor is contemporaneous with the time indicated by the matrix tense.

However, this does not mean that the CP does not contain a temporal binder of its own that is associated with the attitude holder’s ‘now’. If the CP did not contain such a temporal binder, it would be impossible to express the attitude holder’s temporal orientation towards the relevant temporal concept.

However, it is necessary for there to be isomorphism in the ordering of the temporal concept and the attitude holder’s ‘now’ in each of the say-alternatives, on the one hand, and the time indicated by the embedded tense and its anchor. Otherwise non-existent readings will be generated.

Therefore, our system must allow for a CP-external extensional anchor for the embedded tense as well as a CP-internal binder associated with the attitude holder’s ‘now’. To repeat, this is necessary in order to make sure that the ordering of the time indicated by the embedded tense and its temporal anchor is preserved between the temporal concept and the attitude holder’s ‘now’ in each of the relevant say-alternatives.

This is, in essence, the theory of temporal dependencies proposed in (Abusch, 1994).

In my rendition of this theory, I am using (Percus & Sauerland’s, 2003) idea of concept generators adapting it for the temporal domain.

Sentence (9) ends up with the LF, given in its full form in (31) (for simplicity, I am ignoring here the need to attach a concept generator to ‘Mary’):

(9) Say that Mary is smoking a cigar, John did.

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