

### *De re* tenses and Trace Conversion

This talk discusses problems for previous *de re* analyses of tenses, and argues for a quantificational account in which the seemingly peculiar behavior of tenses that are interpreted *de re* fall out from a general Trace Conversion rule that applies to quantifiers.

**Background.** It has been long observed (Jespersen, 1924; Ogihara, 1989; Abusch, 1997, a.o.) that a Past-under-Past sentence like (1a) in English can have either a backward-shifted reading ((2a)) or a simultaneous reading ((2b)) with respect to the attitude time (AT=the local evaluation time ( $t_0$ ) of the embedded clause, John’s “now” in (1)). Additionally, a Present-under-Past sentence as in (1b) has only the *double access* reading (DAR) that requires the embedded event not only to hold at AT but to encompass the utterance time (UT=the  $t_0$  of the matrix clause, the speaker’s “now” in (1)) too.

- (1) a. John thought that Mary was ill.    b. John thought that Mary is ill.  
 (2) a. John’s thought: “Mary was ill”    b. John’s thought: “Mary is ill”  
       c. John’s thought: “Mary will be ill”

Abusch (1997) in her influential work suggests that the simultaneous reading of (1a) involves a zero tense in the embedded clause, whereas the DAR of (1b) results from interpreting the embedded Present *de re*, i.e., Present wrt UT, and not wrt AT.

Given the assumption that tenses can be interpreted *de re*, an immediate question arises: why can neither (1a) nor (1b) have the forward shifted reading in (2c)?

Abusch (1997)’s answer is that *de re* readings result from tense movement that leaves behind a trace which is subject to the stipulative Upper Limit Constraint (ULC), that posits a restriction on the interpretation of the trace such that it must not follow AT.

(3)-(4) state the necessary ingredients for Past-under-Past ((3)) and Present-under-Past ((4)) *de re* structures and their semantic contribution given a ULC-based approach.

- (3) a. Moved PAST: precedence wrt UT.    b. ULC: precedence/inclusion wrt AT.  
 (4) a. Moved PRES: inclusion wrt UT.    b. ULC: precedence/inclusion wrt AT.

Ogihara (1989) differs in suggesting that tense movement leaves a copy that causes the unavailability of (2c). The comparable schema for the Copy-based approach is in (5)-(6):

- (5) a. Moved PAST: precedence wrt UT.    b. PAST in-situ: precedence wrt AT.  
 (6) a. Moved PRES: inclusion wrt UT.    b. PRES in-situ: inclusion wrt AT.

**Problem #1.** On top of being based on an ad hoc constraint, the ULC-based approach faces problems; Bary and Altshuler (2014) provide the scenario in (7) to argue against it:

- (7) John thinks Bill’s 40th birthday is in the past and that Mary was ill on that day.  
       Bill’s 40th birthday is in fact the day of John’s thinking, which is today.

In this context, (1b) is infelicitous. However, the requirements in (4) are satisfied: the time of Bill’s 40th birthday includes UT (in the real world) and precedes AT (in all of John’s belief worlds it is Past). Therefore the ULC-based approach predicts it to be felicitous.

**Problem #2.** (8a) challenges the ULC-based approach as well. It is judged to be true if either all the doctors said “Mary was pregnant” or they all said “Mary is pregnant”; but not if some of them said “Mary was pregnant” and some said “Mary is pregnant” ((8b)).

- (8) a. Every doctor said Mary was pregnant.  
       b. \*Some doctors said: “Mary was pregnant”, and some said: “Mary is pregnant”.

It is not clear how (8b) can be ruled out given the ULC-based approach and given that tenses can get ‘functional’ readings (i.e., (8a) is true even if they all said “Mary was pregnant” but each had a different past-time in mind). Particularly, the restriction put by the ULC in (3b) is satisfied.

**Problem #3.** The Copy-based approach predicts the right results for (7) and (8b), but it reveals to be problematic from a crosslinguistic point of view: Ogihara and Sharvit (2012) point out that the Copy-based approach is ill-equipped to explain simultaneous readings of Past-under-Past in ‘non-SOT languages’, given that a zero tense account cannot work for them. Hebrew is traditionally considered a ‘non-SOT language’, since the Hebrew equivalent of (1a) has typically only the reading in (2a). However, consider the following

