## Tense as a Complex of Three Points: E

Ling 406/802; Spring 2005 Material from Chierchia & McConnell-Ginet Ch 5.2 (e and Hornstein 1990, pp. 8-41

### A Reichenbachian Theory of Tense

- Following Hans Reichenbach (1947), Hornstein (1990) advocatense as a complex of three points: time of event (E), time of reference time (R).
- What is R? The time from which the action or event is viewed.

R could be explicitly specified by a temporal adverb, or identification of some other event mentioned in the preceding context, accommodated by context.

(1) When Mary came to the party, John had left.

S: time of utterance

E: time of John's leaving

R: time of Mary's coming to the party

(2) At 3pm, John had left the office.

S: time of utterance

E: time of John's leaving the office

R: 3pm

### A Reichenbachian Theory of Tense (conf

 Different tense interpretation is determined by the way S, E, a related with each other.

Notation: E,R = E and R are contemporaneous; E\_R = E is ea

Basic tense structure	Interpretation	Example
S,R,E	present	John is leaving.
E,R_S	past	John left.
S_R,E	future	John will leave.
E_S,R	present perfect	John has left.
E_R_S	past perfect	At 3pm, John had le
S_E_R	future perfect	John will have left a

- The relationship between S and R determines present/past/fu the relationship between R and E determines perfect tense. T between S and E is indirect, and depends on the S/R and R/E
- QUESTION: While it makes sense to posit R for perfect tense play any visible interpretive role in simple tenses. Then how d R is also present in the representation of simple tenses?

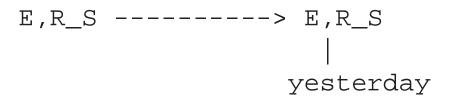
### **Derived Complex Tense Structure**

- Basic tense structures (BTS) can be modified to derive comples structures (DTS). One way of doing this is to use temporal advantage.
  - (3) John left yesterday.

- Constraints on the derivation of DTS
  - (4) X associates with  $Y =_{def} X$  is separated from Y by com
  - (5) BTS is preserved iff:
    - a. No points are associated in DTS that are not associa
    - b. The linear order of points in DTS is the same as that
  - (6) Constraint on DTS: DTS must preserve BTS.

#### **Tenses and Adverbs**

- Temporal adverbs map onto either E or R. They can alter BTS and E around. The alternation must preserve BTS. Otherwise will be ungrammatical, or will have deviant non-temporal read
  - (7) John left yesterday.



(8) \* John left right now.

(9) \* John left tomorrow.

QUESTION: Why can't temporal adverbs map onto S?

## Tenses and Adverbs (cont.)

- Capturing ambiguity
  - (10) John had eaten the cake yesterday.

## Tenses and Adverbs (cont.)

- Present perfect can take either past or present oriented adver
  - (11) John has eaten breakfast earlier this morning.

(12) John has finished typing this very moment.

### Tenses and Adverbs (cont.)

- Why is this ungrammatical when there is nothing wrong with the
  - (13) \* John has come home tomorrow.

- Gricean explanation: In other past or future perfects, specifical contributes to the location of E. But in present perfect, the modulinformative. It does not contribute to the location of E. E is location be interpreted as before S whether R is modified or not (2).
- Present perfect seems to indicate present relevance of past endetection stretched/extended to S). This interpretation may be tied to the R and S.

## Multiple Adverbs: Evidence for R Points in Simp

- Pre-sentential adverbs prefer to modify R.
  - (14) At 3pm, John had left the store.
- Post-sentential adverbs prefer to modify E.
  - (15) John had left the store at 3 pm.

Note that temporal PPs with certain prepositions prefer to more regardless of the position.

- (16) John had left the store by 3 pm.
- What if there are multiple adverbs?

In simple tenses as well as perfect tenses, since there are E a available, it should be possible to modify the two points with d temporal adverbs.

# Multiple Adverbs: Evidence for R Points in Simp (cont.)

- Past perfect
  - (17) Yesterday, John had left a week ago.

(18) \* A week ago, John had left yesterday.

# Multiple Adverbs: Evidence for R Points in Simp (cont.)

- Past
  - (19) Yesterday, John left a week ago.

(20) \* A week ago, John left yesterday.

# Multiple Adverbs: Evidence for R Points in Simp (cont.)

Present

(21) Tomorrow, John is leaving in a week.

(22) \* In a week, John is leaving tomorrow.

### **Two Positions for Temporal Adverbs**

- Possible adverb slots: sentence-initial, sentence-medial, sentence-
  - (23) a. Yesterday, John left for Paris.
    - b. John, yesterday, left for Paris.
    - c. John left for Paris yesterday.
- All three slots cannot be filled.
  - (24) a. \* Yesterday, John, at 6 o' clock, left for Paris a wee
    - b. \* Tomorrow, John, in a week, will leave for Paris in

It is ok if one of the slots is filled by non-temporal adverb.

- (25) Tomorrow, John, luckily, will leave for Paris in a week.
- Bunched adverbs act like single adverbials as far as modifying concerned.
  - (26) a. Yesterday at 6 o'clock, John left for Paris a week
    - b. A week tomorrow, John will leave for Paris in a m

> Only two available slots, E and R, for temporal adverb modific

#### **Tense of Modal Auxiliaries**

- Modal auxiliaries are tensed.
- The BTS structure of modals is S,R,E (present tense).
  - (27) John could/should/might/may/can/must go to school now/tomorrow/\*yesterday.

#### Tense of Modal Auxiliaries: Will

- Will is ambiguous between tense and modal.
  - (28) John will leave right now. (\*temporal meaning, √modal

Temporal meaning: future

Modal meaning: present

QUESTION: But is will really ambiguous between tense and rewe unify the semantics of will as a modal? After all, future has yet, so you can think of it as a possible world.

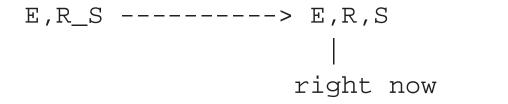
### Tense of Modal Auxiliaries: Past Tense Mod

- The past tense form of modals is 'modal + have'.
  - (29) John must have arrived yesterday.

(30) \*John must have arrived now.

\*John must have arr

E,R\_S -----



- QUESTION: Isn't it misleading to say 'modal+have' is past ten.
  What (29) is saying is that it must be the case (now) that in the arrived.' So, past tense goes with John's arriving event, not the
- QUESTION: Why isn't there future tense modals, if there are past tense modals?

### **Tense of Modal Auxiliaries: Counterfacuta**

- In some cases, when temporal adverb modification on 'modal an illegal DTS, deviant non-temporal reading is generated.
  - (31) a. George should have arrived tomorrow.
    - b. George would have arrived tomorrow.
    - c. George could have arrived tomorrow.
    - d. George ought to have arrived tomorrow.
  - ⇒ George won't arrive tomorrow.

Instead 'modal+*have*' is interpreted as irrealis modality, and p counterfactual interpretation.

- QUESTION: Why is it that counterfactuals have past tense co
  - (32) a. If I knew the answer, I would tell you.
    - b. John wishes he knew the answer.