# Ling 566 Nov 12, 2013

Raising, Control

### Overview

- Intro to topic
- Infinitival to
- (Subject) raising verbs
- (Subject) control verbs
- Raising/control in TG
- Object raising and object control
- Reading questions

## Where We Are & Where We're Going

- In the last two lectures, we have seen a kind of subject sharing -- that is, cases where one NP served as the SPR for two different verbs. Examples?
- Last time, we looked at "dummy" NPs -- that is, non-referential NPs. Examples?
- Today, we're going to look at the kind of subject sharing we saw with *be* in more detail.
- Then we'll look at another kind of subject sharing, using dummy NPs in differentiating the two kinds.

## What Makes This Topic Different

- The phenomena we have looked at so far (agreement, binding, imperatives, passives, existentials, extraposition) are easy to pick out on the basis of their form alone.
- In this chapter, we look at constructions with the general form NP-V-(NP)-*to*-VP. It turns out that they divide into two kinds, differing in both syntactic and semantic properties.

#### The Central Idea

- Pat continues to avoid conflict and Pat tries to avoid conflict both have the form NP-V-to-VP
- But *continues* is semantically a one-place predicate, expressing a property of a situation (namely, that it continues to be the case)
- Whereas *tries* is semantically a two-place predicate, expressing a relation between someone who tries and a situation s/he tries to bring about.
- This semantic difference has syntactic effects.

#### The Status of Infinitival to

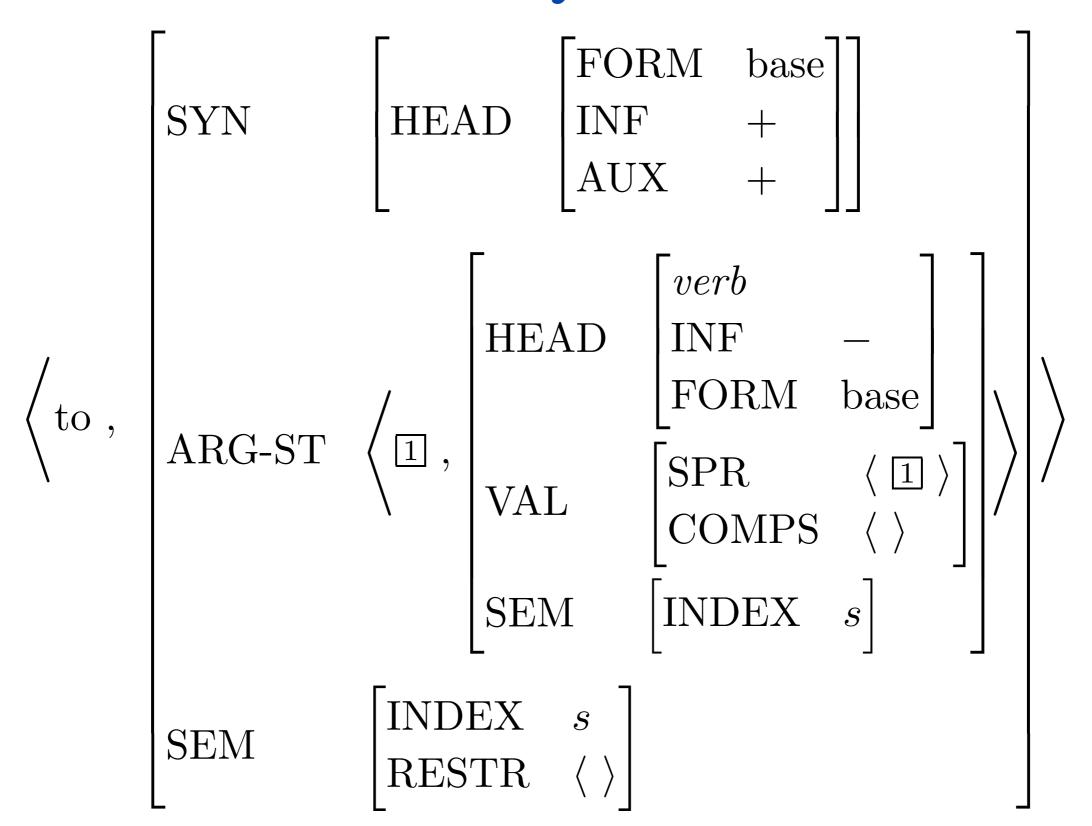
- It's not obvious what part of speech to assign to to.
- It's not the same as the preposition *to*:

Pat aspires to stardom

Pat aspires to be a good actor

- \*Pat aspires to stardom and to be a good actor
- We call it an auxiliary verb, because this will make our analysis of auxiliaries a little simpler.

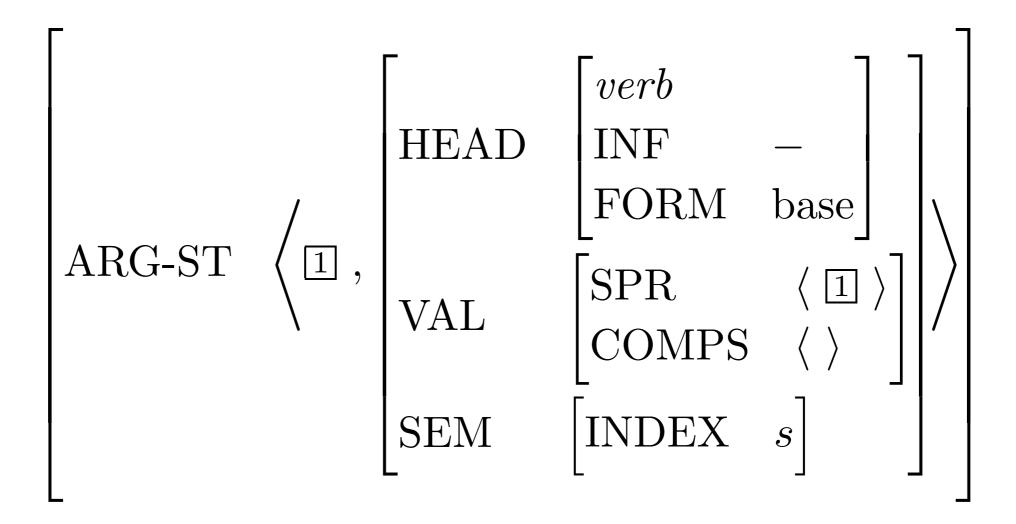
## The Lexical Entry for Infinitival to



## The Syntax of Infinitival to

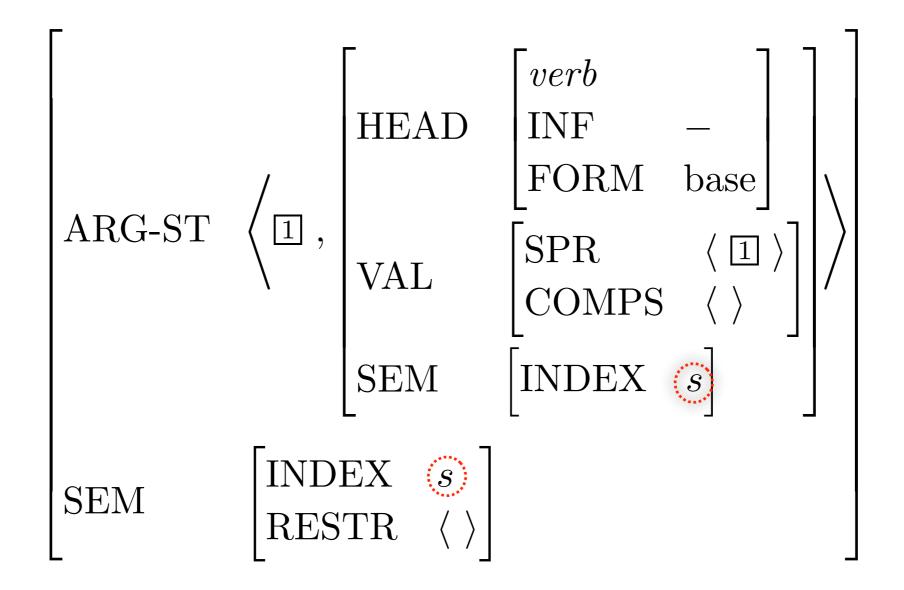
- This makes it a verb, because AUX is declared on *verb*
- [INF +] uniquely identifies the infinitival to
- Verbs select complements with different combinations of FORM and INF values, e.g.
  - complements of *condescend* are [FORM base] and [INF +]
  - complements of *should* are [FORM base] and [INF –]
  - complements of *help* are [FORM base]
- The meaning of [AUX +] becomes clear in Chapter 13.

## The Argument Structure



- What kind of constituent is the second argument?
- The tagging of the first argument and the SPR of the second argument is exactly like *be*.

#### The Semantics of Infinitival to



- The INDEX value is taken from the SEM of the second argument.
- So what is the semantic contribution of to?

#### Dummies and continue

• Some examples:

There continue to be seats available.

It continues to matter that we lost.

Advantage continues to be taken of the innocent.

- \*It continues to be seats available.
- \*There continues to matter that we lost.
- \*Advantage continues to be kept of the innocent.
- Generalization: Non-referential NPs can appear as the subject of *continue* just in case they could be the subject of the complement of *continue*.

### A New Type, for Verbs like continue

Subject-Raising Verb Lexeme (srv-lxm):

$$\begin{bmatrix} ARG-ST & \left\langle \boxed{1}, \begin{bmatrix} SPR & \left\langle \boxed{1} \right\rangle \\ COMPS & \left\langle \right\rangle \\ INDEX & s_2 \end{bmatrix} \right\rangle \\ SEM & \begin{bmatrix} RESTR & \left\langle \begin{bmatrix} ARG & s_2 \end{bmatrix} \right\rangle \end{bmatrix}$$

- Notes on the ARG-ST constraints
  - The subject sharing is just like for *be* and *to*: the subject of *continue* is also the subject of its complement
  - *continue* imposes no other constraints on its subject
- Note on the SEM constraint
  - The index of the complement must be an argument of the predication introduced by the verb

## The Lexical Entry for continue

$$\left\langle \text{continue}, \begin{bmatrix} srv\text{-}lxm \\ ARG\text{-}ST & \left\langle X, \begin{bmatrix} \text{VP} \\ X, \begin{bmatrix} \text{INF} & + \end{bmatrix} \right\rangle \\ \end{bmatrix} \right\rangle$$

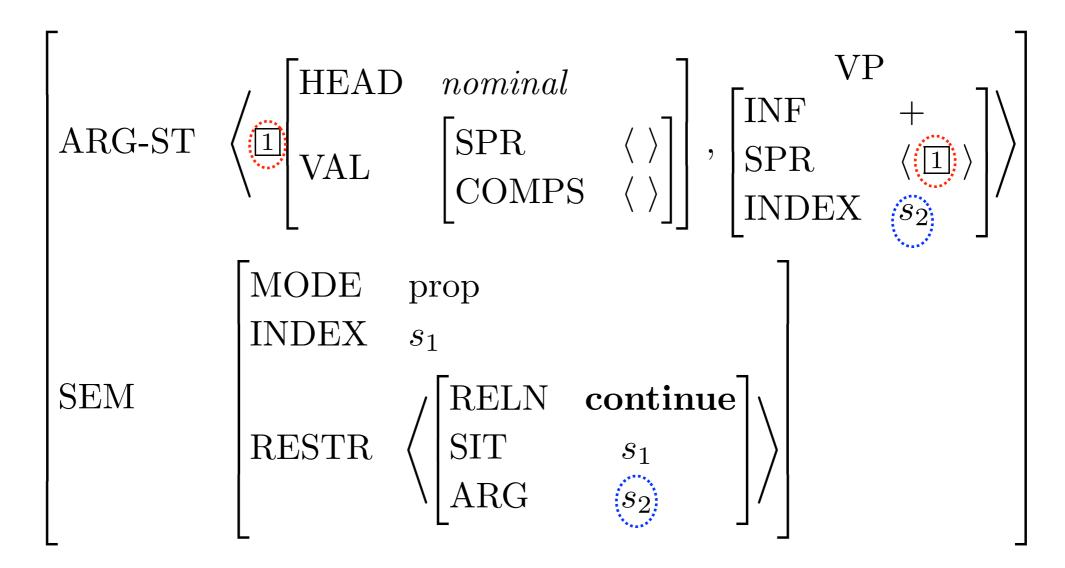
$$\left\langle \text{continue}, \begin{bmatrix} \text{INDEX} & s_1 \\ \text{RESTR} & \left\langle \begin{bmatrix} \text{RELN} & \mathbf{continue} \\ \text{SIT} & s_1 \end{bmatrix} \right\rangle \right]$$

### Entry for continue, with Inherited Information

$$\left\{ \begin{array}{l} srv\text{-}lxm \\ \\ syn \end{array} \right. \left. \left[ \begin{array}{l} verb \\ PRED - \\ INF - \\ AGR 2 \end{array} \right] \\ \left. \left( \begin{array}{l} VAL \\ SPR & \left( [AGR 2] \right) \end{array} \right] \right\} \\ \left\langle \begin{array}{l} continue \\ VAL \end{array} \right. \left[ \begin{array}{l} SPR & \left\langle \left( \left( AGR 2 \right) \right) \right] \\ VAL & \left( \left( AGR 2 \right) \right) \end{array} \right] \\ \left. \left( \begin{array}{l} VP \\ SPR & \left\langle \left( AGR 2 \right) \right) \\ SPR & \left\langle \left( AGR 2 \right) \right\rangle \end{array} \right) \\ \left. \left( \begin{array}{l} INF + \\ SPR & \left\langle \left( AGR 2 \right) \right\rangle \\ INDEX + s_2 \end{array} \right) \right\rangle \\ \left. \left( \begin{array}{l} INF + \\ SPR & \left\langle \left( AGR 2 \right) \right\rangle \\ INDEX + s_2 \end{array} \right) \\ SEM & \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\} \\ \left. \left( \begin{array}{l} INDEX + s_1 \\ INDEX + s_2 \end{array} \right) \right\}$$

## Key Property of Subject-Raising Verbs

The subject plays no semantic role in the predication introduced by the SRV itself. Its semantic role (if any) is only in the predication introduced in the complement.

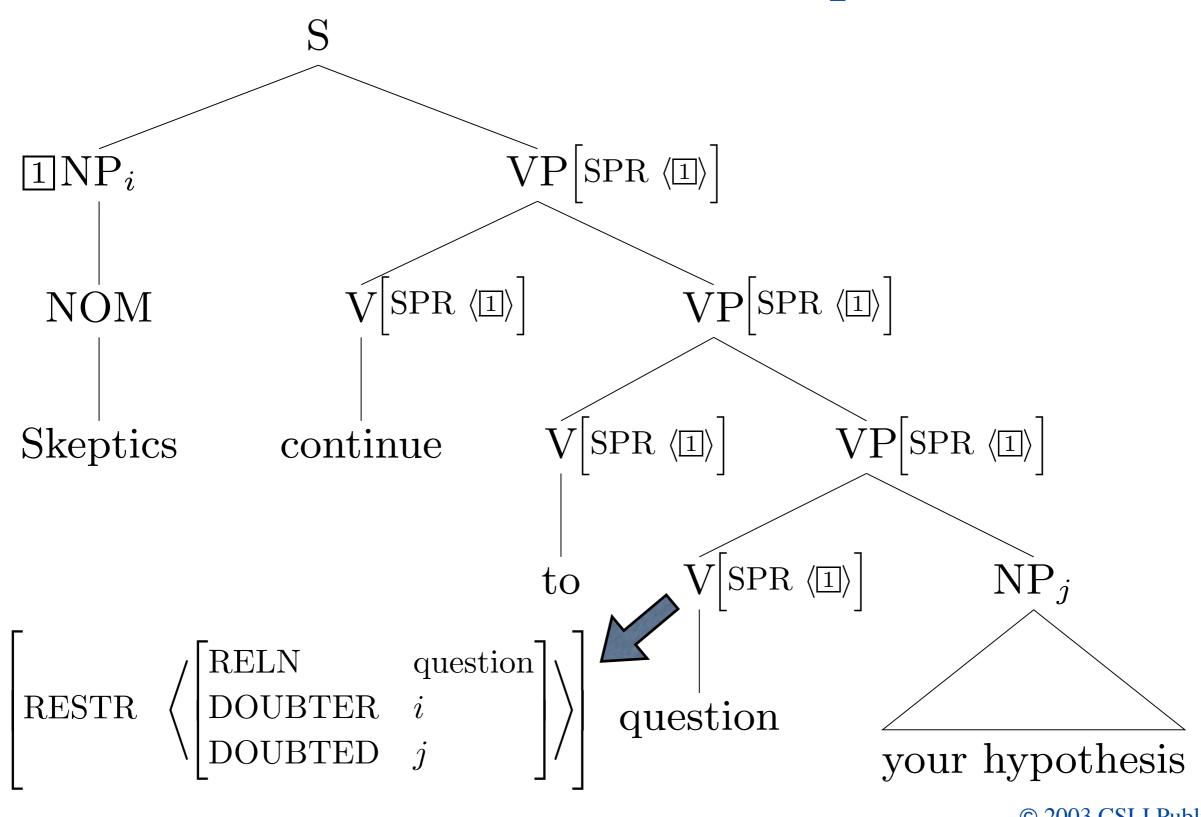


# Hence, constraints on the subjects of SRVs are imposed by their complements

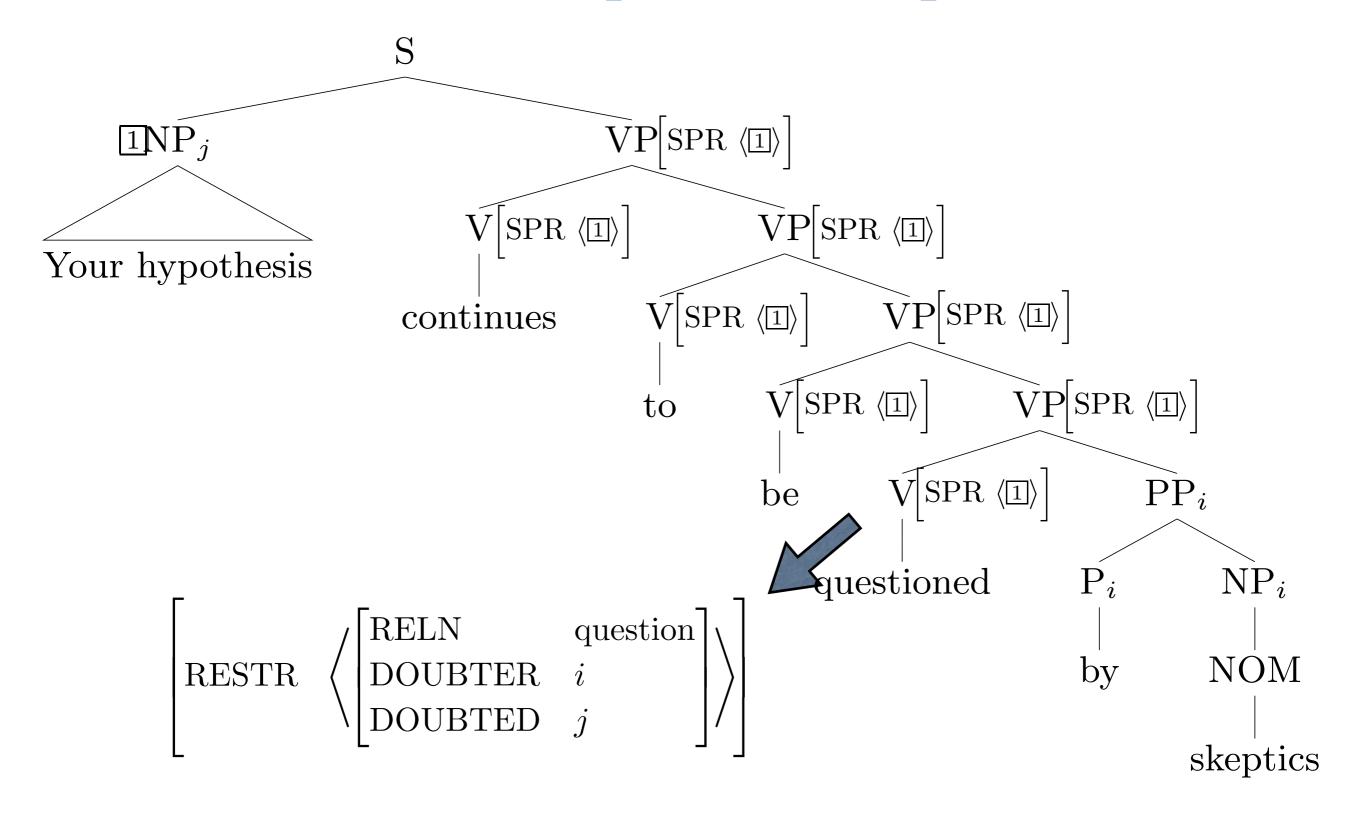
- SRVs take dummy subjects when and only when their complements do.
- SRVs take idiom chunk subjects when and only when their complements do.
- Passivizing the complement of an SRV doesn't change the truth conditions of the whole sentence:

Skeptics continue to question your hypothesis ~ Your hypothesis continues to be questioned by skeptics

### Continue with active complement



### Continue with passive complement



#### Control Verbs

- Control verbs, like *try*, appear in contexts that look just like the contexts for raising verbs: *Pat tried to stay calm* looks superficially like *Pat continued to stay calm*
- Control verbs also share their subjects with their complements, but in a different way.
- A control verb expresses a relation between the referent of its subject and the situation denoted by its complement.

## Control Verbs Are Not Transparent

- They never take dummies or idiom chunks as subjects.
  - \*There try to be bugs in my program
  - \*It tries to upset me that the Giants lost
  - \*Advantage tries to be taken of tourists
- Passivizing the complement's verb changes the truth conditions.

The police tried to arrest disruptive demonstrators ≠ Disruptive demonstrators tried to be arrested by the police

## A New Type

Subject-Control Verb Lexeme (scv-lxm):

$$\begin{bmatrix} \text{ARG-ST} & \left\langle \text{NP}_i \right\rangle & \left\langle \text{NP}_i \right\rangle \\ \text{COMPS} & \left\langle \right\rangle \\ \text{INDEX} & s_2 \end{bmatrix} \end{bmatrix}$$

$$\begin{bmatrix} \text{SEM} & \left[ \text{RESTR} & \left\langle \left[ \text{ARG} & s_2 \right] \right\rangle \right] \end{bmatrix}$$

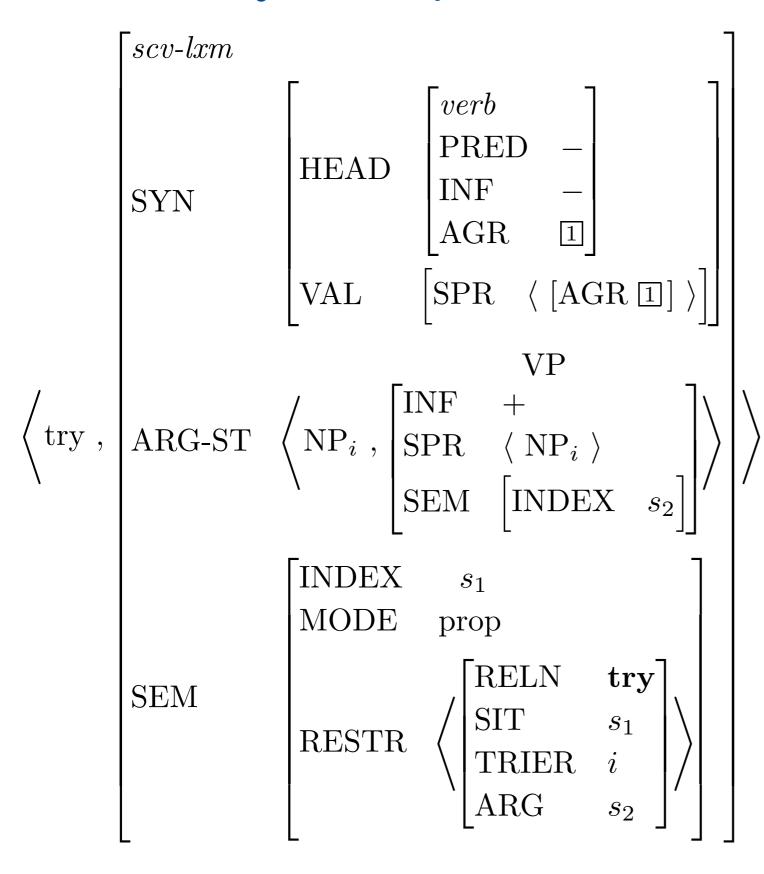
- This differs from *srv-lxm* in that the first argument and the SPR of the second argument are coindexed, not tagged.
  - This means that they only need to share INDEX values, but may differ on other features
  - And the first argument -- the subject -- must have an INDEX value, so it cannot be non-referential

## The lexical entry for try

$$\left\langle \text{try ,} \begin{vmatrix} \text{scv-lxm} \\ \text{ARG-ST} & \left\langle \text{NP}_i & \text{VP} \\ \text{NP}_i & \text{INDEX} & s_1 \\ \\ \text{SEM} & \left[ \begin{matrix} \text{INDEX} & s_1 \\ \\ \text{RESTR} & \left\langle \begin{matrix} \text{RELN} & \mathbf{try} \\ \\ \text{SIT} & s_1 \\ \\ \text{TRIER} & i \end{matrix} \right] \right\rangle \right]$$

Note that the subject  $(NP_i)$  plays a semantic role with respect to the verb, namely the "TRIER"

### Entry for try, with Inherited Information



#### Things to Note:

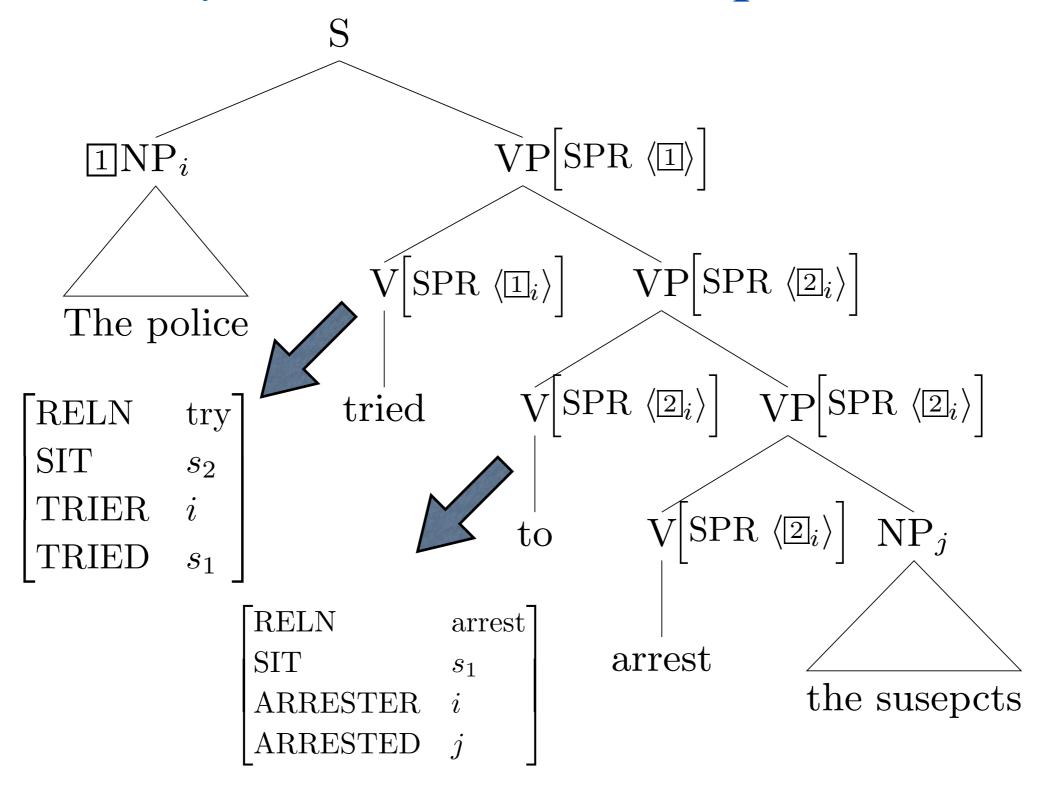
- The first argument has an index
- The first argument is coindexed with the SPR of the second argument
- Both the first and second arguments play semantic roles in the 'try' relation
- Very little had to be stipulated in the entry for *try*

## Questions

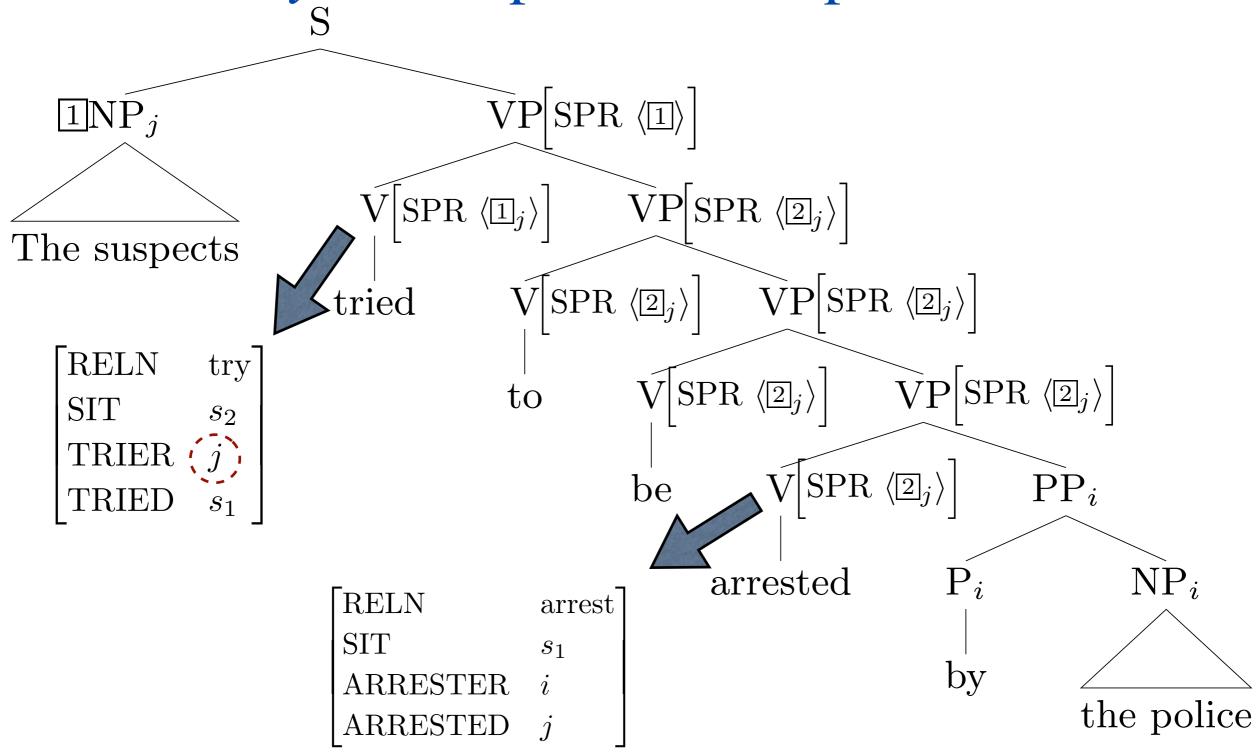
- What rules out dummies and idiom chunks as subjects of *try*?
- What accounts for the semantic non-equivalence of pairs like the following?
  - Reporters tried to interview the candidate

    The candidate tried to be interviewed by reporters
- Why does *continue* behave differently in these respects?

### Try with an active complement



### Try with a passive complement



# The main formal difference between raising and control verbs is in ARG-ST

$$\left\langle \text{NP}_{i}, \begin{bmatrix} \text{INF} & + & & \\ \text{SPR} & \langle \text{NP}_{i} \rangle & & \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s_{2} \end{bmatrix} \end{bmatrix} \right\rangle \qquad \left\langle \begin{array}{c} \text{INF} & + & \\ \text{SPR} & \langle \begin{array}{c} \text{I} \rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s_{2} \end{bmatrix} \end{bmatrix} \right\rangle$$

**CONTROL** 

**RAISING** 

Which is which? Why?

# Raising & Control in Transformational Grammar

Raising

continue [the dogs to bark]

Control

[the dogs]<sub>i</sub> try [NP<sub>i</sub> to bark]

- In early TG, the NP got deleted.
- In more recent TG, it's a silent pronoun.

#### Problems with the TG Accounts

- Details never fully worked out (e.g. where does *to* come from?)
- What blocks \*The cat continued (for) the dog to bark or \*The cat tried (for) the dog to bark?
- Failure of experimental attempts to find evidence for psychological reality of these transformations.

### We make another raising/control distinction

#### Object-Raising Verb Lexeme (orv-lxm)

$$\begin{bmatrix} \text{ARG-ST} & \left\langle \text{NP}, \square, \begin{bmatrix} \text{SPR} & \left\langle \square \right\rangle \\ \text{COMPS} & \left\langle \right\rangle \\ \text{INDEX} & s_2 \end{bmatrix} \right\rangle \end{bmatrix} \bullet \text{ The formal distinction is again betwee tagging and coindexing.}$$

#### Object-Control Verb Lexeme (ocv-lxm)

$$\begin{bmatrix} \text{ARG-ST} & \left\langle \text{NP}, \text{NP}_i, \begin{bmatrix} \text{SPR} & \left\langle \text{NP}_i \right\rangle \\ \text{COMPS} & \left\langle \right\rangle \\ \text{INDEX} & s_2 \end{bmatrix} \end{bmatrix}$$

$$\begin{bmatrix} \text{SEM} & \begin{bmatrix} \text{RESTR} & \left\langle [\text{ARG} & s_2] \right\rangle \end{bmatrix}$$

- again between tagging and coindexing
- This time it's the second argument and the SPR of the third argument.

## Example orv-lxm and ocv-lxm Entries

$$\left\langle \text{expect}, \begin{bmatrix} \textit{orv-lxm} & \textit{VP} \\ \textit{ARG-ST} & \langle \textit{NP}_j, \textit{X}, \begin{bmatrix} \textit{INF} + \end{bmatrix} \rangle \\ \text{Expect}, \begin{bmatrix} \textit{INDEX} & s \\ \textit{RESTR} & \langle \begin{bmatrix} \textit{RELN} & \textbf{expect} \\ \textit{SIT} & s \\ \textit{EXPECTER} & j \end{bmatrix} \rangle \right] \right\rangle$$

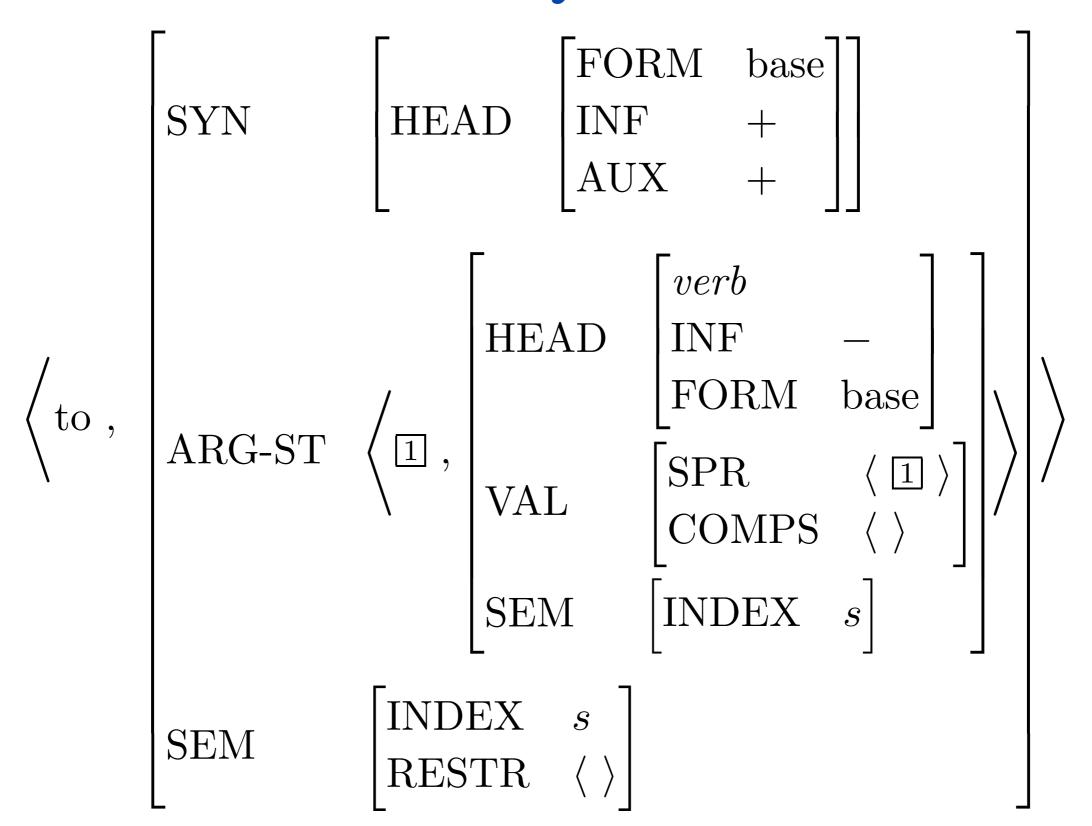
 Note that the 'persuade' relation has three arguments, but the 'expect' relation has only two

$$\left\langle \text{persuade} \right. \left\langle \begin{array}{l} \text{ocv-lxm} \\ \text{ARG-ST} \left\langle \left. \text{NP}_{j} \right., \text{NP}_{i} \right., \begin{bmatrix} \text{INF} + \end{bmatrix} \right\rangle \\ \text{persuade} \right. \left. \left\langle \begin{bmatrix} \text{RELN} & \mathbf{persuade} \\ \text{SIT} & s \\ \text{PERSUADER} & j \\ \text{PERSUADEE} & i \end{bmatrix} \right\rangle \right] \right\rangle$$

And the object's INDEX plays a role in the 'persuade' relation, but not in the 'expect' relation

- Why add INF, rather than [FORM to ]?
- Why doesn't to undergo finite verb lex rules?
- To me it doesn't make sense that a phrase like, 'to solve the problem' would have a specifier. Why is this necessary?
- It seems like the constraints on ocv-lxm are a subset of the constraints on orv-lxm. Why not just make one a subtype of the other?

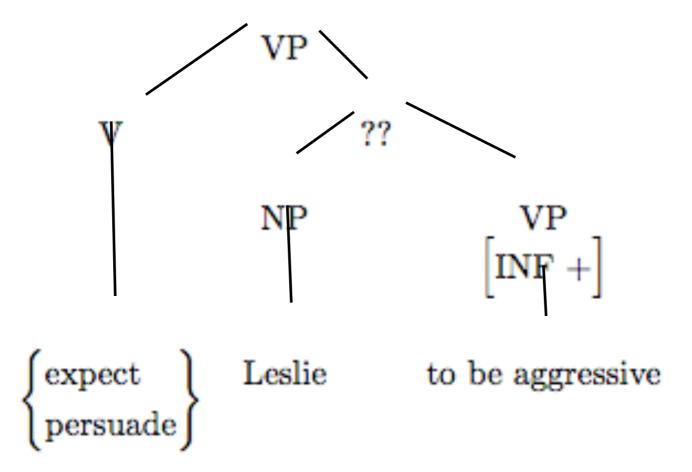
## The Lexical Entry for Infinitival to



- Are these all "ungrammatical" in the same way?
  - There tries to be a bird.
  - Kim persuaded it to surprised Sandy that Pat left.
  - Advantage tried to be taken of the refugees.
  - Colorless green ideas sleep furiously.

- Can we make these two have the same semantics?
  - We expect that a new subtype will be introduced.
  - We expect a new subtype to be introduced.
- Can we relate the verb entries by lexical rule?
- What about: We expected that.
- What about: *Chris was expected/persuaded*.

 How does the analysis of passive relate to the choice of structures for ORV and OCV sentences?



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- Next time: Auxiliaries