Ling 566
Nov 13, 2006

Raising, Control

Overview

- Intro to topic
- Infinitival *to*
- (Subject) raising verbs
- (Subject) control verbs
- Raising/control in TG
- Object raising and object control
- If time: Problem 12.4

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 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*

$$\left\langle \text{to} \ , \left[\begin{array}{ll} \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \text{FORM} & \text{base} \\ \text{INF} & + \\ \text{AUX} & + \end{array}\right] \end{array}\right] \\ \text{ARG-ST} & \left\langle \boxed{1} \ , \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \textit{verb} & \\ \text{INF} & - \\ \text{FORM} & \text{base} \end{array}\right] \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle \boxed{1} \rangle \\ \text{COMPS} & \langle\,\rangle \end{array}\right] \\ \text{SEM} & \left[\text{INDEX} \quad s\right] \end{array}\right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s \\ \text{RESTR} & \langle\,\rangle \end{array}\right] \end{array}\right] \right\rangle$$

The Syntax of Infinitival *to*

$$\begin{bmatrix} \text{SYN} & \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \text{FORM} & \text{base} \\ \text{INF} & + \\ \text{AUX} & + \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

- 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

$$\begin{bmatrix} \text{ARG-ST} & \left\langle \boxed{1}, \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} & \\ \text{INF} & - \\ \text{FORM} & \text{base} \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle\ \boxed{1}\ \rangle \\ \text{COMPS} & \langle\ \rangle \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \end{bmatrix} \end{bmatrix} \right\rangle \end{bmatrix}$$

- 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*

$$\begin{bmatrix} \text{ARG-ST} & \left\langle \boxed{1}, \begin{bmatrix} \text{HEAD} & \begin{bmatrix} \textit{verb} \\ \text{INF} & - \\ \text{FORM} & \text{base} \end{bmatrix} \\ \text{VAL} & \begin{bmatrix} \text{SPR} & \langle\, \boxed{1} \,\rangle \\ \text{COMPS} & \langle\, \rangle \end{bmatrix} \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \end{bmatrix} \end{bmatrix} \right\rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s \\ \text{RESTR} & \langle\, \rangle \end{bmatrix} \end{bmatrix}$$

- 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*):

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

- 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*

$$\left\langle \text{continue} , \left[\begin{array}{ll} \textit{srv-lxm} & \\ \text{ARG-ST} & \left\langle \text{X} , \left[\begin{array}{ll} \text{VP} & \\ \text{INF} & + \end{array} \right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s_1 \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{continue} \\ \text{SIT} & s_1 \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

Entry for *continue*, with Inherited Information

$$\left\langle \text{continue} , \left[\begin{array}{ll} \textit{srv-lxm} & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \textit{verb} & \\ \text{PRED} & - \\ \text{INF} & - \\ \text{AGR} & \boxed{2} \end{array}\right] \\ \text{VAL} & \left[\text{SPR} \quad \langle\, [\text{AGR}\ \boxed{2}]\, \rangle\right] \end{array}\right] \\ \text{ARG-ST} & \left\langle \boxed{1}\left[\begin{array}{ll} \text{HEAD} & \textit{nominal} \\ \text{VAL} & \left[\begin{array}{ll} \text{SPR} & \langle\, \rangle \\ \text{COMPS} & \langle\, \rangle \end{array}\right] \end{array}\right] , \left[\begin{array}{ll} & \text{VP} \\ \text{INF} & + \\ \text{SPR} & \langle\, \boxed{1}\, \rangle \\ \text{INDEX} & s_2 \end{array}\right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{MODE} & \text{prop} \\ \text{INDEX} & s_1 \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{continue} \\ \text{SIT} & s_1 \\ \text{ARG} & s_2 \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

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.

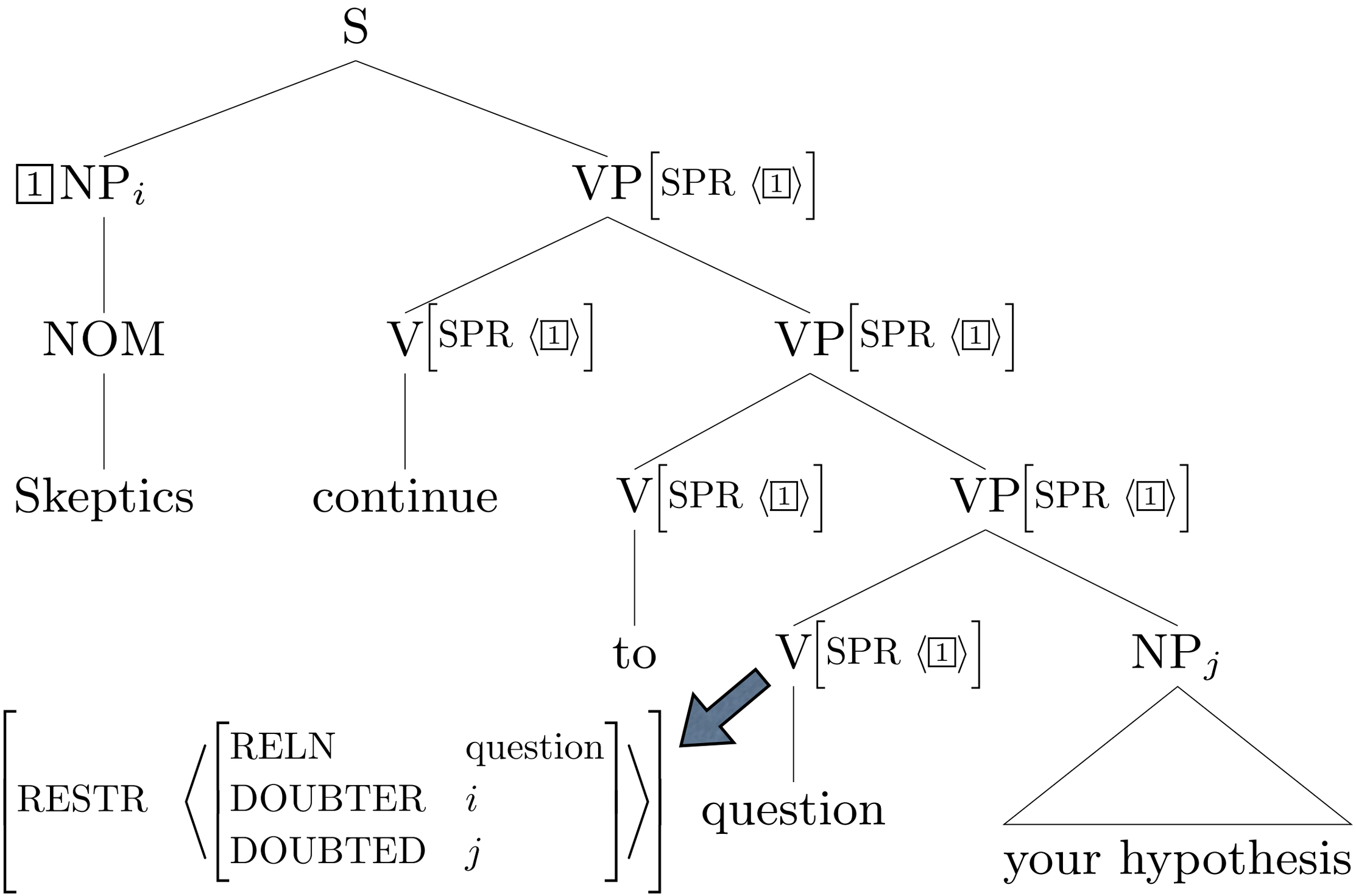
$$\left[\begin{array}{ll}
\text{ARG-ST} & \left\langle \boxed{1} \left[\begin{array}{ll}\text{HEAD} & \textit{nominal}\\ \text{VAL} & \left[\begin{array}{ll}\text{SPR} & \langle\ \rangle\\ \text{COMPS} & \langle\ \rangle\end{array}\right]\end{array}\right], \left[\begin{array}{ll}\text{VP}\\ \text{INF} & +\\ \text{SPR} & \langle \boxed{1} \rangle\\ \text{INDEX} & s_2\end{array}\right] \right\rangle \\
\text{SEM} & \left[\begin{array}{ll}\text{MODE} & \text{prop}\\ \text{INDEX} & s_1\\ \text{RESTR} & \left\langle \left[\begin{array}{ll}\text{RELN} & \textbf{continue}\\ \text{SIT} & s_1\\ \text{ARG} & s_2\end{array}\right] \right\rangle\end{array}\right]
\end{array}\right]$$

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

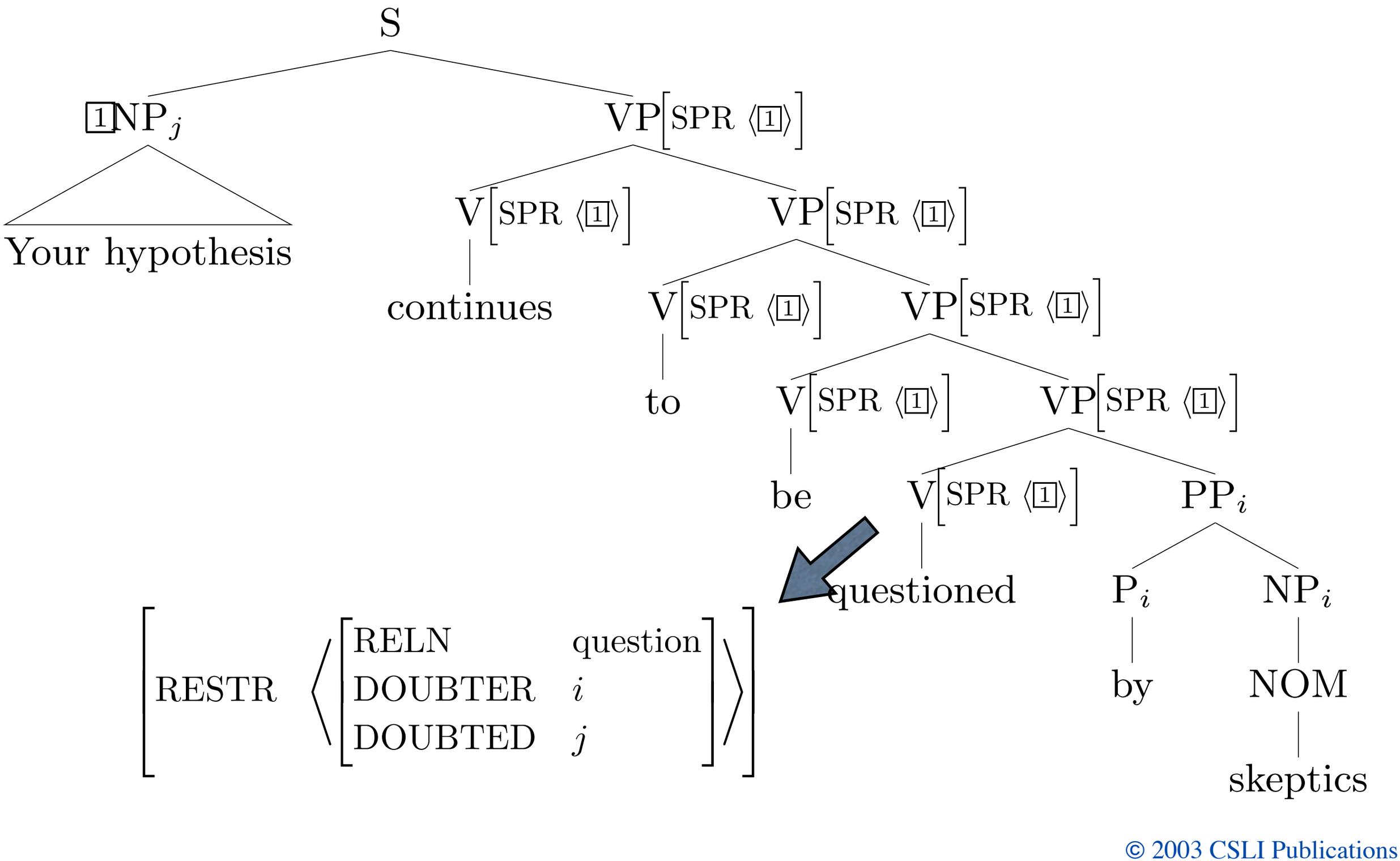
- SRVs take dummy subjects when and only when their complements do.
- SRVs take idiom chunk subjects when and only when their complements do.
- Passivizing the complement of an SRV doesn't change the truth conditions of the whole sentence:

  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):

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

- 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*

$$\left\langle \text{try} , \left[\begin{array}{ll} \textit{scv-lxm} & \\ \text{ARG-ST} & \left\langle \text{NP}_i , \left[\begin{array}{c} \text{VP} \\ \text{INF} + \end{array} \right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s_1 \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{try} \\ \text{SIT} & s_1 \\ \text{TRIER} & i \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

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

Entry for *try*, with Inherited Information

$$\left\langle \text{try} \;,\; \left[\begin{array}{ll} \textit{scv-lxm} & \\ \text{SYN} & \left[\begin{array}{ll} \text{HEAD} & \left[\begin{array}{ll} \textit{verb} & \\ \text{PRED} & - \\ \text{INF} & - \\ \text{AGR} & \boxed{1} \end{array}\right] \\ \text{VAL} & \left[\text{SPR} \quad \langle\, [\text{AGR}\ \boxed{1}] \,\rangle\right] \end{array}\right] \\ \text{ARG-ST} & \left\langle \text{NP}_i \;,\; \left[\begin{array}{ll} \text{VP} & \\ \text{INF} & + \\ \text{SPR} & \langle\, \text{NP}_i \,\rangle \\ \text{SEM} & \left[\text{INDEX} \quad s_2\right] \end{array}\right] \right\rangle \\ \text{SEM} & \left[\begin{array}{ll} \text{INDEX} & s_1 \\ \text{MODE} & \text{prop} \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{try} \\ \text{SIT} & s_1 \\ \text{TRIER} & i \\ \text{ARG} & s_2 \end{array}\right] \right\rangle \end{array}\right] \end{array}\right] \right\rangle$$

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

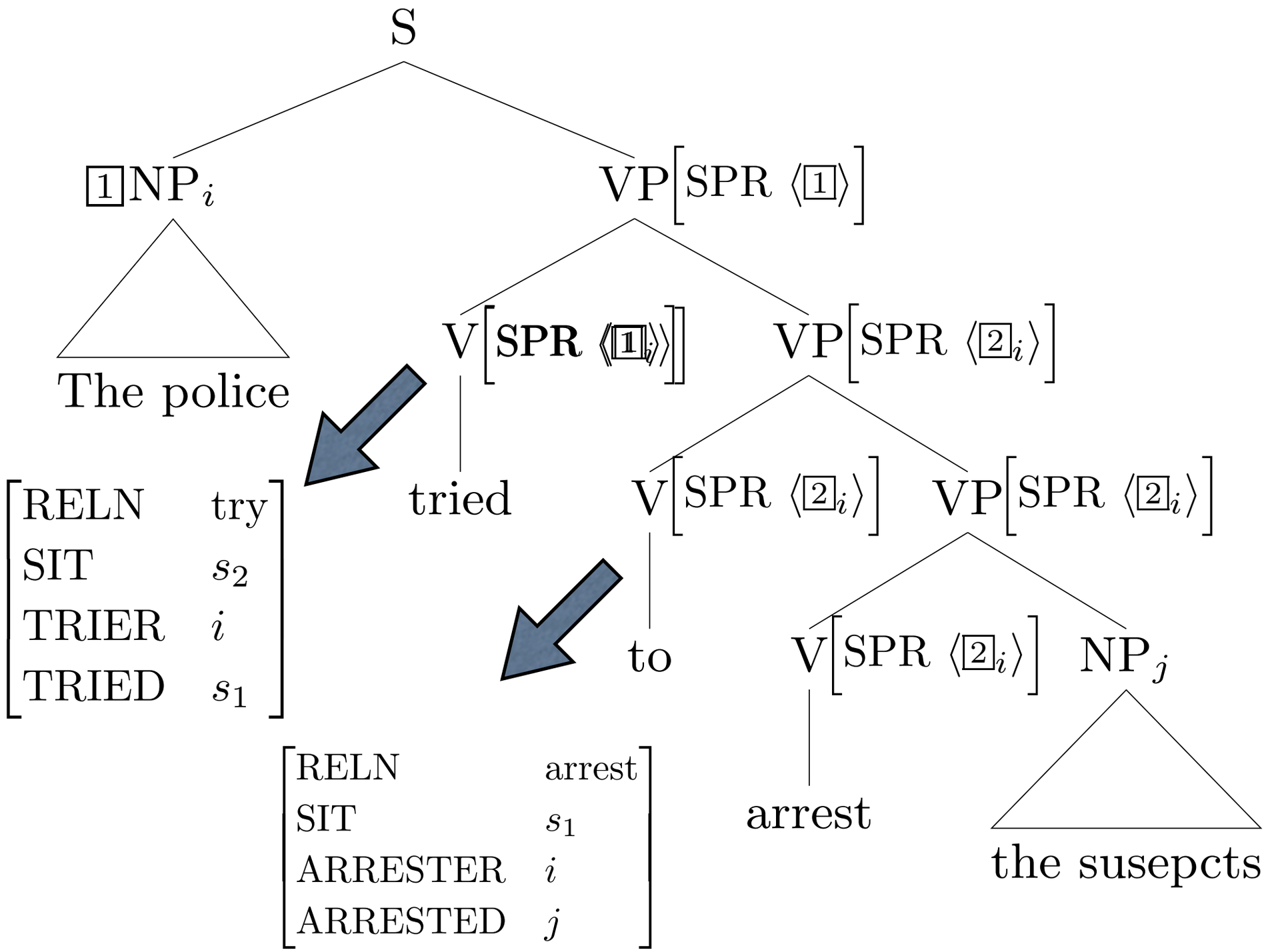
- What rules out dummies and idiom chunks as subjects of *try*?
- What accounts for the semantic non-equivalence of pairs like the following?

  Reporters tried to interview the candidate

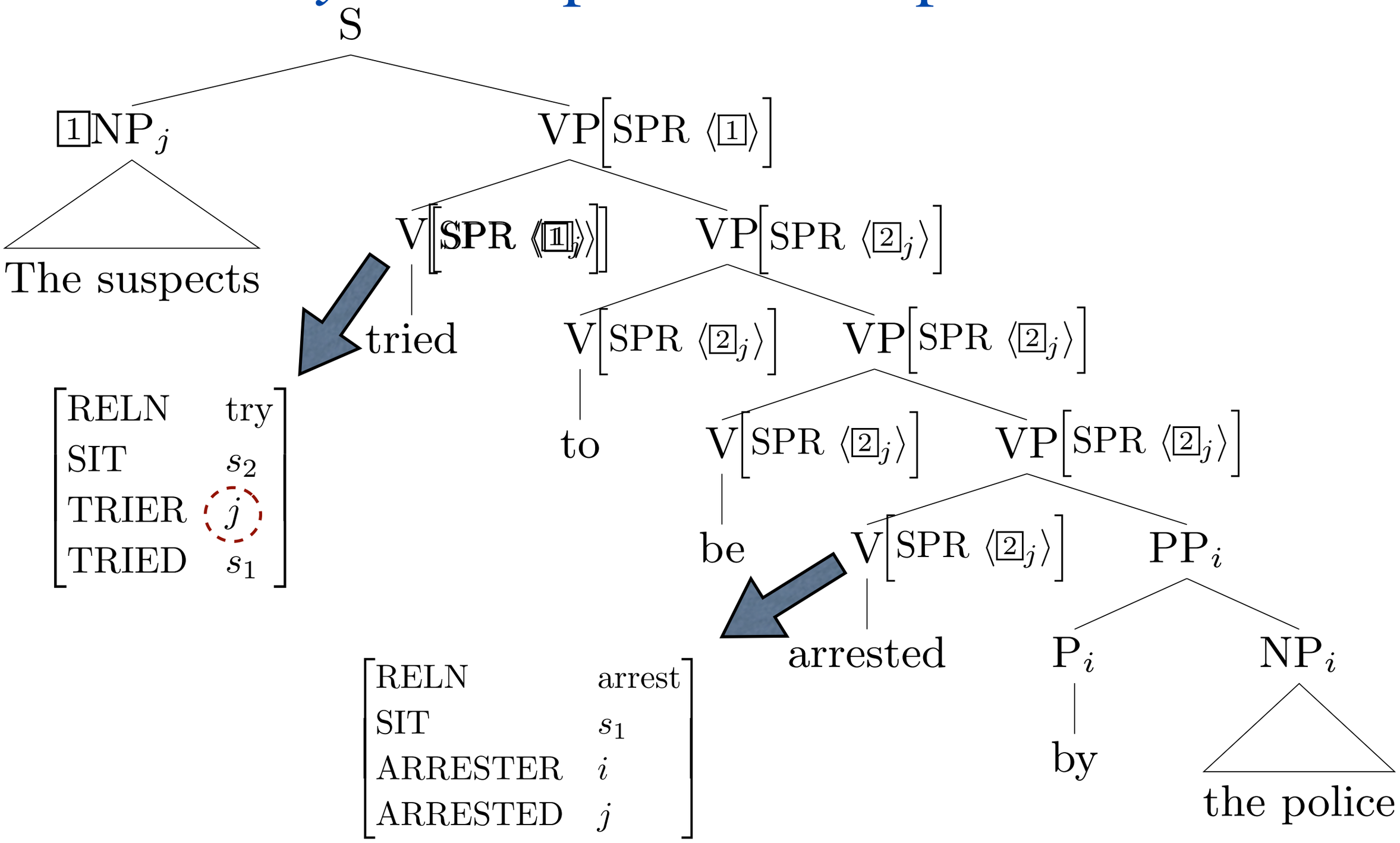
  The candidate tried to be interviewed by reporters

- 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

$$\left\langle \text{NP}_i \ , \begin{bmatrix} \text{VP} \\ \text{INF} & + \\ \text{SPR} & \langle\ \text{NP}_i\ \rangle \\ \text{SEM} & \left[\text{INDEX} \quad s_2\right] \end{bmatrix} \right\rangle$$

CONTROL

$$\left\langle \boxed{1}\ \text{NP} \ , \begin{bmatrix} \text{VP} \\ \text{INF} & + \\ \text{SPR} & \langle\ \boxed{1}\ \rangle \\ \text{SEM} & \left[\text{INDEX} \quad s_2\right] \end{bmatrix} \right\rangle$$

RAISING

Which is which?

Why?

Raising & Control in Transformational Grammar

- Raising

  _____ continue [the dogs to bark]

- Control

  $[\text{the dogs}]_i$ try $[NP_i$ 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*)

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

- The formal distinction is again between tagging and coindexing

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

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

- This time it's the **second** argument and the SPR of the **third** argument.

Example *orv-lxm* and *ocv-lxm* Entries

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

$$\left\langle \text{persuade} , \left[\begin{array}{l} \textit{ocv-lxm} \\ \text{ARG-ST} \ \langle \ \text{NP}_j \ , \text{NP}_i \ , \left[\begin{array}{c} \text{VP} \\ \text{INF} + \end{array} \right] \rangle \\ \text{SEM} \left[\begin{array}{ll} \text{INDEX} & s \\ \text{RESTR} & \left\langle \left[\begin{array}{ll} \text{RELN} & \textbf{persuade} \\ \text{SIT} & s \\ \text{PERSUADER} & j \\ \text{PERSUADEE} & i \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

- Note that the 'persuade' relation has three arguments, but the 'expect' relation has only two
- And the object's INDEX plays a role in the 'persuade' relation, but not in the 'expect' relation

Justifying the difference between *expect* and *persuade* (Prob. 12.4)

Construct examples of each of the following four types which show a contrast between *expect* and persuade:

i. Examples with dummy *there*

ii. Examples with dummy *it*

iii. Examples with idiom chunks

iv. Examples of relevant pairs of sentences containing active and passive complements. Indicate whether they are or are not paraphrases of each other.

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- Next time: Auxiliaries