

Ling 566
Nov 18, 2010
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*:

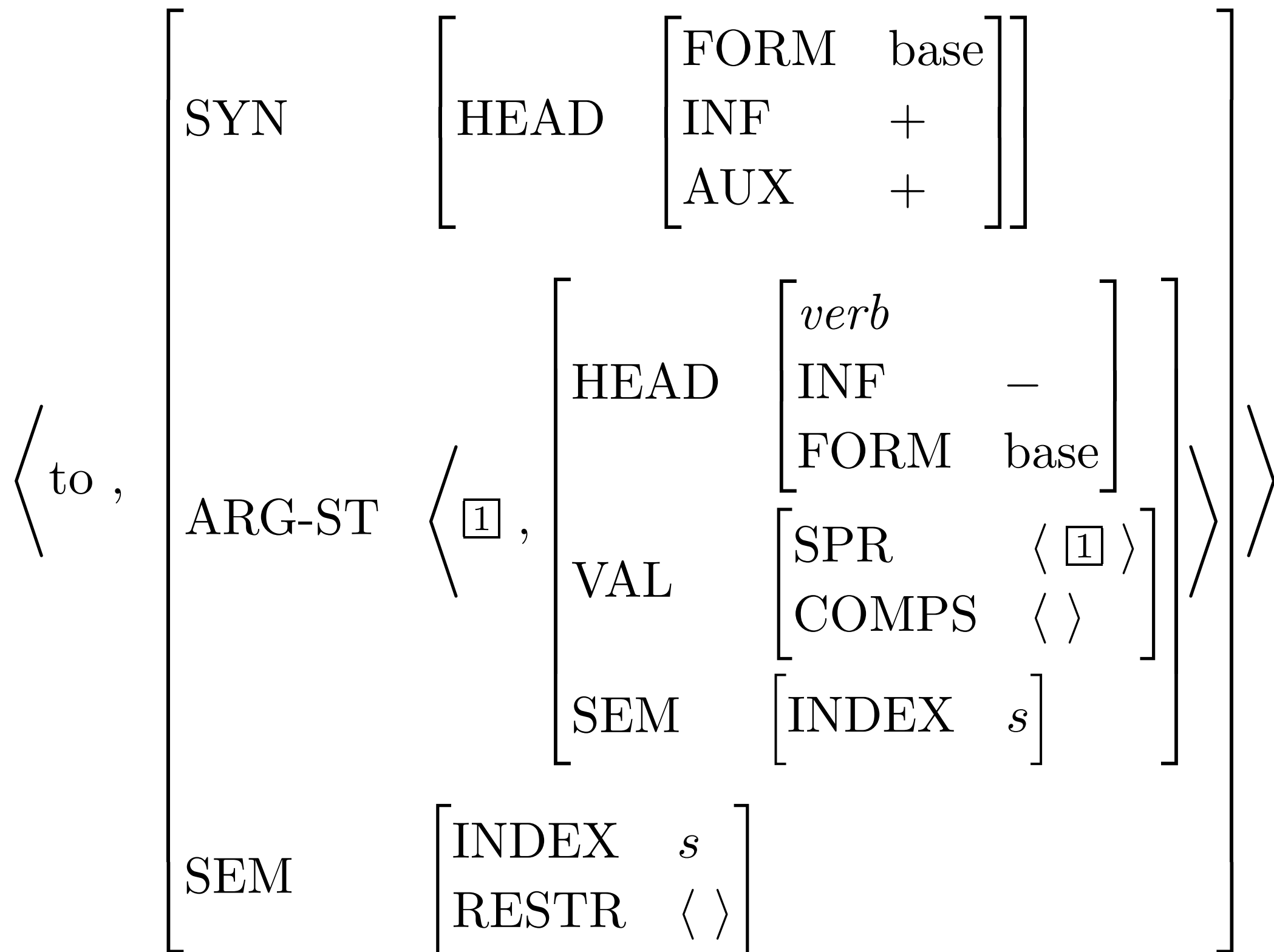
Pat aspires to stardom

Pat aspires to be a good actor

**Pat aspires to stardom and 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*

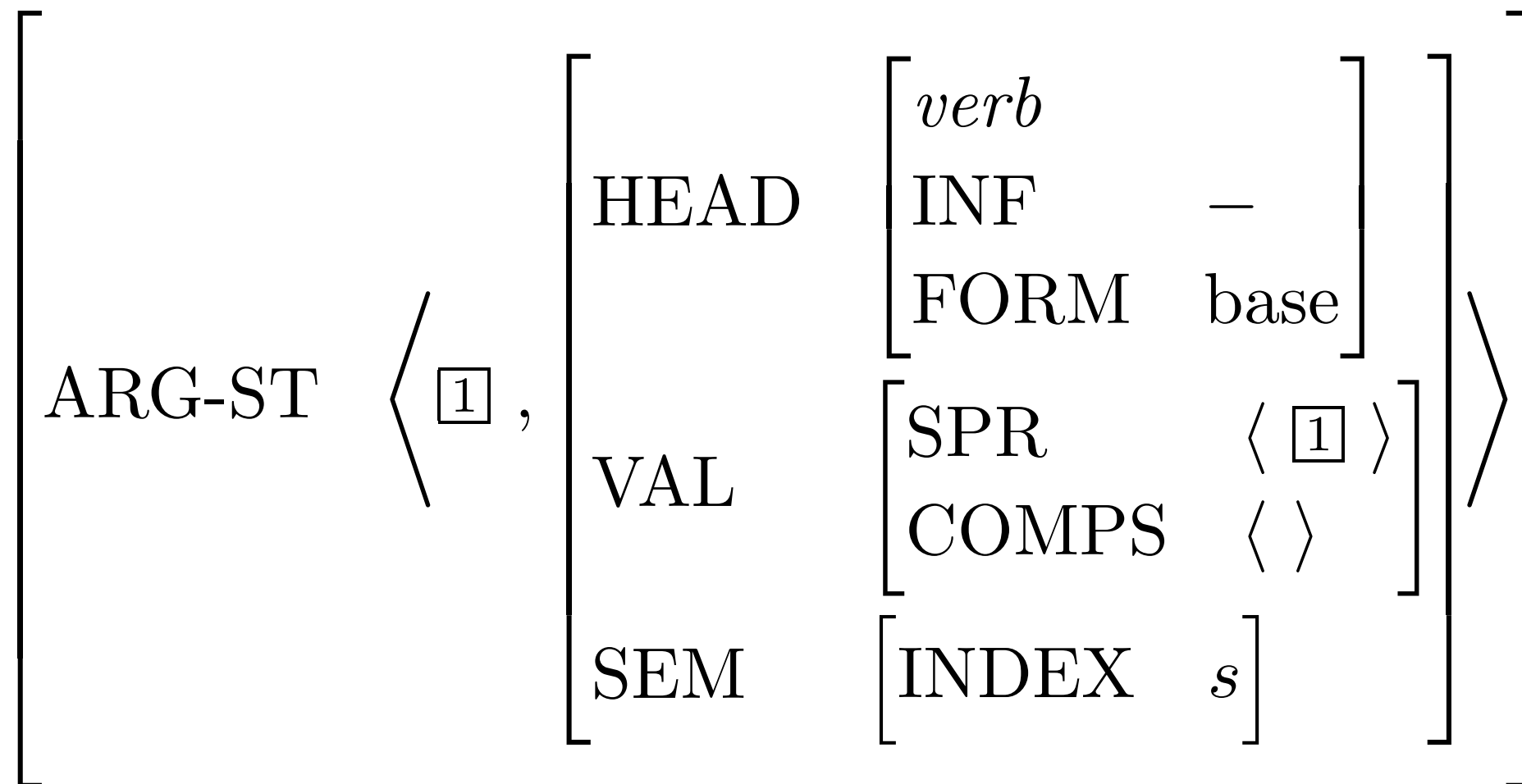


The Syntax of Infinitival *to*

$$\left[\text{SYN} \left[\text{HEAD} \left[\begin{array}{ll} \text{FORM} & \text{base} \\ \text{INF} & + \\ \text{AUX} & + \end{array} \right] \right] \right]$$

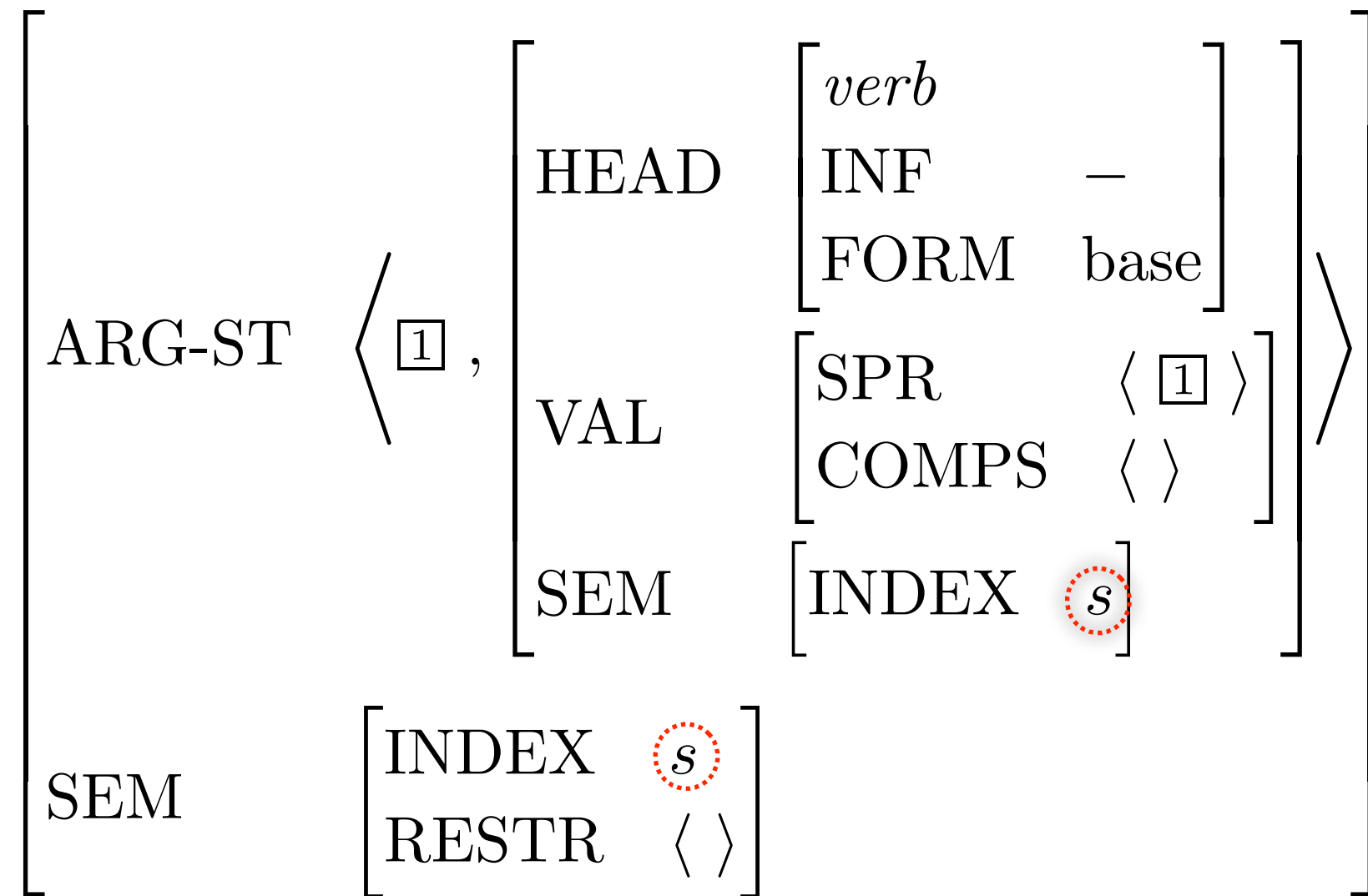
- This makes it a verb, because AUX is declared on *verb*
- [INF +] uniquely identifies the infinitival *to*
- Verbs select complements with different combinations of FORM and INF values, e.g.
 - complements of *condescend* are [FORM base] and [INF +]
 - complements of *should* are [FORM base] and [INF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

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

- 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*

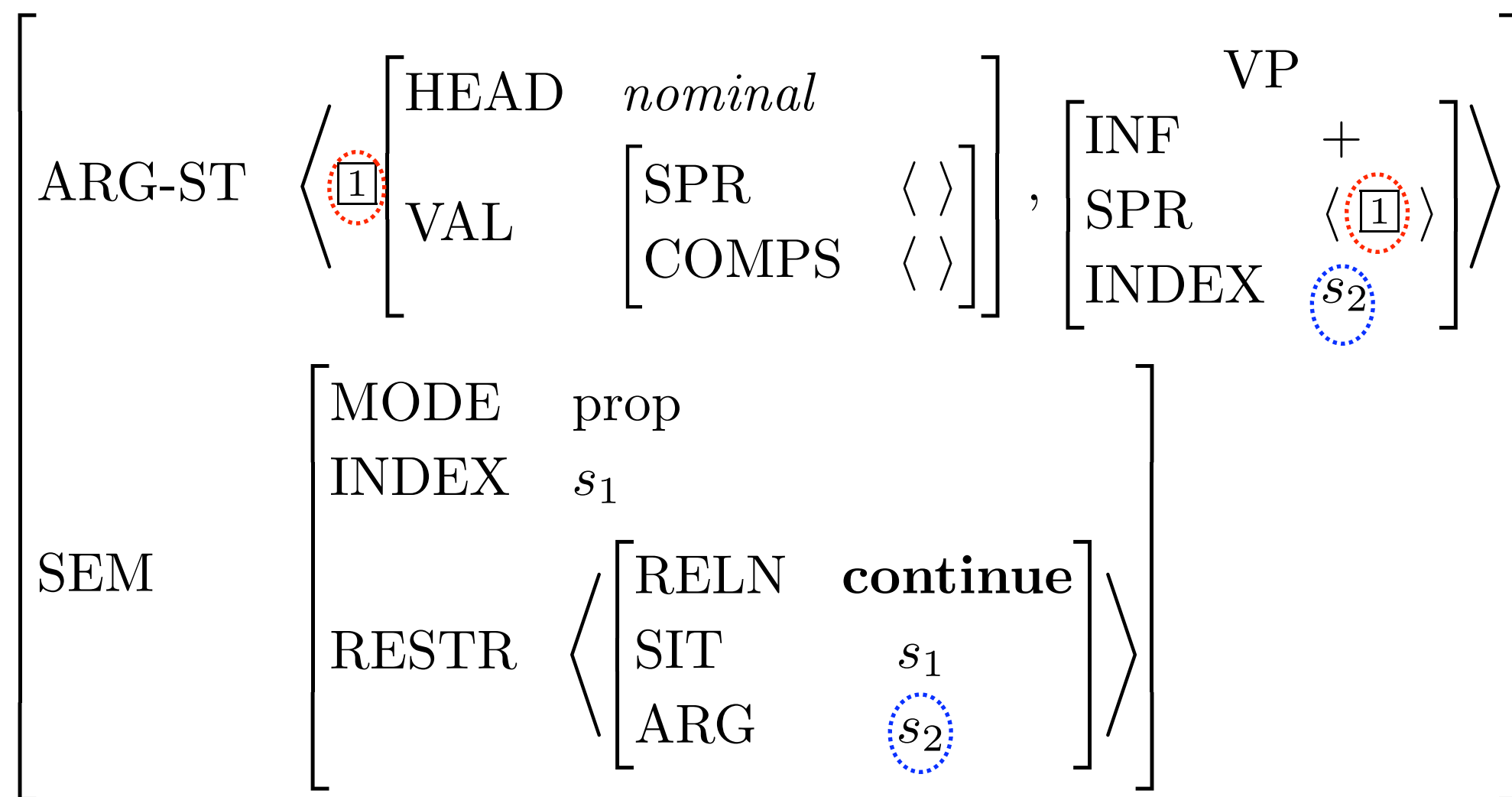
$$\left\langle \text{continue} , \left[\begin{array}{l} \text{srv-lxm} \\ \text{ARG-ST} \left\langle \text{X} , \left[\text{INF}^{\text{VP}} + \right] \right\rangle \\ \text{SEM} \left[\begin{array}{l} \text{INDEX} \quad s_1 \\ \text{RESTR} \left\langle \left[\begin{array}{l} \text{RELN} \quad \text{continue}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

Entry for *continue*, with Inherited Information

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

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.



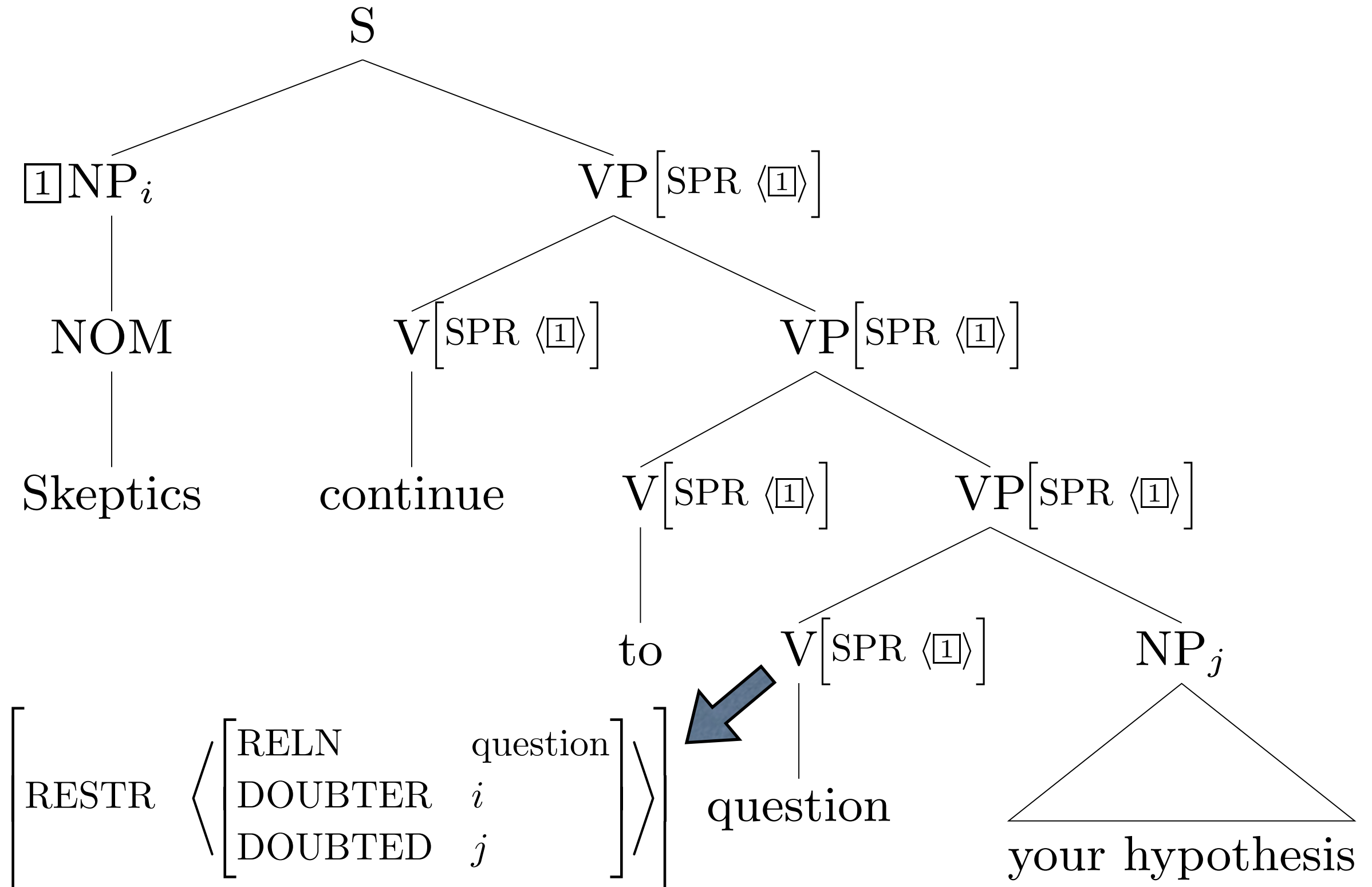
Hence, constraints on the subjects of SRVs are imposed by their complements

- 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:

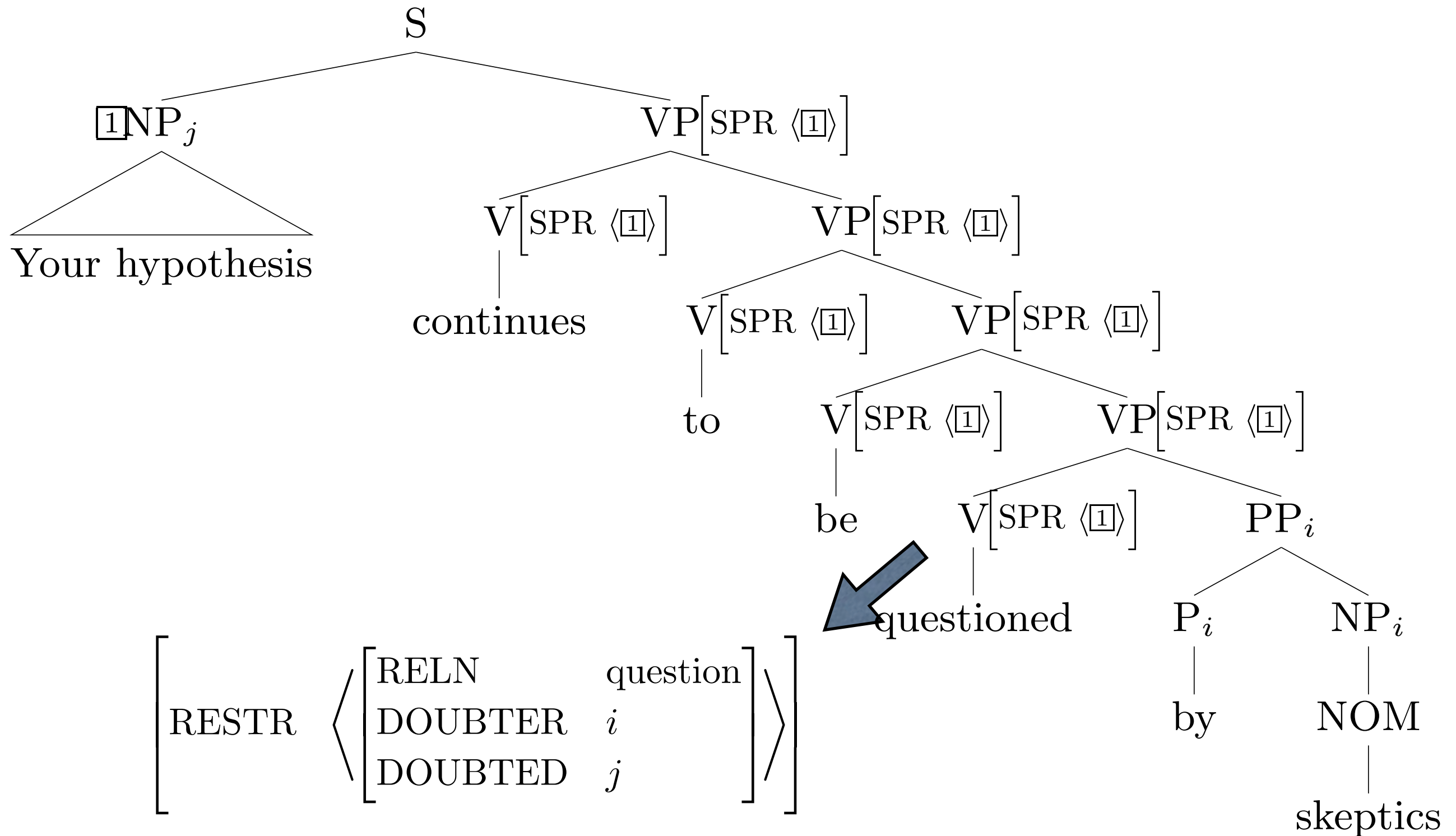
Skeptics continue to question your hypothesis ~

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):

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

- 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*

$$\left\langle \text{try} , \left[\begin{array}{l} scv-lxm \\ \text{ARG-ST} \left\langle \text{NP}_i , \left[\text{VP} \right. \right. \\ \left. \left. \left[\text{INF} + \right] \right] \right\rangle \\ \text{SEM} \left[\begin{array}{l} \text{INDEX} \quad s_1 \\ \text{RESTR} \left\langle \left[\begin{array}{l} \text{RELN} \quad \mathbf{try} \\ \text{SIT} \quad s_1 \\ \text{TRIER} \quad i \end{array} \right] \right\rangle \end{array} \right] \end{array} \right] \right\rangle$$

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

Entry for *try*, with Inherited Information

| | | | | | | | | | | | | | | | |
|-----------------|---|-------------|--|-----------------|---|-------|---|------|---------------------|-----|-------------------------|-------|---------------------|-----|----------------|
| <i>scv-lxm</i> | | | | | | | | | | | | | | | |
| SYN | <table> <tr> <td>HEAD</td><td> <table> <tr><td><i>verb</i></td><td></td></tr> <tr><td>PRED</td><td>—</td></tr> <tr><td>INF</td><td>—</td></tr> <tr><td>AGR</td><td>[1]</td></tr> </table> </td></tr> <tr> <td>VAL</td><td>[SPR < [AGR [1]] >]</td></tr> </table> | HEAD | <table> <tr><td><i>verb</i></td><td></td></tr> <tr><td>PRED</td><td>—</td></tr> <tr><td>INF</td><td>—</td></tr> <tr><td>AGR</td><td>[1]</td></tr> </table> | <i>verb</i> | | PRED | — | INF | — | AGR | [1] | VAL | [SPR < [AGR [1]] >] | | |
| HEAD | <table> <tr><td><i>verb</i></td><td></td></tr> <tr><td>PRED</td><td>—</td></tr> <tr><td>INF</td><td>—</td></tr> <tr><td>AGR</td><td>[1]</td></tr> </table> | <i>verb</i> | | PRED | — | INF | — | AGR | [1] | | | | | | |
| <i>verb</i> | | | | | | | | | | | | | | | |
| PRED | — | | | | | | | | | | | | | | |
| INF | — | | | | | | | | | | | | | | |
| AGR | [1] | | | | | | | | | | | | | | |
| VAL | [SPR < [AGR [1]] >] | | | | | | | | | | | | | | |
| ARG-ST | <table> <tr> <td colspan="2">VP</td></tr> <tr> <td>NP_i</td><td> <table> <tr><td>INF</td><td>+</td></tr> <tr><td>SPR</td><td>< NP_i ></td></tr> <tr><td>SEM</td><td>[INDEX s₂]</td></tr> </table> </td></tr> </table> | VP | | NP _i | <table> <tr><td>INF</td><td>+</td></tr> <tr><td>SPR</td><td>< NP_i ></td></tr> <tr><td>SEM</td><td>[INDEX s₂]</td></tr> </table> | INF | + | SPR | < NP _i > | SEM | [INDEX s ₂] | | | | |
| VP | | | | | | | | | | | | | | | |
| NP _i | <table> <tr><td>INF</td><td>+</td></tr> <tr><td>SPR</td><td>< NP_i ></td></tr> <tr><td>SEM</td><td>[INDEX s₂]</td></tr> </table> | INF | + | SPR | < NP _i > | SEM | [INDEX s ₂] | | | | | | | | |
| INF | + | | | | | | | | | | | | | | |
| SPR | < NP _i > | | | | | | | | | | | | | | |
| SEM | [INDEX s ₂] | | | | | | | | | | | | | | |
| SEM | <table> <tr><td>INDEX</td><td>s₁</td></tr> <tr><td>MODE</td><td>prop</td></tr> <tr> <td>RESTR</td><td> <table> <tr><td>RELN</td><td>try</td></tr> <tr><td>SIT</td><td>s₁</td></tr> <tr><td>TRIER</td><td><i>i</i></td></tr> <tr><td>ARG</td><td>s₂</td></tr> </table> </td></tr> </table> | INDEX | s ₁ | MODE | prop | RESTR | <table> <tr><td>RELN</td><td>try</td></tr> <tr><td>SIT</td><td>s₁</td></tr> <tr><td>TRIER</td><td><i>i</i></td></tr> <tr><td>ARG</td><td>s₂</td></tr> </table> | RELN | try | SIT | s ₁ | TRIER | <i>i</i> | ARG | s ₂ |
| INDEX | s ₁ | | | | | | | | | | | | | | |
| MODE | prop | | | | | | | | | | | | | | |
| RESTR | <table> <tr><td>RELN</td><td>try</td></tr> <tr><td>SIT</td><td>s₁</td></tr> <tr><td>TRIER</td><td><i>i</i></td></tr> <tr><td>ARG</td><td>s₂</td></tr> </table> | RELN | try | SIT | s ₁ | TRIER | <i>i</i> | ARG | s ₂ | | | | | | |
| RELN | try | | | | | | | | | | | | | | |
| SIT | s ₁ | | | | | | | | | | | | | | |
| TRIER | <i>i</i> | | | | | | | | | | | | | | |
| ARG | s ₂ | | | | | | | | | | | | | | |

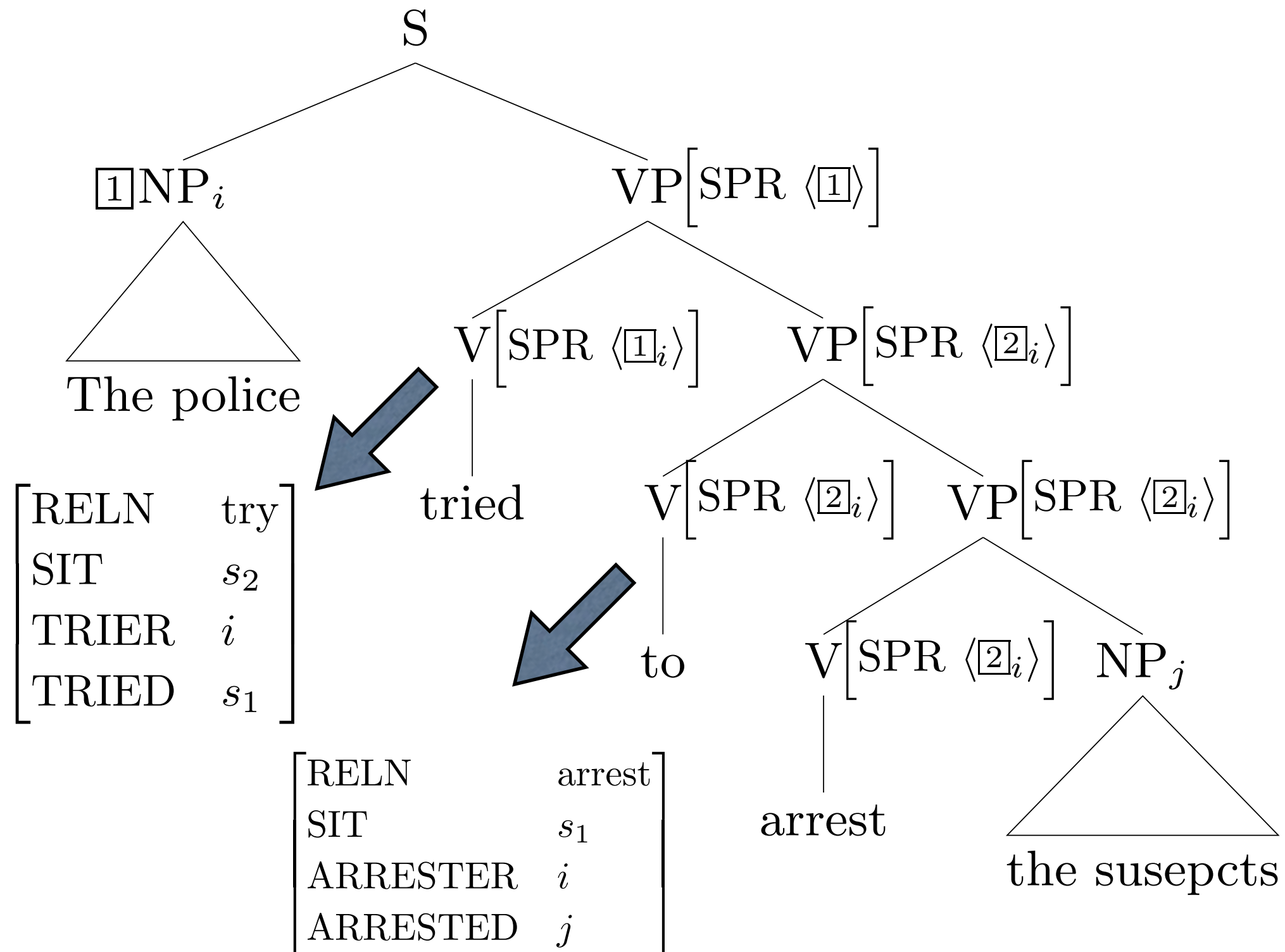
Things to Note:

- 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*

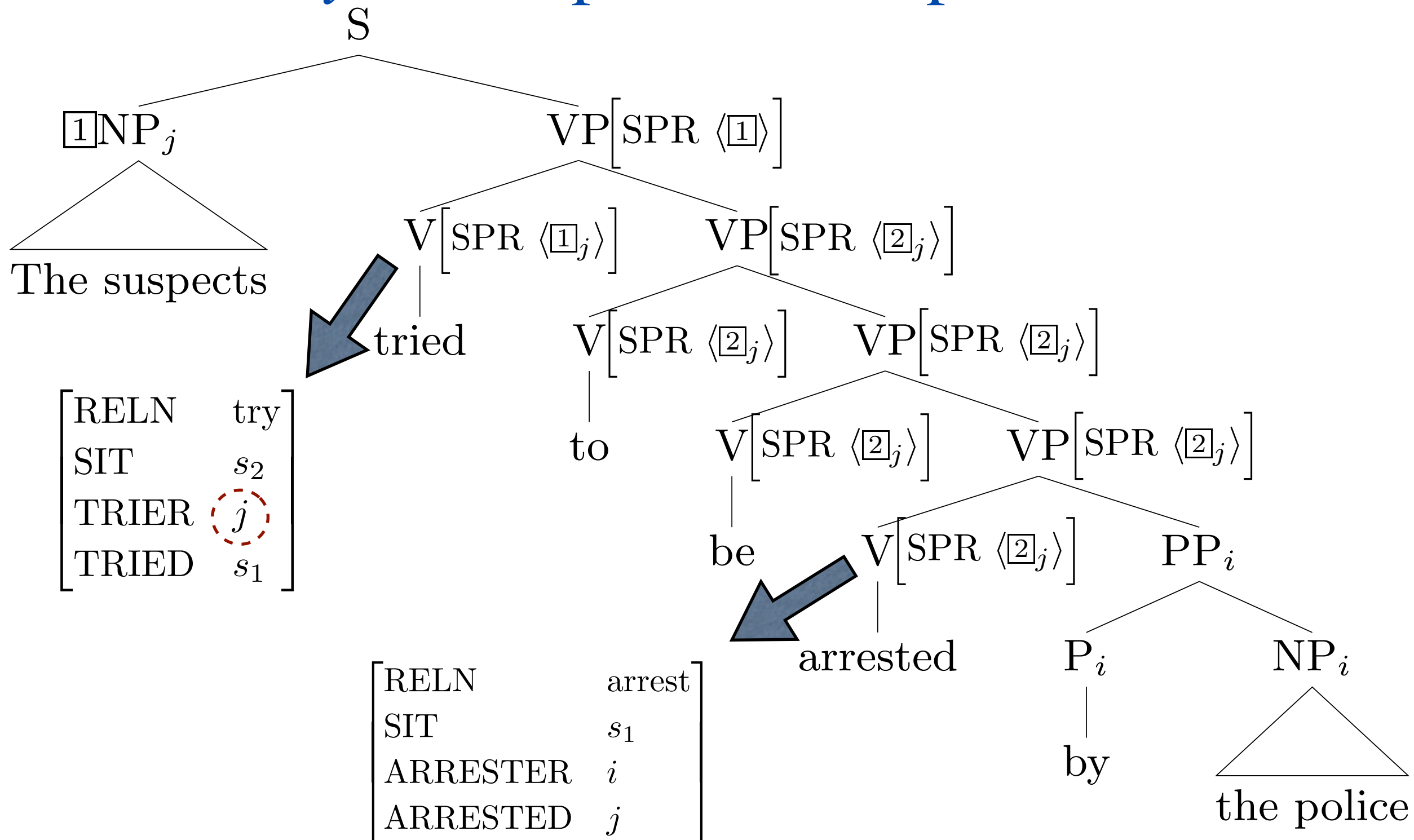
Questions

- 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

$$\begin{array}{cc}
 \begin{array}{c} \text{VP} \\ \left\langle \text{NP}_i, \begin{bmatrix} \text{INF} & + \\ \text{SPR} & \langle \text{NP}_i \rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s_2 \end{bmatrix} \end{bmatrix} \right\rangle \end{array} & \begin{array}{c} \text{VP} \\ \left\langle \boxed{1} \text{ NP}, \begin{bmatrix} \text{INF} & + \\ \text{SPR} & \langle \boxed{1} \rangle \\ \text{SEM} & \begin{bmatrix} \text{INDEX} & s_2 \end{bmatrix} \end{bmatrix} \right\rangle \end{array} \\
 \text{CONTROL} & \text{RAISING}
 \end{array}$$

Which is which?

Why?

Raising & Control in Transformational Grammar

- Raising



- Control

[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)

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

- The formal distinction is again between tagging and coindexing

Object-Control Verb Lexeme (ocv-lxm)

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

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

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

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

- Note that the ‘persuade’ relation has three arguments, but the ‘expect’ relation has only two

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

- 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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- If time: Problem 12.4
- Next time: Auxiliaries