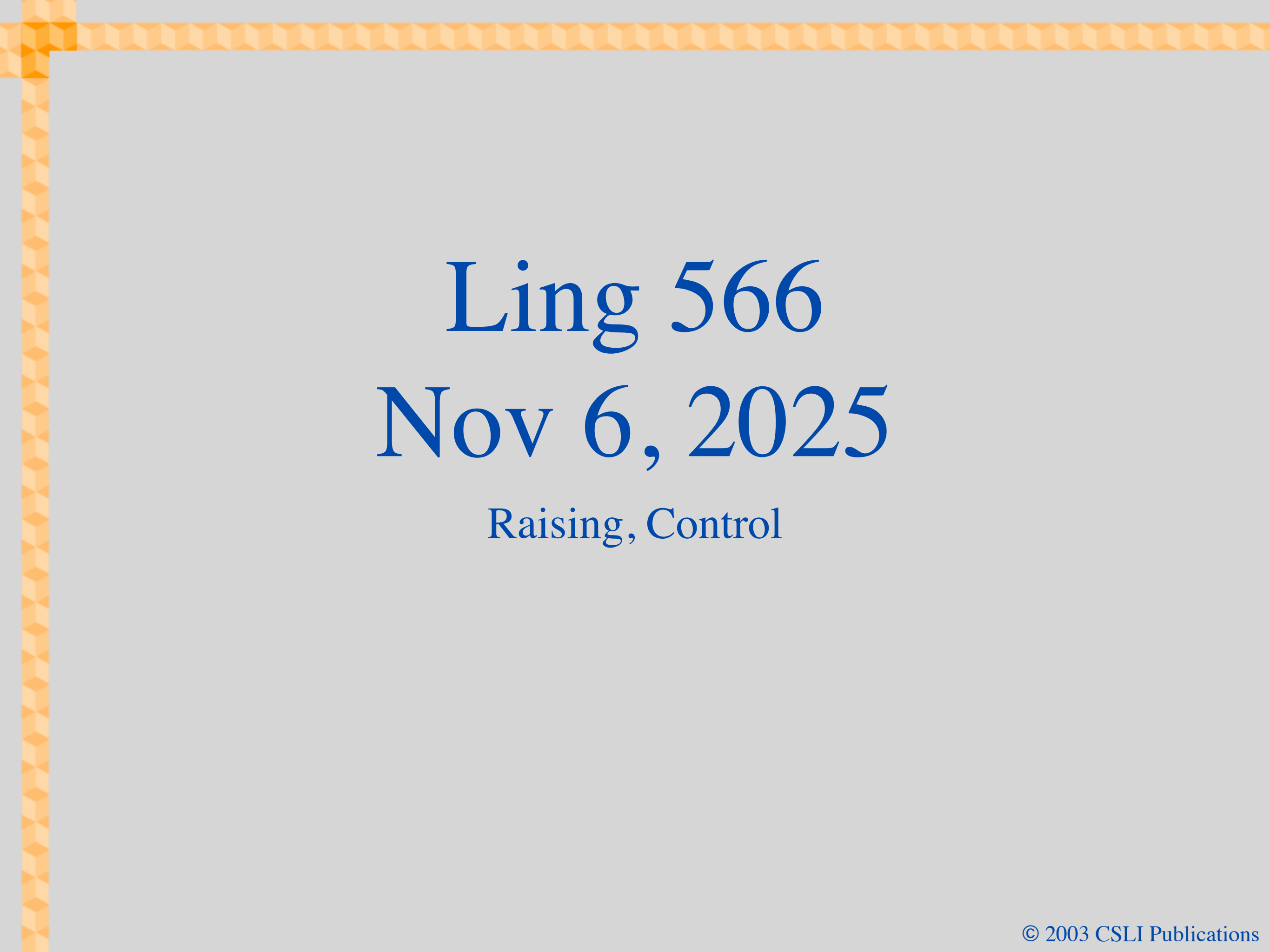


A decorative border in the top-left corner of the slide, composed of a grid of small orange squares and rectangles, creating a geometric pattern.

Ling 566

Nov 6, 2025

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 chapters, 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: non-referential NPs. Examples?
- Today: the kind of subject sharing we saw with *be* in more detail.
- Then: 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*:

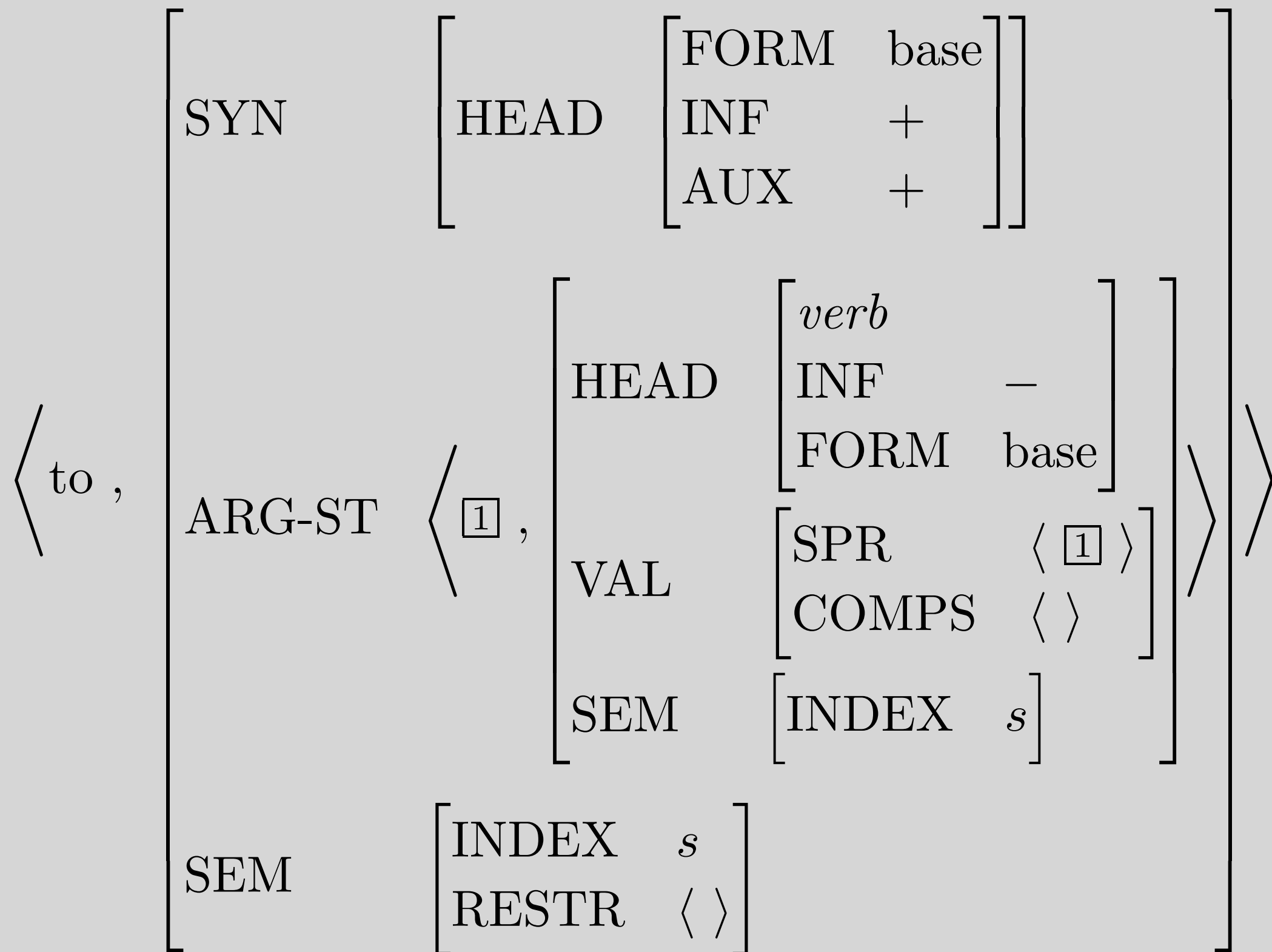
Pat aspires to stardom

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*

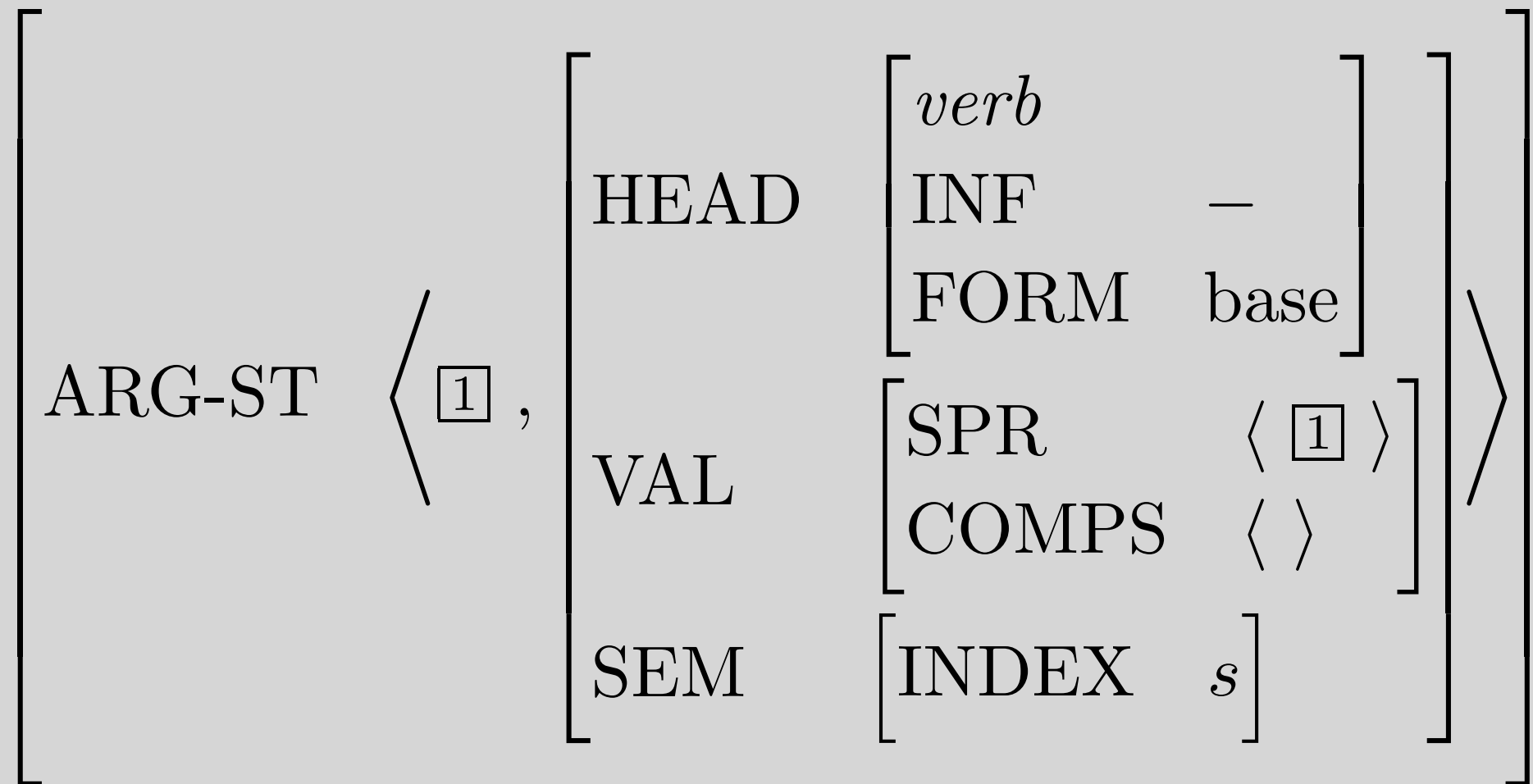


The Syntax of Infinitival *to*

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

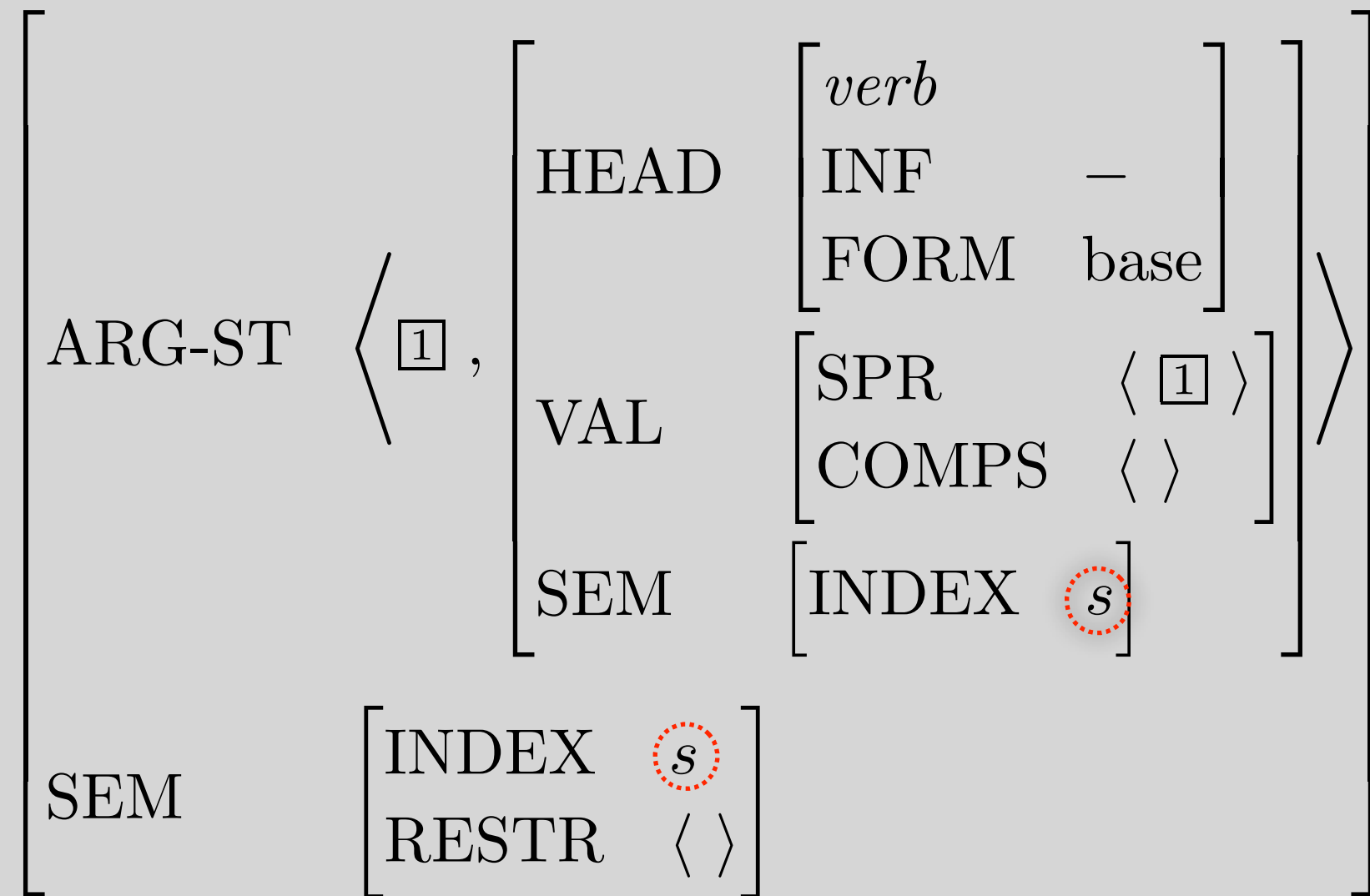
- This makes it a verb, because AUX is declared on *verb*
- [INF +] uniquely identifies the infinitival *to*
- Verbs select complements with different combinations of FORM and INF values, e.g.
 - complements of *condescend* are [FORM base] and [INF +]
 - complements of *should* are [FORM base] and [INF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



'to' as an auxiliary verb



Unexpected, but clever

0

Dodgy (I'm skeptical)

0

Don't categories mean anything??

0

None of the above

0

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

RQs: Semantic role labels

- I'm a little confused by the introduction of ARG in the new verb lexeme types.

The Lexical Entry for *continue*

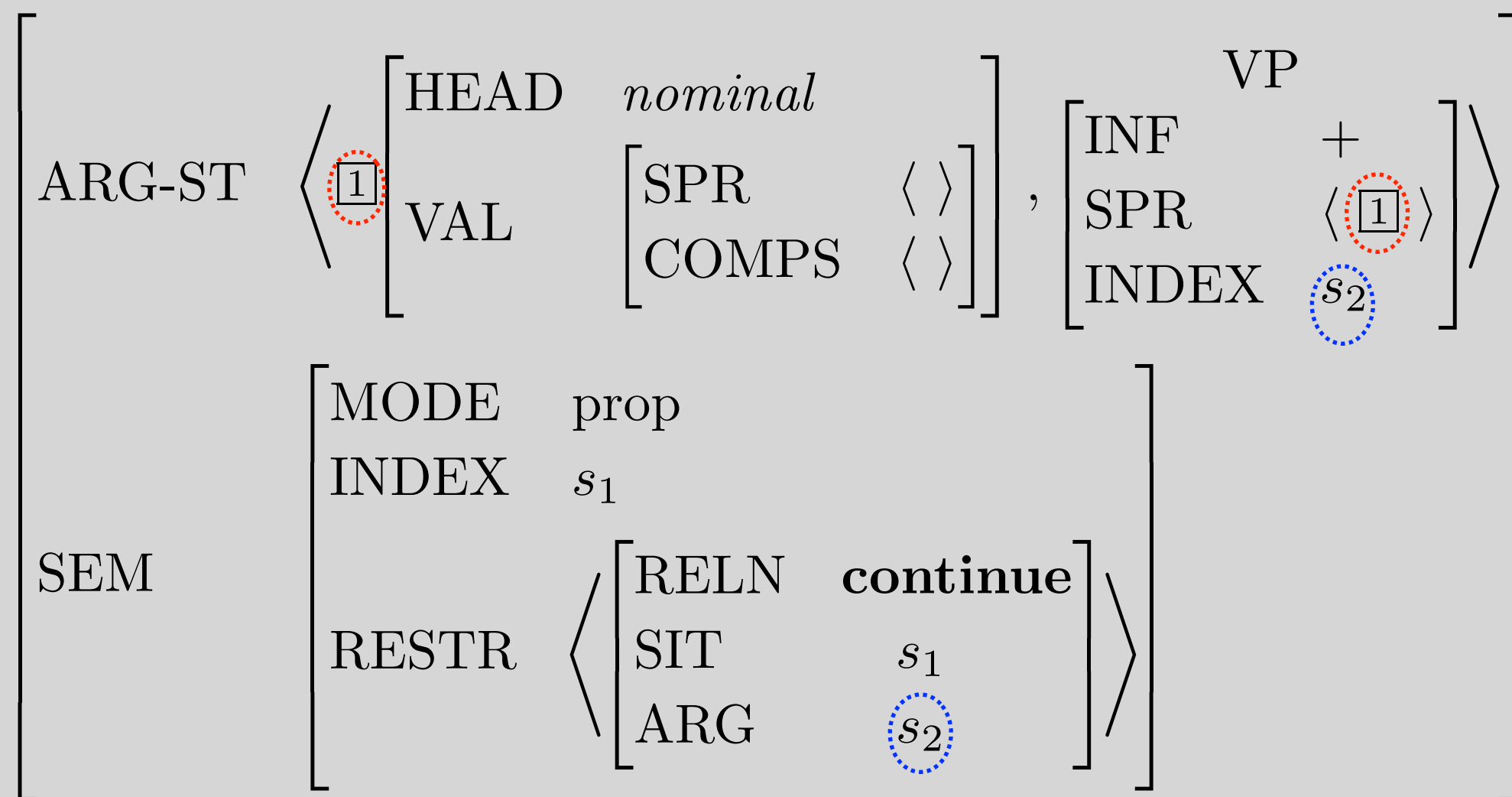
$$\left\langle \text{continue} , \left[\begin{array}{l} \text{srv-lxm} \\ \text{ARG-ST} \left\langle \text{X} , \left[\text{INF}^{\text{VP}} + \right] \right\rangle \\ \text{SEM} \left[\begin{array}{l} \text{INDEX} \quad s_1 \\ \text{RESTR} \left\langle \left[\begin{array}{l} \text{RELN} \quad \text{continue}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

Entry for *continue*, with Inherited Information

$\langle$ continue , $\rangle$	$srv-lxm$	
	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	$\left\langle \left[\begin{array}{l} \text{HEAD} \text{ } \textit{nominal} \\ \text{VAL} \left[\begin{array}{l} \text{SPR} \text{ } \langle \rangle \\ \text{COMPS} \text{ } \langle \rangle \end{array} \right] \end{array} \right] , \left[\begin{array}{l} \text{INF} \text{ } \text{VP} \\ \text{SPR} \text{ } + \\ \text{INDEX} \text{ } \langle \text{[1]} \rangle \end{array} \right] \right\rangle$
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.



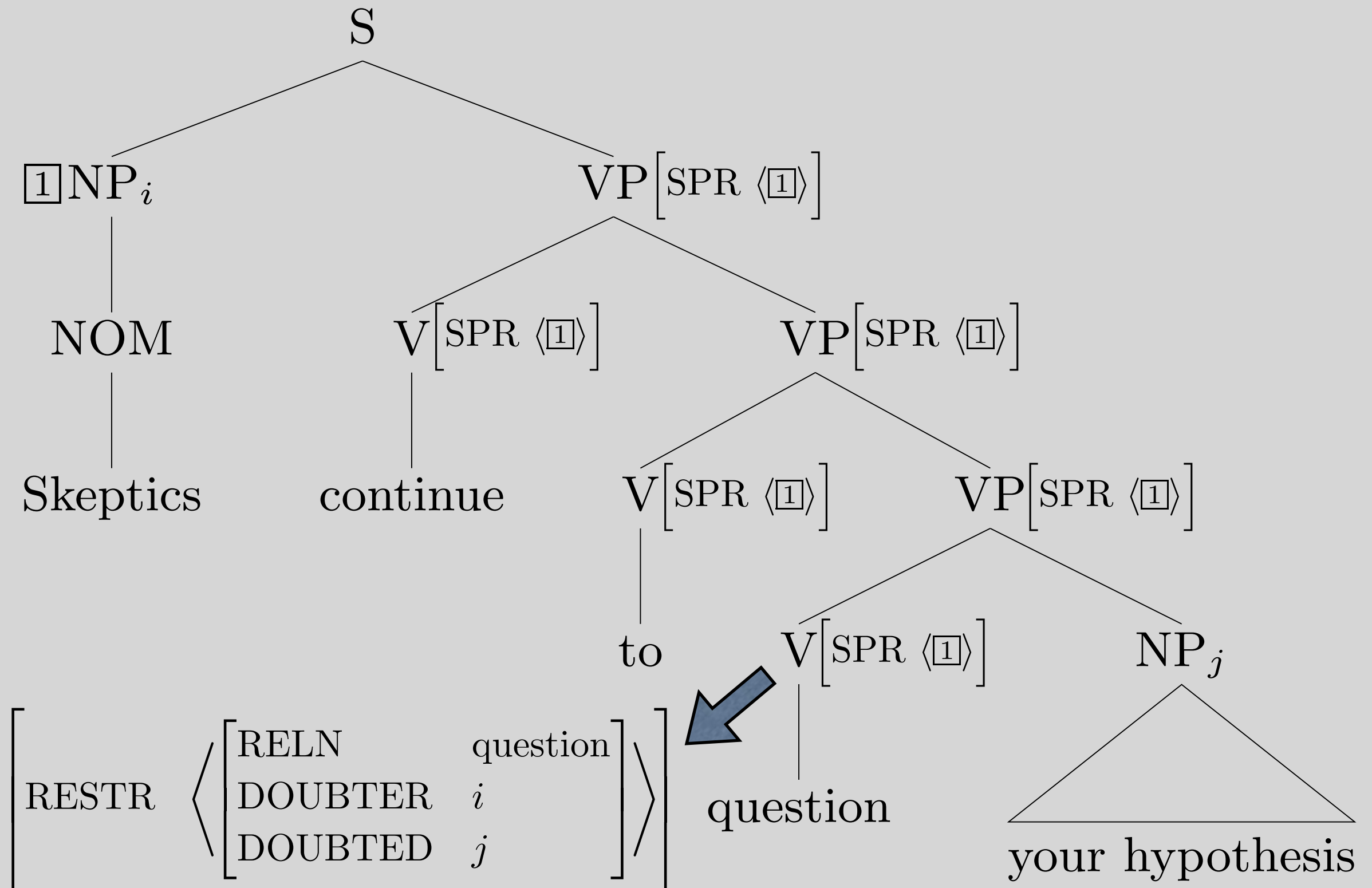
Hence, constraints on the subjects of SRVs are imposed by their complements

- 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 verb in the VP complement of an SRV doesn't change the truth conditions of the whole sentence:

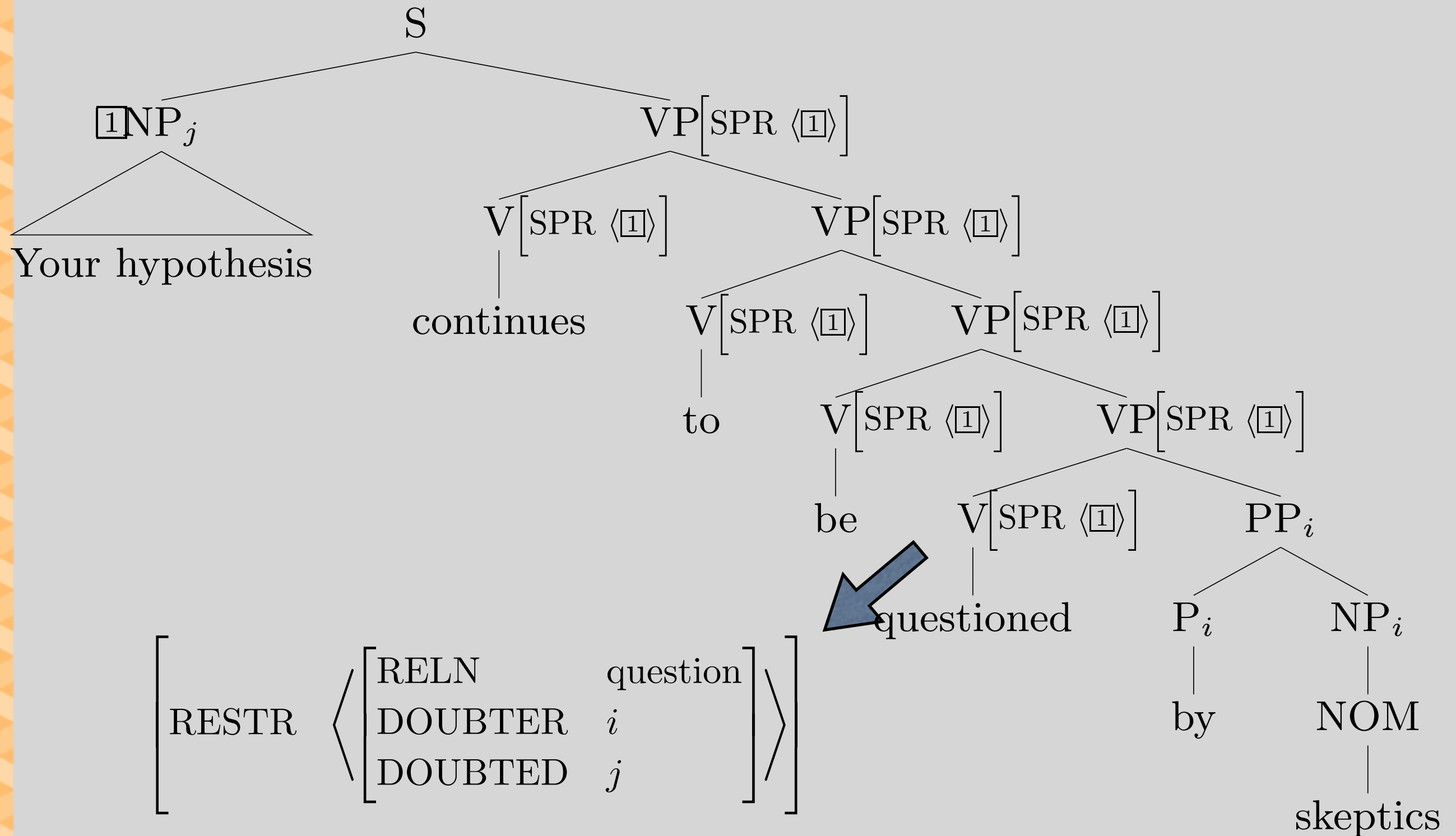
Skeptics continue to question your hypothesis ~

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

FBI

FBI Tries to Unmask Owner of Infamous Archive.is Site



JASON KOEBLER · NOV 6, 2025 AT 9:50 AM

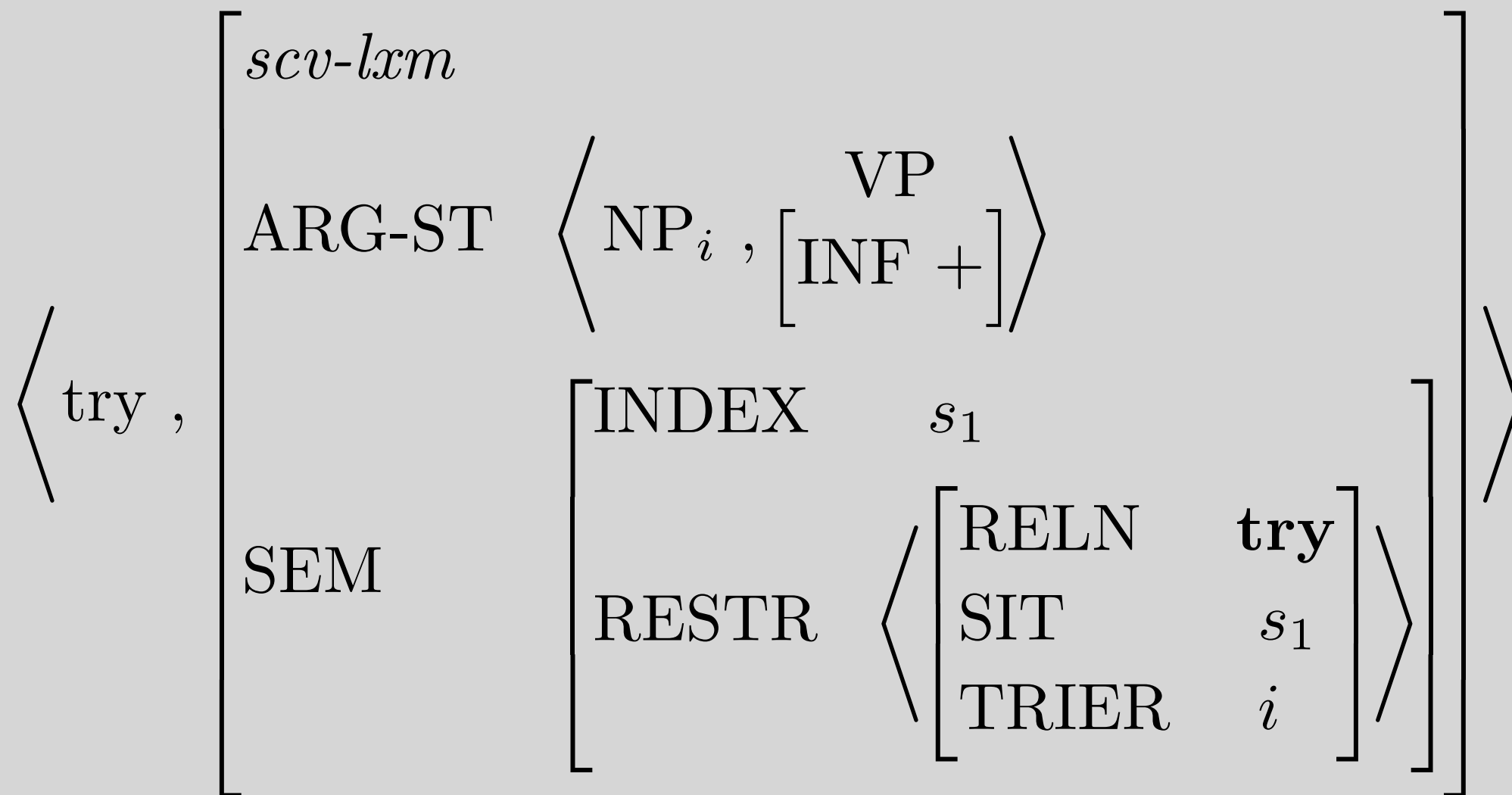
A New Type

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*



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	+														
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SEM	[INDEX s ₂]														
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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														
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TRIER	<i>i</i>														
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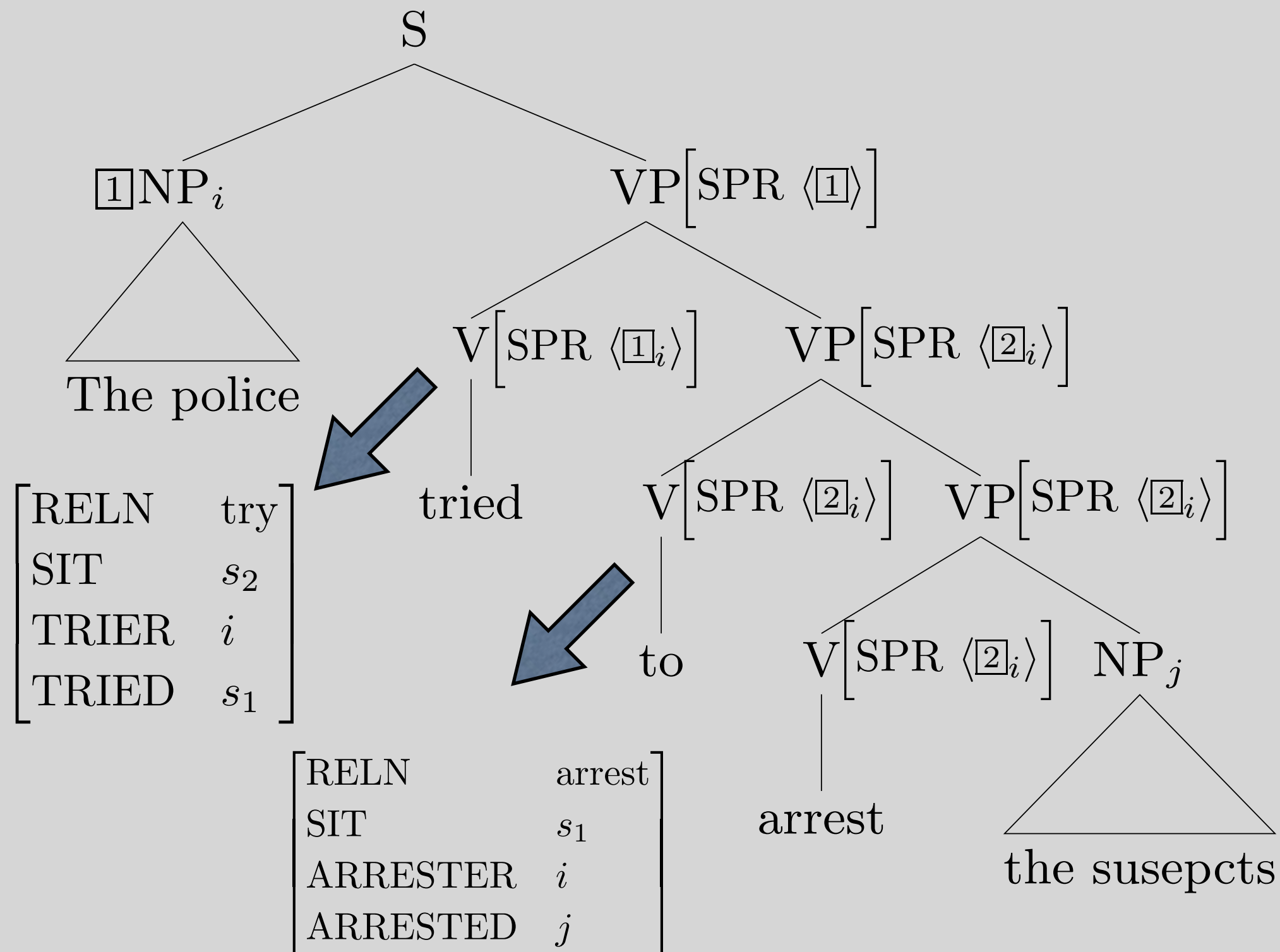
Things to Note:

- 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*

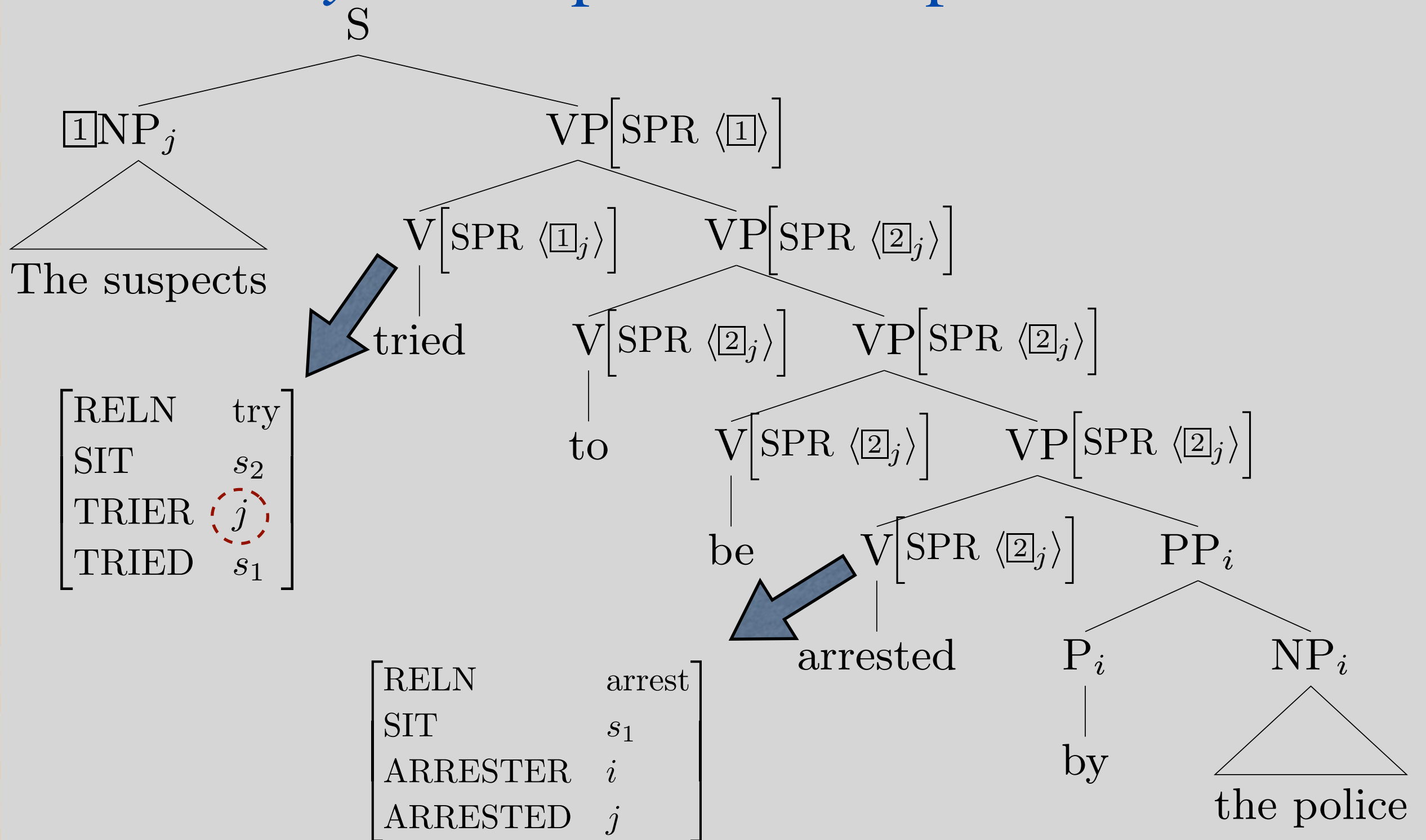
Questions

- 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

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

CONTROL

RAISING

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.

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

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

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

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

- And the object’s INDEX plays a role in the ‘persuade’ relation, but not in the ‘expect’ relation

Ch 12 Prob 4

- Construct examples of each of the following four types which show a contrast between *expect* and *persuade*:
 - Ex with dummy *there*
 - Ex with dummy *it*
 - Ex with idiom *chunks*
 - Ex of relevant active/passive pairs
- Breakout rooms!

Overview

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RQs: Complementation patterns

- I see that *srv-lxm* and *scv-lxm* are separate from intransitive and transitive verb lexemes in the hierarchy. I'm wondering if these types can be considered intransitive or transitive at all? They both take a complement, but we've only seen an infinitival VP as an example complement. And if sentences with intransitive verbs normally don't have passive counterparts, would that make *scv-lxm* intransitive and rule out intransitivity for *srv-lxm*? Or are they exceptions?

RQs: Constituent structure

- To me, figure (36) (pg. 377) is the logical tree for the sentence because one must expect something. How can we distinguish between object-raising and transitive, non-object-raising verbs?

accept_v3 := v_np-pp_oeq-as_le &
 accommodate_v2 := v_np-pp_oeq-as_le &
 accustom_v1 := v_np-vp_oeq_le &
 ache_v2 := v_vp_seq_le &
 acknowledge_v3 := v_np-pp_oeq-as_le &
 act_seem_v1 := v_ap-pp_seq_le &
 adjudge_v4 := v_np-prd_oeq_le &
 advertise_v2 := v_np-pp_oeq-as_le &
 advise_v4 := v_np-vp_oeq_le &
 advise_v5 := v_np-pp_oeq-as_le &
 advocate_v3 := v_np-pp_oeq-as_le &
 afford_v3 := v_vp_seq_le &
 agree_v3 := v_vp_seq_le &
 aim_v2 := v_vp_seq_le &
 allege_v2 := v_np-vp_sor_le &
 allow_v1 := v_np-vp_oeq_le &
 alter_v2 := v_np-vp_oeq_le &
 amend_v2 := v_np-vp_oeq_le &
 anticipate_prp_v1 := v_vp_seq-prp_le &

appeal_v1 := v_pp-vp_oeq_le &
 appear_v1 := v_pp-vp_ssr_le &
 appear_v2 := v_prd_ssr-va_le &
 appear_v6 := v_prd_seq-va_le &
 apply_v6 := v_vp_seq_le &
 arrange_for_v1 := v_it-pp-vp_seq_le &
 arrange_with_v1 := v_pp-vp_seq_le &
 arrange_with_v2 := v_it-pp-vp_seq_le &
 arrest_v2 := v_vp_seq-prp_le &
 ask_v2 := v_np-vp_oeq_le &
 ask_v4 := v_vp_seq_le &
 aspire_v1 := v_vp_seq_le &
 assay_v1 := v_vp_seq_le &
 assess_v2 := v_np-pp_oeq-as_le &
 assess_v3 := v_np-vp_oeq_le &
 assign_v3 := v_np-vp_oeq_le &
 assume_v3 := v_np-vp_oeq_le &
 attempt_v2 := v_vp_seq_le &
 authorize_v1 := v_np-vp_oeq_le &
 authorize_v1_br := v_np-vp_oeq_le &

The full menagerie

v_vp_seq_le	B intended to win.
v_vp_seq-from_le	B refrained from smoking.
v_prd_seq_le	B remained doubtful.
v_prd_seq-idm_le	B made sure that C won.
v_prd_seq-va_le	B became impatient admired.
v_ap_seq_le	B proved competent ?admired.
v_pp_seq_le	B wanted into the game.
v_pp_seq-e_le	My battery shows as empty.
v_vp_seq-prp_le	B loves playing chess.
v_vp_seq-bse_le	B helped finish the paper.
v_vp_seq-go_le	B will go play chess *goes play chess.
v_vp_seq-and_le	They try and find it #tried and found it.
v_vp_seq-and-bse_le	B will try and find it.
v_vp_seq-but_le	B couldn't help but continue.
v_p-vp_seq_le	B turned out to be wrong.

The full menagerie

v_pp-vp_seq_le	B arranged with C to stay.
v_np-vp_oeq_le	B invited C to stay.
v_np-vp_oeq-ntr_le	B got C to stay.
v_np-vp_oeq-bse_le	B helped C win.
v_np-vp_oeq-psv_le	The teacher promised me to be allowed to play outside.
v_np-prd_oeq_le	B proved C wrong.
v_np-ap_oeq_le	B imagined C taller.
v_np-prd_oeq-ntr_le	B wanted C ready. *C was wanted ready (by B).
v_np-vpslnp_oeq_le	B had C to talk to.
v_np-vp_oeq-from_le	B excused C from playing.
v_p-vp_oeq_le	B geared up C to go.

The full menagerie

v_vp_ssr_le There failed to be a link.
v_vp_ssr-n3sg_le We needn't wait here.
v_vp_ssr-n3sg-r_le We need only wait here.
v_p-vp_ssr_le B has yet to win.
v_prd_ssr-va_le It became obvious that Kim arrived.
v_vp_ssr-prp_le It finished raining.
v_vp_ssr-nimp_le There tend to be problems.
v_pp-vp_ssr_le It seems to B to be windy.

The full menagerie

v_np-vp_aeq-ntr_le B promised C to stay. | *C was
promised by B to stay.

v_np-vp_aeq_le B used C to reach D.

v_np-vp_aeq-psv_le B asked C to be allowed to leave. | #B asked
C to leave.

v_np-vp_aeq-noel_le B took an hour to finish.

v_np-vp_aeq-prp_le B had trouble sleeping.

The full menagerie

aj_pp-vp_i-it_le It is easy for B to win.
aj_pp-vp_i-it-nt_le It is urgent for B to win. | *B is urgent to win.
aj_pp-vp_i-on-it_le It is incumbent on B to go.
aj_pp-vp_i-of-it_le It is nice of B to go.
aj_pp-vp_i-tgh_le This race is tough to win.
aj_pp-vp-pp_i-cmp-it_le It is easier to solve this problem than that one
aj_vp_i-it-prp_le It is worth reading that book.
aj_vp_i-ssr_le There are destined to be unicorns in the garden.
aj_vp_i-wrth_le The race is worth running.
aj_vp_i-prty_le Paris is pretty to look at.
aj_vp_i-seq-nmd_le B is supposed to win.
aj_vp_i-seq-prp_le B is done running.

The full menagerie

n_vp_c_le	B has the ability to win.
n_vp_m_le	B has permission to stay.
n_vp_mc_le	B has clearance to stay.
n_vp_c-it_le	It is a pleasure for B to sleep.
n_vp_m-it_le	It is drudgery for B to do that.
n_vpslnp_c_le	B is a pleasure for C to mmet.

RQs: meaninglessness

- Are there any elements in a sentence that cannot be filled by a semantically empty shell? In other words, is there any sentence in which all the elements could be empty shells?
- I came up with the following sentence: *It seems to continue to appear to be there.*

RQs: raising v. control

- Why is it necessary to share the entire feature structure for raising verbs, but only co-index the subjects for control verbs? What would go wrong if we just used co-indexing for both?

RQs: So many features?

- I also was wondering if this is why we get larger and larger structures since we are introducing INF currently to only be used by *to*.
- The chapter says that *to* in infinitives doesn't really add meaning, but we still treat it like an auxiliary with its own features in the syntax. If *to* is semantically empty, what would actually go wrong if we didn't give it this special status in the grammar?

RQs: So many features?

- Why do we need [INF +] instead of just saying "head = to" or the like? [INF +] is just introduced to mark "to"?

RQs: Application

- What is the HPSG analysis of the phrase "to be continued"? Is it the same "continue(d)" that we describe in this chapter, or something subtly different?

RQs: Semantic role labels

- I'm a little confused by the introduction of ARG in the new verb lexeme types.