Overview

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

<table>
<thead>
<tr>
<th>SYN</th>
<th>HEAD</th>
<th>INF</th>
<th>AUX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>base</td>
<td>+</td>
</tr>
</tbody>
</table>

\[
\langle \text{to} , \rangle
\]

<table>
<thead>
<tr>
<th>ARG-ST</th>
<th>HEAD</th>
<th>VAL</th>
<th>COMPS</th>
<th>SEM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>verb</td>
<td>SPR</td>
<td></td>
<td>INDEX s</td>
</tr>
<tr>
<td>1</td>
<td>INF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FORM base</td>
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\[
\langle [1] \rangle
\]

\[
\langle \rangle
\]

<table>
<thead>
<tr>
<th>RESTR</th>
<th>SEM</th>
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<tbody>
<tr>
<td></td>
<td>INDEX s</td>
</tr>
</tbody>
</table>

\[
\langle \rangle
\]
The Syntax of Infinitival *to*

\[
\begin{bmatrix}
\text{SYN} & \text{HEAD} & [\text{FORM base}] & [\text{INF }+] \\
\end{bmatrix}
\]

- 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

- 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):*

\[
\text{ARG-ST} \left\langle \begin{array}{l}
\text{SPR} \left\langle \begin{array}{l}
\text{INDEX} \left\langle s_2 \right\rangle
\end{array} \right\rangle
\end{array} \right\rangle
\]

\[
\text{COMPS} \left\langle \begin{array}{l}
\end{array} \right\rangle
\]

\[
\text{SEM} \left\langle \begin{array}{l}
\text{RESTR} \left\langle \begin{array}{l}
\text{ARG} \left\langle s_2 \right\rangle
\end{array} \right\rangle
\end{array} \right\rangle
\]

- 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*

\[
\langle \text{continue} , \begin{bmatrix}
\text{srw-lxm} \\
\text{ARG-ST} \\
\text{SEM}
\end{bmatrix} \rangle
\]

\[
\text{ARG-ST} \begin{bmatrix}
\langle X , [\text{INF} +] \rangle \\
\text{INDEX} s_1 \\
\text{RESTR} \langle [\text{RELN} \text{continue} ] \rangle \\
\text{SIT} s_1
\end{bmatrix}
\]
Entry for *continue*, with Inherited Information

\[
\langle \text{continue} , \\
\begin{array}{c}
srv-lxm \\
\text{SYN} \\
\text{ARG-ST} \\
\text{SEM}
\end{array}
\begin{array}{c}
\begin{bmatrix}
\text{verb} \\
\text{PRED} & - \\
\text{INF} & - \\
\text{AGR} & 2
\end{bmatrix} \\
\begin{bmatrix}
\text{SPR} & \langle [\text{AGR} 2] \rangle
\end{bmatrix}
\end{array}
\begin{array}{c}
\begin{bmatrix}
\text{HEAD} & \text{nominal} \\
\text{VAL} & \langle \rangle \\
\text{SPR} & \langle \rangle \\
\text{COMPS} & \langle \rangle \\
\text{INDEX} & s_2
\end{bmatrix}
\end{array}
\begin{array}{c}
\begin{bmatrix}
\text{inf} & + \\
\text{SPR} & \langle 1 \rangle \\
\text{INDEX} & s_2
\end{bmatrix}
\end{array}
\begin{array}{c}
\begin{bmatrix}
\text{MODE} & \text{prop} \\
\text{INDEX} & s_1 \\
\text{RELN} & \text{continue} \\
\text{SIT} & s_1 \\
\text{ARG} & s_2
\end{bmatrix}
\end{array}
\rangle
\]
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.

\[
\begin{align*}
\text{ARG-ST} & \quad \left\langle \begin{array}{c}
\text{HEAD} \\
\text{VAL} \\
\text{COMPS} \\
\text{SPR} \\
\text{INDEX} \\
\text{MODE} \\
\text{INDEX} \\
\text{RESTR} \\
\text{SIT} \\
\text{ARG} \\
\end{array} \right\rangle,
\left\langle \begin{array}{c}
\text{nominal} \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\langle \rangle \\
\end{array} \right\rangle,
\left\langle \begin{array}{c}
\text{VP} \\
\text{INF} \\
\text{SPR} \\
\text{INDEX} \\
\text{INDEX} \\
\text{RELN} \\
\text{SIT} \\
\text{ARG} \\
\end{array} \right\rangle,
\left\langle \begin{array}{c}
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\langle 1 \rangle \\
\end{array} \right\rangle
\end{align*}
\]
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

S

[1] NP_i

NOM

Skeptics

VP[SPR ⟨↓⟩]

continue

V[SPR ⟨↓⟩]

VP[SPR ⟨↓⟩]

to

V[SPR ⟨↓⟩]

VP[SPR ⟨↓⟩]

[ RELN

Doubter_i

Doubted_j ]

question

question

your hypothesis
Continue with passive complement

Your hypothesis continues to be questioned by skeptics.
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):

\[
\begin{align*}
\text{ARG-ST} & \langle \text{NP}_i, \text{SPR} \langle \text{NP}_i \rangle \rangle \\
\text{COMPS} & \langle \rangle \\
\text{INDEX} & s_2 \\
\text{SEM} & \text{RESTR} \langle [\text{ARG} s_2] \rangle
\end{align*}
\]

- 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*

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

Note that the subject (NP\(_i\)) plays a semantic role with respect to the verb, namely the “TRIER”
Entry for *try*, with Inherited Information

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*

```
S
  \[1\] NP_i
  \[RELN \ try \ SIT \ s_2 \ TRIER \ i \ TRIED \ s_1 \]
  \[\]
  VP[SPR \ \langle 1 \rangle \ ]
      \[\]
      V[SPR \ \langle 1 \rangle \ ]
          \[\]
          tried
              \[\]
              V[SPR \ \langle 2 \rangle \ ]
                  \[\]
                  to
                      \[\]
                      V[SPR \ \langle 2 \rangle \ ]
                          \[\]
                          arrest
                              \[\]
                              the susepcts
```

The police tried to arrest the suspects.
Try with a passive complement

S

[1]NP\_j

The suspects

[RELN try]

SIT s2

TRIER j

TRIED s1

VP[SPR ⟨1⟩]

tried

V[SPR ⟨1⟩]

V[SPR ⟨2⟩]

to

V[SPR ⟨2⟩]

be

V[SPR ⟨2⟩]

arrested

RELN arrest

SIT s1

ARRESTER i

ARRESTED j

[RELN]

P\_i

by

the police

NP\_i
The main formal difference between raising and control verbs is in ARG-ST

CONTROL

RAISING

Which is which?
Why?
Raising & Control in Transformational Grammar

• Raising
  
  ____ continue [the dogs to bark]

• 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)

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

Object-Control Verb Lexeme (ocv-lxm)

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

- The formal distinction is again between tagging and coindexing

- This time it’s the second argument and the SPR of the third argument.
Example \textit{orv-lxm} and \textit{ocv-lxm} Entries

- 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.
Reading Questions

• How does the sentence in (2b) get licensed? If Chris solve the problem is the complement of helped, what sort of complement is it? N

• Pat helped [Chris solve the problem].
Reading Questions

• Is it fair to say that the reason that the structure in (35) is invalid because the passive rule would front the entire VP[to] structure instead of just the object NP?

(35)

```
V
/   \\??\
|    |
NP   VP
/  /  |
{     [INF +]
expect persuade

{Leslie to be aggressive

```
Reading Questions

• Is subject-raising-lxm used for any parts of speech other than adjectives or verbs?

• Why can't scv-lxm just be a subtype under srv-lxm in the hierarchy?
• This isn't really a question, but more a comment. It bothers me how many interpretations of syntax we declare "semantically empty." It's either a linguistic generalization about English or the grammar writers.
Justifying the difference between \textit{expect} and \textit{persuade} (Prob. 12.4)

Construct examples of each of the following four types which show a contrast between \textit{expect} and \textit{persuade}:

i. Examples with dummy \textit{there}

ii. Examples with dummy \textit{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