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*

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

\[
\langle 1, \rangle
\]

\[
\langle \text{spr} \rangle
\]

\[
\langle \text{comps} \rangle
\]

\[
\langle \text{index} s \rangle
\]

\[
\langle \text{restr} \rangle
\]
The Syntax of Infinitival *to*

```
SYN [HEAD [INF +] [AUX +]]
```

- 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):**

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

- **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

\[
\begin{align*}
\text{ARG-ST} & : \langle X, [\text{VP}^+ \rangle \\
\text{SEM} & : \langle \text{INDEX}^{s_1}, \text{RESTR}^{s_1} \rangle \\
\text{srv-lxm} & : \langle \text{continue} \rangle
\end{align*}
\]
Entry for \textit{continue}, with Inherited Information
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

S

\[ \text{Skeptics} \]

\[ \text{continue} \]

\[ \text{to} \]

\[ \text{question} \]

\[ \text{your hypothesis} \]
Continue with passive complement

Your hypothesis

\[ \text{Your hypothesis} \]

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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):

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

- This differs from \textit{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 \textit{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 \textit{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

1NP_i

The police

[RELN try
SIT s_2
TRIER i
TRIED s_1]

VP[SPR ⟨1_i⟩]

tried

V[SPR ⟨1_i⟩] VP[SPR ⟨2_i⟩]

to

V[SPR ⟨2_i⟩] VP[SPR ⟨2_i⟩]

arrest

RELN arrest
SIT s_1
ARRESTER i
ARRESTED j

NP_j

the suspects
Try with a passive complement

S

1NP_j

The suspects

[RELN try]
[SIT s2]
[TRIER j]
[TRIED s1]

VP[SPR 〈1〉]

V[SPR 〈1_j〉]

tried

V[SPR 〈2_j〉]

VP[SPR 〈2_j〉]

to

V[SPR 〈2_j〉]

VP[SPR 〈2_j〉]

be

V[SPR 〈2_j〉]

arrested

PP_i

RELN arrest
[SIT s1]
[ARRESTER i]
[ARRESTED j]

P_i

by

the police

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

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

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)**

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

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

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

- The formal distinction is again between tagging and coindexing.
- This time it’s the **second** argument and the SPR of the **third** argument.
Example orv-lxm and 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

• 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*
Reading Questions

• 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.*
Reading Questions

• 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.
Reading Questions

• How does the analysis of passive relate to the choice of structures for ORV and OCV sentences?
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• Next time: Auxiliaries