Chapter 7: Raising and Control Constructions

Syntactic Constructions in English
Kim and Michaelis (2020)
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Raising and control predicates

Certain verbs select an infinitival VP as their complement.

(1) a. Lee tried to fix the computer.
   b. Lee appeared to fix the computer.

(2) a. Mary persuaded Lee to fix the computer.
   b. Mary expected Lee to fix the computer.

They look the same in terms of syntax but there are significant differences between control and raising predicates.

(3) a. Control verbs and adjectives: try, hope, eager, persuade, promise, etc.
   b. Raising verbs and adjectives: seem, appear, tend, happen, likely, certain, believe, expect, etc.
Verbs like *try* are called ‘control’ or ‘equi’ verbs, where subject is understood to be ‘equivalent’ in some sense to the unexpressed subject of the infinitival VP.

In linguistic terminology, the subject of the control (or equi) verb is said to ‘control’ the referent of the subject of the infinitival complement.

(4) John tried [(for) John to fix the computer]. (deep structure)
Meanwhile, verbs like *seem* and *appear* are called ‘raising’ verbs.

(5) △ appeared [John to fix the computer]. (deep structure)
Differences between subject raising and control predicates

- **The semantic role of the subject:** One clear difference between raising and control verbs is the semantic role assigned to the subject.

  (6) a. John tries to be honest.
  b. John seems to be honest.

  (7) a. John makes efforts for himself to be honest.
  b. It seems that John is honest.

- A control verb like *try* assigns a semantic role to its subject (the ‘agent’ role), whereas a raising verb *seem* does not assign any semantic role to its subject.
Differences between subject raising and control predicates (cont’d)

- **Expletive subjects:** Since a raising verb does not assign a semantic role to its subject, certain expressions which do not have a semantic role may appear in the subject position, provided that the infinitival VP is of the right kind.

  (8) a. It tends to be warm in September.
   b. It seems to bother Kim that they resigned.

  (9) a. *It/*There tries to be warm in September.
   b. *It/*There hopes to bother Kim that they resigned.

  (10) a. There is likely to be a candidate. (raising)
   b. *There/John is eager to be a candidate. (control)
**Subcategorization:** In raising constructions, it is not the raising predicate itself but its VP complement that determines its subject.

(11) a. Pat seemed [to be intelligent].
    b. It seems [to be obvious that she is not showing up].
    c. The chicken is likely [to come home to roost].
       (In the sense of ‘Consequences will be felt’.)

(12) a. *There seemed [to be intelligent].
    b. *Pat seems [to be obvious that she is not showing up].
    c. *Pat is likely [to come home to roost].
Differences between subject raising and control predicates (cont’d)

However, in control constructions, it is the control verb or adjective itself which fully determines the properties of the subject.

(13) a. Sandy tried [to eat oysters].
   b. *There tried [to be riots in Seoul].
   c. *It tried [to bother me that Chris lied].
   d. *The chickens try [to come home to roost]. (under the idiomatic meaning)

(14) a. Sandy is eager [to eat oysters].
   b. *That he is clever is eager [to be obvious].
Selectional restrictions: Verbs also impose semantic selectional restrictions on their subjects or objects.

(15) a. The king thanked the man.
    b. #The king thanked the throne.
    c. ?The king thanked the deer.
    d. #The castle thanked the deer.

(16) a. The color red seems [to be his favorite color].
    b. #The color red tried [to be his favorite color].
Meaning preservation: An idiom whose meaning is specially composed from its parts will still retain its meaning even if part of it appears as the subject of a raising verb. However, this is not true for control constructions.

(17) a. The cat seems to be out of the bag. (In the sense of ‘The secret is out’.)
    b. #The cat tries to be out of the bag.

(18) a. The dentist is likely to examine Pat.
    b. Pat is likely to be examined by the dentist.

(19) a. The dentist is eager to examine Pat.
    b. Pat is eager to be examined by the dentist.
Similar contrasts are found between what are known as ‘object raising’ and ‘object control’ predicates.

(20) a. Stephen believed Ben to be careful.
    b. Stephen persuaded Ben to be careful.

Once again, these two verbs (*believe* and *persuade*) look alike in terms of syntax: they both combine with an NP and an infinitival VP complement.

However, the two are different with respect to the properties of the object NP in relation to the rest of the structure.
Expletive NPs *it* and *there* can appear in the object position with object raising predicates like *believe*, but not with object control predicates like *persuade*.

(21) a. Stephen believed it to be easy to please Maja.
    b. *Stephen persuaded it to be easy to please Maja.

(22) a. Stephen believed there to be a fountain in the park.
    b. *Stephen persuaded there to be a fountain in the park.
The differences show up again in the preservation of idiomatic meaning.

(23) a. Stephen believed the cat to be out of the bag.
     (In the sense of ‘Stephen believed that the secret was out’.)
     b. *Stephen persuaded the cat to be out of the bag. (under the idiomatic reading)

Active-passive pairs show another contrast.

(24) a. The dentist was believed to have examined Pat.
     b. Pat was believed to have been examined by the dentist.

(25) a. The dentist was persuaded to examine Pat.
     b. Pat was persuaded to be examined by the dentist.
A simple traditional analysis, hinted at earlier, is to treat raising as a relationship between two distinct syntactic structures, mediated by a procedure that was known in the literature as NP Movement.

(26) a. Deep structure: \(\triangle\) seems [Doland to be irritating]

b. Surface structure: Donald seems \(t\) to be irritating.
A simple transformational approach: subject raising cases (cont’d)

(27) S
   NP
     △
     seems
     to be irritating
   VP
     △
   S
     V
     S
     VP[inf]
     Donald

A simple transformational approach: object raising cases

A similar movement process can be applied to the object raising cases.

(28) a. Deep structure: Tom believes △ [Donald to be irritating].
    b. Surface structure: Tom believes Donald to be irritating.

(29) Syntactic Constructions

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Control constructions are different: there is no movement operation involved. Instead, it is the lower subject position which has special properties.

(30) a. John tried to please Stephen.
    b. John persuaded Stephen to be more careful.

(31) a. John tried [PRO to please Stephen].
    b. John persuaded Stephen [PRO to be more careful].
A simple transformational approach: control cases (cont’d)

(32) a. 

```
(32) a. S
    | NP
John
    | V
tried
    | VP
PRO
    | S
      | VP[inf]
          | PRO
              | S
                  | VP[inf]
                      | PRO
                          | S
                              | VP[inf]
                                  | PRO
                                      | S
                                          | VP[inf]
                                              | PRO
                                                  | S
                                                      | VP[inf]
                                                          | PRO
                                                              | S
```

to please Stephen

b. 

```
(32) b. S
    | NP
John
    | V
persuaded
    | NP
Stephen
    | S
      | VP
PRO
      | S
          | VP[inf]
              | PRO
                  | S
```

to be more careful
The classical transformational approach is a useful way to represent the difference between raising and control.

However, it assumes a very different model of grammar from that assumed here. In the transformational approach, the raising and control patterns are the products of mappings between sentential structures.

The transformational approach is highly abstract in that it assumes syntactic structure that is not ‘visible’.
A nontransformational, construction-based approach: identical syntactic structures

Instead, we simply focus on argument structure patterns that are characteristic of raising verbs, on the one hand, and control verbs, on the other.
A nontransformational, construction-based approach: basic lexical entries of subject raising/control predicates

(33) a. \[
\begin{align*}
\text{FORM} & \quad \langle \text{seemed} \rangle \\
\text{SYN} | \text{VAL} & \quad \begin{cases}
\text{SPR} & \quad \langle 1 \text{NP} \rangle \\
\text{COMPS} & \quad \langle 2 \text{VP} \left[ \text{VFORM} \inf \right] \rangle \\
\text{ARG-ST} & \quad \langle 1 \text{NP}, 2 \text{VP} \rangle
\end{cases}
\end{align*}
\]

b. \[
\begin{align*}
\text{FORM} & \quad \langle \text{tried} \rangle \\
\text{SYN} | \text{VAL} & \quad \begin{cases}
\text{SPR} & \quad \langle 1 \text{NP} \rangle \\
\text{COMPS} & \quad \langle 2 \text{VP} \left[ \text{VFORM} \inf \right] \rangle \\
\text{ARG-ST} & \quad \langle 1 \text{NP}, 2 \text{VP} \rangle
\end{cases}
\end{align*}
\]
A nontransformational, construction-based approach: basic trees for subject raising/control predicates

(34) a. S
   NP
   Pat
   VP
   V
   seemed
   VP[\textit{inf}]
   VP[bse]
   to
   be honest

b. S
   NP
   Pat
   VP
   V
   tried
   VP[\textit{inf}]
   VP[bse]
   to
   be honest
A nontransformational, construction-based approach: basic lexical entries of object raising/control predicates

- The object raising verb *expect* and the control verb *persuade* also have identical valence (SPR and COMPS) information.

(35) a. \[
\begin{array}{l}
\text{FORM} \langle \text{expects} \rangle \\
\text{SYN} | \text{VAL} \\
\text{SPR} \langle 1 \text{NP} \rangle \\
\text{COMPS} \langle 2 \text{NP}, 3 \text{VP} \mid \text{VFORM inf} \rangle \\
\text{ARG-ST} \langle 1 \text{NP}, 2 \text{NP}, 3 \text{VP} \rangle
\end{array}
\]

b. \[
\begin{array}{l}
\text{FORM} \langle \text{persuaded} \rangle \\
\text{SYN} | \text{VAL} \\
\text{SPR} \langle 1 \text{NP} \rangle \\
\text{COMPS} \langle 2 \text{NP}, 3 \text{VP} \mid \text{VFORM inf} \rangle \\
\text{ARG-ST} \langle 1 \text{NP}, 2 \text{NP}, 3 \text{VP} \rangle
\end{array}
\]
A nontransformational, construction-based approach: basic trees for object raising/control predicates

(36) a. 

```
S
|-- NP
    `-- V
        `-- NP
            `-- VP
                `-- to rain tomorrow
        `-- V
            `-- NP
                `-- VP
                    `-- it
                        `-- NP
                            `-- VP
                                `-- to leave tomorrow
```

b. 

```
S
|-- NP
    `-- V
        `-- NP
            `-- VP
                `-- it
                        `-- NP
                            `-- VP
                                `-- to leave tomorrow
        `-- V
            `-- NP
                `-- VP
                    `-- to leave tomorrow
```

Syntactic Constructions

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Differences of the feature specifications in the valence information

- For raising predicates, whatever kind of category is required as subject by the infinitival VP is also required as the subject of the predicate.

- On the other hand, the subject of a control predicate is coindexed with that of the infinitival VP complement.

(37) a. Stephen/*It/*There seemed to be intelligent.
    b. It seemed to rain.
    c. There seemed to be a fountain in the park.

(38) a. Stephen/*It/*There tried to be intelligent.
    b. *It tried to rain.
    c. *There tried to be a fountain in the park.
Differences of the feature specifications in the valence information (cont’d)

- The raising verb involves shared subjects, while the control verb only shares the semantic index (of the subjects).

(39) a. \[
\begin{align*}
\text{FORM} &\langle \text{seemed}\rangle \\
\text{SYN} | \text{VAL} &\langle \text{spr} \rangle \\
\text{COMPS} &\langle \text{vform inf} \rangle \\
\text{ARG-ST} &\langle 1\text{NP}, 2\text{VP} \rangle
\end{align*}
\]

b. \[
\begin{align*}
\text{FORM} &\langle \text{tried}\rangle \\
\text{SYN} | \text{VAL} &\langle \text{spr} \rangle \\
\text{COMPS} &\langle \text{vform inf} \rangle \\
\text{ARG-ST} &\langle 1\text{NP}, 2\text{VP} \rangle
\end{align*}
\]
In the entry for *seemed*, the subject of the VP complement is fully identical with its own subject (notated by \[\text{1}\]).

In the entry for *tried*, only the index value of the specifier of its VP complement is identical to that of its subject, meaning that the VP complement’s understood subject refers to the same individual as the subject of *tried*.

(40) Someone\[i\] tried NP\[i\] to leave town.

The example here means that whoever *someone* might refer to, that same person left town.

(41) a. Tom hoped [to win].
    b. Tom\[i\] hoped [that he\[i\] would win].
Subject raising constructions: an example tree

(42)

[\[
\begin{array}{c}
\text{S} \\
\text{NP} \\
\text{VP}
\end{array}
\]

[\[
\begin{array}{c}
\text{HEAD} \\
\text{POS} \text{\textit{verb}} \\
\text{SPR} \\
\text{COMPS}
\end{array}
\]

\text{John}]

[\[
\begin{array}{c}
\text{V} \\
\text{VP}
\end{array}
\]

[\[
\begin{array}{c}
\text{HEAD} \\
\text{SPR} \\
\text{COMPS}
\end{array}
\]

\text{seems}]

[\[
\begin{array}{c}
\text{V} \\
\text{VP[bse]}
\end{array}
\]

\text{be honest}]

\text{syntactic constructions
Subject control constructions: example tree

(43)

\[ S \]  
\[ \begin{array}{l}
\text{HEAD } 3 | \text{POS } \text{verb} \\
\text{SPR } \langle \rangle \\
\text{COMPS } \langle \rangle 
\end{array} \]

\[ \begin{array}{l}
\text{NP}_i \\
\text{John} \\
\text{tries} \\
\text{to} \\
\text{be honest}
\end{array} \]

\[ \begin{array}{l}
\text{VP} \\
\text{HEAD } 3 \\
\text{SPR } \langle \text{NP}_i \rangle \\
\text{COMPS } \langle 2 \rangle \\
\text{VP}[bse]
\end{array} \]

\[ \begin{array}{l}
\text{VP} \\
\text{HEAD } 3 \\
\text{SPR } \langle \text{NP}_i \rangle \\
\text{COMPS } \langle \rangle \\
\text{tries} \\
\text{to} \\
\text{be honest}
\end{array} \]
Object raising and control predicates are analogous.

(44) a. 

\[
\begin{align*}
\text{FORM} \; &\langle \text{expect} \rangle \\
\text{SPR} \; &\langle \text{1} \text{NP}_i \rangle \\
\text{COMPS} \; &\langle 2 \text{NP}, \ 3 \text{VP} \rangle \\
\text{ARG-ST} \; &\langle 1 \text{NP}, \ 2 \text{NP}, \ 3 \text{VP} \rangle
\end{align*}
\]

b. 

\[
\begin{align*}
\text{FORM} \; &\langle \text{persuade} \rangle \\
\text{SPR} \; &\langle \text{1} \text{NP} \rangle \\
\text{COMPS} \; &\langle 2 \text{NP}_i, \ 3 \text{VP} \rangle \\
\text{ARG-ST} \; &\langle 1 \text{NP}, \ 2 \text{NP}, \ 3 \text{VP} \rangle
\end{align*}
\]
Object raising constructions: example tree

(45)

\[
\begin{array}{c}
\text{S} \\
\text{HEAD} & 4 \\
\text{POS} & \text{verb} \\
\text{SPR} & \langle \rangle \\ 
\text{COMPS} & \langle \rangle \\
\end{array}
\]

\[
\begin{array}{c}
\text{VP} \\
\text{HEAD} & 4 \\
\text{SPR} & \langle 1 \text{NP} \rangle \\
\text{COMPS} & \langle \rangle \\
\end{array}
\]

\[
\begin{array}{c}
\text{NP} \\
\text{Kim} \\
\end{array}
\]

\[
\begin{array}{c}
\text{V} \\
\text{HEAD} & 4 \\
\text{SPR} & \langle 1 \text{NP} \rangle \\
\text{COMPS} & \langle 2, 3 \rangle \\
\end{array}
\]

\[
\begin{array}{c}
\text{NP} \\
\text{it} \\
\end{array}
\]

\[
\begin{array}{c}
\text{VP} \\
\text{SPR} & \langle 2 \rangle \\
\end{array}
\]

expects it to rain tomorrow
Object control constructions: example tree

(46)

\[
S \quad \begin{cases}
\text{HEAD} & 4 \\
\text{POS} & \text{verb} \\
\text{SPR} & \langle \rangle \\
\text{COMPS} & \langle \rangle \\
\end{cases}
\]

\[
\text{VP} \quad \begin{cases}
\text{HEAD} & 4 \\
\text{SPR} & \langle 1\text{NP} \rangle \\
\text{COMPS} & \langle \rangle \\
\end{cases}
\]

\[1\text{NP} \quad \begin{cases}
\text{Kim} \\
\end{cases}
\]

\[\text{V} \quad \begin{cases}
\text{HEAD} & 4 \\
\text{SPR} & \langle 1\text{NP} \rangle \\
\text{COMPS} & \langle 2\text{NP}, 3\text{VP} \rangle \\
\end{cases}
\]

\[2\text{NP}_i \quad \begin{cases}
\text{persuaded} \\
\end{cases}
\]

\[3\text{VP} \quad \begin{cases}
\text{SPR} & \langle \text{NP}_i \rangle \\
\end{cases}
\]

\[\text{Mary} \quad \text{to be more careful} \]
How to capture a mismatch between meaning and structure

- We have not yet addressed differences in the assignment of semantic roles.
- We first need to introduce further semantic features, distinguished from syntactic features, as this issue is closely related to the relationship between syntax and semantics.
- Nouns and verbs have $\text{IND}$ values. That is, a noun refers to an individual (e.g., $i$, $j$, $k$) whereas a verb denotes a situation (e.g., $s0$, $s1$, $s2$).
Meaning representation of *hit* and its lexical entry

(47) a. John hits a ball.
   b. hit′(j, b)

(48) \[
\begin{align*}
\text{FORM} & \langle \text{hit} \rangle \\
\text{SYN} | \text{VAL} & \begin{bmatrix}
\text{SPR} & \langle 1\text{NP}_i \rangle \\
\text{COMPS} & \langle 2\text{NP}_j \rangle
\end{bmatrix} \\
\text{ARG-ST} & \langle \text{NP}_i, \text{NP}_j \rangle \\
\text{IND} & s0 \\
\text{SEM} & \langle \begin{bmatrix}
\text{PRED} & \text{hit} \\
\text{AGT} & i \\
\text{PAT} & j
\end{bmatrix} \rangle
\end{align*}
\]
Meaning representations of subject raising/control predicates

(49)  a. \text{seem}'(s_1) ('s_1$ seems (to be the case) = s_0')
      b. \text{try}'(i, s_1) ('i$ tries to (make) s_1 (be the case) = s_0')
Lexical entries of subject raising predicates

(50)

\[
\begin{aligned}
\text{FORM} & \langle \text{seem} \rangle \\
\text{SPR} & \langle 1 \text{NP} \rangle \\
\text{SYN} | \text{VAL} & \quad \text{COMPS} \langle 2 \text{VP} \rangle \\
\text{ARG-ST} & \langle 1 \text{NP}, 2 \text{VP} \rangle \\
\text{IND} & s0 \\
\text{SEM} & \quad \text{RELS} \langle \text{PRED } \text{seem}, \text{SIT } s1 \rangle
\end{aligned}
\]
Lexical entries of subject control predicates

(51)

\[
\begin{aligned}
\text{FORM} & \langle \text{try} \rangle \\
\text{SYN} | \text{VAL} & \text{COMPS} \langle 2 \text{VP} \rangle \\
\text{ARG-ST} & \langle 1 \text{NP}, 2 \text{VP} \rangle \\
\text{SEM} & \text{RELS} \\
\end{aligned}
\]
Meaning representations of object raising/control predicates

(52) a. \textit{expect}'(x, s1)
b. \textit{persuade}'(x, y, s1)
Lexical entries of object raising predicates

(53)

\[
\begin{aligned}
\text{FORM} & \quad \langle \text{expect} \rangle \\
\text{SPR} & \quad \langle 1\text{NP}, i \rangle \\
\text{COMPS} & \quad \langle 2, 3\text{VP} \rangle \\
\text{ARG-ST} & \quad \langle 1\text{NP}, 2\text{NP}, 3\text{VP} \rangle \\
\text{IND} & \quad s0 \\
\text{SEM} & \quad \langle \text{PRED expect, EXP } i, \text{SIT } s1 \rangle
\end{aligned}
\]
Lexical entries of object control predicates

(54)  \[
\begin{align*}
\text{FORM} & \left\langle \text{persuade} \right\rangle \\
\text{SYN} & \mid \text{VAL} \\
\text{COMPS} & \left\langle 2 \text{NP}_i, 3 \text{VP} \right\rangle \\
\text{ARG-ST} & \left\langle 1 \text{NP}, 2 \text{NP}, 3 \text{VP} \right\rangle \\
\text{IND} &  s0 \\
\text{SEM} & \left\langle \begin{array}{c}
\text{PRED} \\
\text{AGT} \\
\text{EXP} \\
\text{SIT}
\end{array} \right\rangle \\
\text{RELs} & \left\langle \begin{array}{c}
\text{persuade} \\
i \\
j \\
s1
\end{array} \right\rangle
\end{align*}
\]
For raising verbs, one argument is dependent for its semantic properties solely upon those of the specifier of the VP complement: the subject in case of *seem* and the object in case of *believe*.

(55) a. There/*It/*John seems [to be a fountain in the park].
    b. We believed there/*it/*John [to be a fountain in the park].

Control verbs are different, directly assigning the semantic role of agent or experiencer to the subject or object. For this reason, expletives cannot appear.

(56) a. *There/*It/John tries to leave the country.
    b. We believed *there/*it/John to try to leave the country.
The subject of *seems* does not have any semantic role: its subject is identical with the subject of its VP complement *to be out of the bag*, whereas the subject of *tries* has its own agent role.

(57) a. The cat seems to be out of the bag.
    b. The cat tries to be out of the bag.
Since *likely* is a raising predicate, in as much as the expressions *The dentist examines Pat* and *Pat is examined by the dentist* have the same meaning, the two raising examples will also be synonymous.

What matters is only that there be identity between the subject of the sentence (whether subject or object) and the subject of the verb’s VP complement.

(58) a. The dentist is likely to examine Pat.
    b. Pat is likely to be examined by the dentist.

By contrast, the control adjective *eager* assigns a semantic role to its subject independent of the VP complement; so, the following examples have different meanings.

(59) a. The dentist is eager to examine Pat.
    b. Pat is eager to be examined by the dentist.
Lexical entry of *eager*

(60) \[
\begin{align*}
\text{FORM} & \langle \text{eager} \rangle \\
\text{SYN} | \text{VAL} & \begin{cases}
\text{SPR} \langle \text{NP}_i \rangle \\
\text{COMPS} \begin{cases}
\text{IND} & \langle \text{VP} \rangle \\
\text{IND} & \langle \text{inf} \rangle \\
\text{REL} & \begin{cases}
\text{PRED} & \langle \text{eager} \rangle \\
\text{EXP} & \langle i \rangle \\
\text{SIT} & \langle s1 \rangle 
\end{cases}
\end{cases}
\end{cases}
\end{align*}
\]
Subject vs. object control verbs

- Both *persuaded* and *promised* are control verbs: their object is assigned a semantic role (and so is their subject).

  (61) a. They persuaded me to leave.
        b. They promised me to leave.

- This in turn means that their object cannot be an expletive.

  (62) a. *They persuaded it to rain.
        b. *They promised it to rain.

- However, the two are different with respect to the controller of the infinitival VP.
Lexical entries

(63) \[
\begin{align*}
\text{FORM} & \langle \text{persuade} \rangle \\
\text{SYN} & \mid \text{VAL} \\
\text{COMPS} & \langle \text{NP}_j, \text{VP} \rangle \\
\text{SPR} & \langle \text{NP}_i \rangle \\
\text{VFORM} & \langle \text{NP}_j \rangle \\
\text{IND} & \langle \text{NP}_i \rangle \\
\text{inf} & \langle \text{NP}_j \rangle \\
\end{align*}
\]
Unlike a control predicate, a raising predicate does not assign a semantic role to its subject (or object). The absence of a semantic role can be used to account for the possibility of expletives *it* or *there* or parts of idioms as subject or object among raising predicates, and the impossibility of such expressions as subjects of control predicates.

Among control predicates, the VP complement’s unexpressed subject is coindexed with one of the syntactic dependents. Among raising predicates, the entire syntactic-semantic value of the subject of the infinitival VP is shared with that of one of the dependents of the predicate. This ensures that whatever category is required by the raising predicate’s VP complement is the raising predicate’s subject (or object).