Topics in English Syntax: Control, Raising

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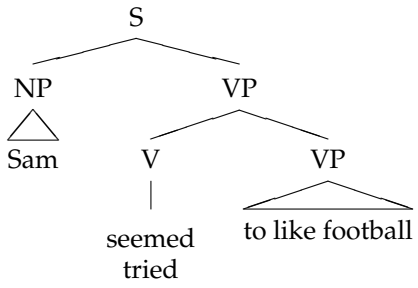
June 1, 2016

1 Introduction

The following look superficially very similar – see (2), but they are not:

(1) a. Sam seemed to like football. (Raising)
b. Sam tried to like football. (Control)

(2)



- In both cases we have an infinitival constituent with no overt subject, and a separate constituent 'upstairs' which functions as the subject of the infinitival (and subject of the upstairs verb).

2 Subject Raising/Control: Differences

2.1 Semantics

- Raising predicates have a 'non-thematic' argument (one without a semantic role);
- All arguments of Control predicates are 'thematic';

One can see this in a number of ways.

2.1.1 Sentential Paraphrase

- With Raising predicates, if there is a related sentence with a finite clause instead of the infinitival constituent, the upstairs subject position is filled by expletive *it*.

(3) It seemed [that Sam liked football].

- With Control predicates, if there is a related sentence with a finite clause instead of the infinitival constituent, this position is filled by a normal NP with semantic content.

(4) The girls hoped [that they would like football]

(There isn't always such a related sentence, e.g. with *try*: **They tried that they would like football* – *try* does not allow a sentential complement.).

2.2 Expletive Subjects

- Allowed with Raising predicates if and only if allowed with downstairs predicate;
- Forbidden with Control predicates (arguments must be 'referential').

(5) a. There was a riot.
b. There seemed to be a riot.
c. *There hoped to be a riot.

(6) a. It is obvious that everything is okay.
b. It seems to be obvious that everything is okay.
c. *It hopes to be obvious that everything is okay.

(7) a. It is warm today.
b. It seems to be warm today.
c. *It hopes to be warm today.

Similarly, Raising is possible with non-referential subjects of idioms:

(8) a. The cat is out of the bag. (the secret is revealed)
b. The fur will fly.
c. The game/jig is up.
d. The pot is calling the kettle black.
e. The shit hit the fan.
f. A little bird told her that . . .

These are all possible with *seem*, but not with *hope* (the idiomatic meaning is lost):

(9) a. The cat seems to be out of the bag.
b. #The cat hoped to be out of the bag. (no idiomatic meaning)

More generally, it seems that with a Raising predicate almost anything can occur as upstairs subject, so long as it is allowed downstairs.

(10) a. [That he was late] seems to be a problem/obvious.
b. [Under the bed] seems to be a good place to hide.
c. [Bored and disillusioned] seems to be the fashion these days.

2.3 Existence Entailments

Many speakers see an "ambiguity" in (11a) which is absent from (11b).

(11) a. A unicorn seemed to enter the room.
b. A unicorn hoped to enter the room.

(11b) can only be true if there is (or was) a unicorn.

On one reading, (11a) asserts the existence of a unicorn, and says of it that it seemed to enter the room. This is like (11b) in requiring the existence of unicorns. The other reading is equivalent to (12), which does not require the existence of unicorns.

(12) It seemed that a unicorn entered the room.

2.4 Quirky Case

In Icelandic, some verbs assign 'quirky' case (e.g. ACC, DAT, or GEN) to their subjects. When these verbs occur with raising predicates, the subject of the raising predicate is quirky. That is, raising predicates preserve quirky case (raised and downstairs subjects share case):

(13) a. Hana virthist vanta peninga
her.ACC seems to lack money
'She seems to lack money'
b. Barninu virthist hafa batmatj veikin
the-child.DAT seems to have recovered from the disease
'The child seems to have recovered from the disease'
c. Verkjanna virthist ekki gaeta
the-pains-GEN seem not to be noticeable
'The pains don't seem to be noticeable'

This does not happen with control verbs, where upstairs and downstairs cases are independent.

Exercise 2.1 Classify the following verbs as either control or raising verbs:

- *continue*, *happen*, *tend*, *appear*, *start*, *fail*, *ought*, *begin*, *keep*, *become*
- *manage*, *want*, *arrange*, *condescend*, *hope*, *attempt*, *prepare*.

How to do this:

- We are only interested in the use of the verb that appears with a *to*-infinitive or other subjectless complement:
(14) a. NP ___to study. (e.g. Sam continued to study, Sam managed to study)

b. NP ___happy. (Sam became happy)
c. NP ___working. (Sam kept working)

- Consider whether the verb can appear with an expletive subject:
  (15) It ___to be warm today.
- Think about how many thematic roles the verb seems to have.
- You may sometimes get inconsistent answers.

Exercise 2.2 Not only verbs show this contrast. Compare the following adjectives: which are raising predicates, which are control predicates?

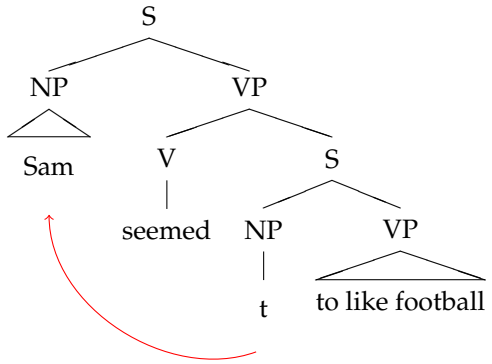
- *(be) likely*, *(be) predicted*, *(be) unlikely*, *certain*, *apt*.
- *(be) reluctant*, *(be) eager*, *(be) willing*, *(be) afraid*.

2.5 Traditional Analyses

Subject (to Subject) Raising (SSR) — movement:

(16) a. Δ seems [$_S$ Sam$_i$ to like Kim] $\Rightarrow$
b. Sam$_i$ seems [$_S$ t$_i$ to like Kim]

(17)



Control — either deletion of a downstairs NP, or phonologically empty pronominal 'PRO' ('big PRO') which is referentially tied to the upstairs NP (co-indexation).

1. EQUI-NP Deletion ('Equivalent NP Deletion'):
   (18) a. Sam$_i$ hoped [$_S$ Sam$_i$ to like Kim] $\Rightarrow$
   b. Sam$_i$ hoped [$_S$ to like Kim]
2. Control (PRO):
   (19) Sam$_i$ hoped [$_S$ PRO$_i$ to like Kim]

3 Subject Raising/Control: Analysis

3.1 Raising

- Ignore *to* for the moment.
- To allow control/raising structures like (2), we will need a rule like (20):

(20) VP $\rightarrow$ V, VP[SUBJ $\langle$ NP $\rangle$]

i.e. a VP can consist of a V and a VP (i.e. a verbal constituent lacking a subject).

- We assume verbs (and other lexical items) have SUBJ and COMPS values which specify the kinds of subjects and complements they take, e.g.

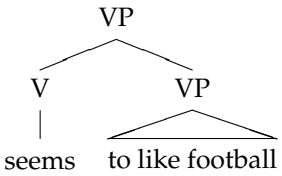
(21) *send* – V [SUBJ $\langle$ NP $\rangle$, COMPS $\langle$ NP,PP $\rangle$]

- As a first approximation, the lexical entry for *seem* will be as follows (*seem* requires an NP subject, and VP as its complement):

(22) *seem* – V [SUBJ ⟨ NP ⟩, COMPS ⟨ VP ⟩]

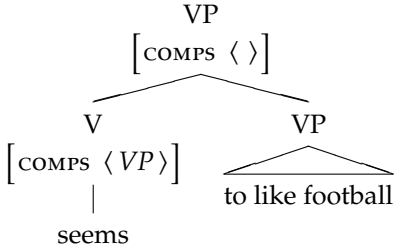
- This allows us to produce a representation of *seems to like football* (the following are more specific representations of the same thing):

(23)



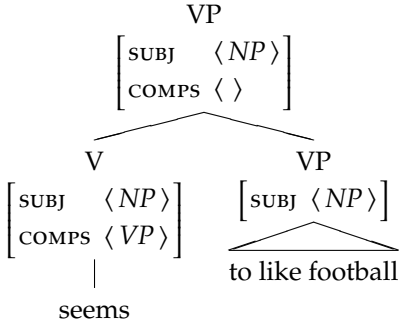
- We add in the COMPS feature:

(24)



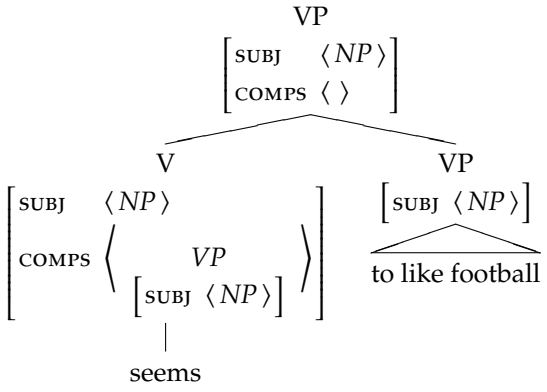
- We add in the SUBJ feature:

(25)



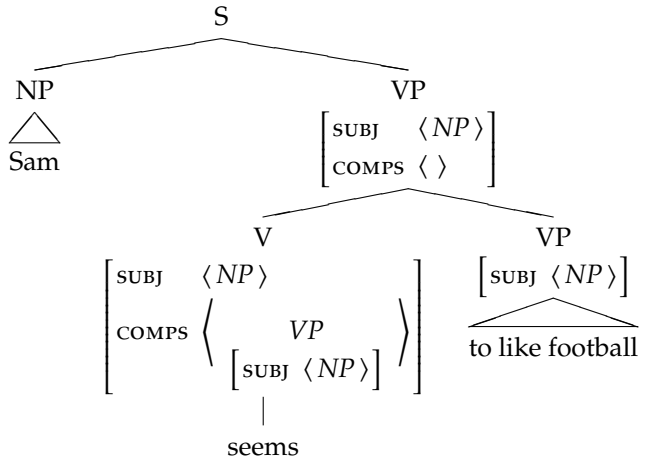
- We are a bit more precise about the COMPS value of *seem*:

(26)



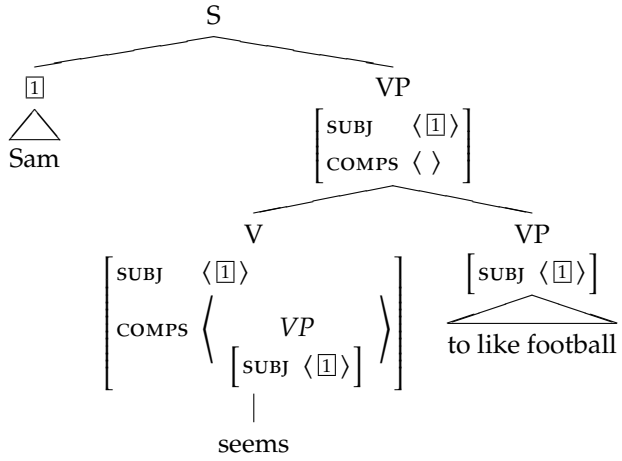
- We provide *seem* with it's own subject, building a sentence:

(27)



- Of course, what we want is that this is the *same* NP in all these places: we indicate this by writing 1:

(28)



- So, the lexical entry for *seem* says 'I require a subject and a VP complement whose subject is syntactically the same as mine'.
- Of course, it should also say that the VP complement is non-finite, and that it allows an optional PP complement (*Sam seems to Kim to like football*) etc., but these are separate matters.

This captures what we want to say about *seem*:

- The only restriction that *seem* imposes on its subject is that it is the same as that of its complement;
- any case restrictions on the downstairs subject will be imposed on the subject of *seem*;
- if the downstairs predicate allows an expletive subject, then so will *seem*;
- if the downstairs predicate allows an sentential subject, then so will *seem*;
- etc.

We have not said how to capture the semantics, but the idea will be that *seem* is semantically interpreted as a one or two place relation in all these cases:

(29) It seems that Sam likes football.
(30) Sam seems to like football.

(31) It seems to Kim that Sam likes football.
(32) Sam seems to Kim to like football.

(33) $seem(toKim, likes(Sam, football))$

3.2 Control

- Here the idea is that the upstairs and downstairs subjects are syntactically independent, but semantically related. We indicate this by giving them the same 'index'.
- So the lexical entry for a verb like *hope* says 'I require a subject and a VP complement whose subject is co-indexed with mine'.

(34)
$$\begin{bmatrix} \text{V} & \\ \textsc{subj} & \langle NP_{\boxed{i}} \rangle \\ \textsc{comps} & \left\langle \begin{bmatrix} VP \\ \textsc{subj} \ \langle NP_{\boxed{i}} \rangle \end{bmatrix} \right\rangle \end{bmatrix}$$

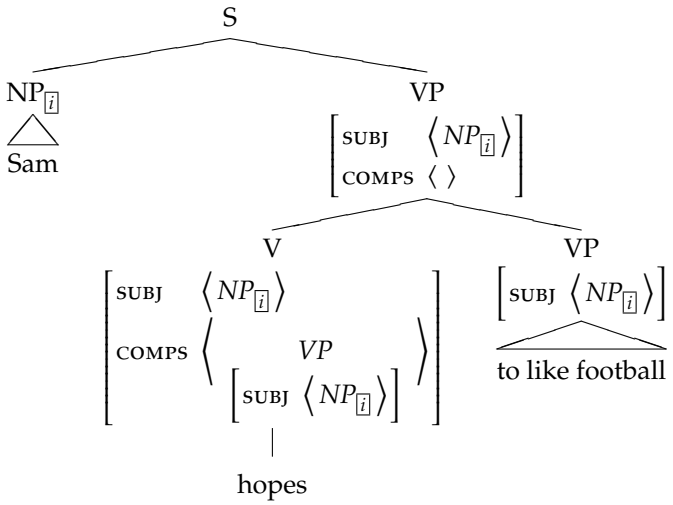
Compare *seem*:

(35)

seem:
$$\begin{bmatrix} \text{V} & \\ \textsc{subj} & \langle \boxed{1} \rangle \\ \textsc{comps} & \left\langle \begin{bmatrix} VP \\ \textsc{subj} \ \langle \boxed{1} \rangle \end{bmatrix} \right\rangle \end{bmatrix}$$

hope:
$$\begin{bmatrix} \text{V} & \\ \textsc{subj} & \langle NP_{\boxed{i}} \rangle \\ \textsc{comps} & \left\langle \begin{bmatrix} VP \\ \textsc{subj} \ \langle NP_{\boxed{i}} \rangle \end{bmatrix} \right\rangle \end{bmatrix}$$

(36)



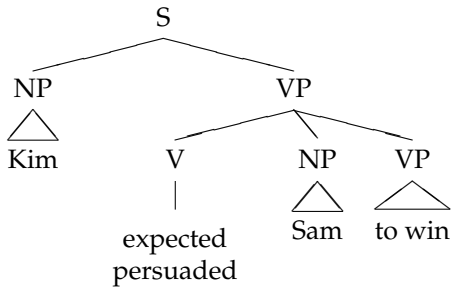
How does this capture the properties of control verbs?

- The content of the subject of *hope* is understood both 'upstarirs' and 'downstairs':
  - *hope* assigns a semantic role to its subject (HOPER) — subject of *hope* is thematic;
  - hence expletive subjects are not allowed (incompatible with the semantics of a verb like *hope*);
  - the matrix and embedded subjects' CASE (etc) are different — hence no quirky case (only the indices are shared);

4 Object Raising, Object Control

- The pattern of phenomena we observed with subjects for *seem* and *hope* can be replicated with objects for other verbs:
- For example, *expect* and *persuade*, occur in what look like similar structures, but are not:

(37)



- Again, we have an infinitival constituent with no overt subject, and a separate constituent which functions as the subject of the infinitival; but here the upstairs constituent is the object of the upstairs verb.

(38) a. Kim expected Sam to win (Object Raising)
b. Kim persuaded Sam to win (Object Control)

- Sentential paraphrases make the extra argument explicit:

(39) a. They expected Sam to win.
b. They expected [that Sam would win].

(40) a. They persuaded Sam to win.
b. They persuaded Sam [that she (=Sam) would win].

- Semantics: *persuade* seems to denote a three place relation (three thematic roles), *expect* a two place relation (two thematic roles)
- Expletive *it* or *there* are possible with *expect*, but not with *persuade*

(41) a. They expected there to be a riot.
b. *They persuaded there to be a riot.

(42) a. They expected it to be obvious that everything was okay.
b. *They persuaded it to be obvious that everything was okay.

(43) a. They expected the cat to be out of the bag.
b. #They persuaded the cat to be out of the bag. (not idiomatic)

(Oddly, I find the 'meteorological *it*' better with object control predicates – my objection to *They persuaded it to rain* is factual rather than grammatical – perhaps this *it* is not really expletive).

- Existence entailments

(44) a. They expected a unicorn to enter the room. (no implication that unicorns exist)
b. They persuaded a unicorn to enter the room. (entails that unicorns exist)

4.1 Traditional Analyses

- Raising to Object

(45) Sam believed Kim [$_S$ to like football]

Where *Kim* has become the direct object of *believe*.

Many people have believed (almost as an article of faith) that this view is seriously wrong, and the structures are actually more like (46):

(46) Sam believed [$_S$ Kim to like football]

i.e. that *Kim* in these examples has no grammatical relation to the matrix verb at all.

- Object Control (Object EQUI):
  - deletion of 'equivalent' NP, or
  - empty pronominal PRO

(47) a. Sam persuaded Kim [~~Kim~~ to like football]

b. Sam persuaded Kim$_i$ [PRO$_i$ to like football]

Exercise 4.1 Classify the following as object raising or control verbs:

- *believe*, *consider*, *regard*
- *command*, *direct*, *instruct*, *advise*, *compel*, *make*, *urge*, *ask*, *force*

5 Object Raising and Object Control: Analysis

The treatment is exactly parallel to that of subject raising and subject control, except that the upstairs expression is a complement rather than the subject:

(48) *believe*:

$$\begin{bmatrix} \textsc{subj} & \langle \text{NP} \rangle \\ \textsc{comps} & \left\langle \text{NP } \boxed{1}, \text{VP}\left[\textsc{subj} \left\langle \boxed{1} \right\rangle\right] \right\rangle \end{bmatrix}$$

(49) *persuade*:

$$\begin{bmatrix} \textsc{subj} & \langle \text{NP} \rangle \\ \textsc{comps} & \left\langle \text{NP}_{\boxed{i}}, \text{VP}\left[\textsc{subj} \left\langle \text{NP}_{\boxed{i}} \right\rangle\right] \right\rangle \end{bmatrix}$$

6 Discussion, Open Issues

- There has been a great deal of work on control and raising, and the topic is still hotly debated.
- There is some terminological variation. E.g. what we have called 'Raising' roughly corresponds to what is called 'Functional Control' in LFG, and what we have called 'Control' roughly corresponds to 'Anaphoric Control'
- One possible analysis of auxiliary verbs, in particular the aspectual auxiliaries *have*, *be*, etc., is as raising verbs.

(50) Sam is playing football.
(51) Sam has played football.

On this account, progressive *be* is just like *seem*, except that it requires its complement VP to be marked with *ing* (contain an *ing* form of the verb – cf. the way *seem* requires a verb accompanied by *to*).

- Potentially, other auxiliaries might be analysed as control predicates (e.g. ability *can*).
- There is considerable variation among control verbs with respect to what is the controller (i.e. subject or object). Compare, for example:

(52) Sam ordered Kim to go. (Kim is subject of *go*: object control)
(53) Sam promised Kim to go. (Sam is subject of *go*: subject control)

Exercise 6.1 Discuss whether the following verbs are like *order* (object control) or *promise* (subject control):

- *persuade*, *command*, *direct*, *instruct*, *advise*, *compel*, *make*, *urge*, *ask*, *force*
- *agree*, *hope*, *intend*, *refuse*, *choose*, *decline*, *demand*, *propose*, *offer*

It should be apparent that there is some kind of semantic basis for this distinction (e.g. near synonyms are in the same group).

- Control is not restricted to non-finite predicates with *to*; it appears with a variety of other forms of complement, e.g.

(54) They made him go. (bare VP)
(55) They hoped/considered opening the door. (*ing* VP)
(56) They felt sick. (AP)

6.1 Appendix: Other Differences

- This discussion does not exhaust the differences that have been observed between control and raising verbs.

6.1.1 Differences in downstairs passive

Do the following mean the same? (e.g. can you think of a situation where one might be true, and the other false?):

(57) a. The doctor seemed to examine the patient.
b. the patient seemed to be examined by the doctor.

What about the following?

(58) a. The doctor hoped to examine the patient.
b. the patient hoped to be examined by the doctor.

Let's say that, in *The doctor examined the patient*, *the doctor* is the EXAMINER, and *the patient* is the EXAMINEE. The roles are the same in a passive version, *the patient was examined by the doctor*:

(59) a. The doctor (EXAMINER) examined the patient. (EXAMINEE)
b. The patient (EXAMINEE) was examined by the doctor. (EXAMINER)

Given what we have said about raising verbs not assigning thematic roles to their subjects, you might expect there to be no difference when there is a 'downstairs':

(60) a. The doctor (EXAMINER) seemed to examine the patient. (EXAMINEE)
b. The patient (EXAMINEE) seemed to be examined by the doctor. (EXAMINER)

But you would expect a difference with control verbs:

(61) a. The doctor (HOPER,EXAMINER) hoped EXAMINEE to examine the patient.
b. The patient (HOPER,EXAMINEE) hoped EXAMINER to be examined by the doctor.

Intuitively, with raising verbs downstairs passive does not affect meaning, in terms of the roles assigned to the NPs.

The same contrast can be seem with object raising and object control:

(62) a. They expected the doctor to examine the patient. =
b. They expected the patient to be examined by the doctor.

(63) a. They persuaded the doctor to examine the patient. ≠
b. They persuaded the patient to be examined by the doctor.

6.1.2 Complement ellipsis

- Allegedly, the VP complement of control verbs can be dropped:

(64) a. [Did Sam really leave?]
b. He hoped.
c. He hoped to.
d. He hoped to leave.

This is not possible with raising verbs:

(65) a. [Did Sam really leave?]
b. *He seemed
c. He seemed to.
d. He seemed to leave.

- The same pattern can be seen with object raising and object control verbs:

(66) a. [Did Sam really go to the party?]
b. Yes, we persuaded her.
c. Yes, we persuaded her to.
d. Yes, we persuaded her to go to the party.

(67) a. [Does Sam really enjoy parties?]
b. *Yes, we believe her. (ungrammatical on this interpretation)
c. Yes, we believe her to.
d. Yes, we believe him to enjoy parties.

6.1.3 VP preposing

- VP preposing is also impossible with Raising verbs:

(68) a. Sam seemed to understand the theory.
b. *To understand the theory, Sam seemed.

(69) a. They believe her to understand the theory.
b. *To understand the theory, they believe her.

- Control predicates are different in this respect:

(70) a. Sam hoped to understand the theory.
b. ?To understand the theory, Sam hoped.

(71) a. They convinced her to leave the room.
b. ?To leave the room, they convinced her.

6.2 Quantifier floating

- 'Quantifier floating' is the phenomenon whereby with some verbs a quantifier (notably *all*, and *both*) that is interpreted as part of the subject NP can appear after the verb:

(72) a. All (of) the children are happy.
b. The children are all happy.

Not all verbs allow this (most don't):

(73) a. All (of) the children went to school.
b. *The children went all to school.
c. *The children went to school all.

Raising verbs seem to allow it (at least marginally), whereas control verbs do not:

(74) a. All of the men seem to be running.
b. The men seem all to be running.
c. The men seem to all be running.

(75) a. All of the candidates want to get elected.
b. *The candidates want all to get elected.
c. *The candidates want to all get elected.

(If you think (75b) is acceptable, it may be because you interpret it as 'all the candidates want all the candidates to get elected' – notice this is not what (75a) mean. (75a) means each candidate wants *herself* to get elected).

7 Reading

There is a great deal of literature. Some examples: Pollard and Sag (1994, Ch3 and Ch7); Sag and Wasow (1999, Ch12, Ch13, Ch14); Sag and Wasow (1999, Ch12, Ch13, Ch14); Sag et al. (2003, Ch12); Borsley (1996, Ch8); Borsley (1991, Ch11 and Ch12); Culicover (2009, Ch7); Culicover and Jackendoff (2005, Ch12); Falk (2001, Ch5); Kim and Sells (2008).

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