Handout 8: Raising, control and ECM: Three types of infinitives
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Seminar *English Syntax*

1. RAISING

(1) a. JOHN$_i$ seemed/appeared [$_{IP}$ t$_i$ to *know* the answer]
b. JOHN$_i$ turned out [$_{IP}$ t$_i$ to *have* the right qualities]
c. JOHN$_i$ happened [$_{IP}$ t$_i$ to *see* the article]

The underlined verbs in (1) are called **raising** verbs, because the DP that initially seems to be their subject, *John*, has been *raised* out of the bracketed IP, as the traces indicate. We will see that raising verbs don't take DP arguments, rather they only take a single IP argument. Thus, in (1) *John* is an argument of the verbs in the bracketed IPs, not of the raising verbs.

1.1. Evidence that raising verbs don't take DP arguments

- The sentences in (1) have close paraphrases in the non-raising constructions in (2), where *John* stays in the lower clause and is clearly not an argument of the underlined verbs. (In (2), *it* is an expletive subject like *there* mentioned in handout 4.)

(2) a. It appeared/seemed [that JOHN *knew* the answer]
b. It turned out [that JOHN *had* the right qualities]
c. It happened [that JOHN *saw* the article]

- In constructions like (1), the subject DPs are always interpreted as arguments of the verbs in the bracketed IPs. (E.g. *John* in (1)a is an experiencer, which is the thematic role that *know* assigns to its subject.)
- Recall idioms consisting of verb, subject and object (handout 4). It is possible for the fixed subject to become subject in a raising construction, and it is still interpreted as part of an idiom:

(3) a. All hell seemed to break lose.
b. The chickens appeared to be coming home to roost.
c. The cat turned out to be out of the bag already.

- There are certain (parts of) DPs that normally only occur as part of particular idioms (*take umbrage at, raise X's hackles, read the riot act to X*). Sometimes these idioms can be passivised (*umbrage was taken at...*, etc.). If we combine these passives with a raising verb, the special idiomatic DP can quite happily appear as subject of the raising structure, as in (4). It would be implausible to treat these DPs as arguments of *seem*, since no other verbs apart from the verbs in the subordinate clauses can take these DPs as arguments.

(4) a. Considerable **umbrage** seems to have been taken at this.
b. **Everyone's hackles** seemed to have been raised by this.
c. **The riot act** doesn't seem to have been read to those creeps.
d. **Die Spreu** scheint sich vom Weizen zu trennen. [valid example for speakers who only use *Spreu* in the idiom *die Spreu vom Weizen trennen*]

1.2. An analysis for raising verbs

The syntax of raising constructions, compared with expletive constructions of the type in (2):

(5) a. [$_{IP}$ *John$_i$* [$_{I'}$ I [$_{VP}$ *seems* [$_{IP}$ t$_i$ [$_{I'}$ [$_I$ *to*][$_{VP}$ t$_i$ *know that*]]]]]]
b. [$_{IP}$ *It* [$_{I'}$ I [$_{VP}$ *seems* [$_{CP}$ *that* [$_{IP}$ *John$_i$* [$_{I'}$ I [$_{VP}$ t$_i$ *knows that*]]]]]]]

- To understand this, recall the following observations:

(6) a. The infinitive particle *to* is an instance of Infl (handout 2)
b. In English, the specifier of IP must be filled by a DP. (handout 4)

- In the raising structure in (5)a, *John* starts in the specifier of the innermost VP (as we expect, since *John* is an argument of *know*), moves to the spec. of the inner IP headed by

to and then to the spec. of the outer IP. Both cases of movement to spec,IP are due to (6)b.

- In (5)b, the requirement in (6)b is fulfilled by the expletive *it*. (We saw a similar use of expletive *there* in structures like *there is someone waiting* in handout 4.)
- The infinitive particle *to* differs from other instances of Infl in not being able to assign case to its specifier. This means that the DP must move to spec,IP in the main clause to receive case and rules out a structure like:

(7) *It seems [$_{IP}$ John to know that]

- Raising verbs are like unaccusative and passive verbs in that in all cases, the DP appearing as their 'subject' really starts as (part of) their complement. Passive, unaccusative and raising structures all involve A-movement (movement of a DP to an A(rgument) Position, namely spec, IP, motivated by the need for the DP to receive case and the need for IP to have a specifier).

1.3. Other constructions with properties similar to raising

- The raising verbs we've seen so far also have non-raising uses, cf. (1) and (2), but there are other raising verbs which don't have non-raising uses:

(8) There needed/had/continued/were supposed to be inquiries.
All hell started/is going/tends to break lose here.

- Given the VP-internal subject hypothesis (handout 4), it appears that all modal verbs are raising verbs in the sense that the DP that seems to be their subject is really an argument of a verb in their complement (though here the complement is a VP, not an IP). This should not shock us, since semantically modals are very close to certain types of adverbs/adjectives which clearly don't have DP arguments: *I must go* means *it is necessary that I go* and *he may have gone* means *he has possibly gone*.
- There are also raising adjectives (which take an IP complement that a DP moves out of):

(9) She$_i$ is [$_{AP}$ certain/likely [$_{IP}$ t$_i$ to go]. [cf. *It is likely that Gwen will go*]

2. Control: Infinitives with a silent pronoun subject (PRO)

A different type of infinitive structure is one where we will see reasons to assume that the specifier of *to* is occupied not by a trace but by a silent pronoun called PRO which is interpreted as being identical to (technical term: is **controlled** by) an argument of the verb in the main clause:
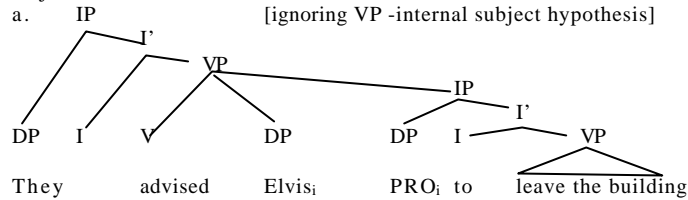
(10) Subject control:
a.
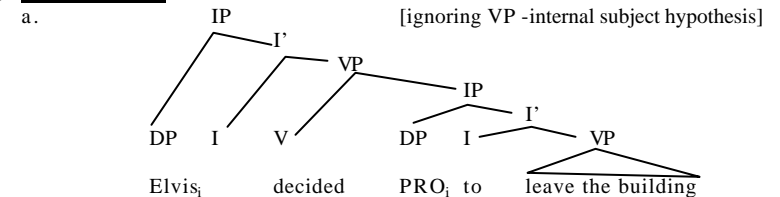
b. Paraphrase of (a): **Elvis** has decided that **he** should leave the building
c. Other such verbs: *try, hope, manage, opt, aspire, fail, need, pretend*

- Verbs like *decide* are called **subject control** verbs because the subject of the main clause (here: *Elvis*) *controls* (i.e. provides the interpretation for) PRO.
- There are also **object control** verbs, where the verb has two complements: a DP object and an IP which has a PRO subject controlled by the object DP:

(11) Object control:
  a.   IP   [ignoring VP -internal subject hypothesis]

(tree diagram)

DP	I	V	DP	DP	I	VP
They		advised	Elvis$_i$	PRO$_i$	to	leave the building

  b. Interpretation of (a): They advised **Elvis** that **he** should leave the building
  c. Other such verbs: *tell, tempt, force, persuade, order, ask, instruct*
- The trees in (10)/(11) ignore the VP -internal subject hypothesis for reasons of simplicity. Like any other subject, PRO is initially inserted further to the right in the specifier of the VP and moves to spec,IP, i.e.:
(12) …[IP PRO$_i$ [I' [I *to*] [VP t_i *leave the building*]]]

2.1. Control and raising verbs compared

- Distinguishing control from raising initially looks hard because both types of verbs have in common that the main clause contains a DP which is interpreted like it is an argument of a verb in the subordinate IP, e.g. *Mary* is interpreted as the agent of *solve* in the following sentences:
(13) a. Raising: Mary$_i$ seemed [IP t_i to solve the problem].
     b. Subj. control: Mary$_i$ tried [IP PRO$_i$ to solve the problem].
     c. Obj. control: I asked Mary$_i$ [IP PRO$_i$ to solve the problem].
- The difference is that, while raising verbs don't take DP arguments, control verbs clearly do. How we know this:
  - Very often, the fact that the individual expressed by the DP in question has two thematic roles can be detected intuitively:
(14) a. *Mary hoped PRO to study*: Mary is both experiencer (of *hope*) and agent (of *study*)
     b. *I persuaded Mary PRO to leave*: She is both persuaded and the one who will leave.
  - The same point can be brought out using paraphrases like those in (10)b)/(11)b): Here we see that *Elvis* is an argument of *decide/advise*, but there is also a pronoun referring to *Elvis* which is argument of *leave*. In (10)a)/(11)a), PRO functions like *he* in (10)b)/(11)b).
  - Unlike raising verbs, which allow any kind of subject that the verb in the IP complement allows, control verbs only allow DP arguments with which they are semantically compatible. Thus, control verbs fail tests like (3) and (4): We don't find parts of idioms functioning as controllers of PRO because outside the idiom they either make no sense or do not have an idiomatic interpretation:
(15) a. *Considerable umbrage$_i$ tried PRO$_i$ to be taken at his behaviour.
     b. *The riot$_i$ act managed PRO$_i$ to be read to those losers.
     c. *I asked the riot act$_i$ PRO$_i$ to be read to them.
  - Also telling are cases where the lower IP has an expletive subject. There is no problem moving such subjects into main clauses with raising verbs, but the results with control verbs are aweful, since expletives don't have the right semantics to appear as arguments of control verbs:
(16) a. There is someone waiting.   (expletive *there*)
     b. Raising: There$_i$ seems [t_i to be someone waiting].
     c. Subject control: *There$_i$ managed [PRO$_i$ to be someone waiting].
     d. Object control: *I persuaded there$_i$ [PRO$_i$ to be someone waiting].

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(17) a. It is raining   .   (expletive *it*)
     b. Raising: It$_i$ seemed [t_i to be raining].
     c. Subject control: *It$_i$ managed [PRO$_i$ to be raining].
     d. Object control: *I persuaded it$_i$ [PRO$_i$ to be raining].

2.2. Why linguists believe that PRO exists

- Parallels like (18) show that subordinate clauses in control sentences are interpreted as if they have an understood/implicit subject. By assuming PRO, we are maximising the parallels between syntax and semantics.
(18) a. I promised PRO to leave   =   **I** promised that **I** would leave
     b. I am sorry PRO to have put you out =   **I** am sorry that **I** have put you out
- Other evidence comes from *binding* (=the area of grammar dealing with reflexive pronouns). Reflexives require an antecedent (=*Bezugswort*) in the same IP, cf. (19)a). If PRO exists, we can explain why it is possible to have reflexives in an IP where there is no other antecedent in the clause, cf. (19)b-d).
(19) a. We want [IP Elvis$_i$ to trust himself$_i$/*ourselves]
     b. They$_i$ promised him [IP PRO$_i$ to trust themselves$_i$/*himself]
     c. We$_i$ want [IP PRO$_i$ to help ourselves$_i$/*himself/*yourselves]
     d. They asked him$_i$ [IP PRO$_i$ to trust himself$_i$/*themselves]
- In (20), the reflexives act as if they are bound to a generic pronoun (*one,* German *man*). If we assume a PRO here, this receives an explanation. [1]
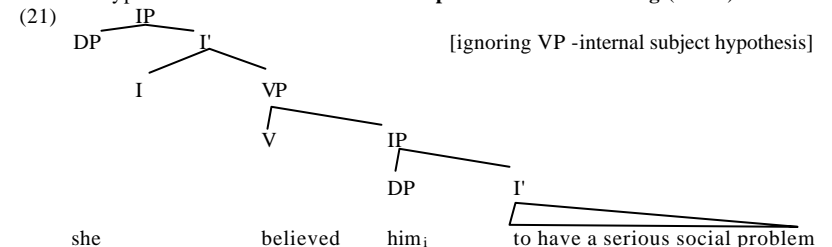(20) [PRO to love yourself/oneself/*herself/*themselves/*yourselves/*ourselves] is hard

2.3. Miscellaneous comments on PRO

- Normally, if a control verb has an object, the object will control PRO. This suggests that PRO is controlled by the nearest DP in the main clause. An exceptional case is *promise*: *He$_i$ promised them PRO$_i$ to leave early*. Sentences of this type are indeed exceptional: They aren't possible to all speakers and cause problems for children learning languages.
- PRO doesn't need case, hence it can occupy the specifier of an IP headed by *to*.

3. Exceptional Case Marking (ECM)

The third type of infinitive is one with **exceptional case marking** (**ECM**):
(21)

(tree diagram)

	DP	I	V	DP	I'
	she		believed	him$_i$	to have a serious social problem

[ignoring VP -internal subject hypothesis]

- Here *him* in the lower spec,IP will be shown not to be an argument of the ECM verb *believe*, although it receives case from it. (Call such phrases **exceptionally case marked DPs**).

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[1] Here PRO has an *arbitrary* interpretation, where it is not controlled by another DP . More examples: *PRO to err is human; That's too hard PRO to answer; It is hard to know whether PRO to do that; PRO bathing daily is a good idea.*

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- Other ECM verbs: *expect, know, prove, assume, believe, need, want, think, show, consider*.

3.1. How ECM verbs differ from (object) control verbs

- Exceptionally case marked DPs don't receive thematic roles from the verb in the main clause (i.e. aren't arguments of it). How we know this:
  - In these constructions, the interpretation doesn't correspond to that found in cases where the verb selects a DP without an infinitive (if it can take a DP at all):
- (22) a. *I believe/found him to be a liar≠*   *I believe/found him*
  b. *I need the psycho to be locked up≠*   *I need the psycho*
  c. *I proved the theory to wrong* ≠   *I proved the theory*
  d. *I expect him not to turn up*   ≠   *I expect him*
  e. *I assume/think her to be a genius≠*   **I assume/think her*
  - In (23) we see that parts of idioms can be exceptionally case marked DPs. We saw from (15) that unacceptability results when we try to put part of an idiom in a position where it has to be treated as an argument of two verbs at once, and in (23) this problem is not found, so we conclude that the ECM DP is only an argument of the verb in the inner IP.
- (23) a. I considered the chickens to have come home to roost.
  b. I need <u>all hell</u> to have broken loose by then.
  c. I expect <u>the riot act</u> to have been read to those louts by tomorrow.
  - Same deal for expletives: If ECM verbs assigned a thematic role to their objects, we would expect them to be incompatible with expletives (just like object control verbs, cf. (16), (17)), but what we find is that they are compatible with them:
- (24) a. I expect <u>there</u> to be someone waiting for him.
  b. She knew <u>there</u> to be people controlling the situation.

3.2. What do we mean by *exceptional* case marking?

- The DP in the lower spec,IP receives accusative, not nominative:
- (25) I expect {her/*she} to win the race.
- Recall that infinitive particle *to* doesn't assign case to its specifier.
- This suggests that the case of the objects in ECM constructions must come from the verb.
- This is *exceptional* because the verb assigns case to the specifier of its complement, in contrast where to the more normal situation where it assigns case to its complement (not to a constituent within it).
- Another instance of ECM is the complementiser *for* (discussed in handout 3):
- (26) [CP [C For] [IP him to go there] would be silly
- An indication that *for* assigns case here:
- (27) *For them to go to the slaughterhouse would be inadvisable.*
  PRO to go to the slaughterhouse would be inadvisable.
  *Them to go to the slaughterhouse would be inadvisable.

4. Exercises

Try to decide whether the following sentences involve raising, control or ECM. Some verbs can be used in more than one way.
A. *want*: 1. I want it to rain. 2. I want to go.   3. *There wants to someone smoking here.
B. *need*: 1. I need it to rain. 2. I need to go.   3. It needs to rain heavily.
C. *cease*: There ceased to be people interested in the job.
D. *agree*: He agreed to stop ruining everyone's life.