

## Infinitival Complementation 2: ECM and Raising

### 1 Exceptional Case Marking

Two distinct structures are possible for the string in (1).

- (1) NP V NP to VP
- a. ECM: NP V [NP to VP]  
I believe [him to be innocent].
  - b. Control: NP V NP [PRO to VP]  
I persuaded David [PRO to dance].

Implications of the the proposed structures:

- (2) a. ECM: ...  $V_{matrix}$  [NP to  $VP_{embedded}$ ]
- 1.  $V_{matrix}$  is a two place predicate.  
(He expected [me to take syntax].  
 $\approx$  He expected [that I would take syntax].)
  - 2. NP does not get a  $\theta$ -role from  $V_{matrix}$ .
    - $\rightarrow$  NP can be expletive if  $VP_{embedded}$  permits.
    - $\rightarrow$  NP can be a non-referential phrase licensed by  $VP_{embedded}$ .
  - 3. NP gets case from outside the embedded infinitival clause.
    - $\rightarrow$  the case relationship crosses a TP boundary.
- b. Control: ...  $V_{matrix}$  NP [PRO to  $VP_{embedded}$ ]
- 1.  $V_{matrix}$  is a three place predicate.  
(He persuaded me [to take syntax].  
 $\approx$  He persuaded me [that I should take syntax].)
  - 2. NP gets a  $\theta$ -role from  $V_{matrix}$ .
    - $\rightarrow$  NP cannot be an expletive.
    - $\rightarrow$  NP cannot be a non-referential phrase licensed by  $VP_{embedded}$ .
  - 3. NP gets case from  $V_{matrix}$ .
    - $\rightarrow$  the case relationship does not cross a TP boundary.

## 1.1 ECM vs. Control w.r.t. Expletives and Idiom Chunks

### 1.1.1 Expletives

We know that expletives<sup>1</sup> cannot appear in object positions.

- (3) expletives:
  - a. There is a man in the garden.
  - b. \*A man is there<sub>expl</sub> in the garden. (not expletive)

### 1.1.2 Idiom Chunks: nonreferential NPs

Certain phrasal constituents receive a special idiomatic interpretation when they appear together with certain other lexical items. These combinations are called idiom chunks and for the idiomatic reading to be available, the phrasal constituent cannot be an argument of another predicate.

- (4) idiom chunks:
  - a. [[the cat] [out of the bag]
    - i. The cat is out of the bag.
    - ii. # I persuaded [the cat] [to be out of the bag].
  - b. take advantage
    - i. Lane took advantage of Andrew./Advantage was taken of Andrew.
    - ii. # I persuaded advantage [to be taken of Andrew].

### 1.1.3 Applying the Diagnostic

Now what is relevant here is that expletives and idiom chunks can appear as ‘objects’ of certain embedding predicates but not others: ECM predicates allow for expletives and idiom chunks, while control predicates do not.

- (5) expletive *there*:
  - a. ECM:
    - I want [there to be 50 chairs in room by noon tomorrow].
    - The police allowed [there to be looting in the Muslim quarter of the city].
    - He expects [there to be someone waiting for him at the airport terminal].
  - b. Control:
    - \*I persuaded there [to be 50 chairs in room by noon tomorrow].
    - \*The police ordered there [to be looting in the Muslim quarter of the city].
    - \*He advised [there to be someone waiting for him at the airport terminal].

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<sup>1</sup>This is especially clear with expletive *there*. The facts with clausal expletive *it* are murkier due to the existence of cases like *He can't stand it that they were mean to David*. See Postal and Pullum (1988) for critical discussion.

(6) idiom chunks:

a. ECM:

I don't want [advantage to be taken of David].

He believes [the cat to be out of the bag].

They expected [the fur to fly].

They expected [the chickens to come home to roost].

They expected [the shit to hit the fan].

b. Control:

\*I persuaded advantage [to be taken of David].

\*He allowed the cat [to be out of the bag]. (with idiomatic reading)

\*They persuaded the fur [to fly].

\*They persuaded the chickens [to come home to roost].

\*They persuaded the shit [to hit the fan].

Something to keep in mind is that just because a predicate is an ECM predicate, it does not follow that it will allow for an expletive/idiom chunk NP. The relevant NP is licensed within the embedded infinitival and it is the embedded infinitival VP that determines what kinds of NPs are possible. The matrix predicate simply plays no role.

(7) ECM predicate:

a. Expletive:

The police allowed [there to be looting in the Muslim quarter of the city].

\*The police allowed [there to have a man eat an apple].

\*The police allowed [there to sink a ship].

b. Idiom Chunk:

I don't want [advantage to be taken of David].

\*I don't want [advantage to be read by David].

\*I don't want [advantage to be seen by David].

Another way of thinking about it is that the possibility of expletives/idiom chunks with ECM predicates depends upon the potential wellformedness of the embedded infinitival. The ungrammatical cases in (7) all involve embedded infinitival clauses that are not wellformed.

## 1.2 Embedded Passivization

Passivization of the embedded infinitival substantially changes the meaning in the case of control infinitives but not in the case of ECM infinitives.

(8) Control:

a. He persuaded the doctor [PRO to examine David].

b. He persuaded David [PRO to be examined by the doctor].

(9) ECM:

a. He wants [the doctor to examine David].

b. He wants [David to be examined by the doctor].

### 1.3 Two Kinds of ECM

We noted that in ECM infinitives, the subject of the infinitival gets case from a head that is outside the embedded infinitival. There are two possible heads that could supply case:

- (10) a. the embedding predicate:
  - i. I expect [there to be unhappiness about this].
  - ii. He believes [him to be uncaring].
- b. the infinitival Complementizer *for*:
  - i. [For [there to be a party tonight]] would be excellent.
  - ii. He intended [for [his parents to be present]].

#### 1.3.1 The location of *for*

The fact that *there* is possible in (10b.i) indicates that the structure is as indicated and not for example:

- (11) [For there] [to be a party tonight] would be excellent.

Such a structure might actually be present for He intended for his parents to be present, but it is not the only structure possible.

- (12) Two structures for He intended for his parents to be present:
  - a. He intended [for his parents] [to be present].
  - b. He intended [for [his parents to be present]].

(12a) has *for his parents* forming a constituent - thus we expect that it might be possible to move it around, and indeed we find that we can in fact move it around.

- (13) a. It was [for his parents] that he intended [to be present].
  - b. [For his parents], he intended [to be present].

The possibility of (13) indicates that (12a) is a possible structure. However, the sentences in (13) have only one of the interpretations available to (12), the interpretation where the parents are the beneficiary of his intended action of being present - he will be the one who is present, not his parents i.e. *he* controls the PRO subject in the infinitival clause in (12a).

A similar point is made by pseudoclefting:

- (14) a. What he intended was [for his parents to be present].
  - forces the structure in (12b).
- b. What he intended for his parents was [to be present].
  - forces the structure in (12a).

- *for* can function as an infinitival Complementizer which assigns accusative case.

### 1.3.2 The possibility of ECM

- ECM by *for* is always available as long as the local syntactic context permits a *for*-CP i.e. *for* (in Standard English) always allows for ECM, it being an independent question whether a *for*-CP is permitted or not.

- ECM by verbs<sup>2</sup>: whether a verb can function as an ECM predicate seems to be somewhat idiosyncratic. For a predicate to be an ECM predicate, it must take a 'small enough' infinitival complement and it must assign accusative case.

- (15) a. *regret*: that-CP:ok, for-CP:\*, ECM:\*, NP:ok  
i. I regret [that [he is no longer here]].  
ii. \*I regret [for [him to no longer be here]].  
iii. \*I regret [him to no longer be here].  
iv. I regret this outcome.
- b. *hope*: that-CP:ok, for-CP:ok, ECM:\*, NP:\*  
i. I hope [that [it doesn't snow this week]].  
ii. I hope [for [him to get well soon]].  
iii. \*I hope [him to get well soon].  
iv. I hope \*(for) a favorable outcome.
- c. *believe*: that-CP:ok, for-CP:\*, ECM:ok, NP:ok  
i. I believe [that [she is innocent]].  
ii. \*I believe [for [her to be innocent]].  
iii. I believe [her to be innocent].  
iv. I believe her account.
- d. *want, prefer*: that-CP:ok, for-CP:ok, ECM:ok, NP:ok  
i. I want [that [he leave]].  
ii. I want [for [him to leave]].  
iii. I want [him to leave].  
iv. I want his immediate departure.

Often the licensing of accusative case can be diagnosed by the possibility of an NP in place of the infinitival complement. But as *regret* shows, the possibility of an NP object does not guarantee ECM. i.e. ECM predicates allow for accusative NP objects, but the reverse does not follow.

Also there is no 1-1 correlation between the possibility of *for*-CPs and ECM infinitivals (cf. *hope* vs. *believe*).

### 1.4 ECM vs. Control

- *de se* interpretations:

- (16) a. Control: only *de se*:  
David wants [PRO to win the election].
- b. ECM: both *de se* and *de re*:  
David wants [himself to win the election].

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<sup>2</sup>There are no adjectival ECM predicate - this would follow from the general inability of adjectives to assign case. There are also no ditransitive ECM predicates i.e. ECM counterparts of *persuade*. I don't know why this is so.

- Adjacency effects:

Control clauses can be separated from their predicates by intervening adverbs, while ECM clauses cannot.

- (17) a. Control: David tried yesterday [PRO to book a ticket for Holland].  
 b. ECM: \*David expected yesterday [him to be late].

These adjacency facts are part of a more general pattern which requires adjacency (in English) between an accusative licensing complex head ( $v_{AG} + \sqrt{\phantom{x}}$ ) and the NP that gets accusative. The source of this adjacency requirement remains an open question, made more interesting by the fact that it seems to be a language specific restriction not applying for example in French.

- (18) I saw him yesterday. / \*I saw yesterday him.

No comparable restrictions seem to apply to CPs.

## 2 Raising

In principle, two distinct structures are possible for the string in (19).

- (19) NP V [to VP]  
 a. Raising: NP V [ $t_{NP}$  to VP]  
      $He_i$  seems [ $t_i$  to like David].  
 b. Control: NP V [PRO to VP]  
      $He_i$  tried [PRO<sub>i</sub> to like David].

### 2.1 Raising vs. Control

Implications of the the proposed structures:

- (20) a. Raising: NP<sub>i</sub>  $V_{matrix}$  [ $t_{NP}$  to VP<sub>embedded</sub>]  
 1.  $V_{matrix}$  is a one place predicate.  
    ( $He_i$  seems [ $t_i$  to like David].  
     $\approx$  It seems [that he likes David].)  
 2. NP does not get a  $\theta$ -role from  $V_{matrix}$ .  
     $\rightarrow$  NP can be expletive if VP<sub>embedded</sub> permits.  
     $\rightarrow$  NP can be a non-referential phrase licensed by VP<sub>embedded</sub>.  
 3. NP gets case from outside the embedded infinitival clause.  
     $\rightarrow$  the case relationship crosses a TP boundary.

b. Control:  $NP_i V_{matrix} [PRO_i \text{ to } VP_{embedded}]$

1.  $V_{matrix}$  is a two place predicate.

(He wants [to take syntax].

$\approx$  He desires[that he take syntax].)

2. NP gets a  $\theta$ -role from  $V_{matrix}$ .

→ NP cannot be an expletive.

→ NP cannot be a non-referential phrase licensed by  $VP_{embedded}$ .

3. NP gets case from  $V_{matrix}$ .

→ the case relationship does not cross a TP boundary.

(21) Expletives and Idiom Chunks

a. There seems to be a man in the garden.

b. There is likely to be a farmer harvesting pumpkins somewhere right now.

c. The cat appears to be out of the bag.

d. The chickens happen to be coming home to roost.

Expletives/Idiom Chunk subjects are only possible if the embedded VP permits them.

(22) a. \*There seems to be raining.

b. \*There is likely to be a farmer harvest pumpkins somewhere right now.

c. \*The cats appear to like David. (\* with idiomatic reading)

d. \*The chicken happens to have hit the fan. (\* with idiomatic reading)

Raising predicates can be stacked on top of each other suggesting that raising can take one far.

(23) a. Joey appears to have turned out to have left.

b. Roland happens to appear to seem to be sick.

But this is not something that distinguishes raising from control since control predicates can also be stacked.

(24) a. Joey wants [PRO to try [PRO to get the McGill position]].

b. I want [PRO to persuade Joey [PRO to apply for the McGill position]].

## 2.2 The class of Raising Predicates

An incomplete list of raising predicates:

(25) a. appear, seem

b. happen, turn out

c. be likely, be unlikely, be certain

(To this list we can add modals and auxiliaries even though the movement over these doesn't have to involve crossing a TP boundary.)

Only predicates that do not assign a  $\theta$ -role to their specifier can be raising predicates i.e. raising predicates are all unaccusatives. For this reason, raising predicates involves raising (and not ECM). Note that unaccusative syntax is a necessary but not sufficient condition for a predicate to be a raising verb.

The unaccusative must be able to combine with an infinitival complement in the first place and the infinitival complement must be ‘small enough’.

(26) Unaccusatives that do not allow Raising:<sup>3</sup>

- a. *be true/false*: that-CP:ok, for-CP:\*, Raising:\*  
 It is true/false [that David is leaving].  
 \*It is true/false [for [David to be leaving]].  
 \*David<sub>i</sub> is true/false [t<sub>i</sub> to be leaving].
- b. *stinks/be possible/necessary*: that-CP:ok, for-CP:ok, Raising:\*  
 It stinks/is possible/necessary [that John will win].  
 It stinks/is possible/necessary [for [John to win]].  
 \*John<sub>i</sub> stinks/is possible/necessary [t<sub>i</sub> to win].

• **A prediction:** ECM predicates and Raising predicates seem to share many properties, differing primarily in the case/ $\theta$ -domain.

- ECM:  $\theta$ -role to subject, case to subject of infinitival complement.
- Raising: no  $\theta$ -role to subject, no case to subject of infinitival complement.

Given Burzio’s Generalization, these two properties are related. We would expect that if we were to passivize an ECM predicate, we would have a Raising predicate on our hands, and this seems to be the case.

- (27) a. *expect*:  
 John<sub>i</sub> is expected [t<sub>i</sub> to arrive at 5pm].  
 There<sub>i</sub> is expected [t<sub>i</sub> to be a party tonight].
- b. *believe*:  
 30 missiles<sub>i</sub> are believed [t<sub>i</sub> to be missing].  
 There<sub>i</sub> are believed [t<sub>i</sub> to be around 30 missiles missing].

### 3 Formal Treatment

Parameters of Variation:

- size of infinitival complement: CP vs. TP
- the source/nature of case: matrix T<sup>0</sup>, matrix v<sub>AG</sub>, C<sup>0</sup>

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<sup>3</sup>I used to put *probable* in this group, but it seems that some people, sports fans in particular, can say things like *However, he is probable to play against the Sabres on Wednesday, reports the Philadelphia Inquirer*. Further at least one descriptive grammar online advice common inveighs against the practice of combining *probable* with an infinitive suggesting that sufficiently many people say this in the first place.



### 3.1 Control

(28) ... V [<sub>CP</sub> C<sup>0</sup> [<sub>TP</sub> PRO [<sub>T'</sub> to [<sub>VP</sub> ...

- Does PRO need case? Can PRO ever have case?
- How is the distribution of PRO regulated?

#### 3.1.1 PRO cannot bear case

An important intuition: PRO cannot appear in positions where an overt NP can (for the most part). Since overt NPs require case, this distribution would follow if PRO could not tolerate case. This intuition seems surprisingly correct.

(29) a. No PRO in object of active:  
He<sub>i</sub> tried/wants [David to annoy PRO<sub>i</sub>].

b. PRO can be merged VP-internally as in a passive:  
He<sub>i</sub> tried/wants [PRO<sub>i</sub> to be annoyed at David].

(30) a. *try*:  
He tried [PRO/\*David to leave].

b. *believe*:  
He believes [David/\*PRO to be innocent].

(31) *for*:  
a. [For [all the fugitives to be apprehended by the dementors]] would be great.  
b. [C<sup>0</sup> [PRO to be apprehended by the dementors]] would be great.  
c. \*[For [PRO to be apprehended by the dementors]] would be great.<sup>4</sup>

#### 3.1.2 Why a CP?

1. In many languages (see Landau (2003):488), overt complementizers are possible in control contexts.

2. The presence of the CP layer is taken to ‘protect’ the PRO from potential case assigners - case relationships do not cross CP boundaries irrespective of whether they are established via Agree or Move.

3. Postulating a null CP layer also helps us with potential exceptions to the case generalization:

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<sup>4</sup>As recently as 1584, for to infinitives were still possible in English, appearing for example as a verse in the popular folk song *Greensleeves*:

Greensleeves was all my joy, Greensleeves was my delight  
Greensleeves was my heart of gold, And who but my Lady Greensleeves.  
I have been ready at your hand to grant whatever you would crave;  
I have both wagered life and land Your love and good will **for to** have.

They continue to be possible in Irish English though the location of *for* in Irish English is probably not the same as in Standard English. See Henry (1992) and Henry (1995) for details.

(32) (also *prefer*)

- a. He wants/expects [David to be a good person in his next life].
- b. He wants/expects [PRO to be a good person in his next life].

The idea is that *expect/want* can take both CP and IP complements.

(33) (also *prefer*)

- a. He wants/expects [<sub>IP</sub> David to be a good person in his next life].
- b. He wants/expects [<sub>CP</sub> C<sup>0</sup> [<sub>TP</sub> PRO to be a good person in his next life]].

(Earlier stages of the theory referred to *want/expect* as S'-deleting predicates, reflecting the belief that the control predicate was basic and that the ECM predicate was derived from it through a process that deleted the CP layer.)

### 3.1.3 How to block PRO from getting case?

- Strategy 1: PRO has no case feature. Case assigners in general have case features that need to be deleted.

- The CP layer idea allows for PRO to appear in all the places where it should. It also blocks other NPs or NP-trace from appearing in these positions.
- If PRO is inserted in a position where case is available, it will fail to check the case feature of the case assigning head, leading to ungrammaticality.

- Strategy 2: Null Case - PRO (and only PRO) has a special kind of case called Null Case, which is assigned by the null C<sup>0</sup> that appears with control infinitives.

- The C<sup>0</sup> in the CP layer allows for PRO to appear in all the places where it should. It also blocks other NPs or NP-trace from appearing in these positions. Pronouns inserted here will get Null Case and will be realized as PRO.
- If a pronoun is inserted in a position where some other case is available, it will come out with a non-null case i.e. it will not be pronounced as PRO.

One nice thing about the null case proposal is that the fact that case relationships cannot be established across a CP boundary now falls out from the definition of Agree.

(34) \* X<sup>0</sup>[Case1] ..... [C<sup>0</sup>[null]] [ YP[Case1].....

## 3.2 ECM and Raising

The proposals for ECM and Raising now follow straightforwardly. We have already ruled out the possibility of a CP complement. We are left with the following structures which involve TP complementation:

(35) a. ECM: v<sub>AG</sub> [V [<sub>TP</sub> NP [to .....  
He believes [<sub>TP</sub> David [to be innocent]].

NP gets case from matrix v<sub>AG</sub> and raises to embedded [Spec,T<sup>0</sup>] for EPP reasons.

- b. Raising:  $[NP_i [T^0 \dots v_{UNACC} [V [_{TP} t_{NP} \text{ to} \dots \dots$   
 David<sub>i</sub> seems  $[_{TP} t_i [\text{to be innocent}]]$ .

NP raises to embedded  $[\text{Spec}, T^0]$  for EPP reasons, gets case from matrix  $T^0$  and raises to matrix  $T^0$  for EPP reasons.

Violations like Superraising and Super-ECM now follow from the definition of Agree.

- (36) a. Superraising:  
       \*John seems that it appears to be happy.  
       (= \*John<sub>i</sub> seems  $[_{CP} \text{that } [_{TP} \text{it appears } [_{TP} t_i [\text{to be happy}]]]]$ .)  
 b. Super-ECM:  
       \*He believes that it seems David to be happy.  
       (= \*John believes  $[_{CP} \text{that } [_{TP} \text{it seems } [_{TP} \text{David } [\text{to be happy}]]]]$ .)

We can also handle cases like the following if we assume that in English finite  $T^0$  must assign nominative and that case can only be assigned to an NP that doesn't already have case.

- (37) \*David<sub>i</sub> seemed  $[\text{that } t_i \text{ left}]$ .

## 4 Interactions between Passivization and Control, ECM, and Raising

### 4.1 Passivization and Control

#### 4.1.1 Subject Control Predicates

Most subject control predicates cannot be passivized. This is known as Visser's Generalization.

- (38) a. \*It was preferred  $[\text{PRO to go}]$ .  
       b. \*It was wanted  $[\text{PRO to go}]$ .  
       c. \*It was tried  $[\text{PRO to go}]$ .

The ungrammaticality of (38) cannot be attributed to the inability of implicit arguments to control - we know that implicit arguments can control PRO: The ship was sunk  $[\text{PRO to collect the insurance}]$ .

Visser's Generalization is brought out particularly nicely by the predicate *promise*. *Promise* can function as a subject control predicate but also as a ditransitive verb.

- (39) a. He promised David  $[\text{PRO to stay}]$ .  
       b. He promised David a new beginning.

Interestingly, the infinitival complement taking promise cannot be passivized while the ditransitive *promise* can be.

- (40) a. \*David was promised [PRO to stay].
- b. David was promised a new beginning.

But Visser's Generalization is not an exceptionless generalization. decide constitutes an exception to it:

- (41) It was decided [PRO to leave].

#### 4.1.2 Object Control Predicates

Object control predicates seem to passivize quite happily.

- (42) a. He was ordered [PRO to leave].
- b. He was persuaded [PRO to leave].
- c. He was permitted [PRO to leave].
- (and so for *instruct*, *allow*, *encourage*...)

The possibility of passivization is not surprising because these predicates satisfy general conditions on passivization and the control relationship is not disrupted by passivization.

## 4.2 Passivization and ECM

Several ECM predicates can be passivized.

- (43) a. He believes [David to be innocent].
- b. David<sub>i</sub> is believed [t<sub>i</sub> to be innocent].

The embedded clause may also be passivized leading to an interesting range of interactions:

- (44) a. He believes [David to have eaten the apple].
- b. He believes [the apple<sub>i</sub> to have been eaten t<sub>i</sub> by David].
- c. David<sub>i</sub> is believed [t<sub>i</sub> have eaten the apple].
- d. The apple<sub>i</sub> is believed [t<sub>i</sub> to have been eaten by David].

Not all ECM predicates passivize.

- (45) a. \*David<sub>i</sub> was wanted [t<sub>i</sub> to leave].  
(He wanted [David to leave].)
- b. \*David<sub>i</sub> would have been preferred [t<sub>i</sub> to be less possessive of him].  
(I would have preferred David to be less possessive of him.)

The failure of passivization and other interpretive properties of *want/prefer* have been used to argue that the infinitival complement of want/prefer might be a CP headed by a null *for* inspired by the idea that *want/prefer* can take *for*-CP complements. But then we need to say something more to explain the ungrammaticality of the following:

- (46) a. \*It was wanted [for [David to leave]].  
 b. \*It would have been preferred [for [David to be less possessive of him]].

The source of the ungrammaticality of (46) is mysterious but is probably related to the fact that (47) doesn't seem that great either.

- (47) a. \*It was wanted [for [David to leave]].  
 b. \*It would have been preferred [for [David to be less possessive of him]].

Finally, at least one ECM predicate that also takes for-CP complements can be passivized.

- (48) a. Makoto<sub>i</sub> was expected [t<sub>i</sub> to win].  
 b. I can't expect [him to accept everything].  
 c. I can't expect [for [him to accept everything]].

The picture all of this suggests is as follows:

- (49) a. *hope*: overt *for*-CPs, \*covert *for*-CPs, \*TPs  
 b. *want*, *prefer*: overt *for*-CPs, covert *for*-CPs, \*TPs  
 c. *expect*: overt *for*-CPs, covert *for*-CPs, TPs  
 d. *believe*: \*overt *for*-CPs, \*covert *for*-CPs, TPs

### 4.3 Passivization and Raising

Raising predicates are all unaccusatives. It is therefore unsurprising that they do not passivize.

- (50) \*David is seemed/appeared to be happy.

They can embed passive complements though.

- (51) The article<sub>i</sub> seems [t<sub>i</sub> to have been written t<sub>i</sub> by David].

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