24.910 Topics in Linguistic Theory: Propositional Attitudes
Spring 2009

# *Tough*-Constructions, Derived Subjects and Intervention Effects

## 1. Background: Thematic vs. Derived Subjects

➢ Raising vs. Control:

    (1)    a.    John is eager to leave.
            b.    John is likely to leave.

- Superficially similar, but structurally different.

    (2)    a.    *It is eager that John will leave.
            b.    It is likely that John will leave.

    - In (a), *eager* assigns a thematic role to *John.*
    - In (b), *likely* doesn't assign a thematic role to *John*.

        John is eager to leave   ➔   John is eager.

        John is likely to leave.   ⇸   #John is likely.

- *Likely* assigns one thematic role: a proposition.

        is likely [PROPOSITION]

- *Eager* assigns two thematic roles: an experiencer and a proposition.

        [EXPERIENCER] is eager [PROPOSITION]

- Control structure vs. raising structure:

                EXP        PROPOSITION            CONTROL
    (3)    a.    John$_i$ is eager [PRO$_i$ to leave].    (Thematic subject)
                               AGENT

                         PROPOSITION
        b.    ___ is likely [John to leave]
                       AGENT

                                    RAISING
        John$_i$ is likely [ $t_i$ to leave]   (Subject derived by movement)
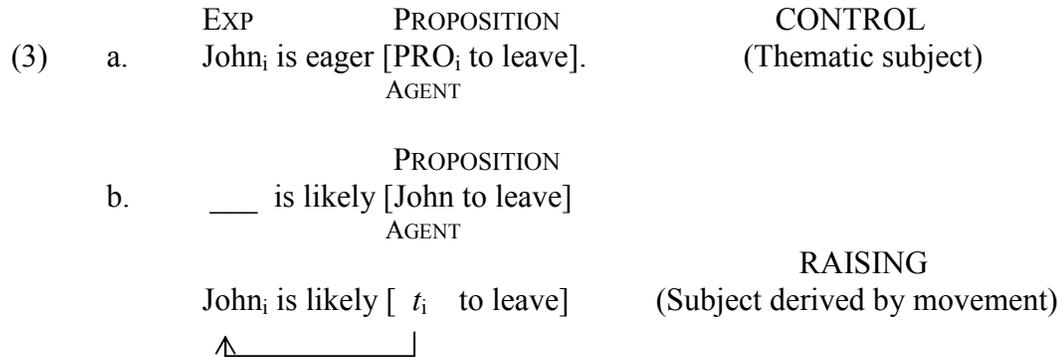
➢   Tests for distinguishing raising and control

• Idioms

    "The cat is out of the bag"
    "The shit hit the fan"

    RAISING
            The cat appears to be out of the bag.          *Literal or idiomatic reading*
            The shit is likely to hit the fan.

    CONTROL
            The cat wants to be out of the bag.            *Only literal reading.*
            The shit is eager to hit the fan.

• Expletive subjects

    "There is a student in the room"

    RAISING
            There is likely to be a student in the room.

    CONTROL
            *There tried to be a student in the room.

➢   Other raising and control predicates: Test for yourself!

| *appear* | *promise* | *hope* | *love* | *tend* | *forget* |
| *want* | *be certain* | *begin* | *seem* | *try* | *be about to* |


## 2. Background: Intervention Effects with Experiencers

An important phenomenon seen in raising to subject:

• "Intervention" by Experiencer DPs:  (cf. Chomsky 1995, Boeckx 2008)

    *An Experiencer DP in the main clause blocks movement to subject position.*

    SUBJ$_i$  PRED  [$_{CP}$ … $t_i$ …]                          OK

    SUBJ$_i$  PRED **EXP** [$_{CP}$ … $t_i$ …]                    *

- English subject-to-subject raising an exception, but in other languages, subject-to-subject raising cannot cross an experiencer in the higher clause.

- The experiencer blocks movement: an experiencer in the main clause makes raising impossible.

*French*

(4)  a.  Il      semble (au garçon) qu'elle a    du     talent.  ←
         expl.   seems   to.the boy  that-she has of-the talent.
         'It seems to the boy that she has talent.'

| **No raising.** |
| Experiencer OK |

     b.  Elle semble (*au garçon) avoir  du      talent.     ←
         She seems     to.the boy to.have of-the  talent.
         'She seems to the boy to have talent.'

| **Raising.** |
| Experiencer bad. |

*Italian*

(5)  a.  Sembra (a Maria) che Gianni è  stanco.
         seems   to Maria  that Gianni is tired      ←
         'It seems to Maria that Gianni is tired.'

| **No raising.** |
| Experiencer OK |

     b.  Gianni sembra (*a Maria) essere stanco
         Gianni seems    to Maria  to.be tired.      ←
         'Gianni seems to Maria to be tired.'

| **Raising.** |
| Experiencer bad. |

- (a) examples:  No movement across higher clause.  Experiencer is permitted.
- (b) examples:  Movement across higher clause. Experiencer is prohibited.

- (* It is a matter of some debate why this effect does not hold of English raising constructions.  I won't go into this here.  But English will become important below.)

## 3. Introducing *Tough*-Constructions

- An "unsolved mystery" in syntax for a long time.

Consider the following sentences:

(6)  a.   Mary is tough to please.
     b.   John is easy to fool.
     c.   This test will be impossible to fail.
     d.   Monsters are fun to draw.
     e.   Bill is depressing to listen to.
     f.   This book is important to read.        .

- What do they mean, intuitively?

- The subject of the embedded clause is PRO_{arb}.

What's intriguing about them?

- Gap in the object position of the embedded clause.  What is it?  Is it a trace of movement? Or some other empty category?

- Apparent non-thematic subject of the main clause.  Is it derived by movement?

(7)  a.     It is tough to please Mary.
     b.     It is easy to fool John.
     c.     It will be impossible to fail this test.
     d.     It is fun to draw monsters.
     e.     It is depressing to listen to Bill.
     f.     It is important to read this book.

(8)  a.     John is easy to fool.          ⇏     #John is easy.
     b.     This test is difficult to fail.  ⇏     This test is difficult.
                              *Etc.*

➤ The proper analysis of *tough*-constructions is a very open question!

Possible analyses:

➤ Derived-subject analysis

- Movement from object position of embedded clause to subject position of main clause.  A-movement, like subject-to-subject raising.

     ____   is easy [_{CP} PRO to please Mary]

     Mary_i is easy [_{CP} PRO to please   $t_i$   ]
          ⌐_____⌐

- The earliest analyses of tough constructions (Rosenbaum 1967, Postal 1971)

- Revived recently in "two-step" form (Brody 1993, Hornstein 2000, Hicks 2003)

     Mary_i is easy [_{CP} $t_i$ [_{TP} PRO to please   $t_i$   ]
          ⌐_____⌐⌐_____⌐

4

➢ Object deletion analysis

- No movement. The subject is base-generated. Assimilates *tough* constructions to sentences like (9), where the object gap is assumed to be the result of obligatory deletion under identity with the main subject.

(9)    a.    Mary is beautiful to look at [*e*].
       b.    John is too smart to fool [*e*].

Unlike *tough* constructions, these have clearly thematic subjects.

(10)   a.    *It is beautiful to look at Mary
       b.    *It is too smart to fool John.

- An older analysis (Lasnik and Fiengo 1974, Akmajian 1972).  Fallen out of favor.

➢ Null Operator Analsysis.

- The subject is base-generated.  The object gap in the embedded clause is a trace bound by a null wh-operator:

   Mary$_i$ is easy [$_{CP}$ Op$_i$ [$_{TP}$ PRO to please $t_i$]]

- The 'classic' GB analysis of Chomsky (1977, 1981).

- Assimilates tough-constructions to other cases of complex-predicates, e.g. relative clauses.

(11)   a.    John met [the woman I love].
       b.    Mary is [the woman to ask]

- Same binding relationship between the gap and a null operator.

   the girl [λx. I love x]

To recap:

➢    Object deletion analysis
           No movement.  Subject is base-generated.

➢    Derived-subject analysis
           Movement, crosses the main clause.

➢    Null-operator analysis
           Movement, but doesn't cross the main clause.  Subject is base-generated.

## 4. Experiencers and Intervention Effects in *Tough*-Constructions

- The intervention effect can help us choose between the analyses.

- To use the intervention effect to diagnose movement in *tough*-constructions, first we must introduce an experiencer.

- Both the expletive construction (a examples) and the movement construction (b examples) can optionally take a *"for*-DP" sequence.

(13)  a.  It is easy (for Mary) to please John.
      b.  John is easy (for Mary) to please.

(14)  a.  It will be hard (for the students) to fail the test.
      b.  The test will be hard (for the students) to fail.

But there is a structural ambiguity in these sentences!

Two "*for*"s in English:

| | |
|---|---|
| *"For"* the preposition | These flowers are [for Mary] |
| | Math is difficult [for John.] |
| | [For you,] I would do anything. |
| | |
| *"For"* the complementizer | I am eager [for Mary to win.] |
| | [For John to ace the test] would be surprising. |
| | I would hate [for you to have to wait a long time.] |

- The *for*-DP sequence (the "for-phrase") is potentially ambiguous between a PP experiencer in the matrix clause (15) and a complementizer-subject sequence in the embedded clause (16).

(15)  a.  It is easy [$_{PP}$ for Mary$_i$] [PRO$_i$ to talk to John]
      b.  John is easy [$_{PP}$ for Mary$_i$] [PRO$_i$ to talk to___]

(16)  a.  It is easy [$_{CP}$ for Mary to talk to John]
      b.  John is easy [$_{CP}$ for Mary to talk to ___]

➤ If the matrix subject is derived by movement, the structure in (15b) will constitute an environment for intervention by the experiencer.

➤ However, any intervention effect would be impossible to detect from the examples examples above, since the offending structure in (15b) is surface-identical to the benign structure in (16b).

➢ There are cases that can be used to resolve the ambiguity in favor of the structure in (15). The predictions for such cases are clear:

➢ If *tough* constructions involve a derived subject, then we should uncover an intervention effect. (The expletive construction should be grammatical and the *tough* construction should be ungrammatical.)

➢ On the other hand, if *tough* constructions involve a matrix subject that is base-generated, then no intervention effect should be uncovered. (Both the expletive construction and the *tough* construction should be grammatical.)

PREDICTIONS

| | **Expletive Construction** | | **Tough-construction** | |
|---|---|---|---|---|
| | No Exp | Exp | No Exp | Exp |
| **Object deletion** | | | | |
| **Null-operator** | | | | |
| **Derived Subject** | | | | |

LOOKING FOR EVIDENCE:

**4.1  Evidence from other prepositions in English**

• The ambiguity between (15) and (16) arises only because, in English, the preposition used to introduce experiencers is homophonous with the complementizer *for*.

• Less frequently, other prepositions may be used to introduce experiencers:

(17)  a.      It is important to John to avoid cholesterol.
        b.      It is annoying to the girls to make small-talk.
        c.      It was tough on me to lose my wife.

• Since these prepositions are *not* homophonous with complementizers, a *to*-DP or *on*-DP sequence is unambiguously a PP, and the experiencer contained in it should block *tough* movement.

• This is indeed the case: these prepositions are compatible with the expletive construction (*a* examples) but incompatible with the movement construction (*b* examples).

(18)    a.    It is important (to Mary) to avoid cholesterol.
        b.    Cholesterol is important (*to Mary) to avoid.

(19)    a.    It is enjoyable (to John) eat strawberries.
        b.    Strawberries are enjoyable (*to John) to eat.

(20)    a.    It is annoying (to those boys) to talk to John.
        b.    John is annoying (*to those boys) to talk to.

(21)    a.    It was hard (on me) to give up sugar.
        b.    Sugar was hard (*on me) to give up.

SUMMARY

| Expletive Construction | | Tough-construction | |
|---|---|---|---|
| No Exp | Exp | No Exp | Exp |
| OK | OK | OK | BAD |


## 4.2 Evidence from Romance

A similar effect is observed when we examine *tough* constructions in French and Italian, languages in which the preposition used to introduce experiencers is *never* homophonous with a complementizer.

- Here, P-DP sequences are unambiguously PPs, so we predict that the DPs they contain should act as interveners to *tough* movement.

- This prediction is confirmed by the data. The experiencer is allowed in the expletive construction (a examples), but not in the *tough* construction (b examples):

(22)    a.    Il est difficile (pour les chiens) de  voir cette couleur.              *French*
              It is  difficult  for  the dogs   DE see this  color
              'It is difficult for dogs to see this color'

        b.    Cette couleur est difficile (*pour les chiens) a voir.
              This  color    is  difficult  for    the dogs  A see.
              'This color is difficult for dogs to see.'

(23)    a.    Il est difficile (pour les estudiants) de  comprendre le   problème.
              It is  difficult  for   the students  DE understand  the  problem
              'It is difficult for the students to understand the problem.'

        b.    Le problème est difficile (*pour les etudiants) a  comprendre.
              The problem is difficult   for  the students  A  understand.
              'The problem is difficult for the students to understand.'

(24)   a.      È difficile (per i   cani)  vedere questi colori.                    *Italian*
               Is difficult  for the dogs  see    these   colors.
               'It is difficult for dogs to see these colors.'

       b.      Questi colori  sono difficili (*per i   cani)  da  vedere.
               These   colors are  difficult   for the dogs  DA  see.
               'These colors are difficult for dogs to see.'

(25)   a.      È impossibile (per gli studenti)  capire        questi  problemi.
               Is impossible  for  the students  understand  these   problems.
               'It is impossible for the students to understand these problems.'

       b.      Questi problemi sono impossibili (*per gli studenti)  da   capire
               These problems are    impossible   for the students   DA understand
               'These problems are impossible for the students to understand.'

| SUMMARY | Expletive Construction | | Tough-construction | |
|---|---|---|---|---|
| | No Exp | Exp | No Exp | Exp |
| | OK | OK | OK | BAD |


## 4.3 Evidence from 2 *for*-phrases

- There is nothing semantically deviant about two for- phrases in the tough paradigm. The expletive construction allows it:

(26)   It is easy for the rich for the poor to do the work.
       It is convenient for John for Mary to bring the wine.

- Crucially, one of the for- phrases must be analyzed as a matrix-adjoined PP, and this should block tough-movement.

- We thus predict that the expletive construction, but not the movement construction, should be compatible with two for- phrases.

Let's test:

(27)  a.      It is easy [PP for the rich] [CP for the poor to do the work]
      b.      *The work is easy [PP for the rich] [CP for the poor to do __]

(28)  a.      It is convenient [PP for John] [CP for Mary to bring the wine].
      b.      *The wine is convenient [PP for John] [CP for Mary to bring __].


SUMMARY

| Expletive Construction | | Tough-construction | |
| --- | --- | --- | --- |
| No Exp | Exp | No Exp | Exp |
| OK | OK | OK | BAD |

## **Lesson:**

Intervention effects in *tough*-constructions diagnose movement across the main clause, and support the derived subject analysis over analyses that take the subject to be base-generated.