Properties of $\overline{\text{A}}$-movement

☞ Case study for Wednesday: Defaka (Bennett et al., 2012).

1 Back in the land of transformations

(1) **Two Movement Rules (transformations)**
   a. Move NP. ["NP" = something with ϕ-features]
   b. Move *wh*-phrase. ["*wh*-phrase" = something with *wh*-features]

Today we would call the former A-movement and the latter $\overline{\text{A}}$-movement. These movements differ in several ways, one of which is how local they are:

(2) **NP-movement cannot cross a finite clause boundary**
   a. John was likely *t* to win.
   b. * John was likely that *t* won.

(3) ***Wh*-movement is unbounded**
   a. *What* did he say that he read *t*?
   b. *What* are they claiming that she believes that he said that he read *t*?

But *wh*-movement is not unrestricted. It is sensitive to islands (Ross, 1967).

(4) **The Complex NP Constraint**
   a. * *How many cities* does John have brothers [who live in *t*]?
   b. * *What* does John believe [the report [that Mary bought *t*]]?

(5) ***Wh*-Island**
   * *What* does John wonder [*where* Mary went to buy *t*]?

To account for these islands, Chomsky proposes the subjacency rule:

(6) **Subjacency** (Chomsky, 1973)
   No movement rule may involve X and Y in:
   ... X ... [$_\alpha$ ... [$_\beta$ ... Y ...] ...] ... X ...
   where α and β are bounding nodes.[1]

[1] For Chomsky (1977): NP and $\overline{\text{S}}$. In the current literature: CP, DP, *v*P.

(7) **Escape hatches:**
Apparent unbounded *wh*-movement proceeds through COMP (read: "Spec,CP"). There is only one COMP per clause.

(8) *Who* do [$_{TP}$ you believe [$_{CP}$ *t* that [$_{TP}$ Mary said [$_{CP}$ *t* that [$_{TP}$ Sue thinks [$_{CP}$ *t* that [$_{TP}$ John will visit *t*]]]]]?
Movement of *who* never violates Subjacency, since it proceeds through COMP.

(9) **Characteristics of *wh*-movement** cf Chomsky (1977), (49)[2]
   a. It leaves a gap
   b. It observes the Complex NP Constraint
   c. It observes *wh*-island constraints

(10) **Goal of the paper:**
"Where we find the configuration [(9)] in some system of data, can we explain it on the assumption that the configuration results from wh-movement?"

One other relevant property of *wh*-movement:

(11) **Strong Crossover affects *wh*-movement**
No *wh*-movement across a co-indexed, c-commanding pronoun.
   a. * *Who*$_i$ does he$_i$ think [t_i won the game]?
   b. *Who*$_i$ t_i thinks that he$_i$ left?
   c. * *Who*$_i$ does he$_i$ think [you saw t_i]?
   d. *Who*$_i$ t_i thinks that you saw him$_i$?

(12) **No SCO with A-movement**
   a. David$_i$ seems to himself$_i$ [t_i to be a genius].
   b. David$_i$'s wife seems to him$_i$ [t_i to be a genius].

[2]Chomsky mentions another property of *wh*-movement: "Where there is a "bridge," there is an apparent violation of subjacency, PIC, and SSC." Bridge verbs are verbs like *say, think*, which have been argued to be better embedders of questions than verbs like *whisper, murmur* (Erteschik-Shir, 1973). The SSC and PIC have been subsumed by other constraints in the current literature, so they are not going to be relevant for our discussion. For reference, the rules are:

(i) **SSC/PIC**
No movement rule may involve X and Y in:
... X ... [$_\alpha$ ... Y ...] ... X ...
where α contains a [subject that c-commands Y] or is "propositional."
(where Y is not in COMP of X.)

2 Lots of things are "*wh*-movement"

Chomsky shows that if we consider the characteristics in (9), we find that a whole host of movement phenomena can be interpreted as "*wh*-movement" (=$\overline{\text{A}}$-movement).

- ☞ Comparatives
- ☞ Topicalization
- ☞ *It* clefts
- ☞ Relative clauses and indirect questions
- ☞ *Tough* movement

2.1 Comparatives

In the literature at the time: it was speculated that the gap in comparative constructions arises through deletion. However, comparatives show the properties of *wh*-movement.

(13) **Overt *wh*-word may show up** [(51)]
  a. John is taller than (*what*) Mary is.
  b. John is taller than (*what*) Mary told us that Bill is.

(14) **Shows bridge/non-bridge and other island contrasts:** [(52)]
  a. Mary isn't the same as [she was five *t* years ago]
  b. Mary isn't the same as [John believes [that Bill claimed [that she was *t* five years ago]]
  c. * Mary isn't the same as [John believes [Bill's claim [that she was *t* five years ago]]]
  d. * Mary isn't the same as [I wonder [whether she was *t* five years ago]]

(15) **Strong crossover in comparatives (Bresnan, 1975)**
  a. More students$_i$ flunked than *t* thought they$_i$ would (flunk).
  b. * More students$_i$ flunked than they$_i$ thought *t* would (flunk).

(16) **Chomsky's analysis:**
  a. More students flunked than [[~~*wh*-many (students)~~] [*t* thought [they would flunk]]]
  b. More students flunked than [[~~*wh*-many (students)~~] [they thought [*t* would flunk]]]

(17) **A more modern take on an analysis:**
  a. Assume a two-place semantics for *more*:
  $[\![\text{-}er]\!] = \lambda \text{D}_{\langle d,t\rangle}.\ \lambda \text{D}'_{\langle d,t\rangle}.\ max(\text{D}) < max(\text{D}')$
  b. Assume an LF:[3]
  (i) [$_{DegP}$ *-er*]$_1$ [t$_1$ students flunked]
  (ii) [$_{DegP}$ *-er* [$_{\text{late-merged}}$ than thought they would flunk]]$_1$ [t$_1$ students flunked]
  (iii) [*-er*][$\lambda d'$. [*d'-many* students [...*gap*...]]] [λd. *d*-many students flunked]

[3]There is magic here, in particular involving the structure of the 'than' clause and where it appears at LF (and where it's pronounced). I assume a structure where *-er* QRs from its position as the sister of the subject into the matrix, and the rest of the than-clause is late merged. See Bhatt and Pancheva (2004) for details.

2.2 Topicalization

Is topicalization just like left-dislocation?

(18) **Left-dislocation:**
  a. This book, I think you should read it.
  b. As for this book, I think you should read it.

No! Left-dislocation does not look like movement, but topicalization does.

(19) **Topicalization shows bridge/non-bridge and other island contrasts**
  a. This book, I really like *t*.
  b. This book, I asked Bill to get his students to read *t*.
  c. * This book, I accept the argument that John should read *t*.
  d. * This book, I wonder who read *t*.

(20) **...unlike Left dislocation**
  c. As for this book, I accept the argument that John should read it.
  d. This book, I wonder who read it.

(21) **Some Phrase Structure rules**
  a. S″ → TOP S′
  b. S′ → COMP S
  c. S′ → COMP S″

→ Topic recursion allowed by the combination of rules (a) and (c).
→ The S′ introduced by rule (a) could be a *wh*-clause.
  This yields the Topicalization construction if *wh*-deletion is obligatory / TOP ____.
→ If the S′ introduced by rule (a) is not a *wh*-clause, we get a Left Dislocation construction.

(22) **Topics and left-dislocated phrases:**
  a. [$_{S''}$ [$_{\text{TOP}}$ As for this book,] [$_{S'}$ COMP [$_{S}$ John will definitely have to read it]]]]. (a)+(b)
  b. [$_{S''}$ [$_{\text{TOP}}$ This book,] [$_{S'}$ ~~*what*~~ [$_{S}$ John will definitely have to read *t*]]]]]. (a)+(b)
  c. [$_{S''}$ [$_{\text{TOP}}$ As for John,] [$_{S'}$ COMP [$_{S''}$ [$_{\text{TOP}}$ as far as this book is concerned,] [$_{S'}$ COMP [$_{S}$ he will definitely have to read it]]]]]. (a)+(c)+(a)+(b), [cf (68)]
  d. [$_{S''}$ [$_{\text{TOP}}$ As for John,] [$_{S'}$ COMP [$_{S''}$ [$_{\text{TOP}}$ this book,] [$_{S'}$ ~~*what*~~ [$_{S}$ he will definitely have to read *t*]]]]]. (a)+(c)+(a)+(b)
  e. * [$_{S''}$ [$_{\text{TOP}}$ John,] [$_{S'}$ ~~*who*~~ [$_{S''}$ [$_{\text{TOP}}$ this book], ~~*what*~~ *t* will definitely have to read *t*].[4]

[4]That this is impossible is mysterious, given our rules. Perhaps *wh*-movement cannot cross S″.

2.3 Indirect Questions and Infinitival Relative Clauses

Questions

(23) **Finite indirect questions show bridge/non-bridge and other island contrasts**
  a. I wonder [*who* John saw *t*].
  b. I wonder [*who* John believed [that Mary would claim [that Bill would visit *t*.
  c. * I wonder [*who* John believed [the claim [that Bill would visit *t*]]].
  d. * *Who*$_2$ did you wonder [*who*$_1$ t_1 saw t_2].

(24) **Infinitival indirect questions show bridge/non-bridge and other island contrasts**
  a. I wonder [*who* to see *t*].
  b. I wonder [*who* to order Mary [to promise [to visit *t*]]].
  c. I wonder [*who* to persuade Mary [that she should promise [to visit *t*]]].
  d. * I wonder [*who* to insist on [the principle [that Bill should visit *t*]]].
  e. * *Who*$_2$ do you wonder [*what*$_1$ to give t_1 to t_2].
  f. * *What*$_2$ do you wonder [[*to whom*]$_1$ to give t_2 t_1].

Inifitival Relative clauses

(25) **Infinitival relative clauses show bridge/non-bridge and other island contrasts**
  a. I found a book for you to read *t*.
  b. I found a book for you to arrange for Mary to tell Bill to give *t* to Tom.
  c. I found a book for you to insist that Bill should read *t*.
  d. I found a book for you to insist that Bill tell Mary that Tom should read *t*.
  e. * I found a book for you to insist on the principle that Tom should read *t*.
  f. * *Who* did he find a book (for) *t* to read?

What can be pronounced in COMP is different in finite and infinitival relative clauses.

Finite Relative clauses

Both *wh* and *that* cannot be pronounced. Either one could be targeted for deletion, except when deletion is non-recoverable (=when pied-piping is involved), then pronounce *wh*.

(26) a. the person [(*whom*/that/**whom* that) I met *t*]
  b. the person [*with whom* (*that) I met *t*]

Infinitival Relative clauses

Deletion of *wh* is obligatory in infinitival relatives, except when deletion is non-recoverable [p. 98]. *For* obligatorily deletes before PRO.

(27) a. a person [(**whom*) for Mary to invite *t* to the party]
  b. a person [(**whom*) (*for) PRO to invite *t* to the party]
  c. a person [*with whom* (*for) PRO to speak *t* at the party]

3 *It*-clefts as overt focus movement

(28) **Cleft sentences show bridge/non-bridge and other island contrasts**
  a. It is this book that I really like *t*.
  b. It is this book that I asked Bill to get his students to read *t*.
  c. * It is this book that I accept the argument that John should read *t*.
  d. * It is this book that I wonder *who* read *t*.

(29) **Analysis of clefts:**
It is S".
  a. the S' must show *wh*-movement;
  b. COMP (for some speakers) must not become "terminally null" (=unpronounced).

(30) **Pseudo-clefts**
  a. This book is *what* I really like *t*.
  b. This book is *what* I asked Bill to get his students to read *t*.
  c. * This book is *what* I accept the argument that John should read *t*.
  d. * This book is *what* I wonder *who* read *t*.

(31) **Analysis of pseudo-clefts:**
NP is S'
S' must show *wh*-movement;

4 Properties of in-situ focus

Question: Does in-situ focus involve covert *wh*-movement?

4.1 Adverb *only* (and *even*)

Widely believed answer, since Jackendoff (1972); Anderson (1972), see also Rooth (1985), many others: adverb *only* is not island-sensitive. Therefore, it can't be the case that the associate of *only* moves covertly.

(32) a. Dr. Svenson *only* rejected the proposal that [John]F submitted. (Rooth, 1996)
  b. * [Which student]$_1$ did Dr. Svenson reject [the proposal that t_1 submitted]?

(33) Anderson (1972):
  a. You can do lots of things with bananas. I *even* know a guy who smokes$_F$ them.
  b. I don't know anyone who grows bananas, I *only* know a guy who smokes$_F$ them.
  c. * What do you know a guy who does with bananas *t*?
  d. John *even* has the idea that he$_F$ is tall for a Watusi.

4.2 Constituent *only*

Recall: constituent *only* in non-subject position introduces scope ambiguities:

(34) We are required to study [*only* [syntax]$_F$]. (Rooth, 1985, p. 90)
   a. required > *only*:
   We are required to *not* study {semantics, phonology,...}.
   $\iff$ we are not allowed to study {semantics, phonology,...}.
   b. *only* > required:
   We are *not* required to not study {semantics, phonology,...}.

Only is sensitive to the *wh*-island constraint. (35) is unambiguous, with the reading in (35a) but not (35b).

(35) Mary showed John how to study *only* syntax$_F$.
   a. = Mary showed John how to *only* study syntax$_F$.
   b. $\neq$ Mary *only* showed John how to study syntax$_F$.

(36) I knew (that) he had learnt [*only* [Spanish]$_F$] (Taglicht, 1984, p. 150)
   a. knew > *only*:
   I knew he *hadn't* learnt any other language.
   b. *only* > knew:
   I *didn't* know he had learnt any other language.

Only is sensitive to CNPC: (37a) has unambiguous scope.

(37) I knew the fact that he studied *only* Spanish$_F$.
   a. = I knew the fact that he *only* studied Spanish$_F$.
   b. $\neq$ I *only* knew the fact that he studied Spanish$_F$.

Judgments?

(38) a. Dr. Jones rejected [the proposal [that *only* John$_F$ submitted]]
   b. I don't know anyone who grows bananas, I know a guy who *only* smokes$_F$ them.

4.3 Free focus

Similarly seems insensitive to islands.

(39) **Focus within complex NP:**
John announced a plan to steal five$_F$ cars tonight.
$\rightsquigarrow$ He did not announce a plan to steal six$_F$ cars...

(40) **Focus within a *wh*-island:**
I wonder what to write with the [red]$_F$ pen.
$\rightsquigarrow$ I do not wonder what to write with the [black]$_F$ pen.

Cf explicit contrasts (Drubig, 1994; Krifka, 2006). In English, such expressions are marked by *but* and involve focus-sensitive negation. The contrasting expression is focused as well.

(41) a. Mary didn't invite Jóhn$_F$ to the party, but she invited Bíll$_F$.
b. Mary didn't invite Jóhn$_F$ to the party, but Bíll$_F$

Complete reduction is blocked if the focus of the first clause is properly contained within a syntactic island.

(42) Mary didn't invite [the man in a bláck$_F$ suit] to the party, but
a. she invited the man in a púrple$_F$ suit.
b. the man in a púrple$_F$ suit.
c. * in a púrple$_F$ suit.
d. * a púrple$_F$ suit.
e. * púrple$_F$.

(43) John doesn't wonder who saw Mary$_F$, but
a. (he) wonders who saw Jane$_F$.
b. who saw Jane$_F$.
c. * Jane$_F$.

(44) John didn't tell you when to fix the car slowly$_F$, but
a. when to fix it quickly$_F$.
b. * quickly$_F$.

(45) John didn't review the books that were written by Chomsky$_F$, but
a. the books that were written by Quine$_F$.
b. * by Quine$_F$.

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