On Sub-extraction from Phase Edges

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Chomsky (2005): edges create a locality problem

Causes of syntactic opacity

Pure locality:
  a) Minimal Link Condition (A-over-A Principle)
  b) Internal part of phase edges are opaque (see Chomsky 2005)

Freezing:
  a) ϕ-driven (Activity Condition; see Boeckx 2003 and Chomsky 2005)
  b) Op-driven (Neg/-Wh/-Focus/-etc. – Criteria; see Rizzi 2004)
  c) Transfer-driven (PIC/MSO; see Chomsky 2004 and Uriagereka 1999)

1. The Subject Condition

Chomsky’s (2005) analysis

“Freezing” in derived positions (i.e., SPEC-Tϕ-complete)
(see Boeckx 2003, Ormazábal et al. 1994, Rizzi 2004, Stepanov 2001, Takahashi 1994, i.a.)

“Freezing”

(1)    [CP  C  [TP  [DP  α  …]  [vP  t  …] ]]
T_ϕ-complete vs. T_ϕ-defective

(2)

a. *[CP [Of which car] z did [TP [the driver t_z ]; [ϕP t_i cause a scandal]]]?
b. [CP [Of which car] z is [TP [the driver t_z ]; likely [TP t_i to [ϕP t_i cause a scandal]]]]?
c. [CP [Of which car] z did they believe [the driver t_z ]; [TP t_i to [ϕP t_i have caused a scandal]]]?

[from Chomsky 2005]

A-Movement

A’-Movement

De-Activation Effect / Activity Condition
(see Boeckx 2003 and Chomsky 2000; 2001; 2004; 2005)

If an element α undergoes A-Movement (i.e., triggered by a ϕ-Probe), it gets frozen: neither it nor any of its parts can undergo further movement operations. In its derived position, α is rendered “ϕ-complete”, and cannot participate in any other computational operation.

“Freezing” at phase edges (see Chomsky 2005, Uriagereka 1999)

SPEC-ν* (in situ subjects)

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SPEC-v* (Spanish a-marked objects and Agreeing objects in Basque)

(6) ??/*¿ [CP [De qué estudiante]i has criticado [vP [a los padres t]i ]]?  (Spanish)
Of what student have-2SG criticized to the parents
"Which student have you criticized the parents of?"

(7) *CP [Noren i ikusi ditu [ti argazkiak] Jonek?  (Basque)
Who-GEN see-3SG/Obj-AUX-3SG/Subj pictures-ABS Jon-ERG
"Of whom has Jon seen pictures?"
[from Uriagereka 2004]

SPEC-C

(8) Wh-phrases
a. ?? Who, do you wonder [CP [which picture of t_z]i Mary bought t_i]]?
b. ?? Who, do you wonder [CP [which picture of t_z]i t_i is on sale]]?  
[from Lasnik & Saito 1992]

(9) Topics (1)
a. *De quin escriptor, dius [CP que [llibres t_i] ja no en vols t_i]?  (Catalan)
Of what writer say-2SG that books already not CL-of them want-2SG
"Of what writer do you say that books you do not want any more?"
b. *De quin escriptor, dius [CP que [novel.les t_i] ja no en llegeix t_i]?  (Catalan)
Of what writer say-2SG that novels already not CL-of them read-3SG
"Of what writer does Mary say that novels she does not read any more?"

(10) Topics (2)
a. ??Vowel harmony_x, I think [CP that [articles about t_x]i you should read t_i carefully]
b. ??Who do you think [CP that [pictures of t_x]i, John wanted,]  
[from Lasnik & Saito 1992]

Problematic cases

(11)
a. ¿[CP [De qué equipo]i han protestado [los/muchos jugadores t_i ]]?  (Spanish)
Of what team have-3PL protested the/many players
"Which team have the/many players of protested?"
b. ¿[CP [De qué universidad]i te respetan [los/muchos estudiantes t_i ]]?  (Spanish)
Of what university CL-you respect-3PL the/many students
"Which university do the/many students of respect you?"
2. Sub-extraction in Spanish

2.1. Sub-extraction from objects

 đòi SUB-extraction from unaccusative and passive structures

a. Of what linguist have-3PL arrived already many books
   “Which linguist have many books by already arrived?”
   [from Torrego 1985]

b. Of what writer have-3PL been sold many novels
   “Which writer have many novels by been sold?”
   [from Rizzi 2004]
Sub-extraction from transitive structures

(16)
a. ¿[CP [De qué lingüista, vais a leer [vP [muchos artículos t₁ ] ]]? (Spanish)
   “Of what linguist AUX-2PL to-to-read many papers
   “Which linguist are you going to read many papers by?”
b. ??/*¿[CP [De qué estudiante]i has criticado [vP [a los padres t₁ ] ]]? (Spanish)
   “Of what student have-2SG criticized to the parents
   “Which student have you criticized the parents of?”

2.2. Sub-extraction from subjects

Sub-extraction from SPEC-v* (postverbal subjects)

(17)
a. ¿[CP De qué equipo, han protestado [los/muchos jugadores t₁ ]]? (Spanish)
   “Of what team have-3PL protested the/many players
   “Which team have the/many players of protested?”
b. ¿ [CP De qué universidad, te respetan [los/muchos estudiantes t₁ ]]? (Spanish)
   “Of what university CL-you respect-3PL the/many students
   “Which university do the/many students of respect you?”

Sub-extraction from SPEC-T (preverbal subjects)

(18)
a. ¿[CP [De qué conferenciantes], te parece [CP que [TP me van a impresionar
   the proposals
   “Which speakers does it seem to you that the proposals by will impress me?”
   [vP [las propuestas t₁ ] ]]]? (from Uriagereka 1988)
b. *¿[CP [De qué conferenciantes], te parece [CP que [TP [las propuestas t₁ ] me
   go-3SG to-to-impress
   “Which speakers does it seem to you that the proposals by will impress me?”
   van a impresionar [vP t₁ ] ]]]?
SPEC-T as a hybrid edge (see Gallego 2006a; 2006b)

1 A-properties

Agreement (see Camacho 2003)

(19)  

a. [Han/ha] llegado tu padre y tu hermano.  
    Have{3PL/3SG} arrived your father and your brother  
    “Your father and your brother have arrived”

b. Tu padre y tu hermano [han/*ha] llegado.  
    Your father and your brother have{3PL/3SG} arrived  
    “Your father and your brother have arrived”

Binding

(20) Juani se peina a sí mismoi  
    Juan CL-self comb-3SG to himself  
    “Juan combs himself”

Control

(21) Juani quiere [ PROi salir con María]  
    Juan want-3SG to-go-out with María  
    “Juan wants to go out with María”

2 A’-properties

Surface semantic effects

(22)  

a. María canta.  
    María sings-3SG  
    ‘María sings’ (=María is a singer)

b. Mira: canta María, como cada vez que está contenta!  
    Look: sings-3SG María, as every time that be-3SG happy  
    ‘Look: María is singing, as she always does when she is happy’
(23)

**Phase Sliding**

(see Chomsky 1986; 1993)

\[
\begin{array}{c}
\text{TP} \\
\text{T} \\
\v^*P \\
\text{Subj} \\
\v^*V_1 \\
\text{VP} \\
\text{t}_j \\
\text{Obj} \\
\Rightarrow \\
\text{v}^*/\text{TP} \\
\text{v}_1^*/\text{T} \\
\text{Subj} \\
\v^*V \\
\text{t}_i \\
\text{VP} \\
\text{t}_i \\
\text{Obj}
\end{array}
\]

- **Edges in Syntax**
- **Complement Domain**

\[\text{Intervention effects}\]

(24) \[\left[\left[\text{TP} T \left[\v^*P \text{Obj} \right] \left[\v^* \text{Subj} \left[\v^* \left[\text{VP} t_i \right] \right] \right] \right] \right]\]

\[\downarrow\downarrow\downarrow\downarrow\downarrow\downarrow\]

(25) Compró el coche María.

"Maria bought the car"

- Two possible sources:
  1. VP-topicalization
  2. Object scrambling (see Ordóñez 1998)

(26)

a. Recogió cada coche su propio dueño.

"Its owner picked each car up"

b. No regañó a ningún niño su madre.

"His mother did not scold any child"
(27)  a. (Ayer) Estaba Juan leyendo un libro. (Spanish)  
   (Yesterday) Was-3SG Juan reading a book  
   “Yesterday, Juan was reading a book”  
   b. *(Ayer) Estaba un libro Juan leyendo. (Spanish)  
   (Yesterday) Was-3SG a book Juan reading  
   “Yesterday, Juan was reading a book”

2.3. Sub-extraction from SPEC-C

‡ The issue
   -A locality problem with phase edges?  
   -An A-over-A Principle violation? (see Chomsky 1973)

(28)  a. ??[ Who$_z$ do you wonder [CP [which picture of t$_z$] Mary bought t$_i$] ]?  
   b. ??[ Who$_z$ do you wonder [CP [which picture of t$_z$] t$_i$ is on sale] ]?  
   [from Lasnik & Saito 1992]

(29)  a. ??Esta es la autora [CP [de la que] [TP varias traducciones t$_i$] han ganado [v$_{TP}$ t$_j$  
   This is-3SG the author of the which several translations have-3PL won  
   premios internacionales ]]]  
   awards international  
   “This is the author whom several translations by have won international  
   awards”  
   b. ¿[ De qué autora$_z$ no sabes [ [qué traducciones t$_z$] [v$_{TP}$ t$_i$ están a la venta]]]?  
   Of what author not know-2SG you which translations are-3PL to the sale  
   “Which author don’t you know which translations by are on sale?”  
   [from Torrego 1985]

‡ A parsing (filler-gap) problem

(30)  2 possible analyses for verbs like decir, preguntar, saber, etc.

a. [VP [V X de Y ] ]  

b. [VP [ [V X] [de Y ] ] ]  
   aboutness phrase
(31) ¿De qué escritor dijo Juan qué novelas había leído? (Spanish)
   “Which writer had Juan said which novels by he had read?”

(32)
   a. Juan dijo \([\text{CP [qué novelas [de Javier Marías]] ] habida leído}\) (Spanish)
      “Juan said which novels by Javier Marías he had read”
   b. Juan dijo \([\text{de Javier Marías} [\text{CP [qué novelas] ] ha leído}\) (Spanish)
      “Juan said, about Javier Marías, which novels by him he had read”

1. Binding

(33)
   a. ¿[[De qué fotografías de sí misma ] ha oído María ha oído habladurías t_i ]? (Spanish)
      “Of which photographs of herself has María heard nasty comments?”
   b. *¿[[De qué fotos de sí misma ]_z dijiste [[qué habladurías t_i ] ha oído María t_i ]]? (Spanish)
      “Which photos of herself did you say which nasty comments of María has heard?”

2. Filling the gap

(34) Ana preguntó [de María] [[qué novelas de Javier Marías] había leído]
    “About María, Ana asked which novels by JM she had read”

(35) *[De qué escritor]_z preguntó Ana [de María] [qué novelas t_z], había leído t_i ]? (Spanish)
    “Which writer did Ana ask about María which novels by she had read?”
Appendix on the Subject Condition: Phase Sliding or pied-piping effects?

(36) (=11)
(a) ¿[CP [De qué equipo] han protestado [los/ muchos jugadores]]? (Spanish)
   Of what team have-3PL protested the/many players
   “Which team have the/many players of protested?”
(b) ¿[CP [De qué universidad] te respetan [los/ muchos estudiantes]]? (Spanish)
   Of what university CL-you respect-3PL the/many students
   “Which university do the/many students of respect you?”

(37) (=12)
(a) *[CP Wat zijn [TP [voor rare verhalen]] [vP jouw vader verteld]]? (Dutch)
   What are for strange stories your father told
   “What kind of strange stories have been told to your father?”
(b) [CP Wat hebben [TP er [vP [voor mensen]] je moeder bezocht]]? (Dutch)
   What have-3PL there for people your mother visited
   “What sorts of people have visited your mother?”
   [from Broekhuis 2006]

(38)
(a) *[CP [Of which car] did [TP [the (driver, picture)]] [vP t cause a scandal]]? (Dutch)
(b) [CP [Of which car] was [TP [the (driver, picture)]] [vP awarded t a prize]]? (Dutch)
   [from Chomsky 2005]

(39)
(a) [CP [Of whom] was [TP [a picture]] [vP taken t]]
(b) *[CP Who was [TP [a picture]] [vP taken t]]
3. Conclusions

3.1. Sub-extraction problems arise at particular SPECs:
   - SPECs of \( \varphi \)-complete functional heads (i.e., Activity Condition)
   - SPECs which create an interpretive effect of the Criterion sort.

3.2. There seems to be no need to invoke independent locality problems within phase edges (contra Chomsky 2005).

3.3. Although languages like Spanish seem to contradict Chomsky’s (2005) analysis, this is not so if data are considered in more detail. Nevertheless, note that while the Subject Condition case might follow from the “Phase Sliding” mechanism (still consistent Chomsky’s 2005 analysis), the Torrego (1985) facts are not real: elements moved to SPEC-C do block sub-extraction, but not necessarily because of locality problems in the internal part of edges (Chomsky’s 2005 claim), but rather because of (a) a violation of the A-over-A Principle or (b) Criterial Freezing effects, in Rizzi’s 2004 sense.
REFERENCES
Gallego, Angel J. (2006b): “Phase Sliding”, Ms., UAB/UMD.
Uriagereka, Juan (2004): “Spell-out Consequences”, Ms., UMD.