Wh-movement, Islands, Incorporation and Covert Movement

1. The possibility of "successive-cyclic" *wh*-movement

Can *wh* move to the closest C — whether interrogative or not?

- **Answer: yes it can (many of us think)**
- This is called the "**successive cyclic**" property of *wh*-movement.
- *Wh*-phrases can hop from specifier of CP to specifier of CP.

West Ulster English

(1) a. What-all did he say [$_{CP}$ __ (that) he wanted__]?
b. What- did he say [$_{CP}$ __ (that) he wanted __-all]?
c. What- did he say [$_{CP}$ __-all (that) he wanted __]?

(2) a. What were you trying [$_{CP}$ __all to say __]?
b. What did you mean [$_{CP}$ __-all for me to do __]?

(3) a. What-all do you think (that) he'll say (that) we should buy *t?*
b. What- do you think -all (that) he'll say (that) we should buy *t?*
c. What- do you think (that) he'll say -all (that) we should buy *t?*
d. What- do you think (that) he'll say (that) we should buy -all?

(4) a. Who- did you arrange -all for your mother to meet at the party?
b. *Who- did you arrange for your mother -all to meet at the party?
[James McCloskey (2002) "Quantifier Float and *Wh*-Movement in an Irish English". *Linguistic Inquiry* 31:57-84.]

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(5) **Binding evidence:**
a. [$_1$Tom asked [$_2$ [which picture of himself] Mary thought [$_3$ __ that the kids liked __]]]
b. [$_1$Tom asked [$_2$ [which picture of herself] Mary thought [$_3$ __ that the kids liked __]]]
c. [$_1$Tom asked [$_2$ [which picture of themselves] Mary thought [$_3$ __ that the kids liked __]]]

(6) **Binding Principle A *is* observed in this construction:**
a. *[$_1$Tom's sister asked [$_2$ [which picture of himself] Mary thought [$_3$ __ that the kids liked __]]]
b. *[$_1$Tom asked [$_2$ [which picture of herself] Mary's brother thought [$_3$ __ that the kids liked __]]]
c. *[$_1$Tom asked [$_2$ [which picture of themselves] Mary thought [$_3$ __ that the kids's teacher liked __]]]

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2. The necessity of "successive-cyclic" *wh*-movement: Subjacency

In fact, it looks as though *wh*-movement cannot cross more than one CP at a time, nor can it cross a DP and a CP at a time.

Constraints on extraction out of particular domains are called **island conditions**.
Domains out of which extraction is forbidden are called **islands..**

- **The DP+CP case is:**

(7) **The "Complex NP Constraint"**
a. ***CP complement to N is an island***
*Who did Mary resent [$_{DP}$ our claim [$_{CP}$ that Bill had invited __]]?
b. **A *relative clause* (CP modifier of N') *is an island***
*What did Mary want to meet [$_{DP}$ the scientist [$_{CP}$ who had discovered __]]?

- **The CP+CP case is:**

(8) **The "Wh-island constraint"**
(*crossing a *that*-clause and then an interrogative)
*What did Mary ask [$_{CP}$ who said [$_{CP}$ that Bill had bought __]]?

Problem for thought at home:
Are there instances of the *wh*-island effect that are also ruled out by *Attract Closest*? Is (8) a case of this sort?

(9) **The Subjacency Condition**
Movement may cross at most one bounding node at a time.

(10) **Bounding nodes (version 1): CP, DP.**

Actually, for many speakers, simpler examples than (8) are also bad:

(11) **Wh-island constraint (cross just an interrogative)**
??What did Mary ask [$_{CP}$ who bought __]]?

- **A suggestion: due to Rizzi (1979)**

(12) **Bounding nodes (version 2):** IP, DP.

3. Another island condition: the Condition on Extraction Domains (CED)

(13) **Condition on Extraction Domains**
Wh-movement is forbidden from non-complements.

For example...

...from subjects:
(14) *Who are [pictures of __] on sale at the Coop?

(15) *Who would [for Mary to talk to __] annoy Peter?

...from modifiers/adjuncts:

(16) a. ??Who will Bill be unhappy [unless I invite __]?
b. *To whom did Sue leave the room [because she had spoken __]?
c. *What will Mary get mad [since I didn't finish __]?

4. The unity of movement: CED effects on head movement

[Research of Mark Baker (1984, 1987). See also his book *Atoms of Language*.]

Incorporation:

V to V incorporation
Chichewa:
(17) a. Mtsikana a-na-ch-**its**-a kuti mtsuko u-**gw**-e.
girl do-cause that waterpot fall

b. Mtsikana a-na-**gw**-**ets**-a mtsuko.

...make pot fall... ----> fall-make pot...

Japanese:
(18) John-ga Mary-ni susi-o tabe-sase-ta.

P to V incorporation
Kinyarwanda:
(19) a. Umwaana y- a- **taa**-ye igitabo **mu** maazi
child SP-past-**throw**-ASP book in water

b. Umwaana y- a- **taa**-ye-**mo** amaazi igitabo

[SP=subject agreement prefix]

N to V incorporation
Mohawk:

(21) a. Ka-**rakv** ne [sawaitis hrao-**nuhs**-a]
3N-**be.white** John 3M- **house**-SUF

b. Hrao-**nuhs-rakv** ne sawaitis

Generalization: incorporation always from objects -- never from subjects!

This is also true of garden-variety V-to-I and I-to-C of the sort we saw early on.

5. The Coordinate Structure Constraint (CSC)

(20) **Coordinate Structure Constraint**
1. A conjunct in a coordinate structure may not be moved out of that coordinate structure [strong effect]; and
2. Extraction out of a conjunct is also forbidden [weak effect]

(21) **CSC1**
a. *Which book did you read *Harry Potter* and __?
b. *Which book did you read __ and *Harry Potter*?

(22) **CSC2**
a. [*] How many languages does [Mary speak __ fluently] and [has a translator's certificate from the UN]?
b. [*]What kind of chocolates did John open [a jar of jelly-beans] and [a box of __]
but:
c. What kind of chocolates did John [go to the store] and [buy __]

(23) **"Across the Board" (ATB) exceptions**
a. How many languages does Mary [speak __ fluently] and [have a trasnslator's certificate for __]?
b. What kind of chocolates did John open [a jar of __] and then [a box of __]

6. A-movement vs. non-A ("A-bar") movement

Movement to Spec,CP is special in some ways:

(24) **Does not create a new *binder* for Principle A**
a. John seems to himself [__ to be smart]
vs.
*Which woman did herself invite __ to the party?
*Which man did [a picture of himself] fall on __?
etc.

(25) **Creates "weak crossover effects" [see tree on blackboard!]**
a. ??Who$_i$ did it seem to [his$_i$ teacher] that Mary had chosen __$_i$
b. John$_i$ seemed to [his$_i$ teacher] [__$_i$ to have chosen Mary

(26) **May move "long distance" over intervening subjects [via Spec,CP]**
a. Who did Sue prefer for it to seem [that Bill liked __]
b.
*Mary$_i$ was preferred for it to seem [__$_i$ to be happy].

Note expecially:
c. *Who was preferred for it to seem [__$_i$ to be happy].
[Why?]

Movement that --
- **does create a new binder for Principle A**
- **does not yield Weak Crossover Effects**
- **may not proceed via Spec,CP**

-- is called "A-movement" (A for *argument*)

Movement that --
- **does not create a new binder for Principle A**
- **yields Weak Crossover Effects**
- **may proceed via Spec,CP and looks "long distance"**

-- is called "A-bar" (non-A) movement

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7. A theory of movement

- **Movement is "Internal Merge", i.e.**
(i) make a copy of a constituent inside the current tree; and
(ii) merge the copy, forming a specifier (or adjoined position)

- **The copies formed by movement are coindexed and form an object called a chain.**
- **Lower copies in a chain are called traces.**

(27) [C *u*Wh] Mary bought which book -->
[*which book*$_i$ [C *u*Wh] Mary bought which book$_i$]

Chain: (*which book*, which book)

(28) **Pronunciation Principle**:
Pronounce the top member of the chain.

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8. Covert Movement

Pronounce the trace?

(29) **Japanese: matrix questions**
a. John-ga[1] Mary-ni nani-o ageta no?
John-NOM Mary-DAT what-ACC gave Q
'What did John give to Mary?'

b. John-ga naze kubi-ni natta no?
John-NOM why was fired Q
'Why was John fired?'

(30) ***Wh*-in-situ in an embedded clause: matrix questions**
a. Bill-ga [John-ga Mary-ni nani-o ageta tte] itta no?
Bill-NOM ---------- (29a)---------- C said Q
'What$_i$ did Bill say that John gave __$_i$ to Mary?'

b. Bill-ga [John-ga naze kubi-ni natta tte] itta no?
Bill-NOM ---------- (29b)---------- C said Q
'Why$_i$ did Bill say [that John was fired __$_i$]?'

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[1] To a Japanese speaker, this sentence, and others like it, sounds more natural if the nominative marker *-ga* is replaced with the topic marker *-wa*. Our examples ignore this fact, in the interests of clarity.

(31) **In considering (30b), note the ambiguity in (31)**
Why did Bill say (that) John was fired?

a. Why$_i$ did Bill say [that John was fired $\_\__i$]?
[asks for the reason John was fired, according to Bill]

b. Why$_i$ did Bill say [that John was fired] $\_\__i$?
[asks for the reason Bill said what he said, namely that John was fired]

(32) **Because in Japanese, you pronounce the "trace", we can control the ambiguity to some extent.**
a Bill-ga John-ga naze kubi-ni natta tte itta no?
[downstairs *why* only]
b. Bill-ga naze John-ga kubi-ni natta tte] itta no?
[ambiguous]
c. Naze Bill-ga John-ga kubi-ni natta tte] itta no?
[favors upstairs *why*, unless intonation indicates that *naze* has scrambled]

(33) **Embedded questions also show *wh*-in-situ**
Mary-ga [$_{CP}$John-ga nani-o katta-ka] sitte-iru
Mary-NOM John-NOM what-ACC bought-Q know
`I know what John bought' [lit. 'I know John bought what']

- **Is there really any *wh*-movement in Japanese?**

Yes, probably, because there are *island effects* (yes, really --- well, sort of):

- **Normally, island effects are hard to detect on wh-in-situ in Japanese:**

(34) a. **Complex NP Constraint**
%Mary-ga [$_{DP}$ [$_{CP}$ John-ni nani-o ageta] hito-ni] atta-no?
Mary-NOM John-DAT what-ACC gave man-DAT met - Q
'What did Mary meet [the man who gave _ to John]?'

b. **Adjunct island effect (from CED)**
%Mary-ga [John-ga nani-o yomu mae-ni] dekaketa-no?
Mary-NOM John-NOM what-ACC read before left - Q
'What did Mary leave [before John read __]?'

- **But if the *wh*-phrase is modified by the intensifier *ittai* 'on earth' (lit. one body) [as in *what on earth*], an effect emerges:**

(35) **Baseline:**
Mary-ga John-ni [ittai nani-o] ageta-no?
Mary-NOM John -DAT on-earth what-ACC gave - Q
`What on earth did Mary give to John?'

(36) **Simple embedding:**
Mary-ga [$_{CP}$John-ga [ittai nani-o] yonda to] itta-no?
Mary-NOM John-NOM on-earth what-ACC read that said-Q
`What on earth did Mary say that John read?'

(37) **Complex NP Constraint:**
??Mary-ga [$_{DP}$ [$_{CP}$ John-ga [ittai nani-o] yonda] koto-o]
Mary-NOM John-NOM on-earth what-ACC read fact-ACC

wasureteiru-no?
remembered- Q
'What on earth did Mary remember the fact that John read __'

(38) a. **Complex NP Constraint**
*Mary-ga [$_{DP}$ [$_{CP}$ John-ni [ittai nani-o] ageta] hito-ni] atta-no?
[=(34a) with *ittai*]

b. **CED effect**
*Mary-ga [John-ga [ittai nani-o] yomu mae-ni] dekaketa-no?
[=(34b) with *ittai*]

- **The effect also emerges (quite strongly) if the *wh*-in-situ is an adjunct like *naze* 'why':**

(39) a. **Complex NP Constraint**
%Mary-ga [$_{DP}$ [$_{CP}$ John-ni naze hon-o ageta] hito-ni] atta-no?
Mary-NOM John-DAT why book-ACC gave man-DAT met - Q

b. **Adjunct island effect (from CED)**
%Mary-ga [John-ga naze hon-o yomu mae-ni] dekaketa-no?
Mary-NOM John-NOM why book-ACC read before left - Q

- **This parallels English, where island effects are often squishy with extraction of DPs but quite rrobust with extraction of adjuncts.**

(40) a. %What did Mary resent [the fact that they had fixed__ with a wrench]?
b. *How did Mary resent [the fact that they had fixed the car __]?
c. *Why did Mary resent [the fact that they had fixed the car __]?

9. Tentative conclusion: the model

In Japanese, when a verb selects a +Q complementizer, the requirement of wh-movement to specifier of CP is met by "covert movement" in the embedded clause.

How this fits in the model:

(41) **Possibility #1 (traditional idea)**
Wh-movement may happen before or after **Spellout** -- the point at which the syntactic derivation makes contact with phonology. Movement after Spellout is covert, since it does not feed the phonology. The Pronunciation Principle in (28) is correct.

(42) **Possibility #2**
Wh-movement always happens the same way. The Pronunciation Principle is wrong. The EPP property of certain heads dictates that you pronounce the new top of the chain formed by movement. The EPP property of other heads dictates that you pronounce the old top of the chain formed by movement.

...You decide!