

24.952 Summary: Principle C/ *wh*-movement part 1 [November 17 & 19]

[We began the week with material that I already included in sections 7 and 8 of last week's summary.]

1. Principle C

- The term **r-expression** ("r" to suggest "referring") is used to denote a DP that is neither a pronoun, nor an anaphor, nor an expletive. An r-expression may be a proper name (*John, Mary*) or a more complex DP (*Mary's brother, the man in the moon*).

The data in (1) suggest the binding condition in (2) that affects r-expression.

- (1) a. *She_i thinks that we admire [Mary_i's brother].
b. Her_i friends think that we admire [Mary_i's brother].

(2) **Principle C:**

An *r-expression* must be free.

- Note that Principle C does not contain any reference to Binding Domain! This a correct characterization of the facts, as (1a) makes clear. No matter how deeply embedded an r-expression might be, it may not corefer with an expression that c-commands it:

(3) **No reference to binding domain**

*She_i thinks that I believe that you showed that we should all admit that we admire [Mary_i's brother].

Problem set tip: An unacceptable instance of coreference between a pronoun and an r-expression might be due to Principle B (if the pronoun is the problem) *or* to Principle C (if the r-expression is the problem). You cannot just notice that the example involves a pronoun and leap to conclusions.

- Principle C also rules out coreference between two r-expressions when one c-commands the other. The judgments are more delicate, but this seems correct. The delicacy may be due to an independent dispreference for repeating an r-expression:

- (4) a. *Mary_i thinks that we admire [Mary_i's brother].
b. ?Mary_i's friends think that we admire [Mary_i's brother].

Binding Theory (final version)

- A. An anaphor must be bound in its Binding Domain.
- B. A pronoun must be free in its Binding Domain.
- C. An r-expression must be free.

2. Basics of *wh*-movement in questions

What is a *wh*-word?

A word containing the *wh*-morpheme /h^w/ (English).

How we know that *wh*-questions involve movement:

- It leaves a gap.
- (5) a. What did Sue put on the table?
b. How badly did the students treat the professor?
- The position before movement counts for Binding Theory. (This phenomenon is often called **reconstruction**.)
- (6) Which picture of himself did Sue say Bill liked __ best? [BT(A)]
- In West Ulster Irish English (McCloskey 1998), expressions like *what all, who all* etc. can undergo *wh*-movement and strand *all* in the trace position.¹ This is very much like the Japanese numeral quantifier stranding discussed earlier:
- (7) a. What all did you give __ to the kids?
b. What did you give __ all to the kids?
- (8) a. Who all did you send __ to the shops?
b. Who did you send __ all to the shops?
- (9) a. Tell me what all you got __ for Christmas.
b. Tell me what you got __ all for Christmas.

As with Japanese numeral quantifier stranding, it is important to make sure that the *all* is not simply free to occur anywhere. It really does seem to stand next to the trace of the *wh*-word. It cannot occur in random places:

¹ *What all* etc. seem to mean the same as *what* etc. except that the answer is expected to be a plurality. *What all* is not literary English, but is common in many dialects of the US, as well as in Ireland. (I'm not sure about other dialects.) The phenomenon in the (b) sentences, however, is not (as far as I know) found in the US. If you know otherwise, tell me!

(10) *Who did he tell __ he was going to resign all.

- (11) a. What did you do __ all after school the day?
 b. *What did you do __ after school the day all?
 c. *What did you do __ after school all the day.

Where does the *wh*-phrase move to? Where does the auxiliary verb move to in main-clause questions?

- Probably the auxiliary verb moves to C in questions like *What will Mary buy?*.
- We next observe that the *wh*-phrase is moving to what appears to be a unique position to the left of C, at the clause periphery.
- But we've been there, done that. This looks like German V2 (Verb-second), where we saw Topic moving to the specifier of CP and the finite verb moving to C.
- In fact, *wh*-movement in German appears to target Spec,CP just like topicalization:

(12) Welches Buch hat Marie dem Manne __ gegeben?
 which book has Mary the-DAT man-DAT given

- Conclusion:** the *wh*-phrase moves to specifier of CP. In English, each CP has only one specifier.

What's the mechanism by which *wh*-phrases move to specifier of CP?

- An EPP-type property of interrogative C!
- A feature of C (call it C's **+*wh*** feature) requires interrogative C to take a *wh*-specifier. We return to this below.

What's the mechanism by which I moves to C in matrix (i.e. main-clause) questions?

- The C of main-clause questions has another property (we might call it a [+I] feature) which requires I to move to it as well.
- C of embedded questions does not have this feature in standard English, but does in many dialects.

(13) (*) Mary wanted to know [what did Bill say about her]?
 [ok in Belfast English, African American Vernacular English, and other dialects]

In (13), the presence of *her* in the embedded clause, if coreferent with *Mary*, indicates that we are dealing with a true embedded clause — not with a quote, which would have to look like (14):

(14) Mary wanted to know, "What did Bill say about me?"

- Also in Indian English, matrix interrogative C does not necessarily have the I feature.

(15) **Indian English main-clause questions**

- a. What this is made from?
 b. Who you have come to see?
 [Trudgill and Hannah (1994) *International English*. London: Arnold. p.132]²

3. The mechanics of *wh*-movement

Why does *wh*-movement take place in the complements of certain verbs like *wonder* and *ask*?

This is a serious question, since heads subcategorize for the head of their sister -- not for elements moved to Spec position by a movement rule like *wh*-movement.

So here's how it might work.

- A verb like *wonder* subcategorizes for an interrogative C with a +*wh* feature.
- C with this feature attracts a *wh*-phrase to it. (as discussed above).
- If you tried to merge *wonder* with a CP in which *wh*-movement had not occurred, it would be violating either the subcategorization property of *wonder* or the requirements of this +*wh* feature.

This rules out examples like (16), in which either the wrong C is present (i.e. a C without the +*wh* feature) or else the right C is present, but *wh*-movement failed to apply (in violation of the EPP requirements of the +*wh* feature).

(16) *Mary wondered that John left.

Why is C null with embedded *wh*-movement? Why can't it be pronounced?

- This seems to be a language-specific phenomenon. In modern Standard English, C must be null when its specifier is non-null. But in other languages and some dialects of English, including older stages of the language, this restriction does not hold:

² Trudgill and Hannah seem to imply that the facts of Indian English are simply reversed from the US/UK standard -- that inversion is obligatory in embedded clauses and impossible in main clauses. I'm not sure if that is what they are saying, nor am I sure that it's true.

- (17) a. Ik weet niet *wie* of Jan gezien heeft.
I know not who if John seen has [Dutch]
- b. men shal wel knowe *who that* I am[Middle English]
- c. Je me demande quand *que* Pierre est parti.
I wonder when that Pierre has left [colloquial French]

- The language-specific restriction is called the *Doubly-Filled COMP Filter*.³

(18) **Doubly-Filled COMP Filter** [language-specific]
The null variant of C is obligatory when SPEC,CP is non-null.

- Note that an auxiliary verb in C is not a "variant of C". Thus, the combination of I-to-C movement and *wh*-movement to Spec,CP does not violate the Doubly-Filled COMP Filter.

What's a "*wh*-phrase"?

- That is, what besides the *wh*-morpheme undergoes movement to an interrogative C?

- (19) a. Which book did Mary buy?
b. *Which did Mary buy ___ book?

We won't *really* answer this question, but we will talk about it a bit.

- There is cross-language variation. For example, Russian does not require pied-piping of NP:

- (20) a. Kakuju knigu Marija kupila?
which book Mary bought
- b. Kakuju Marija kupila ___ knigu?

Russian is *more permissive* than English in allowing *wh*-movement of *which*. English requires *pied piping* of the entire DP in which *which* occurs.⁴

In other cases, however, English is the more permissive language! For example, English allows *stranding* of a preposition when its object undergoes *wh*-movement — but Russian does not:

- (21) a. To whom did Mary speak?
b. Who did Mary speak to?
- (22) a. S kem Marija razgovarivala?
with whom Mary spoke
- b. *Kem Marija razgovarivala s?

The phenomenon seen in (21b) is called *preposition stranding*.

4. Relative clauses

- A relative clause is a kind of NP or DP modifier, and is a sister of N' or D' -- like any modifier.
- Inside a relative clause, we find something like *wh*-movement (including pied-piping) — but with a slightly different set of *wh*-words. No *what*, no *how*:

- (23) a. the book what I was reading
b. the way how I solved the problem

[*We didn't get to this bit last week, but I will mention it on Monday.*]

Restrictive vs. non-restrictive relative clauses:

- (24) a. The kids who John invited got lollipops. [restrictive]
b. The kids, who John invited, got lollipops. [non-restrictive]

Properties of restrictive relative clauses:

1. They are separated by a pause ("comma intonation") from the rest of the sentence;
2. They give "extra information" about the phrase they modify, and are not strictly necessary to determining the referent of the DP as a whole

How to force a restrictive relative clause reading (in case you ever have to):

- (25) a. *Attach the relative clause to a proper name*
Mary, who John invited to the movies...
- b. *Add phrases like* by the way
the kids, who -- by the way -- John invited to the movies...

³ At one point in the history of the field (mid-1970s), the *wh*-phrase was thought to be occupying COMP itself, hence the name.

⁴ For the legend of the Pied Piper of Hamelin, see Robert Browning's poem at from "The Pied Piper of Hamelin" by Robert Browning at <http://www.indiana.edu/~libresd/etext/piper/text.html>

[We did do this! Note: this supercedes the version of this material on your handout. As you may remember, I had an inspiration and simplified what I was going to present to you in a good way.]

• **The three types of (restrictive) relative clauses in English:**

- (26) a. the person who I invited...
b. the person that I invited...
c. the person I invited...

• **They all involve some kind of *wh*-movement, since they all have gaps in them:**

- (27) a. the book which I put ___ on the table
b. the book that I put ___ on the table
c. the book I put ___ on the table

• **The *wh*-phrase may not co-occur with an overt C:**

- (28) *the book which that I put ___ on the table

Ingredients of an analysis:

1. C is either *that* or \emptyset in a finite relative clause.
[Not cooked up for relative clauses! We have both possibilities even in complement CPs: *Mary believes that/ \emptyset the world is round.*]
2. The Doubly Filled COMP Filter holds in relative clauses, just as it does in questions.
3. English has phonologically null versions of *who* and *what* that we can call *OP*.

How it works:

--> Pick *that* as C, and the *wh*-phrase must be null, to avoid violating the Doubly Filled COMP filter. This yields (26b) and (27b).

--> Pick \emptyset as C, and the *wh*-phrase can be null or pronounced -- since there's no possibility of violating the Doubly Filled COMP filter.

With pronounced *wh*-phrase, this yields (26a) and (27a).

With null *who* or *what*, this yields (26c) and (27c).

In other words:

- (29) a. the person who \emptyset I invited...
b. the person OP that I invited...
c. the person OP \emptyset I invited...

(30) **There's no null "OP" counterpart to pied-piped *wh*-phrases**

- a. the chair in which I was sitting
b. *the chair that I was sitting
c. the chair \emptyset I was sitting

d. the chair which I was sitting in
e. the chair that I was sitting in
f. the chair I was sitting in
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