Wh-movement/Movement in general (handout 2)

1. 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*:

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

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

(2) 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:**

(3) 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:**

(4) *the book which that I put __ on the table

Ingredients of an analysis:

1. C is either *that* or ø in a finite relative clause.
[Not cooked up for relative clauses! We have both possibilities even in complement CPs: *Mary believes that/ø 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 (2b) and (3b).

--> Pick ø 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 (2a) and (3a).
With null *who* or *what*, this yields (2c) and (3c).

In other words:

(5) a. the person who ø I invited...
b. the person OP that I invited...
c. the person OP ø I invited...

(6) **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 ø 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

- **Restrictive vs. non-restrictive relative clauses:**

(7) 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

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

(9) **Restrictive relatives follow all non-restrictive relatives...**
a. the kids that Mary described in her newspaper article, who -- by the way -- John invited to the movies...
b. *the kids, who -- by the way -- John invited to the movies, that Mary described in her newspaper article...

... a fact that can be understood if non-restrictive relatives are DP-level modifiers (sisters of D'), and restrictive relatives are NP-level modifiers (sisters of N').

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2. Multiple Questions

- When IP contains two *wh*-words, the one that moves [overtly] is generally the one closest to the interrogative C.

(10) **Superiority Effect**
a. Who __ bought what?
b. *What did who buy?

(11) a. Who did you persuade __ to read what?
b. *What did you persuade whom to read __?

(12) a. Who did John talk to __ about what?
b. *What did John talk to whom about __?

- This suggests that C gets to pick what *wh* moves to it. We call this the **Attract Closest** property of movement. The effect seen in (10)-(12) is called the **Superiority Effect.**

(13) **Attract Closest**
When a head attracts a phrase with a particular property to its specifier, it picks the closest phrase with that property.

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3. Movement in general

- A head is made of features (properties).
- Some of these features -- called ***uninterpretable features*** **--** are "active". What this means is explained in the next bullet.
- An uninterpretable feature acts as a **probe**, looking down the tree for the *closest* matching instance of the same feature -- called a **goal**. The relationship between probe and goal is called **agreement**, and sometimes expresses itself as morphological agreement.
- If the probe also has a [generalized version of the] **EPP** property, some constituent that contains the goal will move to the probe, forming a specifier of the probe.
- What constituent containing the goal moves?

  If the goal (or its maximal projection) is the sister of the probe, the result is **head movement**.

  Otherwise, it is usually the maximal projection of the goal that moves, but sometimes something larger. These are the mysteries of pied piping.

- The same story for *wh*-movement (where the probe is the uninterpretable *wh*-feature of C) and for movement to Spec,IP (where the probe is the uninterpretable person and number features of I).

(14) a. The puppy *is* in the garden.
b. The puppies *are* in the garden.

(15) **Wh-C agreement in Kinande (Bantu, NE Congo)**
a. IyondI yO kambale alangIra.
who (cl.1) that (cl.1) Kambale saw

b. aBahI Bo kambale alangIra.
who (cl.2) that (cl.2) Kambale saw

c. EkIhI kyO kambale alangIra.
what (cl.7) that (cl.7) Kambale saw

d. EbIhI ByO kambale alangIra.
what (cl.7) that (cl.7) Kambale saw
(Schneider-Zioga 1987; quoted in Rizzi 1990)

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(16) **Agree (Probe-Goal relation) without movement: the *there* construction**
a. There *is* a puppy in the garden.
b. There *are* puppies in the garden

c. There *seems* to be a puppy in the garden.
d. There *seem* to be puppies in the garden.

- *There* has a person feature (perhaps), but no number feature. So the uninterpretable number feature of I must agree with another DP (typically semantically indefinite).

How structures are built bottom-up (we return to this later)

Merge:
a. Combine 2 [or more] lexical items or constituents into a phrase.
b. Designate one as the head, which labels the phrase.

Move:
a. If a feature of a head H has an EPP property, it may be satisfied by copying an already merged constituent as the specifier of H (i.e. merging it to a projection of H after all complements and modifiers have been merged)
b. Alternative: merge something new (e.g. an expletive like *it* or *there*).

The older view

1. Phrase structure rules, including empty placeholder specifiers.
2. The output of the phrase structure rules is called ***Deep Structure*** (or ***D-structure***).
3. Movement applies to the output of the Phrase Structure rules, filling placeholder specifiers, as well as adjoining heads to other heads [and perhaps] adjoining phrases to phrases].
4. The output of the movement rules is called ***Surface Structure*** (or ***S-structure***)

- The newer view does not have a unique level called Deep Structure any more, since Merge and Move are interspersed.
- The newer view forms part of an overall approach and model called the **Minimalist Program**.

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4. Multiple Specifiers

- Languages that allow multiple specifiers of interrogative C. (Slavic)
- The closest *wh* to C moves first. The next-closest "tucks in" under it:

Bulgarian

(17) a. Koj kogo vižda?
who whom sees
'Who sees whom?'

b.*Kogo koj vižda? [on multiple pair reading]
whom who sees

(18) a.Koj kəde ___ udari Ivan __ ?
who where hit Ivan **[NB: *Ivan* is the subject. The verb is in C]**
'Who hit Ivan where?'

b.*Kəde koj __ udari Ivan __? [on multiple pair reading]
where who hit Ivan

(19) a. Koj kəde udari Ivan
who where hit Ivan
cf. *Who hit Ivan where?*

b.*Kəde koj udari Ivan
cf. **Where did who hit Ivan?*

- This patterns suggests that *wh*-phrases move as short a distance as possible — in addition to the fact that C attracts the closest *wh*-phrase that it can. These are both **economy conditions.**

(20) **Economy 1: "Attract closest"**
A probe agrees with the closest goal.

(21) **Economy 2: "Shortest move"**
A constituent that moves to a probe moves as closes as possible to that probe.

Consequence:
of Economy 1: The first *wh*-attracted is the highest of the *wh*-phrases.
of Economy 2: The next *wh* forms the lowest possible specifier of CP, "tucking in" below the previous *wh* that moved.

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5. Successive-cyclic *wh*-movement & Subjacency

Can *wh* move to the closest C — 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

(22) 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 all [$_{CP}$ __ (that) he wanted __]?

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

(24) 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?

(25) 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.]

Subjacency and Island conditions

- 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.

- The DP+CP case is:

(26) **Complex NP Constraint**
*Who did Mary resent [$_{DP}$ our claim [$_{CP}$ that Bill had invited __]]?

(27) *What did Mary want to meet [$_{DP}$ the man [$_{CP}$ who had said __]]?

- The CP+CP case is:

(28) **Wh-island constraint (cross *that*-clause and an interrogative)**
*What did Mary ask [$_{CP}$ who thought [$_{CP}$ that Bill had said __]]?

Problem for thought at home:
Are there instances of the *wh*-island effect that are also ruled out by Attract Closest? Is (28) a case of this sort?

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

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

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

Actually, for many speakers, simpler examples than (28) are bad:

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

- A suggestion:

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