

- Semantically, WH-phrases are understood as Quantifiers:

"Who left?" = For which X, X a human, did X leave

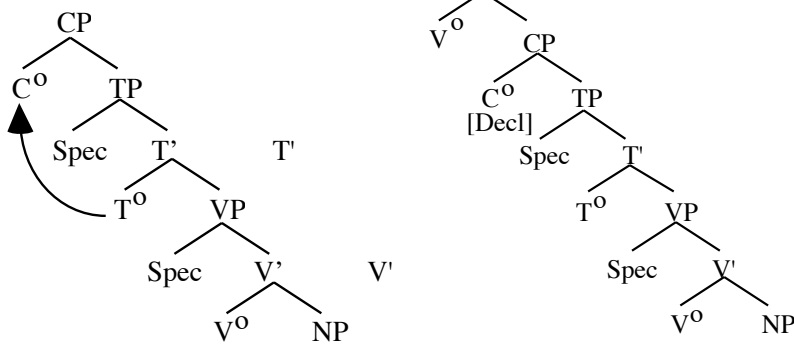
"Where is the cake?" = For which X, X a place, is the cake in place X? etc.

WH-questions move a WH phrase (XP) to SpecQP
 WH-questions ALSO involve $T^0 \rightarrow Q^0$ (like Y/N questions)

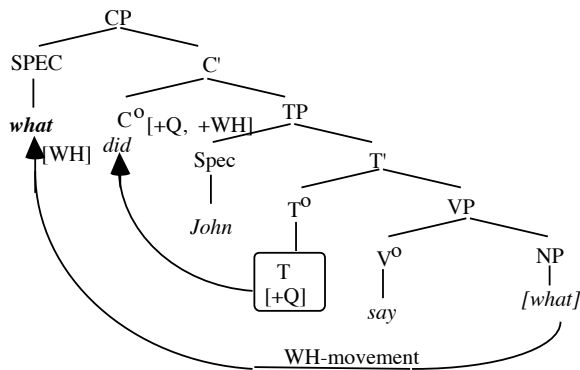
11) Schematic form of QP (often called CP) in questions and non-questions

a. YES/NO Question:

b. Embedded (subordinate) clause:



12) Structure of a simple WH-question:



Indirect Questions (= “embedded” questions)

WH-movement in the subordinate/embedded clause: (= “indirect questions”)

13) a. *John wonders [that he left]. (wonder selects a [+WH] CP)
 b. John wonders [**why** he left __]
 c. John knows [**where** Mary lives]
 d. John isn't sure [**when** the game begins]
 e. Yeltsin asked [**when** Gorby fell __]

(13) involves WH-movement into SpecCP (Practice: draw trees for (13)b-e)
 NB: there is no $T^0 \rightarrow C^0$ in embedded questions (so no dummies!)

14) b. *John wonders [**why** did he leave __]
 c. *John knows [**where** does Mary live]
 d. *John isn't sure [**when** does the game begin]

- 15) **Major WH-movement constraints** (most from Ross 1967)
- i. The Coordinate Subject Constraint
 - ii. The Sentential Subject Constraint
 - iii. The Left Branch Condition
 - iv. the Complex NP/DP Constraint
 - v. Superiority
 - vi. The Constraint on Extraction Domains

EXAMPLES

Coordinate Structure Constraint: *You can't move out of a coordinate structure*

- 16) a. They ordered [tiramisu and espresso].
b. i. ***Which dessert** did they order [____ and espresso]? (*mvt out of coordinate structure)
ii. ***Which beverage** did they order [tiramisu and ____]? (*mvt out of coordinate structure)

Sentential Subject Constraint: *You can't move out of a sentential (CP) subject*

- 17) a. [That he has met Gorbachev] is extremely unlikely. [...] (CP) = "sentential subject"
b. ***Who** is [that he has met ____] extremely unlikely? (*mvt out of sentential subject)

Compare to:

- 18) a. I think [that he has met Gorbachev].
b. **Who** do you think [____ that he has met ____]? (✓ out of subordinate clause)

Left Branch Condition: *You can't move out of the left side of an NP/DP*

- 19) a. She bought [Jonathan's book] .
b. **Whose** did she buy [____ book] ? (*mvt from left edge of DP)
c. ***Which** did she buy [____ book] ? (*mvt from left edge of DP)

Compare to:

- 20) a. **Whose book** did she buy ____ ? (✓ movement of direct object)
b. **Which book** did she buy ____ ? (✓ movement of direct object)

Complex NP/DP Constraint: *You can't move out of a complex NP (one with a relative clause inside)*

- 21) a. Putin is proposing [a law which will hurt Medvedev]
b. ***Who** is Putin is proposing [a law which will hurt ____] ?
22) a. They caught [a man who __ stole 5 computers] (*mvt out of complex NP)
b. ***What** did they catch [a man who stole ____] ? (*mvt out of complex NP)

Superiority *If two elements are competing for a move, you have to move the closer one*

• Multiple WH-movement: (1 WH moves, the other does not)

- 23) a. **Who** works **where**?
b. **Who** said **what**?
c. **What** fell off the shelf **when**?
- 24) Superiority violations: (*non-closest move)
- a. ***Where** does **who** work? (compare: ✓ *Where does John work?*)
b. ***What** did **who** say? (compare: ✓ *What did John say?*)
c. ***When** did **what** fall off the shelf? (compare: ✓ *When did the cup fall off the shelf?*)

- 25) a. I asked **who** saw **what**
 b. *I asked **what who** saw ____ . (*non-closest move)

Constraint on Extraction Domains: *You can't move out from inside subjects or adjuncts*

• Subjects:

- 26) a. I bought [a book about Dostoevsky] yesterday. [...] = direct object
 b. [A book about Dostoevsky] shocked the public. [...] = subject
- 27) a. **Who** did you buy [a book about ___] yesterday? (✓ movement out of an object)
 b. ***Who** did [a book about ___] shock the public? (* movement out of a subject)

• Adjuncts:

- 28) a. I bought a book [before I saw John].
 b. ***Who** did you buy a book [before you saw ___] ? (*movement out of an adjunct)

Overt vs Covert WH-movement

- 29) a. C has a [*u*WH*] feature which checks the [WH] on the WH-phrase and forces movement
 b. In English, [*u*WH] on C is strong = "Overt WH-movement language"
 c. In Chinese, Japanese, ... [*u*WH] on C is weak. = "WH *in situ* language"

- 30) a. Ni shuo Zhangsam qule **nali** (-ne) (Chinese)
 you say Zhangsan went **where** Q-part
 "Where did you say Zhangsan went?"
- b. ***Nali**_i ni shuo Zhangsam qule _____i (-ne) (Chinese)
where you say Zhangsan went Q-part (Cole & Hermon 1994)
 "Where did you say Zhangsan went?"

Long-distance WH-movement

- 31) a. Lebed hates Gorby.
 b. **Who**_i does Lebed hate **t**_i ? (WH-movement into SpecCP)
- 32) a. Yeltsin thinks that [Lebed hates Gorby]
 b. **Who**_i does Yeltsin thinks that [Lebed hates **t**_i] ?
- 33) a. Lebed thinks that Gorby said that Yeltsin is working hard on [the new laws].
 b. **What**_i does Lebed think that Gorby said that Yeltsin is working hard on **t**_i ?
- 34) **Why** do you [[_{VP} think [that John [[_{VP} left ___] <why>]]] <why>] ? *ambiguous*

- 35) Two theories of Long Distance WH-Movement:
 a. One long jump
 b. Several small steps, stopping at every intermediate SpecCP (= "Cyclic Movement")

36) A WH-expression cannot skip a specifier of CP when it moves (Adger, p. 363)

• Evidence that WH-movement in fact works in small steps: (see Adger ch. 9)

37) Scottish Gaelic:

- a. Bha mi ag ràdh **gun** do bhuaíl í e
 Was I ASP saying that prt struck she him
 "I was saying that she hit him."

- b. Cò bha thu ag ràdh a bhuail í _____
 who were you ASP saying that struck she
 "Who were you saying that she struck?"

38) Scottish Gaelic complementizers:

- a. **gun** [C] b. **a** [C], [*u*WH*]

• How do we **test** this hypothesis? We check its **predictions!**

I. The Small Steps hypothesis predicts that WH-movement out of an embedded clause uses local SpecCP for a stopping place.

- 39) a. I think that John bought a book →
 b. **What** do you think ___ that John bought ___? (LD WH-mvt)

II. So if we fill local SpecCP with embedded WH-mvt (like after *wonder* [_{CP,Q} ___]

- 40) I wonder [**when** John bought a book ___] (embedded WH-mvt)

III. then when we try to do WH-movement to the main clause, out of (40), it should fail:

- 41) ***What** do you wonder [**when** John bought ___ ___] (LD AND embedded WH-mvt)
 • If WH-movement were in one fell swoop, (41) would be fine.

This is a WH-island!

A similar test: We also predict loss of ambiguity inside islands:

- 42) Q: **Why**_i does Yeltsin [_{VP} think [that Gorby [_{VP} fell ___]]]? (ambiguous)
 43) A: a. Yeltsin [thinks that Gorby fell [because he read about Gorby's fall in the paper]]
 b. Yeltsin thinks that Gorby [fell [because of political pressures]].
 44) a. Yeltsin said [___ that [Gorby hurt Lebed]]
 b. **Who**_i did_k Yeltsin t_k say [t_i that [Gorby hurt t_i]] (movement is OK)

• If SpecCP is already filled, we have an **island** and predict that WH-movement will violate (36):

- 45) a. Yeltsin wonders [**whether** Gorby fell [because of political pressures]]
 b. ***Why**_k does Yeltsin [_{VP} wonder [**whether** Gorby [_{VP} fell t_k]]]?

• (45)b is ungrammatical on the interpretation where *why* modifies the lower verb (= (45)a) (It can only be of the type of (43)a). In (45)b, **whether** fills SpecCP, so no intermediate stopping place is available, and we have a wh-island violation. Movement must happen in one jump, and (36) is violated

advanced topics:

- wh-movement and binding
- wh-movement and reconstruction
- sideways movement
- copy theory of movement
- multiple wh-movement
- wh *in situ* language types (covert? Unsleeved binding)
- weak crossover
- superiority