A DEEPER LOOK AT WH MOVEMENT

25 January – 5 February
Our Roadmap

• Brief overview of WH typology
• Heads, features, and WH movement
• West Ulster English and Successive Cyclic Movement
• Island effects
• Relative clauses
  • Parallels to WH movement, Operators, and Typology
SOME WH TYPOLOGY

Koromfe (spoken in Burkina Faso)
(a) Sefu də na a manɛ hɛŋ
    when he see ART money the
    ‘When did he find the money?’
(b) ase a kɛɔ hoŋ panɛ a vaga koŋ
    what ART woman the give::PAST ART dog the
    ‘What did the woman give to the dog?’

Welsh
(c) Beth welai$t ti  yn yr ardd
    what saw::2SG you in the garden
    ‘What did you see in the garden?’
(d) O ba greadur mae wyau’n dod
    from what creature is eggs–PROG come
    ‘What creature do eggs come from?’

WH MOVEMENT

The normal order in Koromfe is SVO.

The normal order in Welsh is VSO.

[Understanding Syntax, CH 8, EX 6–8]
**WH In Situ: The WH Stays**

*Chinese*
(a) Ni kanijan-le shei?
   you see-ASP who
   “Who did you see?”

*Japanese*
(b) Hanako-ga kinoo tomodati-to nani-o tukurimasita ka?
   Hanako-NOM yesterday friend-with what-ACC made QU
   ‘What did Hanako make with her friends yesterday?’

*[Understanding Syntax, CH 8, EX 12&14]*

- **Principle**: Languages have a way of forming WH questions.
- Some languages are parameterized to leave the WH in its deep structure position and other languages are parameterized to move the WH to a clause-initial position. And some languages allow both of these options.
MULTIPLE WH-QUESTIONS

- Languages also vary in how they treat questions that have multiple WH phrases.
- In English, only one WH can move.
  - Who saw what?/*Who what saw?
    - Reminder: The subject WH phrases still move to Spec, CP even there’s no difference in word order.
- Bulgarian is a multiple WH fronting language.
  (a) Koj kogo vidjal?
      who whom saw
      “Who saw whom?”
  (b) Koj kogo kakvo e pital?
      who whom what is asked
      “Who asked whom what?”

[Understanding Syntax, CH 8, EX 21&23]

- Bulgarian has relatively free word order (SVO is the general order), but multiple Whs are in a fixed order – subject, indirect object, direct object.
- In Serbo–Croatian, the WHs are at the front, but their order can vary.
The C head has two pieces of information.
• [+Q] identifies the clause as a question.
• [+WH] specifies that the clause is a WH question.

Do is inserted into T and grabs the tense information. [+Q] motivates T to C movement.

WH phrase starts off as sister to the verb. Kiss c-selects a DP and that DP has a theme/patient theta role. The DP is also assigned accusative case (even though many speakers say who) by the verb.

The subject starts off in Spec, VP and moves to Spec, TP. It satisfies EPP and gets nominative case from T.

NOTATIONAL NOTE: Carnie is preparing us for things to come by introducing this null V head. This is not necessary for us at this point.
Embedded WHs

- Embedded WH phrases behave like those in main clauses.
- However, we don’t get T ⇒ C in embedded clauses.
  - *I wonder who has Jim kissed?
  - I wonder who Jim has kissed.
- The explanation provided in the text is that embedded clauses that contain a WH are [+WH] but [-Q]. The author speculates that the object CP can’t have a C that is [+Q].
- Since [+Q] is what forces the auxiliary to move to C (in main clauses), the auxiliary stays put in embedded questions.
• The WH stops off in Spec, CP of the lower clause before moving up to the higher clause.
• We’ll return to this...

The embedded C is [-WH]. The WH travels up to the main clause Spec, CP.
WH PHRASES CAN’T MOVE TO SPEC, CP WHENEVER THEY WANT: THEY’RE TRAPPED ON ISLANDS
(a) What did Bill claim that he read \( t_i \) in the syntax book?
   - Here, \textit{claim} is a verb that takes a CP complement and the WH phrase can move outside of that complement.

(b) *What did Bill make \([\text{DP the claim } [\text{CP that he read } t_i \text{ in the syntax book}]]\)?
   - Here, \textit{claim} is one of our representational nouns. It takes a CP complement. The WH is trying to escape a DP – as opposed to a CP – and it can’t.

(c) *[Which cake] did you see \([\text{DP the man } [\text{CP who baked } t_i]]\)?
   - We have a DP that contains a relative clause, so the CP is in adjunct position.
   - The WH still can’t move outside of the DP.
The WH-Island Constraint

John bought the sweater with the $20 bill.

(a) I wonder what\(_i\) John bought t\(_i\) with the $20 bill.
(b) How\(_i\) do you think John bought the sweater t\(_i\)?
(c) *How do you wonder what John bought?
   *What do you wonder how John bought?  [EX 40-43]

- The deep structure for the embedded clause is *John bought what how?*
- In each of the bad sentences, one WH occupies Spec,CP in the embedded clause and the other WH occupies Spec,CP in the main clause. This seems like it should be just fine.
- BUT, one of the WHs has to hop over the one that has moved to Spec,CP of the lower clause in order to get to the higher clause. It’s this movement that is illegal.

“The central intuition underlying an account of these facts is that once you move a WH-phrase into the specifier of a CP, then that CP becomes an island for further extraction.” [p. 376]
• Returning to this tree, we now have a better understanding of the movement. A WH can’t hop over another WH that sits in Spec, CP.
• This suggests that WHs have to stop in Spec, CP, which is what we see here.

The Minimal Link Condition: Move to the closest potential landing site. [EX 56]
West Ulster English

- The word order patterns from West Ulster English (spoken in Ireland) give us additional evidence for this obligatory movement through Spec, CP.
- We can “see” the Minimal Link Condition at work.

[Data from McCloskey 2000, *Quantifier Float and Movement in an Irish English*]
The Subject Condition

- We know that CPs can occupy the syntactic subject position. But, WH phrases can’t escape them.

(a) \([_{\text{CP}} \text{That the police would arrest several rioters}]\) was a certainty.

(b) * Who\(_i\) was\(_j\) \([_{\text{CP}} \text{that the police would arrest t\(_i\)] \text{t\(_j\) a certainty?} \) [EX 49]
The Coordinate Structure Constraint

(a) Cherlon saw \([\text{DP } [\text{DP Unbroken}] \text{ and } [\text{DP American Sniper}]]\).

(b) *Which other movie did Cherlon see Unbroken and \(t_i\)?/*Which other movie did Cherlon see \(t_i\) and American Sniper?

(c) She \([\text{VP } [\text{VP ate some popcorn}] \text{ and } [\text{VP drank some soda}]]\).

(d) *What did she eat \(t_i\) and drink some soda?/*What did she eat some popcorn and drink \(t_i\)?

- Pretty self-explanatory. We can’t move a WH out of a conjoined phrase.
More on The Minimal Link Condition (MLC)

- The MLC basically says that when something needs to move it goes to the closest potential position which it is c-commanded by.
  - This explains our WH Island effects.
- The MLC also applies to DP movement and head movement.

(a) It seems that Mark\textsubscript{i} is likely t\textsubscript{i} to have left.
  - This is good because Mark moves to the next position where nominative case is available.

(b) *Mark seems that is likely t\textsubscript{i} to have left.
  - This is out because either Mark skipped over the next available position or because Mark moved to that position and then left for no reason.

(c) *Mark seems that it is likely t\textsubscript{i} to have left.
  - Here, there’s an expletive in the position that Mark is supposed to land in. He goes to the higher clause but this is not allowed.
    - There’s another DP in the spot that Mark is supposed to move to.
    - This is like the illegal WH movement.
INTERIM SUMMARY: Key Points

• [+Q] on C motivates T to C movement
• [+WH] on an embedded C means the WH stays in the embedded Spec, CP
• [-WH] on an embedded C means that the WH travels to the matrix Spec, CP.
• WH movement is constrained by island effects
  • The Complex DP Constraint
  • WH Island Constraint
  • Subject Constraint
  • Coordinate Structure Constraint
• West Ulster English overtly illustrates the Minimal Link Condition
Part 1. Please draw a tree for each of the following sentences. Your trees should show: case assignment, tense, all movement operations (follow the VP-Internal Subject Hypothesis), and WH and Q features. Try your best to follow the different +/- configurations that are outlined in the Carnie reading for main clause and embedded clause WHs. You should also use DPs. No □ please. NOTE: If a WH phrase needs case, it gets case in the same spot that a non-WH DP would. WH phrases do not get case in Spec, CP.

1. Which students now understand how island conditions work?
2. The book about the former president’s author won the sought-after award when it finally hit the bookstores.
3. The investigators know who was framed by the real criminal.
4. What bottle of wine do you think the server should recommend to the diners?
5. Who do you suspect was encouraged to apply for the internship?

Part 2. Following is a sentence from Irish that we’ve seen. Use this example and the corresponding sentence in English to discuss verb movement, the VP-Internal Subject Hypothesis, case assignment, and the Extended Projection Principle (EPP) in terms of principles and parameters. You do not need to draw trees, but you can if you it’s useful for your answer.

6. Phóg Máire an lucharachán.
   kissed Mary the leprechaun
   ‘Mary kissed the leprechaun.’

Part 3. Why are the following sentences ungrammatical? Draw the deep structure and then explain what goes wrong.
7. *Who do you and your roommates hate Jim and like?
8. *Who was that the police would arrest a certainty?
9. *Which famous actor did John make the assertion that he saw in the coffee shop?
10. *What kind of boots have the really nice syntax professor should bought on Saturday?
11. *It was punched him by the frustrated player on the other team.
12. *How do you think what the students studied?
WH MOVEMENT AND RELATIVE CLAUSES

Introducing “Operators”
We know that CPs inside of DPs can either be arguments or adjuncts. 
- And we know that the Complex DP Island Constraint applies to both kinds of CPs.

(1) a. The fact that I like begonia-flavored milk shakes is none of your business.

b. She made the outrageous claim that tuna-flavored milkshakes are good for you.

[Carnie, Chapter 12, EX 27]

- The embedded CPs are arguments of the factive (contentful) nouns fact/claim.

- In both of these sentences, the embedded clause is a phonetically full clause. There’s no silent material.

What we know
Relative clauses are adjuncts that modify a noun. They are like WH questions in that there is displaced/silent information.

The **a** sentences contain run of the mill embedded WH clauses. The **b** sentences contain relative clauses.

(1) a. I asked *where* you found it ___.
   b. I won’t reveal the place *where* we found it ___.

(2) a. I asked *who* she kissed ___.
   b. I know several people *who* she kissed ___.

[Carnie, CH 12, EX 28-29]
• This is normal WH movement. The only difference is that the head noun *people* is coindexed with the DP *who*.

• This coindexation represents that the noun and *who* have the same identity. The noun is actually interpreted in the object position.

**Sidebar:** There’s an obvious question. It seems like *several people* is actually the referent of *who*. Relative clauses are extraordinarily complicated (semantically, and consequently, syntactically) and this analysis simplifies things. But, we’ll live with it.

**A familiar derivation**
Not every relative clause contains a WH word...

1. a. I know several people (that) she kissed.
   b. I know I bought the book (that) you recommended.

   [Carnie, Ch 12, EX 31-32]

   ...so how do we maintain the parallelism with WH constructions?

   - A null WH word (an operator) occupies the spot that a WH would in the deep structure and moves to Spec, CP in the same way that an overt WH would.

2. a. I know \[DP\text{several people} [CP (that) she kissed Op].

   b. I know I bought \[DP\text{the book} [CP (that) you recommended Op].

   \[NOTE: The Carnie reading doesn’t coindex Op with the noun, but it probably should be.\]
- C-selection and s-selection suggest that there is actually something present.

- In both examples, both the verb in the main clause and the verb in the embedded clause require DP objects that have a theme (or something like that) theta role.
  - *People/book* have a relationship with both verbs.

- The operator meets the c-selection and s-selection requirements of the verb in the lower clause.

- The coindexation represents that *people/book* are interpreted in both the main clause and embedded clause object position.

- The operator is *not* interpreted in Spec,CP after it moves in the same way that an overt WH is not interpreted in Spec,CP.

**Why have a null element?**
1. Thy freend which that thou has lorn
‘Your friend that you have lost.’
- An older variety of English

2. der Hund der wo gestern d’ Katz bissn hod.
the dog who that yesterday the cat bitten has
‘the dog that bit the cat yesterday.’
- Bavarian German

[Carnie, Ch 12, EX 35-36]

Here, we have both the moved WH and the complementizer in the relative clause.

Some evidence for the operator
Different Types of Relative Clauses

**Restrictive Relative Clauses**

- Limit the meaning of the nouns they modify.
  - The guy who is wearing the red hat just hit me. [Carnie, CH 12 EX ia]

- Must be closer to the noun.
  - The man that is escaping, who I think might be drunk, hit me. [Carnie, CH 12, EX iia]

**Non-restrictive relative clauses**

- Provide supplementary information about the nouns they modify.
  - That guy, who I think might be drunk, just hit me. [Carnie, CH 12, EX ib]

- Can be farther away from the noun.
  - *The man, who I think might be drunk, that is escaping hit me.
    [Carnie, EX iib]
Many languages pattern like English and have externally-headed relative clauses. The overt element (the head noun) is external to the relative clause CP.

**Tinrin**: spoken in New Caledonia

1. wa mwîê rra [nrâ sùveharru nrâ toni] nrâ truu numea
   the woman there 3sg like SM Tony 3sg stay Noumea
   ‘The woman that Tony likes lives in Noumea.’ [Tallerman, CH 8, EX 43]

   The relative clause follows the head noun and there is not a special relative marker. [SM = subject marker]

**Yimas**: spoken in Papua New Guinea

2. ŋaykum [irut m–naampa–nt–um]
   women mat REL–weave–PRES–3pl
   ‘The women who are weaving the mats’ [Tallerman, CH 8, EX 44]

   Again, the relative clause follows the head noun but there’s a relative affix on the verb.

**Japanese**

   Kimura–Mr.–NOM keeps–NONPAST dog
   ‘the dog that Mr. Kimura keeps’ [Tallerman, CH 8, EX 45]

   Here, we have an externally headed relative clause but the clause precedes the head noun. This is common in head–final languages; Japanese is SOV. As in Tinrin, there’s no relative marker.
Some languages have **internally-headed** relative clauses. The head noun is inside of the CP. This is the rarer pattern.

*Bambara* (spoken in West Africa)

1. tye ye [ne ye so min ye] san
   man PAST I PAST horse which see buy
   ‘The man bought the horse which I saw.’ [Tallerman, CH 8, EX 51]

*Hausa* (also spoken in West Africa)

- And sometimes, there is a **resumptive pronoun** in the place where other languages have a gap. This is a common when an object of a preposition has been relativized.

2. wuqad [da ya kashe ta da ita]
   knife REL he killed her with it
   ‘the knife that he killed her with’ [Tallerman, CH 8, EX 52]

- This is an externally-headed relative clause. There is a relative marker at the start of the relative clause and a pronoun in the position of *knife*. 
Relative clauses, Cherlon’s students already understand. Infinitives, they will soon learn about.

That snowstorm in D.C., Cherlon is really glad she missed.

What a strong swimmer Kim is.

How tired I feel these days.

[Tallerman, CH 8, EX 53-54]

[See Tallerman, Chapter 8.2 for some cross-linguistic data]

Other movement to Spec,CP: Focus/Topicalization and Exclamatives
Practice

1. She snarled at the students who had not read the book.
2. The storm we had last night was amazing.
3. Which house that the realtor sold yesterday did the young couple actually want?
4. The application forms that arrived yesterday look quite hard.
5. Kim finished an article Lee had started.
6. The wine that got rave reviews was quickly purchased.
7. Jesse did not know the place where Hank had buried the money.
8. Which meal that Cherlon cooked was the most fantastic thing on earth?