

CAS LX 422 / GRS LX 722 Intermediate Syntax

wh-movement and locality
(9.1-9.3)

18

Mysteries

Mary heard the rumor that Pat kissed Chris.

*Who did Mary hear the rumor that Pat kissed?

Mary sneezed after Pat kissed Chris.

*Who did Mary sneeze after Pat kissed?

Mary said that Pat kissed Chris.

Who did Mary say that Pat kissed?

Long-distance wh-movement

- What did Hurley say [_{CP} he was writing <what>]?
- This is a question: The highest C has a [Q] (= [clause-type:Q]) feature and a [**uwh***] feature.
- When C values the [**uclause-type:**] feature of T, it becomes [**uclause-type:Q***]. To check this feature, T moves to C.
- When T is adjoined to C, its sister is not headed by *v*, so we “insert *do*” to pronounce the tense.
- To check the [**uwh***] feature of C, the interrogative pronoun *what* moves up (into SpecCP).

[_{CP} what T+C [_{TP} H <T> say [_{CP} he was writing <what>]]]
[_{wh}] [_{uclt:Q*}]+[_{Q, uwh*}]
 did

Long distance wh-movement

At first glance, there seems to be no limit on how far a *wh*-word can move any more than there is a limit on how many clauses you can embed:

What did Jack bring?

What did Charlie hear [_{CP} Jack brought _]?

What did Claire say [_{CP} Charlie heard
[_{CP} Jack brought _]]?

What did Kate think [_{CP} Claire said
[_{CP} Charlie heard [_{CP} Jack brought _]]]?

- And yet...

Islands

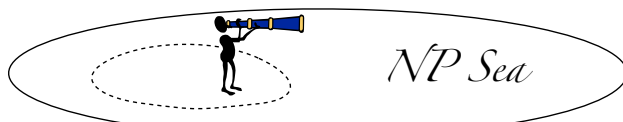
Hurley claimed [_{CP} that the list does not include Ethan].

Who did Hurley claim [_{CP} that the list does not include _]?

Why did Hurley claim [_{CP} that the list does not include E.]?

Jack believes
[_{DP} the claim [_{CP} that the list does not include Ethan]].

*Who does Jack believe
[_{DP} the claim [_{CP} that the list does not include _]]?



Islands

Hurley claimed [_{CP} that the list does not include Ethan].

Who did Hurley claim [_{CP} that the list does not include _]?

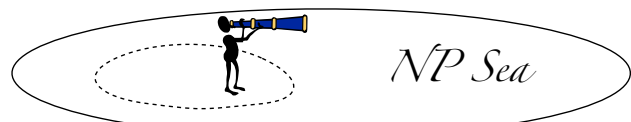
Jack believes
[_{DP} the claim [_{CP} that the list does not include Ethan]].

*Who does Jack believe
[_{DP} the claim [_{CP} that the list does not include _]]?

Who starts out **inside the DP**.

The DP forms a sort of **barrier to movement**.

- **Complex Noun Phrase island**



Locality

The generalization (which we hope to explain):
A *wh*-word cannot move out of a DP.

This is a **locality condition**, a requirement that *wh*-movement not go too far (where escaping from inside a DP counts as “too far”).

We have a bit of a paradox, then: *Wh*-words seem to be able to move arbitrarily far (e.g., from any number of embedded clauses)—but *wh*-words cannot move too far (e.g., out of a DP).

Can *wh*-words go arbitrarily far?

Assuming that moving a *wh*-word out from inside a DP is impossible because it is moving the *wh*-word “too far”, we should go back to look at why we thought *wh*-words *could* move arbitrarily far.

What did Kate think [_{CP} Claire said
[_{CP} Charlie heard [_{CP} Jack brought _]]]?

Where do *wh*-words generally move?

- What will Ethan do _?

What exactly is going on?

What exactly did you buy?

What did you buy exactly?

- All the students will buy a textbook.
- The students will all buy a textbook.

What exactly did he say [_{CP} that he wants]?

What did he say [_{CP} that he wants exactly]?

What did he say [_{CP} exactly that he wants]?

Scottish Gaelic complementizer agreement

Bha mi ag ràdh **gun** do bhuail i e.
was I **ASP** saying **that PRT** struck she him
'I was saying that she hit him.'

Tha mi a' smaoinichadh **gu** bheil lain air a mhisg.
am I **ASP** thinking **that** is lain on his drink
'I think that lain is drunk.'

Cò bha thu ag ràdh **a** bhuail i?
who were you **ASP** saying **that** struck she
'Who were you saying that she hit?'

Cò tha thu a' smaoinichadh **a** tha air a mhisg?
who are you **ASP** thinking **that** is on his drink
'Who do you think is drunk?'

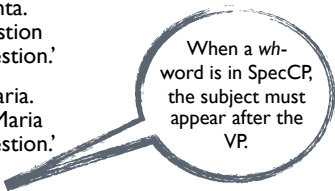
Inversion in Spanish

Maria contestó la pregunta.
Maria answered the question
'Maria answered the question.'

Contestó la pregunta Maria.
answered the question Maria
'Maria answered the question.'

Qué querían esos dos?
what wanted those two
'What did those two want?'

*Qué esos dos querían?
what those two wanted
'(What did those two want?)'



When a *wh*-word is in SpecCP, the subject must appear after the VP.

Successive inversion

Juan pensaba que Pedro le había dicho que...
Juan thought that Pedro to-him had said that
la revista había publicado ya el artículo.
the journal had published already the article
'Juan thought that Pedro had told him that the journal had published the article already.'

Qué pensaba Juan que le había dicho Pedro...
what thought Juan that to-him had said Pedro
que había publicado la revista?
that had published the journal
'What did Juan think that Pedro had told him that the journal had published?'

When a *wh*-word is in SpecCP, the subject must appear after the VP.

Successive inversion

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Qué pensaba Juan que le había dicho Pedro...
 what thought Juan that to-him had said Pedro
 que había publicado la revista?
 that had published the journal
 'What did Juan think that Pedro had told him that the journal had published?'

That “unbounded” movement...

It looks like (where we can tell), a *wh*-word that moves from inside an embedded clause **actually moves first to the SpecCP of the embedded clause, and then moves on.**

[_{CP} What did you say
 [_{CP} <what> that Pat would eat <what>]] ?

Compare:
 [_{CP} [_{TP} Pat seems [_{TP} <Pat> to be likely [_{TP} <Pat> to appear [_{TP} <Pat> to cry]]]] ?

That “unbounded” movement...

This means: **Where it looked like *wh*-words were moving over great distances, those distances were traversed in small steps.**

What did Kate think [_{CP} <what> Claire said
 [_{CP} <what> Charlie heard
 [_{CP} <what> Jack brought <what>]]] ?

If *wh*-movement is in fact constrained not to move “too far”, this explains how it can look like *wh*-movement is unbounded.

What it means to move too far

Having gotten an idea about what is happening, let's go back to our theory to figure out how we can ensure that it does.

- We need to allow a *wh*-word to move from one SpecCP to a higher SpecCP.
 [_{CP} What did Al say [_{CP} <what> that Bart stole <what>]] ?
- We need to prevent a *wh*-word from moving from further inside a CP to a higher SpecCP.
 [_{CP} What did Al say [_{CP} that Bart stole <what>]] ?

What it means to move too far

A common idea about this is to say that sentences are built up in “chunks”, called **phases**.

- **A CP constitutes a phase.**

Once you've built a phase, you can't “see into it” further than the specifier.

[_{CP} C [_{uwh}*] [_{TP} Al T say [_{CP} that [_{TP} Bart stole what...]]]

[_{CP} C [_{uwh}*] [_{TP} Al T say [_{CP} what that [_{TP} Bart stole <what>...]]]

So, in order for [_{uwh}*] to be checked, *what* must be visible to it.

Technical implementation

To allow *what* to move to an embedded SpecCP, we need to be able to add (optionally) a [_{uwh}*] feature even to a C that is not itself [clause-type:Q].

[_{CP} C [_{uwh}*] [_{TP} Al T say [_{CP} what that [_{TP} Bart stole <what>...]]]

If you don't, the topmost [_{uwh}*] can never be checked.

Embedded C may optionally bear [_{uwh}*].

Wh-islands

Having gotten this far, we predict that it is not possible to turn this

Pat asked [_{CP} who kidnapped the Lindbergh baby].

into a question asking about the kidnappee:

*Who did Pat ask [_{CP} who kidnapped <who>]?

See why?

Wh-islands

An embedded question forms another kind of an “island”, generally called a **wh-island**.

The embedded C already had a [**uwh***] feature, which was checked by moving the first *wh*-word into SpecCP. By the time we get to the main clause C, it can no longer see a *wh*-word inside the embedded clause.

*Who did Pat ask [_{CP} who kidnapped <who>]?

Op

In fact, remember when we looked at yes-no questions and suggested that even they have a “silent *whether*” (**Op**)?

Pat wondered [_{CP} *Op* if Hauptmann kidnapped the Lindbergh baby].

*Who did Pat wonder [_{CP} *Op* if Hauptmann kidnapped <who>]?

Evidence that *Op* is really there.

Complex Noun Phrase islands

We can use the same kind of explanation for the Complex Noun Phrase islands:

*Who does Jack believe
[_{DP} the claim [_{CP} that the list does not include _]]?

If we suppose that DP, like CP, is a phase.

*Who does Jack believe
[_{DP} the claim [_{CP} that the list does not include _]]?

Adjunct islands

One last type of island we’ll consider is the **adjunct island**. Generally: A *wh*-word cannot escape an adjoined modifier.

Dr. Hibbert laughed [_{CP} when Homer lost a finger].

*What did Dr. Hibbert laugh [_{CP} when Homer lost]?

We don’t yet have a good explanation for this. So far, we predict these should be possible.

Adjunct islands

To account for the islandhood of adjuncts in our system, we will add one further condition:

The specifier of a phase is only visible to feature matching if the phase gets a θ -role.

Note: Adger makes this one step more complicated, to account for “subject islands” but we won’t do that here.

Adjuncts differ from arguments in precisely this property.

In sum...

Sentences are “chunked” into **phases** as they are built up. Phases are **CP** and **DP**.

- A feature outside of a phase cannot match a feature further inside the phase than its specifier.

This leads to **island phenomena**, configurations in which a *wh*-word would be “trapped”:

CNP islands: A *wh*-word cannot get to the specifier of DP and so is not visible from outside.

Wh-islands: A *wh*-word cannot get to the specifier of an embedded question (that already has a *wh*-word, or *Op*, in its specifier).

Adjunct islands: Even the specifier is not visible if the phase did not get a θ -role.

Islands

? [John -ed call the police [after you stole what



Islands

? -ed [John -ed call the police [after you stole what



Islands

? -ed [John -ed call the police [after you stole what



Islands

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“Island effects” are a property of movement

Jack believes [_{DP} the claim [_{CP} that the list does not include Ethan]]?

*Who does Jack believe [_{DP} the claim [_{CP} that the list does not include _]]?

Who believes [_{DP} the claim [_{CP} that the list does not include who]]?

Dr. Hibbert laughed [_{CP} when Homer lost a finger].

*What did Dr. Hibbert laugh [_{CP} when Homer lost _]?]

Who laughed [_{CP} when Homer lost what]?]

So long as the *wh*-phrase doesn't *move*, it seems that there's no problem with simply having a *wh*-phrase inside an island.

“Island effects” are a property of movement

Japanese: a *wh*-in-situ language.

- Taroo-ga [**DP** Hanako-ni **nani-o** ageta hito-ni] aimasita ka?
T-nom H-dat what-acc gave man-dat met.pol Q
*‘What did Taro meet [the man that gave _ to Hanako]?’
- Taroo-ga [**CP** Hanako-ga **nani-o** yomu maeni] dekakemasita ka?
T-nom H-nom what-acc read before left.pol Q
*‘What did Taro leave [before Hanako read _]?’

Wh-words don’t move. Islands don’t matter.

Why phases?

One of the main motivations behind phases (conceptually—empirically, there is plenty of evidence) is that it makes computation easier.

- That is, again, the system is lazy. It works in chunks, it never has to look too far to find a feature for checking.

What happens when a phase is “committed”?

- The standard idea is that the *phonological interpretation* and *semantic interpretation* of that chunk becomes fixed, and can’t be altered later. Terminology: **“Spell-out”**
- Terminology: The requirement that movement not go “too far” (not escape a committed phase) was known in the old days as **Subjacency**—you may still encounter this term when talking to linguists at parties (or reading older papers).