Syntax and semantics—question formation in English

(1) John bought a book.      (3) * John bought what?

(2) \textbf{What} did John buy _ ?

(4) • what appears initially, not in its interpretation position (argument of buy).
    • For which x, John bought x?

\begin{center}
\textbf{For which} x, John bought \( x \).
\end{center}

\[ [ \text{what}, i ] \text{ did John buy } t_i \]

A common hypothesis: Wh-movement is semantically driven.
It happens in order to create an operator-variable structure.
Semantics of wh-questions require an Op-vbl structure.

But trouble arises immediately: Even in questions with multiple-wh-words, in English we move only one.

(5) \textbf{What} did John give _ to \textbf{whom}?

How is the second wh-word interpreted? Doesn’t it too need an Op-vbl structure?

(6) a. I wonder who saw what.
    b. I wonder for which \( x \), for which \( y \), someone \( x \) saw something \( y \).

(7) Assign an unmoved wh-phrase to an existing +WH COMP and interpret it in the same way moved wh-phrases are interpreted
(Chomsky’s 1973:283 (249) paraphrased)

That is, even if the wh-word doesn’t move, you link it up with a clause and interpret it as if it had moved.

But if wh-words can be interpreted without moving them, this undercuts the idea that wh-movement is driven for semantic reasons.
Two ways to go:  
• *wh*-words *always* move, but sometimes “covertly.”  
• *wh*-movement (for all *wh*-words) is not *semantically* motivated.  
  (there is some alternate way to interpret a *wh*-in-situ)

**Position One: Wh-words always move** (Huang 1982)

- Even when *wh*-words appear in situ, they “move covertly.”
- Unifies the interpretation of *wh*-words (also across languages).
- Predicts properties of *movement* even where movement is covert.

<table>
<thead>
<tr>
<th>Bulgarian: Move all <em>wh</em>-words (incidentally, keeping them in order)</th>
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</table>
| (8) John e vidjal Mary.  
  John has seen Mary  
  ‘John has seen Mary’ |
| (9) *koj kogo* e vidjal ?  
  *who whom* has seen  
  ‘Who has seen whom?’ |
| (10) *(?)* *koj e vidjal kogo ?*  
  *who has seen whom*  
  (‘Who has seen whom?’) |
| (11) *kogo koj* e vidjal ?  
  *whom who* has seen  
  (‘Who has seen whom?’) |

<table>
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<tr>
<th>Japanese: Move no <em>wh</em>-words.</th>
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</table>
| (12) John-ga hon-o katta.  
  John-NOM book-ACC bought  
  ‘John bought a book.’ |
| (13) John-ga *nani*-o katta no?  
  John-NOM *what*-ACC bought Q  
  ‘What did John buy?’ |
| (14) *dare-ga nani*-o katta no?  
  *who*-NOM *what*-ACC bought Q  
  ‘Who bought what?’ |
A (rough) typology of (overt) *wh*-movement

\[
\begin{align*}
\text{wh-movement} & \quad \text{Move a single } \textit{wh}-\text{word} & \quad \text{(English, French, …)} \\
\text{wh-in-situ} & \quad \text{Move all } \textit{wh}-\text{words} & \quad \text{(Bulgarian, Polish, …)} \\
\end{align*}
\]

Under “Position One” all of these languages look like Bulgarian at Logical Form.
(hence, we can get away with a single crosslinguistic mechanism of interpretation).

The view of syntax position one suggests:

<table>
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<tr>
<th>Typology of <em>wh</em>-movement</th>
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<tbody>
<tr>
<td>• English, … one <em>wh</em>-word before Spellout, the rest after.</td>
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<tr>
<td>• Bulgarian, … all <em>wh</em>-words before Spellout.</td>
</tr>
<tr>
<td>• Japanese, … all <em>wh</em>-words after Spellout.</td>
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Position Two: *Wh*-words only move when you see them move.

• Movement of (all) *wh*-words cannot be driven by semantics
  (assuming that all languages share the same interpretive principles)
• Requires either: two ways to interpret a *wh*-word (moved, in-situ)
  or: uniform interpretation of *wh*-words *in situ*
  (and “putting back” moved *wh*-words).
☞ • Predicts properties of moved *wh*-words may differ from those of *wh*-in-situ.

Still: What causes the typology (all, one, none) of *wh*-movement?
Under Position Two this is a question which is basically orthogonal to semantics.

A very common view of the typology:

<table>
<thead>
<tr>
<th>[Parm. Q] Every question needs a <em>wh</em>-word in front?</th>
<th>English</th>
<th>Bulgarian</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Parm. W] Every <em>wh</em>-word needs to be in front?</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Some languages appear to fall somewhere in the middle though—[W:–, Q: ±]

(15) a. Qu’a-t-il donné à qui ?
    what has-he given to whom
    ‘What did he give to whom?’

   b. Il a donné quoi à qui ?
   He has given what to whom
   ‘What did he give to whom?’

**The question of interpretation of questions**

First, let’s suppose, with the rest of the world, for the sake of argument, that *wh*-questions require an operator binding a variable in their interpretation.

(16) What, did John buy \( t \) ? (‘For what value of \( x \) is it true that John bought \( x \)’)

Most people suppose that movement yields an operator-variable structure.

Where there is no overt movement, people disagree:

- **Approach 1:** *wh*-words can be variables (when in situ) bound by something else.
  E.g., simultaneous binding by a moved *wh*-word, or binding from a “+Q complementizer.”

- **Approach 2:** There is covert movement, both work the same way.

- **Approach 1.5:** A *wh*-word can be bound by a “scope marker” which occupies the same position as a moved *wh*-word would, but is base-generated there.

But there are even problems with overt movement creating Op-vbl structure…

Chomsky (1977:83) noticed that the idea that the moved *wh*-phrase is an operator controlling a variable does not work in its simplest form.

(17) **Whose book** did Mary read \( _ \) ?

(18) a. For which \( x, x \) a person, Mary read \([x’s\ \text{book}]\)

   b. not For which \( x, x \) a book (owned) by somebody, Mary read \( x \)
That is, some material within the NP *whose book* has to be *put back* for interpretation.

(19) \[ \text{Who } \_ \text{se book } \text{ did Mary read } [ \_ \text{se book }] ? \]

For which \( x \)? : Mary read [ \( x \)’s book ].

---


(20) **Who knows where we bought what?** (*Baker 1970, “the Baker ambiguity”*)

a. John does (he knows we bought the book in Amsterdam, the record in Groningen, etc.)

b. John knows where we bought the book (e.g., in Amsterdam); Mary knows where we bought the record (e.g., in Groningen), etc.

Suppose that the pairings (where-what, in 20a; who-what in 20b) indicate the CP with which *what* is associated at the point of interpretation (LF).

**Approach 1 (Baker):** The association between C and a *wh*-in-situ is implemented by coindexing the *wh*-phrase with a Q morpheme (which we might identify with C):

(21) \[ [\text{CP } \text{who} ] Q_{i,j} \text{ t}_i \text{ read } \text{what}_j ] \]

**Approach 2 (Chomsky, Huang, etc.):** The association between C and a *wh*-in-situ is implemented by the familiar kind of movement, just between Spell-out and LF.

(22) \[ [\text{CP } \text{who} ] [\text{IP } t_j \text{ knows } [\text{CP } \text{what} ] [\text{IP we bought } t_i \text{ } t_k ]] ] \]

(23) \[ [\text{CP } \text{what} ] [\text{IP } t_j \text{ knows } [\text{CP } [\text{IP we bought } t_i \text{ } t_k ] ]] ] \]

**Diagnosing movement: Superiority**

(24) a. Who\( _i \) did you persuade \( t_i \) to read what?

b. ?? What\( _j \) did you persuade who(m) to read\( _j \)?
**Pesetsky (1982/1987) version:** Nested dependency condition: If two wh-trace dependencies overlap, one must contain the other. More modern version: Attract Closest/Shortest Move: Only the closest wh-word to the target C is allowed to move.

(25)  
  a. \[[\text{CP what}_j [\text{CP who}_i \text{C} [\text{IP you persuade } t_i \text{ to read } t_j ]]] ?\]  
  b. ?? \[[\text{CP who}_i [\text{CP what}_j \text{C} [\text{IP you persuade } t_i \text{ to read } t_j ]]] ?\]

**Diagnosing non-movement? Lack of Superiority**

(26)  
  a. [Which man]_i did you persuade t_i to read which book?  
  b. [Which book]_j did you persuade [which man] to read t_j ?

We have the same scope options:

(27)  
Which man knows where which woman will live?

**What makes which-phrases special?**

It’s not “heaviness.”

(28)  
* I need to know who(m) how many people voted for.

**Idea:** Which phrases are discourse-linked (“D-linked”), where the range of answers is limited by a set that both speaker and hearer have in mind. Not generally true for who and what.

**Hypothesis:** D-linked wh-phrases are fundamentally different. They don’t get their scope via movement. Hence, no movement-related effects.

(29)  
I know that we need install transistor A, transistor B, and transistor C, and I know that these three holes are for transistors, but I’ll be damned if I can figure out where what goes!

**Wh-in-situ languages like Japanese: wh-words inside movement islands are allowed**

(30)  
Mary-wa John-ni nani-o ageta-no?  
Mary-top John-dat what-acc gave-Q  
‘What did Mary give to John?’
(31) Mary-wa [John-ga nani-o katta-ka] sitte-iru/
Mary-top John-nom what-acc bought-Q know
‘I know what John bought.’

(32) Mary-wa [John-ga nani-o yonda to] itta no?
Mary-top John-nom what-acc read that said Q
‘What did Mary say that John read?’

(33) a. * What did Mary meet [DP the man [CP who gave t to John]]?
b. What did Mary leave [AdvP before John read t]?

Mary-top John-dat what-acc gave man-dat meet Q
(‘What did Mary meet the man who gave t to John?’)
b. Mary-wa [AdvP John-ga nani-o yomu mae-ni] dekaketa-no?
Mary-top John-nom what-acc read after left-Q
(‘What did Mary leave before John read t?’)

If you can’t move out of islands, are these wh-words D-linked in Japanese?

If they are moving, then Subjacency must not hold between Spell-out and LF. And then what does it mean to say that it is “movement”?

Let’s see. If we can force a wh-word not to be D-linked (force it to move), maybe we can see whether a non-D-linked wh-word can be in an island.

Aggressively non-D-linked wh-phrases: What the hell…, What on earth…, …

(35) a. What the hell book did you read that in?
b. * Which the hell book did you read that in?

Japanese ittai may work the same way.

(36) Mary-wa John-ni ittai nani-o ageta-no
Mary-top John-dat ittai what-acc gave Q
‘What the hell did Mary give to John?’

(37) Mary-wa [John-ga ittai nani-o yonda to] itta no?
Mary-top John-nom ittai what-acc read that said Q
‘What the hell did Mary say that John read?’
So, let’s try it: Put *ittai* in an island (forcing movement):

(38)  
   Mary-top John-dat ittai what gave man-dat met Q  
   (‘What the hell did Mary meet the man who gave t to John?’)

   Mary-top John-nom itta what-acc read before left Q  
   (‘What the hell did Mary leave before John read t ?)

Bingo. Force a *wh*-word to be non-D-linked (using *ittai*) and the sentence becomes bad.

Ah, so all *wh*-words are D-linked in Japanese (at least in islands)?

Ok, great. Now are *wh*-words in islands necessarily D-linked? Well, that hardly seems right. But do they show Subjacency effects? Not on first glance, but let’s glance again.

Questions can be answered with short answers:

(39)  
   Q: Mary-wa John-ni nani-o ageta-no?  
   Mary-top John-dat what-acc gave Q  
   ‘What did Mary give to John?’

   A: Konpyuuttaa desu  
   computer is  
   ‘It’s a computer.’

(40)  
   Q: Mary-wa [John-ga nani-o yonda to] omotteiru-no? 
   Mary-top John-nom what-acc read that think Q  
   ‘What does Mary think that John read?’

   A: “Sensoo to Heiwa” desu  
   War and Peace is  
   ‘It’s War and Peace.’
But when the *wh*-word is in an island, suddenly the shortest answer seems to repeat the whole island:


A: */?? Konpyuutaa desu. computer is
   (‘It’s a computer’)

A2:  [DP [CP Konpyuutaa-o ageta] hito] desu computer-acc gave man is
   ‘It’s the man who gave a computer (to him).’

(42)  Q:  Mary-wa [John-ga nani-o yomu mae-ni] dekaketa-no? Mary-top John-nom what read before left Q ‘What did Mary leave before John read it?’

A:  * “Sensoo to Heiwa” desu. War and Peace is
   It’s *War and Peace*.

A2:  [AdvP “Sensoo to Heiwa”-o yomu mae] desu War and Peace-acc read before is
   ‘It’s before (he) read *War and Peace*.’

Suppose the answers are governed by a felicity condition that requires that the answer be part of phrase that is structurally identical to the *wh*-phrase. What does that mean?

**LF-pied piping**

Suppose: Subjacency holds all the time; it’s a property of movement.
   *Wh*-words can appear inside islands in *wh*-in-situ languages like Japanese.
   D-linking has to do with interpretation.
   Non-D-linked *wh*-words need to move (perhaps covertly) to CP.
   *Wh*-words in Japanese are not necessarily D-linked.

How do we get out of this?

(43)  a.  [Whose book] did you read it?
   b.  * Who did you read [ it’s book ]?
If we believe in covert movement, no reason not to also suppose there might be covert pied-piping as well. If the whole island can be treated as a *wh*-word, the whole island can move, no Subjacency violation.

So what went wrong with *ittai* in an island? Not clear, non-D-linked words are certainly allowed in islands. It just seems that *ittai* blocks LFPP:

Another interesting point: *Ittai* is ok on the edge of the island. Perhaps *ittai* not only forces a non-D-linked interpretation, but also marks the phrase the will move.

(44) Mary-wa ittai [dp [cp John-ni nani-o ageta] hito-ni ] atta-no?  
Mary-top ittai John-dat what-acc gave man-dat met  
‘What in the world did Mary meet the man that John gave *t* to?’

**D-linking in an island**

Now that we know what Subjacency looks like in Japanese, does D-linking keep the *wh*-word from having to move?

(45)  
Q:  Mary-wa [dp [cp John-ni dono konpyuutaa-o ageta] hito-ni] atta-no?  
Mary-top John-dat which computer-acc gave man-dan met  
‘Which computer did Mary meet the man who gave to John?’

A:  IBM-no konpyuutaa desu  
IBM-gen computer is  
‘It’s the IBM computer.’

A:  [dp [cp IBM-no konpyuutaa-o ageta] hito] desu  
IBM-gen computer-acc gave man is  
‘It’s the man who gave the IBM computer (to him).’

Seems so: no movement required, no problem with the short answer. The availability of the long answer might indicate that the LFPP percolation is also available for binding.

**D-linking in Eastern Europe**

(46)  
a.  Zatanawiam się [kto co przyniesie]  
I-wonder who what will-bring  
‘I wonder who will bring what.’

b.  (*) Zatanwiam się kto przyniesi co

But *wh*-in-situ isn’t *ungrammatical*, it just requires a special interpretation:
Why do you have to move *which*-phrases in English? Well, there must be something else that drives *wh*-movement in English. Perhaps: Q must cliticize to a *wh*-phrase or Infl.


To keep in mind: Remember that relative clauses involve Op, a null *wh*-word.
We also get $a^L$ in simple cases as well.

(52)  an fhílocht a chum sí _
      the poetry a composed she
      ‘the poetry she composed’

So: It’s the same kind of C whether it is the **ultimate** destination of $Op$ or just an intermediate stopping point for $Op$.

### The problem with successive cyclicity in the modern world

Under modern views:
- $wh$-movement is driven by a feature of (the scope) C.
- Syntactic structure is built from the bottom up.
- The bottom of the tree doesn’t know what the top is doing.
  — you can’t do something that will only benefit the derivation later.

These conspire to make successive cyclicity kind of a problem—
In a sense the derivation doesn’t know that there’s going to be a $wh$-movement until reaching the [+wh] C that needs to bring the $wh$-word up to it. But by then the tree is already built up—it didn’t stop at each phrase along the way.

There are basically two ways to go:
- Upon reaching the [+wh] C, form a chain, essentially make all of the short hops at the end, do all of the movement at once. (Chomsky 1989).
  *This is no longer really an option under new versions of the MP.*
- Allow optional $wh$-movement to the edge of each clause as it is built.
  Then, rule out derivations that took more effort than they needed to.

McCloskey’s story is basically of the second type.

We would suppose that $a^L$ is a reflection of the feature of C that forces the $wh$-movement (of $Op$). This makes sense, the $wh$-word has to get up to the top, the [+wh] C.

This also suggests that there is a feature in all of the intermediate C’s forcing $wh$-movement, but why? What is it? These intermediate Cs are *not* [+wh] in any interpretive sense. Crosslinguistically, too, in cases like this, the same morphology appears at the top and in the intermediate positions (the top is not distinguishable).
Irish also has a **resumptive pronoun** strategy that alternates with *wh*-movement, in which case the complementizer comes out \( a^N \).

\( (a^N \) is the particle a plus “eclipsis” of the following consonant)\)

(53) a. an ghirseach a ghoid na síogaí
the girl a\(^L\) stole the fairies
‘The girl that the fairies stole away’

b. an ghirseach a-r  ghoid na síogá í
the girl a\(^N\)-PAST stole the fairies her
‘The girl that the fairies stole away’

**So, there are three kinds of complementizers in Irish:**

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<table>
<thead>
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<tbody>
<tr>
<td>a.</td>
<td>go [-wh] embedded clauses.</td>
</tr>
<tr>
<td>b.</td>
<td>( a^L ) [+wh] embedded clauses with movement.</td>
</tr>
<tr>
<td>c.</td>
<td>( a^N ) [+wh] embedded clauses with resumptive pronouns.</td>
</tr>
</tbody>
</table>

Although \( a^L \) has to introduce *each* clause with a gap, \( a^N \) can appear *only at the top*.

(55) DP \[ CP \( a^N \) … [CP go … pro … ] \]

(56) An t-ór seo ar chreid corr-duine go raibh sé ann
the gold DEMON \( a^N \) thought some-people go was it there
‘this gold that some people thought was there’

It makes a “comforting kind of sense”… (still basically circa 1979).

- With \( a^N \), there is no movement, \( Op \) starts out at the top, binds the pronoun.

(57) the girl \( Op_i \) \( a^N \) the fairies stole \( her_i \) away.

- With \( a^L \), there is movement, successive cyclic, binds the trace.

(58) the girl \( Wh-op_i \) \( a^L \) the fairies stole \( t_i \) away.

- The standard properties of movement (islands, WCO) appear with \( a^L \).
- None of the properties of movement appear with \( a^N \).
There also seems to be a “combined” pattern

(59)  \[ \text{CP } a^N \{ \text{TP } \ldots \{ \text{DP (D)} \{ \text{NP N [CP } a^t \{ \text{TP } \ldots t \} \} \} \} \] \]

(60)  rud a raibh tuairim láidir agam a bheadh _ aige

  thing a^N was opinion strong at-me a^L be-COND at-him

  ‘something that I strongly suspected he would have’

**Suggests:** Whatever moves in the lower clause can be bound as a resumptive pronoun.

(61)  \[ \text{CP } O_p i a^N \{ \text{TP } \ldots \{ \text{DP (D)} \{ \text{NP N [CP } Wh-op_i a^t \{ \text{TP } \ldots t_i \} \} \} \} \]

So, since pronouns are what get bound when you can see them, this suggests that Wh-op might be considered a pronoun of some sort.

The reverse pattern also exists:

(62)  \[ \text{CP } a_t \{ \text{TP } \ldots \{ \text{CP } a^N \{ \text{TP } \ldots \text{pro } \ldots \} \} \} \]

(63)  faoi pháistí a chapadar a raibh breoiteacht orthu

  about children a^t they-thought a^N was illness on-them

  ‘about children that they thought were ill’

Which suggests that whatever binds the pronoun can itself move.

(64)  \[ \text{CP } O_p i a^L \{ \text{TP } \ldots \{ \text{CP } t_i a^N \{ \text{TP } \ldots \text{pronoun}_i \ldots \} \} \} \]

And as we would have expected given the above, you can also do this:

(65)  \[ \text{CP } a^N \{ \text{TP } \ldots \{ \text{CP } a^N \{ \text{TP } \ldots \text{pro } \ldots \} \} \]
(66) an méd den dán ar mheas sé a raibh feidhm leis
the much of-the poem a\(^N\) thought he a\(^N\) was need with-it
‘as much of the poem as he thought was needed’

\[
(67) \text{[CP } Op_1 a^N \text{ [TP } \ldots \text{ [CP } Op_i a^N \text{ [TP } \ldots \text{ pronoun}_i \ldots ] ] ] ] ]
\]

So \(Op\) (inserted for binding resumptives) and \textit{pronoun} (the bound resumptive itself) and \textit{Wh-op} (moved from the trace position, binds the trace) are all basically the same thing.

\textbf{Note:} Thus, we can’t decide whether a \textit{C} is a\(^N\) or a\(^L\) based on what’s in its specifier.

McCloskey’s story:

(68) \begin{align*}
\text{C whose specifier is filled by Move is realized as } a^L. \\
\text{C whose specifier is filled by Merge is realized as } a^N. \\
\text{C whose specifier is not filled is realized as } go.
\end{align*}

It’s a little bit weird to suppose that the morphology is sensitive to what operation applied, but we seem to have seen cases already where a \textit{C} like a\(^N\) and a \textit{C} like a\(^L\) both with the same thing in Spec\textit{CP}—so it can’t be determined by the thing in Spec\textit{CP}.

Another interesting point about the resumptive strategy is that it is allowed (as an option) everywhere \textit{except} in the subject position of the topmost clause (in the relative). (Same for most—all?—languages with this kind of grammaticalized resumptive strategy)

(69) \begin{align*}
\text{a. }^* \text{ an fear a raibh sé breoite} \\
\text{the man a}\(^N\) was he ill \\
\text{‘the man that (he) was ill’}
\end{align*}

\begin{align*}
\text{b. an fear a-r shíl muid go raibh sé breoite} \\
\text{the man a}\(^N\)-PAST thought we go was he ill \\
\text{‘the man that we thought was ill’}
\end{align*}

This can be attributed to something like Principle B—the bound resumptive pronoun is too close to its binder. \textit{Strictly speaking this is something of a stretch—Principle B is about }A\textit{ positions, not }A’\textit{-positions, but it still has a ring of plausibility to it.}
Adjunct extraction

Some adverbials (temporals, locatives, and manners) seem to be able to use either \( a^L \) or \( a^N \), like arguments.

(70)  an lá a fuair a ear bás agus a-r fághadh ina baintreach í
the day a\(^L\) got her husband death and a\(^N\)-PAST was-left in-her widow her
‘the day that her husband died and she was left as a widow’

Other adverbials (duratives, frequency) can only use \( a^L \):

(71)  a. Cá fhad a bhí tú ann?
how-long a\(^L\) be-PAST you there
‘How long were you there?’

b. * Cá fhad a raibh tú ann?
how-long a\(^N\) be-PAST you there
‘How long were you there?’

Still other adverbials (reason) can only use \( a^N \):

(72)  Sin an dóigh a bhfuil sé
that the way a\(^N\) is it
‘That’s the way it is.’

(73)  a. Cén fáth a-r dhúirt tú sin?
what reason a\(^N\)-PAST said you that
‘Why did you say that?’

b. * Cén fáth a dúirt tú sin?
what reason a\(^L\) said you that
‘Why did you say that?’

Mysterious, but we know how it must work if we’re right about the rest of it.

\( a^N \) = resumptive relation  
\( a^L \) = movement relation

So, the ones with an option can have a (silent) resumptive pronoun, or else move.

when? then—where? there—how? thus  (temporals, locatives, and manners)

The ones with no option but \( a^L \) have no resumptive pronoun options

for how long? **—how often? **  (duratives, frequency)
But what about reason adverbials (*why*)? There’s no intuitively obvious pronoun for a reason. But they are *forced* to use a\(^N\), doesn’t that imply resumption?

Ah, but no—it doesn’t. *It implies the presence of an operator merged in SpecCP*, which is usually connected to the original position of the *wh*-word in some way (resumptive pronoun or trace).

McCloskey proposes that *why* actually just starts there. Merge fills SpecCP, hence a\(^N\).

(74)  Cén fáth a dúirt Pól a raibh Seán ann  
   what reason a\(^i\) said a\(^N\) be-PAST there  
   ‘Why did Paul say that John was there?’ (reason for John’s being there)

This is actually somewhat familiar from something we saw before—Cinque 1999 observed the behavior of perché and come mai (*why*, ‘how come’) suggests that it is merged directly into SpecCP (for him, SpecIntP), based on the difference in inversion behavior.

(75)  a.  * Che cosa Gianni ha fatto?  
   ‘What Gianni did?’
   a’.  Che cosa ha fatto Gianni?  
   ‘What did Gianni?’

b.  * Dove Gianni è andato?  
   ‘Where Gianni went?’
   b’.  Dove è andato Gianni?  
   ‘Where went Gianni?’

c.  * Come Gianni è partito?  
   ‘How Gianni left?’
   c’.  Come è partito Gianni?  
   ‘How left Gianni?’
(76)  a. Perché Gianni è venuto?
     ‘Why Gianni has left?’

   b. Come mai Gianni è partito?
     ‘How come Gianni has left?’

(77) Perché ha detto che si dimetterà?
     ‘Why did he say that he will resign?’

(78) Perché A GIANNI ha detto che si dimetterà (non a Piero)?
     ‘Why TO GIANNI he said that he will resign (not to Piero)?’

     b. How come did Mary say that Bill will resign?

Yes-no questions, as it turns out, use $\mathit{a^N}$—evidence of an operator in SpecCP, like why.

(80) a. A’ mbíonn tú ag caint leis?
     INTERR be-PRES-HABIT you talk-PROG with-him
     ‘Do you talk to him?’

   b. A-r labhair tú leis?
     INTERR-PAST speak you with-him
     ‘Did you speak to him?’

(81) a. fear a mbíonn tú ag caint leis
     man $\mathit{a^N}$ be-PRES-HABIT you talk-PROG with-him
     ‘a man that you talk to’

   b. fear a-r labhair tú leis
     man $\mathit{a^N}$-PAST spoke you with-him
     ‘a man that you spoke to’

This is commonly assumed to be the case—it’s the reason, for example, why you get $\mathit{wh}$-island type effects when you try to move a $\mathit{wh}$-word out of an embedded yes-no question:

(82) a. ?? What did you wonder if Bill bought for Mary?
     b. ? What did you wonder whether Bill bought for Mary?
     c.  What did you say that Bill bought for Mary?
     d.  * Why did you wonder if they left early?
     e.  * Why did you wonder whether they left early?

There are many languages which move all of their *wh*-words to the front. Including Bulgarian, Romanian, Serbo-Croatian, Czech, Polish…

But they seem to fall into two classes with respect to certain phenomena. These languages seem to differ in *how many* *wh*-words can be in Spec*CP*.

This means we have another parameter to differentiate languages:

<table>
<thead>
<tr>
<th>Parm. MFS</th>
<th>Spec<em>CP</em> can be “multiply filled”</th>
<th>Bulgarian</th>
<th>Czech</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

The implications of having the ability to “multiply fill” Spec*CP* like this are several.

- [+MFS] languages allow (require) all *wh*-words to move out of an embedded clause in a matrix question.
- [+MFS] languages are exempt from *wh*-island effects (both because having something in Spec*CP* doesn’t “fill it up”)
- All of the *wh*-words together should form a constituent in [+MFS] languages.

Multiple extraction out of a clause and wh-island violations ok in [+MFS] languages…

(83) *Cine cui ce ziceai [câ i –a promis ] ?* (Romanian)

`who to.whom what said-2s [that to-him has promised] [+MFS]`

‘Who did you say promised what to whom?’

(84) a. *Vidjah edna kniga, kojato i se čuja [koj znae [koj prodova τ] ]* ]? (BG)

`saw-1s a book which wonder-1s who knows who sells [+MFS]`

‘I saw a book which I wonder who knows who sells (it).’

b. *? Koja ot tezi knigi se čudiš [koj znae [koj prodova τ] ]?* (BG)

`which of these books wonder-2S who knows who sells`

‘Which of these books do you wonder who knows who sells?’

Multiple extraction out of a clause and wh-island violations out in [–MFS] languages…

(85) a. *Ko želite [da vam šta kupi ] ?* (Serbo-Croatian)

`who want-2p to you what buy-3s [–MFS]`

‘Who do you want to buy you what?’
b. * Ko šta želite [da vam kupi ]?

(85) košta 'who what want-2p to you buy-3s' [-MFS]

‘Who do you want to buy you what?’

Note in (85), šta ‘what’ has moved inside the lower clause to the position usually occupied by focused elements.

(86) * ...osoba, koja sam ti rekao gde (on) živi... (Serbo-Croatian)

indvidual who have-1s you told where he lives [-MFS]

‘...the individual who you asked me where (he) lives.’

Constituency—all of the wh-words in SpecCP should form a constituent for [+MFS].

(87)

\[
\text{Spec} \rightarrow \text{C'} \\
\text{Spec} \rightarrow \text{kogo} \rightarrow \text{C} \rightarrow \text{IP} \\
\text{koj} \rightarrow \text{Adv} \rightarrow \text{IP} \\
\text{pru} \rightarrow \text{...}
\]

(88) a. Zavisit ot tova, koj kogo pruv e udaril e udaril (Bulgarian)

depends on this who whom first has hit [+MFS]

‘It depends on who hit whom first.’

b. * Zavisit ot tova, koj pruv kogo e udaril (Bulgarian)

depends on this who first whom has hit [+MFS]

(‘It depends on who hit whom first.’)

(89) a. Kojto kakovoto iska ...

(88) Bulgarian

who-to what-to wants

‘Whoever wants whatever…’

b. Koj kakovoto iska ...

who what-to wants

‘Whoever wants whatever…’

c. * Kojto kakovoto iska ...

who-to what wants

(‘Whoever wants whatever…’)

(89) 'Whoever wants whatever…’
That is: All of the *wh*-words in Bulgarian seem to form an uninterruptible chunk.

And in [–MFS] languages, we’d expect the first *wh*-word should be separate and the whole cluster of *wh*-words should not act as a constituent.

(90) a. Ko je koga prvi udario? (Serbo-Croatian)
   who has whom first hit
   ‘Who hit whom first?’

   b. Ko je prvi koga udario? (Serbo-Croatian)
   who has first whom hit
   ‘Who hit whom first?’

Second position clitics follow the first *wh*-word in a series, and sound bad after the whole group. Parentheticals can appear between *wh*-words, as can adverbials.

(91) a. Kdo *ho* kde vid_l je nejasné (Czech)
   who *him* where saw is unclear
   ‘It is unclear who saw him where.’

   b. * Kdo kde *ho* vid_l je nejasné (Czech)
   who where *him* where saw is unclear
   (‘It is unclear who saw him where.’)

(92) a. Kdo, podle tebe, co komu dal? (Czech)
   who according to you what to whom gave
   ‘Who, according to you, gave what to whom?’

   b. Kdo co, podle tebe, komu dal? (Czech)
   Who what according to you to whom gave
   ‘Who, according to you, gave what to whom?’

(93) a. Kdo rychle co komu dal? (Czech)
   who quickly what to whom gave
   ‘Who quickly gave what to whom?’

   b. Kdo co rychle komu dal? (Czech)
   who what quickly to whom gave
   ‘Who quickly gave what to whom?’
This suggests that in Czech (i.e. [-MFS] languages), one wh-word goes to SpecCP (like in English), and the rest adjoin to IP (quite possibly in a “focus” position).

(94) 
```
    CP
   / \   
 Spec kdo C'
   / \   
    C  IP
   / \   
  (ho)  Adv
     /  
    rychle co IP
          /  
         komu IP
```

**Superiority**

English: “Move one wh-word” means “move the one closer to the top of the structure”

(95) a. Who will John persuade to buy what?
   b. * What will John persuade who to buy?

(96) a. What did John give to who(m)?
   b. * Who(m) did John give what to?

In Bulgarian, the wh-words have to stay in order:

(97) a. **Koj** kogo običa?  
    who whom loves
    ‘Who loves whom?’

    b. * **Kogo** koj običa?  
    whom who loves
    (‘Who loves whom?’)

(98) a. **Koj** kogo kazva če e nabil?  
    who whom say that is beaten
    ‘Who do you say beat whom?’

    b. * **Kogo** koj kazva če e nabil?  
    whom who say that is beaten
    (‘Who do you say beat whom?’)
But in Serbo-Croatian (one *wh*-word into SpecCP, the rest front to above IP), the *wh*-words can be in any order in simple (one-clause) sentences:

(99) a. **Ko koga** voli?  
    *who whom* loves  
    ‘Who loves whom?’ [–MFS]

b. **Koga ko** voli?  
    *whom who* loves  
    ‘Who loves whom?’ [–MFS]

Rudin doesn’t discuss this, but the *wh*-words even in S-C have to stay in order if they are both coming out of a lower clause.

(100) a. **? Ko koga** tvrdiš da je istukao?  
    *who whom* claim that is beaten  
    ‘Who do you claim beat whom?’ [–MFS]

b. * **Koga ko** tvrdiš da je istukao?  
    *whom who* claim that is beaten  
    (‘Who do you claim beat whom?’) [–MFS]

<table>
<thead>
<tr>
<th>Structure of CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(101) CP [+MFS]</td>
</tr>
<tr>
<td>Spec C'</td>
</tr>
<tr>
<td>Spec kogo C IP</td>
</tr>
<tr>
<td>koj Adv pru..</td>
</tr>
<tr>
<td>(102) CP [–MFS]</td>
</tr>
<tr>
<td>Spec kdo C' IP</td>
</tr>
<tr>
<td>co IP</td>
</tr>
<tr>
<td>... t ... t ...</td>
</tr>
</tbody>
</table>
One piece of evidence: In Polish, you can see an overt complementizer before the *wh-*
word, and if we believe in the Doubly-filled Comp Filter, then that means all of the *wh-*
words are actually below CP in Polish. The fact that it precedes the subject puts it above
SpecIP.

(103)  Maria myśli, że **co** Janek kupił?  (Polish)
       Maria thinks **that** **what** Janek bought
       ‘What does Maria think that Janek bought?’

(104)  a. Kogo **komu** **Jan** przedstwił?  (Polish)
       whom **to.whom** **Jan** introduced
       ‘Whom did Jan introduce to whom?’

                   b. * Kogo **Jan** **komu** przedstwił?  (Polish)
                   whom **Jan to.whom** introduced
                   ‘Whom did Jan introduce to whom?’

**Where are we?**

It seems like we can classify languages of the multiple wh-movement type into two
groups. One moves all *wh*-words into SpecCP, one moves all *wh*-words but not
necessarily into SpecCP—perhaps for focus-related reasons.

<table>
<thead>
<tr>
<th>Parm</th>
<th>E</th>
<th>SC</th>
<th>P</th>
<th>B</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q Question needs a *wh-*word in SpecCP</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>?</td>
<td>N</td>
</tr>
<tr>
<td>WF Wh-words need to be in front</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>?</td>
<td>N</td>
</tr>
<tr>
<td>MFS SpecCP can hold many *wh-*words</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>