(1) **Italian**
Tuo fratello (‘your brother’),
[CP a cui] [TP mi domando [CP che storie] [TP abbiano raccontato t_i t_j] ... to whom I wonder which stories they-have told
era molto preoccupato (‘was very worried’).

(2)
* Tuo fratello,
[CP a cui] ‘to whom’
[TP temo [DP la possibilità [CP che [TP abbiano raccontato tutto t_i]]] ... I-fear the possibility that they-have told everything, ...  

CNP islands are respected, *wh*-islands aren’t?

(3) Mi sto domandando [CP a chi]
I am wondering to whom
potrei chiedere t_i [CP quando dovrò parlare di questo argomento t_j]]
I-may ask when I’ll-have-to speak about this topic

(4)
* Questo argomento, [CP di cui] mi sto domandando
This topic of which I am wondering
[CP a chi potrei chiedere [CP quando dovrò parlare t_k]]]
to whom I-may ask when I’ll-have-to speak

mi sembra sempre più complicato
to-me seems ever more complicated

Italian bounding nodes: CP and DP. (Rizzi 1982)
Argument *wh*-questions vs. adjunct *wh*-questions...

Argument *wh*-questions are subject *wh*-questions, object *wh*-questions.

- *Who bought the book? What did Bill buy? What was eaten?*

Adjunct *wh*-questions are those which question constituents which in a declarative would be adjuncts.

(5) I fixed the car *with a wrench*.

(6)

```
CP
   C
   [−Q]TP
     DP₁
       I
       T
       VP
         T[PAST]
           t₁
             V[fix]
               V[the car]
                 PP
                   P[with]
                     DP[with]
                       DP[a wrench]
```
(7) How did you fix the car $t_i$?

(8) \[
\begin{array}{c}
\text{Adjunct } \text{wh-questions are more delicate than argument } \text{wh-questions.}
\end{array}
\]

(9) *Whose car were you wondering how to fix $t_i$?
   (Ed’s car...I was wondering how to fix Ed’s car.)

(10) *How were you wondering whose car to fix $t_i$?
     (With a wrench... I was wondering whose car to fix with a wrench.)

What makes these different?
(11) *Howi were [\text{TP you wondering} [\text{CP whose car [\text{TP to fix } t_1}]]]?  
(With a wrench...)  
I was wondering whose car to fix with a wrench.)

(12) \begin{align*}
\text{Howi} \quad \text{did [\text{TP you fix the car } t_i]}? \\
\text{Howi} \quad \text{did [\text{TP Bill say} [\text{CP } t_i \text{that [\text{TP you fixed the car } t_i}]}}}?
\end{align*}

It appears that adjuncts are hyper-sensitive to Subjacency violations, but it possible to move an adjunct \textit{wh}-word as long as it doesn’t go too far.

Interestingly, \textit{subjects} generally act like adjuncts—

(15) ? [Which car]i do you know [\text{CP how Bill fixed } t_i]?
(16) * Howi do you know [\text{CP which car Bill fixed } t_i]?
(17) * Whoi do you know [\text{CP which car } t_i \text{ fixed (with a hammer)}]?
(18) * Whoi do you know [\text{CP how } t_i \text{ fixed (the Pacer)}]?

Usually...

(19) [Which chair]i do you find [\text{CP } t_i \text{ will roll most smoothly}]?
(20) [Which taxi service]i do you consider [\text{CP } t_i \text{ most reliable}]?

It kind of looks like “traces which get accusative Case” are safe.
Nailing down the precise formulation of this restriction is very complicated... (see Chomsky 1986, Rizzi 1990)

Here is a close approximation:

**Empty Category Principle (ECP)**

| Lexical: N, V, A, P | Functional: C, T, D |

**Proper Government**

- properly governs \( \square \) iff
  - (i) \( \square \) governs \( \square \) and \( \square \) is a lexical head
  - (ii) \( \square \) antecedent-governs \( \square \).

Idea:

(i) **accounts for** “What did you say knew how Bill fixed \( t_i \)?”

(ii) **allows for** “How did you fix the car \( t_i \)?”

“antecedent governs” means How and its trace are close.

**Antecedent Government** (first attempt)

- a moved category, antecedent-governs \( \square \) iff
  - i) \( \square \) binds \( \square \) (c-commands & co-indexed)
  - ii) no more than one bounding node dominates \( \square \) but not \( \square \).

‘…if moving from \( \square \) to \( \square \) would not violate Subjacency’

(21) ? Which song \( i \) were [TP you wondering [CP whether [TP the band will play \( t_i \)]]?]

(22) * Which band \( i \) were [TP you wondering [CP whether [TP \( t_i \) will play that song]]]? 

(23) ? Which car \( i \) do you know how to fix \( t_i \)?

(24) * Who \( i \) do you know how \( t_i \) will fix the car?

(25) Which band \( i \) did you consider [ \( t_i \) to be the best ]?
That-trace effect

(26) What did you say (that) Bill would fix $t_i$ ?
(27) *Who did you say (*that) $t_i$ would fix the car ?

This differentiates subjects and objects—it looks like a job for the ECP. When the trace must rely on antecedent government, *that blocks it.

Empty Category Principle (ECP)
Traces must be properly governed

\[
\begin{align*}
\text{properly governs} & \iff \\
& \text{(i) } \text{governs } & \text{and } \text{is a lexical head} \\
& \text{or} & \text{(ii) } \text{antecedent-governs } \\
\text{antecedent-governs} & \iff \\
& \text{(i) } \text{binds } \\
& \text{(ii) no more than one bounding } \\
& \text{node dominates } & \text{but not } \\
& \text{(iii) there is no filled } C \text{ governing } \\
\end{align*}
\]

(28) * $C\ [T$
That-trace effects aren’t universal, though...

(29) Italian
Chi hai detto che ha scritto questo libro? 
who have-you said that has written this book 
‘Who did you say wrote this book?’

(30) * CP
  \( \chi \)
  C
  \( hai \)
  CP
  \( t_i \)
  C
  che
  TP
  T

not gov’d by a lexical head
not antecedent gov’d by \( t_i \)
• \( t_i \) binds \( t_i \)
• no bounding nodes intervene

but • there is a filled C (che) governing \( t_i \).

(31) Hanno telefonato molti studenti 
have.3pl phoned many students 
‘Many students have phoned.’

(32) Vinceremo noi 
will-win.1pl we 
‘We will win.’
Can this help?

(34) How_i did you say (that) he will fix your car t_i?

(35) ...
Chi hai detto che ha scritto questo libro?
‘Who did you say wrote this book?’
(39) Mario E parla
Mario SCL speaks
‘Mario speaks.’

Florentine It.

(40) E parla
SCL speaks
‘He speaks’

(41) * Parla

(42) gl ha telefonato della ragazze
SCL(M.SG) has phoned some girls(F.PL)
‘Some girls telephoned.’

(43) Quante ragazze tu credi che gli abbia parlato?
how many girls you think that M.SG has spoken
‘How many girls do you think have spoken?’

(44) * Quante ragazze tu credi che le abbiano parlato?
how many girls you think that F.PL have spoken
(‘How many girls do you think have spoken?’)
The category of *wh*-words:

(45) \[
\begin{array}{c}
| \text{DP}^{[+\text{wh}]} | \text{DP}^{[+\text{wh}]} | \text{DP}^{[+\text{wh}]} \\
| \text{D} | \text{D} | \text{D} \\
| \text{what} | \text{who} | \text{which} \\
| \text{NP} \\
| \text{N} \\
| \text{book} \\
\end{array}
\]

(46) \[
\begin{array}{c}
| \text{AdvP}^{[+\text{wh}]} | \text{AdvP}^{[+\text{wh}]} | \text{AdvP}^{[+\text{wh}]} | \text{AdvP}^{[+\text{wh}]} \\
| \text{Adv} | \text{Adv} | \text{Adv} | \text{Adv} \\
| \text{how} | \text{why} | \text{when} | \text{where} \\
\end{array}
\]

(47) \[
\begin{array}{c}
| \text{DP}^{[+\text{wh}]} | \text{PP}^{[+\text{wh}]} \\
| \text{D} | \text{P} \\
| \text{-se} | \text{for} \\
| \text{N} \\
| \text{book} \\
| \text{D} \\
| \text{whom} \\
\end{array}
\]

**Pied-piping:** [For whom] did you buy that bagel? 
**P-stranding:** Who(m) did you buy that bagel for?
**Relative clauses**

(48) Bill heard \[DP \text{ the speech}_i [CP \text{ which}_i [TP \text{ Mary made } t_i ]]\].

*Restrictive relatives* restrict the reference of the *head noun*. Semantically, we refer to something which is both:
- a speech
- (something) which Mary made.

*Appositive relatives* don’t restrict the reference, but provide additional information

(49) a. Mary, who you met yesterday, just bought a house.
   b. Mary, \[CP \text{ who}_i [CP \text{ you met } t_i \text{ yesterday }] \], ...

*Free relatives* involve -ever and don’t modify a head noun

(50) a. I will buy \[\text{whatever}_i \text{ you sell } t_i \].
   b. Whoever just arrived unplugged my lamp.

(51) a. Bill heard the speech \[\text{which}_i \text{ Mary made}\].
   b. Bill heard the speech \[\text{that}_i \text{ Mary made}\].
   c. Bill heard the speech \[\text{Mary made}\].

(52) Bill heard \[\text{DP the speech } [CP Op_i (that) [TP \text{ Mary made } t_i ]]\].

(53) \[
\begin{array}{c}
CP \\
\text{Op}_i \\
C \hspace{1cm} C \\
that \hspace{1cm} \emptyset \\
\end{array}
\]

\[
\begin{array}{c}
CP \\
\text{Op}_i \\
C \hspace{1cm} C \\
\emptyset \hspace{1cm} \emptyset \\
\end{array}
\]

\[
\begin{array}{c}
CP \\
\text{Which}_i \\
C \hspace{1cm} C \\
\emptyset \hspace{1cm} \emptyset \\
\end{array}
\]
Is it really *wh*-movement? What do we know about *wh*-movement?

(54) * I know the way which \_ John wonders \[_{wh-island}\. Why Bill went \_ \].

(55) * I know the way which \_ John made \[\text{CNP the claim that Bill went } \_ \].

(56) *I know the way \_ (that) John wonders \[_{wh-island}\. Why Bill went \_ \].

(57) *I know the way \_ that John made \[\text{CNP the claim that Bill went } \_ \].

So:  
- If relative clauses allow an *Op, why can’t *wh*-questions?  
- Why can you have *that with *Op but not with *which?  
  *I heard the speech which \_ that Mary made \_ \].

**Recoverability Condition**

The content of a null category must be recoverable (from a co-indexed overt category in the sentence).

(58)  
- a. When did Mary buy the book?  
- b. Where did Mary buy the book?  
- c. How did Mary buy the book?  
- d. *Op \_ did Mary buy the book?  

(59)  
- a. *Op \_ did Mary buy \_ ?  
- b. *Op \_ did Mary give a book \_ ?  

(60)  
Bill heard the speech \_ [\text{CP Op } \_ that [\text{Tp Mary made } \_ ]].

**Doubly Filled Comp Filter**

*\[\text{CP } \_ \text{-XP that } if / \_ \_ \_ \_ \_ \_ \_ \], if *wh*-XP is overt (non-null).
Sample relative clause: 
*The student Bill will meet.*