(1) ECP (Empty Category Principle) 1st version:
A trace must be governed

(2) *John is illegal \[ \text{CP} \left[ \text{IP} \right] \text{t to park here}\]  (CP is a barrier to government; non-finite Infl isn't a governor)

(3) ECP 2nd version:
A trace must be properly governed  (Proper government is government by a lexical head)

(4) *Who do you think [that [t solved the problem]]  (t is not properly governed)

(5) Which problem do you think [that [John solved t]] (t is properly governed by solve)

(6) Who do you think [ t' [t solved the problem]]  (t is not lexically governed)

(7) \( \alpha \) properly governs \( \beta \) if
i. \( \alpha \) governs \( \beta \) and \( \alpha \) is lexical  ('lexical government')
ii. \( \alpha \) binds \( \beta \) and \( \beta \) is (zero) subjacent to \( \alpha \)  ('antecedent government')

(8) *Who do you think \[ \text{CP} \left[ t' \left[ \text{CP} \left[ \text{IP} \right] \text{t solved the problem}\right]\right]\]

(9) Either that somehow blocks antecedent government
or
that somehow turns \( C' \) into a barrier for antecedent government

(10) ?*Which car did you leave [before Mary fixed t]  Subjacency - an 'adjunct island'

(11) *How did you leave [before Mary fixed the car t]  (t is not properly governed, so the ex. violates both Subjacency and the ECP)

(12) Similarly for all islands: extreaction of an adjunct in violation of Subjacency always yields crashingly bad results.

(13) Lasnik and Saito (1984) technology: A trace that is properly governed is marked \( +\gamma \); one that is not is marked \( -\gamma \). The ECP says \( *[-\gamma] \)  Chomsky (1986) alternative notation: A trace that is not properly governed is marked \( * \).

(14) ✓How do you think [ t [ (that) [ Mary fixed the car t] ]]  (Why no "that"-trace effect with adjuncts?)

(15) Lasnik and Saito proposal: Adjunct traces are not gamma-marked in overt syntax
(maybe because they aren't present yet). In LF (as in overt syntax) that can be deleted.

(16) Argument traces are gamma-marked in overt syntax (or we lose the that- trace effect for subjects).

(17) *How \(_2\) do you wonder [when \(_1\) [John said t \(_1\) [ t \(_2\)' [ Mary solved the problem t\(_2\)]]]]
(18) Intermediate traces must be properly governed. \((t_2\) is antecedent governed by \(t_2';\) so it must be the latter that is not properly governed in violation of the ECP.)

(19) Further, gamma-marking must be specifically at levels. If \(t_2'\) could properly govern \(t_2\) and then delete, (17) would be a 'mere' Subjacency violation.

(20) Chomsky's version of this, from the mid-1980's: "Adjuncts must be fully represented". That is, all the traces in the chain of the moved adjunct must remain. Under this proposal gamma-marking (= *-marking) is not restricted to applying at levels.

(21) *Who left why

(22) Suppose all WH--phrases move eventually, creating an adjunction structure.

(23) LF:

\[
\begin{array}{c}
\text{CP} \\
\text{IP} \\
\text{who}_1 \\
\text{why}_2 \\
\text{who}_1 \\
t_1 \quad \text{left} \\
t_2 \\
\end{array}
\]

\(t_2\) is not properly governed

(24) *Who \(t_1\) said \([ [\text{John left why}] ]\) Again, intermediate traces must be properly governed.

(25) ?*Which car did you leave [before Mary fixed \(t\)]

(26) Who left before Mary fixed which car Subjacency doesn't constrain LF movement. (Huang)

(27) ?*What do you believe the claim that Lisi bought \(t\) (Subjacency: 'Complex NP constraint'. There is actually a difficult puzzle here, since by the core Barriers theory, there will actually not be any barriers, assuming that a head N \(\theta\)-governs its clausal complement. We put this problem aside here.)

(28) \(\checkmark\) Ni xiangxin Lisi mai-le sheme de shuofa Chinese you believe Lisi buy-Asp what claim

(29) *Why do you believe [the claim [that [Lisi left \(t\)]]]

(30) *Ni xiangxin [[Lisi weisheme likai] de shuofa] Chinese you believe Lisi why leave claim

(31) ??What\(_1\) do [you wonder [why\(_2\) [Lisi bought \(t_1\) \(t_2\)]]] 'WH-island constraint'

(32) *Why\(_2\) do [you wonder [what\(_1\) [Lisi bought \(t_1\) \(t_2\)]]]

(33) \(\text{Ni xiang-xhidao [Lisi weisheme mai-le sheme]}\) Huang you wonder Lisi why bought what
(34) OK LF (33) can have the indicated interpretation.

(35) * LF (33) cannot have the indicated interpretation.

(36) And similarly for all islands. This is by far the most powerful argument I know for covert movement.

(37) Mali renwei [[Yuehan weisheme likai]]
Mary thinks John why leave
"Why does Mary think [John left t]"

(38) Long distance interpretation (hence movement) of adjuncts is fine when there is no island.