Shortest Move

Superiority

Chomsky 1973 pp.245-246

(1) John knows [who [t saw what]
(2) *John knows [what [who saw t]
(3) *What books does [John know [to whom [ (PRO) to give t t ]]
(4) *To whom does [John know [what books [(PRO) to give t t ]]
(5) "... wh-Movement cannot move a wh-phrase across a wh-subject (just as it cannot move a wh-phrase across a wh-COMP)."
(6) No rule can involve \(X, Y\) in the structure
\[ ... X ... \in \alpha \ldots Z \ldots -WYZ \ldots \ldots \]
where the rule applies ambiguously to \(Z\) and \(Y\) and \(Z\) is superior to \(Y\)
(7) Superior (informal): "closer to the root of the tree"
(8) Superior (more formal): \(A\) is superior to \(B\) if every major category dominating \(A\) dominates \(B\) as well but not conversely.
(9) John knows [what books [ (PRO) to give t to whom ]]
(10) John knows [to whom [ (PRO) to give what books t ]]
(11) John knows [what [ (PRO) to give t to whom ]]
(12) John knows [to whom [ (PRO) to give what t ]]

Possibly cf.
(13) *John knows [who(m) [(PRO) to give what to t ]]


(14) Shallowness: An operation must be the shallowest p. 258
(15) \(\alpha\) is shallower than \(\beta\) if and only if the depth of \(\alpha\) is properly included in the depth of \(\beta\). p. 260
(16) Depth: The depth of a Move-\(\alpha\) operation affecting \(\alpha\) is the union of the depth of \(\alpha\) in the input of the operation and the depth of \(\alpha\) in the output, where the depth of \(\alpha\) is the set of maximal projections which dominate \(\alpha\). p. 258
(17) Whom₁ did John persuade t₁ [(PRO) to visit whom₂]  
(18) *Whom₂ did John persuade whom₃ [(PRO to visit t₂]  

(19) Whom₃ "has failed to make the shortest move". [Not quite accurate]  
(20) "... Movement of whom₂ to [Spec, CP] is longer in a natural sense (definable in terms of c-command) than movement of whom₁ to this position."  

Similarly for wh-islands:

(21) *What did you wonder where John put  
(22) [cp, What₁ did [ip, you wonder [cp where₂ [ip, John put t₁ t₂]]]]  
(23) Where is closer to the matrix C than what is, so where is an intervener preventing what from moving. [And where is for some reason frozen in place.]  

and ' Superraising':

(24) *John seems that [it is likely [t to be arrested t]]  
(25) It intervenes between matrix subject position and John preventing the latter from moving. [Even though it is frozen in place.]


(26) Y is in a Minimal Configuration (MC) with X iff
there is no Z such that
(i) Z is of the same structural type as X, and
(ii) Z intervenes between X and Y

<<Intervention is standardly defined in terms of c-command.>>  
<<For Y to move to position X, Y must be in a minimal configuration with X.>>

In the following, the intervener is in **bold**:

**RM and head movement:**

(27)a. They have left.  
   b. Have they <have> left?  
(28)a. They could have left.  
   b. *Have they could <have> left?  
   c. Could they <could> have left?  

**RM and A-movement:**

(29)a. It seems that it is likely that John will win.  
   b. It seems that John is likely t to win.  
   c. John seems t to be likely t to win.  
   d. *John seems that it is likely t to win.
RM and ʌ-movement:

(30)a. How many people do you consider __ intelligent?
    b. How intelligent do you consider John __?

(31)a. *How many people do you wonder whether I consider intelligent?
    b. *How intelligent do you wonder whether I consider John __?