1. John\textsubscript{i} thinks he\textsubscript{k} won. (John\textsubscript{i} = he\textsubscript{k})

2. He\textsubscript{i} thinks John\textsubscript{k} won. (He\textsubscript{i} \neq John\textsubscript{k})

3. John's\textsubscript{i} opinion of his\textsubscript{k} dad is surprising. (John\textsubscript{i} = his\textsubscript{k})

4. His\textsubscript{i} opinion of John's\textsubscript{k} dad is surprising. (His\textsubscript{i} \neq John\textsubscript{k})

5. After John\textsubscript{i} ate lunch, he\textsubscript{k} left. (John\textsubscript{i} = he\textsubscript{k})

6. After he\textsubscript{i} ate lunch, John\textsubscript{k} left. (he\textsubscript{i} = John\textsubscript{k})

7. *To John's\textsubscript{k} father, he\textsubscript{i} does not speak anymore. (John's\textsubscript{k} \neq he\textsubscript{i})

8. In John's\textsubscript{i} most recent pictures, he\textsubscript{k} doesn't look well. (John\textsubscript{i} \neq he\textsubscript{k})

9. The student sleeps.

10. *The student sleeps the problem.

11. The student solved the problem.


13. This problem, the student solved.

14. *This problem, John solved this problem.
(1)  

S  

NP\_i  VP  

V  S  

NP\_k  VP  

JOHN THINKS HE WON

(2)  

S  

NP\_i  VP  

V  S  

NP\_k  VP  

HE THINKS JOHN WON

X
(3) 
S 
/  
NP  VP 
/  
NP  V  ADJ 
/  
NP  N 
P  NP  
P  NP 
NP 

JOHN'S OPINION OF HIS DAD IS SURPRISING

(4) 
S 
/  
NP  VP 
/  
NP  V  ADJ 
/  
NP  N 
P  NP  
P  NP 
NP 

HIS OPINION OF JOHN'S DAD IS SURPRISING
AFTER JOHN ATE LUNCH HE LEFT

AFTER HE ATE LUNCH JOHN LEFT
DEFINITION: Take any two categories in a tree; for example, two noun phrases (NP's), one of which is a pronoun, the other a "full" NP. If the category directly above one of them is also above the second one, then the first NP commands the second NP.

PRINCIPLE: Take any pronoun and "full NP" pair in an English sentence; for example, a "full" NP like "John" and a pronoun like "he" or "his." Coreference between them will always be possible unless the pronoun commands the "full" NP partner.
IN JOHN'S MOST RECENT PICTURE HE DOES NOT LOOK WELL

(9)
a. UP
   U
   SLEEP

b. UP
   V
   NP
   SOLVE
   THIS PROBLEM
THE STUDENT SOLVED THIS PROBLEM

(10)

(11)
(14) S

PP  
P  NP  
NP  N

S

NP  V  VP

PP  
P  NP  
NP  N

ADV

TO JOHN'S FATHER  HE DOES NOT SPEAK  TO JOHN'S FATHER  ANYMORE
(15) TO JOHN'S FATHER HE DOES NOT SPEAK ANYMORE.