Binding Theory:  Conditions on indexation.

(14) John\textsubscript{i} likes himself\textsubscript{i}.
(15) * John\textsubscript{i} likes himself\textsubscript{j}.
(16) * Himself\textsubscript{i} left.

Anaphors:  *himself, herself, each other, …*

Anaphors depend on another noun phrase (an antecedent) for their reference.

Conditions on anaphors:
• An anaphor needs an agreeing antecedent in the same clause.

(23) John\textsubscript{i} likes himself\textsubscript{i}.
(24) * John\textsubscript{i} believes that Mary\textsubscript{j} likes himself\textsubscript{i}.
(25) John\textsubscript{i} believes that Mary\textsubscript{j} likes herself\textsubscript{j}.
(26) * John\textsubscript{i} believes that himself\textsubscript{i} will win.

Conditions on anaphors:
• An anaphor needs an antecedent.

(27) John\textsubscript{i} likes himself\textsubscript{i}.
(28) * Himself\textsubscript{i} likes John\textsubscript{j}.
(29) [John and Mary]\textsubscript{i} like [each other]\textsubscript{j}.
(30) * [Each other]\textsubscript{i} like [John and Mary]\textsubscript{j}.

John thinks that he will win the prize.
John wants Mary to like him.

Co-indexation and co-reference:

(3) John\textsubscript{i} thinks that he\textsubscript{i} will win the prize.
(4) John\textsubscript{i} thinks that he\textsubscript{j} will win the prize.

(5) John\textsubscript{i} wants Mary\textsubscript{k} to like him\textsubscript{i}.
(6) John\textsubscript{i} wants Mary\textsubscript{k} to like him\textsubscript{j}.
(7) * John\textsubscript{i} wants Mary\textsubscript{k} to like him\textsubscript{k}.

(8) John likes him.
(9) * John\textsubscript{i} likes him\textsubscript{i}.
(10) John\textsubscript{i} likes him\textsubscript{j}.

(11) John likes himself.
(12) John\textsubscript{i} likes himself\textsubscript{i}.
(13) * John\textsubscript{i} likes himself\textsubscript{j}.

(14) John\textsubscript{i} likes himself\textsubscript{i}.
(15) * John\textsubscript{i} likes himself\textsubscript{j}.
(16) * Himself\textsubscript{i} left.

(23) John\textsubscript{i} likes himself\textsubscript{i}.
(24) * John\textsubscript{i} believes that Mary\textsubscript{j} likes himself\textsubscript{i}.
(25) John\textsubscript{i} believes that Mary\textsubscript{j} likes herself\textsubscript{j}.
(26) * John\textsubscript{i} believes that himself\textsubscript{i} will win.

Conditions on anaphors:
• An anaphor needs an antecedent.

(27) John\textsubscript{i} likes himself\textsubscript{i}.
(28) * Himself\textsubscript{i} likes John\textsubscript{j}.
(29) [John and Mary]\textsubscript{i} like [each other]\textsubscript{j}.
(30) * [Each other]\textsubscript{i} like [John and Mary]\textsubscript{j}.

(17) * Mary\textsubscript{j} likes himself\textsubscript{j}.
(18) Mary\textsubscript{j} likes herself\textsubscript{j}.
(19) * The men\textsubscript{i} like himself\textsubscript{i}.
(20) The men\textsubscript{i} like themselves\textsubscript{j}.
(21) * I\textsubscript{i} like himself\textsubscript{i}.
(22) I\textsubscript{i} like myself\textsubscript{i}.
Conditions on anaphors:
• An anaphor needs an agreeing antecedent earlier in the same clause.

(31) [A friend of my father] saw himself.
(32) * [A friend of my father] saw himself.

Table: Anaphors and pronouns are in complementary distribution.

Anaphors: him, she, I, them, …
R-expressions: Mary, the students, …
Pronominals: them, him, her, …

(39) John believes that Mary likes him.
(40) John believes that Bill likes him.
(41) * John believes that Bill likes him.
(42) Mary likes him.
(43) * [A friend of my father] saw him.
(44) [A friend of my father] saw him.

Condition on anaphors:
An anaphor must be bound in the same clause.
Condition on pronouns:
A pronoun must not be bound in the same clause.

Binding Theory
Condition A: An anaphor must be bound in its binding domain.
Condition B: A pronoun must not be bound in its binding domain.

Binding domain: Its clause (so far).

(49) Ed saw Bill’s picture of him.
(50) * Ed saw Bill’s picture of him.
(51) * Ed saw Bill’s picture of himself.
(52) Ed saw Bill’s picture of himself.

Binding: α binds β iff
i) α c-commands β
ii) α and β are coindexed.
**Binding domain** for \( \alpha \): The smallest IP or DP which contains \( \alpha \).

\[
\begin{align*}
(53) & \quad \text{* Ed}_i \text{ saw } [\text{DP a picture of him}_i]. \\
(54) & \quad \text{Ed}_i \text{ saw } [\text{DP a picture of him}_j]. \\
(55) & \quad \text{Ed}_i \text{ saw } [\text{DP a picture of himself}_i]. \\
(56) & \quad \text{* Ed}_i \text{ saw } [\text{DP a picture of himself}_j].
\end{align*}
\]

**Binding domain** for \( \alpha \):
The smallest IP or DP which contains \( \alpha \) and a subject distinct from \( \alpha \).

\[
\begin{align*}
(61) & \quad \text{* Ed}_i \text{ believes } [\text{that himself}_i \text{ is a genius}]. \\
(62) & \quad \text{Ed}_i \text{ believes } [\text{that he}_i \text{ is a genius}]. \\
(63) & \quad \text{* Al}_i \text{ wants } [\text{CP for him}_i \text{ to be elected}]. \\
(64) & \quad \text{Al}_i \text{ wants } [\text{CP for himself}_i \text{ to be elected}]. \\
(65) & \quad \text{Ed} \text{ believes } [\text{that I am a genius}]. \\
(66) & \quad \text{Ed} \text{ believes } [\text{me to be a genius}]. \\
(67) & \quad \text{Al} \text{ wants } [\text{for me to be elected}].
\end{align*}
\]

**Binding domain** for \( \alpha \):
The smallest IP or DP which contains \( \alpha \) and either (a) a subject distinct from \( \alpha \), or (b) an I assigning NOM to \( \alpha \).

\[
\begin{align*}
(68) & \quad \text{IP}_1 \\
\quad & \quad \text{DP} \\
\quad & \quad \text{Ed} \\
\quad & \quad \text{I'} \\
\quad & \quad \text{I[FIN]} \\
\quad & \quad \text{VP} \\
\quad & \quad t \\
\quad & \quad V' \\
\quad & \quad V \\
\quad & \quad \text{believe} \\
\quad & \quad C' \\
\quad & \quad \text{CP} \\
\quad & \quad \text{that} \\
\quad & \quad \text{IP}_2 \\
\quad & \quad C \\
\quad & \quad \text{that} \\
\quad & \quad \alpha \\
\quad & \quad \text{I'} \\
\quad & \quad \text{I[FIN]} \\
\quad & \quad \ldots
\end{align*}
\]

\[
\begin{align*}
(69) & \quad \text{Mary}_j \text{ believes that Shiela}_i \text{ saw herself}_i. \\
(70) & \quad \text{* Mary}_j \text{ believes that Shiela}_i \text{ saw herself}_j.
\end{align*}
\]

\[
\begin{align*}
(71) & \quad \text{CP} \\
\quad & \quad C' \\
\quad & \quad \text{C} \\
\quad & \quad \text{IP} \\
\quad & \quad t \\
\quad & \quad V' \\
\quad & \quad V \\
\quad & \quad \text{believe} \\
\quad & \quad \text{CP} \\
\quad & \quad \text{that} \\
\quad & \quad \text{I'} \\
\quad & \quad \text{I[FIN]} \\
\quad & \quad \ldots
\end{align*}
\]

\[
\begin{align*}
(72) & \quad \text{Mary}_i \text{ believes herself}_i \text{ to be a genius}. \\
(73) & \quad \text{* Mary}_i \text{ believes her}_i \text{ to be a genius}.
\end{align*}
\]
Anaphors, pronominals, and r-expressions.

(75)  John\textsubscript{i} thinks [that [pictures of himself\textsubscript{i}] will sell like hotcakes].

**Binding domain** for $\alpha$: (final version)
The smallest IP or DP which contains $\alpha$
and either (a) a subject distinct from $\alpha$
that does not contain $\alpha$,
or (b) an I assigning NOM to $\alpha$.

(76)  She\textsubscript{i} saw John\textsubscript{j}.

(77)  * He\textsubscript{i} saw John\textsubscript{i}.

(78)  He\textsubscript{j} saw John\textsubscript{i}.

(79)  [John\textsubscript{i}'s mother]\textsubscript{j} saw him\textsubscript{i}.

(80)  [His\textsubscript{i} mother]\textsubscript{j} saw John\textsubscript{j}.

(81)  He\textsubscript{i} said that Ed\textsubscript{j} thinks Al\textsubscript{k} is a genius.

(82)  * He\textsubscript{j} said that Ed\textsubscript{j} thinks Al\textsubscript{k} is a genius.

(83)  * He\textsubscript{k} said that Ed\textsubscript{j} thinks Al\textsubscript{k} is a genius.

An r-expression must not be bound.

Free
Not bound.

An r-expression must be free.

(84)  Ed\textsubscript{i} persuaded Ted\textsubscript{j} [IP to recuse himself\textsubscript{j}].

(85)  Ted\textsubscript{i} promised Ed\textsubscript{j} [IP to recuse himself\textsubscript{i}].

(86)  Ed persuaded Ted to leave.

(87)  Ed promised Ted to leave.

(88)  Ed\textsubscript{i} persuaded Ted\textsubscript{j} [PRO\textsubscript{j} to leave].

(89)  Ed\textsubscript{j} promised Ted\textsubscript{j} [PRO\textsubscript{i} to leave].

(90)  Ed\textsubscript{i} persuaded Ted\textsubscript{j} [IP PRO\textsubscript{j} to recuse himself\textsubscript{j}].

(91)  Ted\textsubscript{i} promised Ed\textsubscript{j} [IP PRO\textsubscript{i} to recuse himself\textsubscript{j}].

(92)  To teach oneself\textsubscript{i} linguistics is fun.

(93)  [PRO\textsubscript{i} to teach oneself\textsubscript{i} ling.] is fun.
Who and everyone can’t have a θ-role assigned to them by the time the θ-criterion is checked.

Remember that wh-movement leaves a trace which can have a θ-role assigned to it.

(94)  Who does John like ti?

(95)  * Who does he like ti?
(who likes himself?)

What’s wrong?

Why can’t a θ-role be assigned to a wh-phrase?
Why is it possible to assign a θ-role to its trace?

It must be an R-expression.  
**Principle C** says R-expressions must be free.

(96)  * Who did he tell Mary that John likes ti?
 (=who told Mary that John likes him?)

(101) Everyone said that he saw Mary.

(102)* He saw everyone.
 (=Everyone saw himself).

(103)* [His boss] saw everyone.
 (=Everyone’s boss saw him).

**A-movement:** (passives, raising…)

(104) John seems [ ti to speak Mandarin].
(105)* John seems [ ti speaks Mandarin].
 “Tensed S constraint”

(106) A train arrived ti.
(107) There arrived a train.
(108) A train seems [ ti to have arrived ti].
(109)* A train seems [that there arrived ti].
 “Specified subject condition”

Traces of A-movement are anaphors.

**NOTE — NOTE — NOTE — NOTE**

**Binding Theory** is about binding from **A-positions**.

(97)  Who ate lunch?
(98)  What did J tell M that B said he ate ti?

**Strong Crossover**

(99)  * Who does he like ti?
 (who likes himself?)

**Principle C:** An r-expression must be free.

(100)* Who did [his boss] see ti?

**Weak Crossover.**

**Crossover.** A variable cannot be coindexed with a pronoun on its left.

(A)  John thinks that he is right
(B)  John expects me to help him.
(C)  John wants him to resign.
(D)  He wants John to resign.
(E)  PRO to help John would be a mistake.

Tasks: Find the binding domain for the second. Can the two underlined phrases be co-referent (coindexed)?

**Binding domain for α:**  <br>
The smallest IP or DP which contains α <br>and either (a) a subject distinct from α <br>that does not contain α, <br>or (b) an I assigning Nom to α.
(110) [John's mother] congratulated himself.

(111) [John's mother] congratulated herself.

(112) 

```
IP
  
  DP_k
    
    DP_i
      
      D' I VP
        
        D' I VP
          
          John's_i D NP t V V'
            
            [GEN] mother V DP
              
              congratulated α
```