Review

**X-bar Theory**

(1)
```
XP
/ \  
WP  XP
 /   
YP  X'
   /  
  X   ZP
```

Spec-head Agreement: A functional head and its specifier agree in (share) relevant features.

e.g., φ-features, [GEN], [NOM]

(2)
```
IP
/  
I' 
   / 
[3SG, NOM] VP
```

**θ-Theory**

Verbs have θ-roles to assign to the participants in the event it denotes.

kick: Agent <Patient>

(3)
```
VP
/  
θagent
DP  V'
     \  
  V  θpatient
     /  
 kick
```

All θ-roles are assigned inside the VP.

**The θ-criterion**

i) Each argument chain must be assigned exactly one a θ-role.

ii) Each θ-role must be assigned to exactly one argument chain

Only referring expressions can be arguments.

Quantifiers (every student) and wh-words (which student) are not referring expressions—but their traces are. The θ-criterion is checked on the LF representation.

(4) Who bought what?

(5)
```
CP
/  
I' 
   / 
[3SG, NOM] VP
```

bought
**C-command and government**

(6) **C-command**

α c-commands β iff:

i) the first branching node dominating α also dominates β.

ii) α does not dominate β.

(7) A

B

C
domains C, D, and E

D

C

domains B and vice versa

D

E

(8) **Government**

α governs β iff

i) α is an X° category (that is, α is a head)

ii) α c-commands β

iii) Minimality is respected.

(9) **Minimality Condition**

In the configuration

\[ [\text{XP} \ldots X \ldots [\text{VP} \ldots Y \ldots ZP \ldots] \ldots] \]

X does not govern ZP. (because Y is closer)

(10) **Case Theory**

**Case Filter**

A DP chain must be Case-marked

A chain is Case-marked if it contains exactly one Case-marked position.

V assigns Acc Case via

P assigns oblique Case government

Finite I assigns Nom Case via Spec-head

D assigns Gen Case agreement

(11) **Passives**

Passive verbs are derived from active verbs by

• attaching –en

• suppressing external θ-role

• absorbing accusative Case

*eat:* Agent <Theme> ⇒ *eaten:* — <Theme>

(12) **Heads:** Lexical (N, V, A, P)

Functional (C, I, D)
Movement

Various kinds of movement:
- Moving something to SpecIP
- Moving wh-word to SpecCP
- Moving quantifier to adjoin to IP
- Moving V to I, or I to C

Move-α
Anything can be freely moved anywhere—so long as the end result satisfies all of the constraints on the representation.

EPP
The specifier of IP must be filled.

[+Q]-CP principle
A [+Q]-CP must have a [+wh] specifier

Wh-scope
Wh-words must be in or adjoined to SpecCP at LF

Quantifier scope
Quantifiers must be adjoined to IP at LF

Empty Category Principle (ECP)
Traces must be properly governed

α properly governs β iff
- (i) α governs β and α is a lexical head
- or
- (ii) α antecedent-governs β.

α antecedent-governs β iff
- (i) α c-commands β
- α is coindexed with β.
- (ii) no more than one bounding node dominates β but not α.
- (iii) there is no filled C governing β.

I-to-C
Where the root clause C is [+Q], I moves to C.

V-raising (or Aux-raising)
A [+Aux] V will move to I if I is unfilled.

Affix Hopping
Finite I will move (down) to V if V-raising can’t apply—if I is adjacent to the VP.

do-support (last resort)
If I is unfilled and neither Aux-raising nor Affix Hopping can apply, insert do into I.

Subjacency
Overt movement cannot cross more than one bounding node in a single step.
- Bounding nodes (English): IP and DP
- Bounding nodes (Italian): CP and DP

Head-movement constraint (HMC). Movement of an X° category α is restricted to the position of a head β that governs the maximal projection of α. (“No skipping”)

PRO
To tell if PRO is needed, consult θ-theory…

(15) John tried [ PRO to leave ]
(16) John persuaded Bill [ PRO to leave ]
(17) It is difficult [ PRO to leave ]
(18) John is likely [ — to leave ]

PRO can only appear in SpecIP of a nonfinite I. PRO does not need Case (in fact can’t get Case).

Binding Theory

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

Binding. α binds β iff
- (i) α c-commands β
- (ii) α and β are coindexed.
Binding Theory

**Principle A:** An anaphor must be bound in its binding domain.

**Principle B:** A pronominal must be free in its binding domain.

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

**Binding domain** for α:

The smallest IP or DP containing α and either
(a) a subject distinct from α that does not contain α,
or (b) an I assigning NOM to α.
or (c) if a is a pronoun, a D assigning GEN to α.

**Binding Theory** is about binding from A-positions. This excludes, e.g., “binding” of a wh-trace by a wh-word. They are in a c-command and coindexation relation (a binding relation), but Binding Theory does not constrain them.

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**Op and the relative clause**

Where do you find **Op**?

**Op** is essentially a silent which… We find it
- In SpecCP of yes-no questions
- In SpecCP (moved) in relative clauses.

(19) \[ CP
  \]
  \[ Op
  \]
  \[ C’
  \]
  \[ IP
  \]
  \[ I_j
  \]
  \[ C
  \]
  \[ DP
  \]
  \[ I’
  \]
  \[ did [+Q] Pat
  \]
  \[ VP
  \]
  \[ t_j
  \]
  \[ t_i
  \]
  \[ V’
  \]
  \[ V
  \]
  \[ leave
  \]

**Recoverability Condition**

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

**Doubly Filled Comp Filter**

*{Comp wh-XP that/if}, if wh-XP is overt (non-null).

(20) \[ DP
  \]
  \[ D’
  \]
  \[ D
  \]
  \[ NP
  \]
  \[ the
  \]
  \[ N
  \]
  \[ N’
  \]
  \[ CP
  \]
  \[ N
  \]
  \[ N’
  \]
  \[ C
  \]
  \[ [+Q]
  \]
  \[ IP
  \]
  \[ C’
  \]
  \[ vs. which, that
  \]
  \[ student
  \]

(21) Bill heard
\[
[ DP the speech_i [CP which_i C [IP Mary made t_i]]].
\]

(22) Bill heard
\[
[ DP the speech_i [CP Op_i C [IP Mary made t_i]]].
\]

(23) Bill heard
\[
[ DP the speech_i [CP Op_i that [IP Mary made t_i]]].
\]
Some parameters of variation

(24)  

\[
\begin{array}{c}
\text{X' } \\
\text{X} \quad \text{YP} \\
\end{array}
\quad \begin{array}{c}
\text{X' } \\
\text{YP} \quad \text{X} \\
\end{array}
\]

Head-initial
[SVO]
Head-final
[SOV]

Headedness tends to mostly uniform across projections, but not invariably (German; IP, VP head-final, CP head-initial, …)

V-to-I: In French, the (finite) verb appears to the left of negation, adverbs. This is taken to indicate that V has raised to I. French has this parameter set “on”, English “off”.

V2: The verb must be second (German, Dutch, English wh-questions, …)

Implies V-movement to a functional projection which must obligatorily have something in its specifier. I-to-C and SpecCP must be filled (a little bit like the EPP but for CP).

VSO: The verb moves past the surface position of the subject. CVSO sentences suggest V may not be in C. Suppose instead that S remains in its base position (SpecVP), and V raises to I. Assuming that the EPP is satisfied in VSO languages, it is satisfied by a null expletive (pro meaning ‘it’).

wh-movement:
- Wh-in-situ                        (Japanese)
- Wh-in-situ or move one wh-word (French)
- Move one wh-word                (English)
- Move all wh-words               (Bulgarian)

• SpecCP[+Q] needs a wh-word (at SS). [+Q]-CP
• A wh-words need to be in SpecCP[+Q] (at SS).