4.3 The generative approach

Chomsky’s Transformational-Generative (TG) Grammar

Five stages of development:
1) The Classical Theory (*Syntactic Structure*, 1957)
3) The Extended Standard Theory (EST, 1968)
4) The Revised Extended Standard Theory (Government and Binding /GB Theory, 1981)
What is a generative grammar?
By a generative grammar, Chomsky simply means “a system of rules that in some explicit and well-defined way assigns structural descriptions to sentences”. He believes that every speaker of a language has mastered and internalized a generative grammar that expresses his knowledge of his language. “Thus a generative grammar attempts to specify what the speaker actually knows, not what he may report about his knowledge.” (Chomsky, 1965)

To generate is to predict what could be the possible sentences of language.
Transformation is a kind of process that transforms one sentence into another. It uses a finite number of rules to produce infinite number of sentences.
4.3.1 Deep and surface structures (Chomsky)

- **Deep structure**: the abstract representation of the syntactic properties of a construction.

- **Surface structure**: the final stage in the syntactic derivation of a construction.

- **Transformational component** has transformational rules, which change the deep structure component into surface structures.
Chomsky’s linguistic model (*Syntactic Structure*, 1957)

Phrase structure rules (rewriting rules):

- $S \rightarrow NP + VP$
- $VP \rightarrow V + NP$
- $NP \rightarrow \text{Det} + N$
- $\text{Det} \rightarrow \text{the, a, etc.}$
- $N \rightarrow \text{man, ball, etc.}$
- $V \rightarrow \text{hit, took, etc.}$

Diagram:

- **Phrase Structure Component**
  - deep structure
- **Transformational Component**
  - surface structure
- **Morpho-Phonemic Component**
The boy frightened the people in the room.

General formula for PS rules: \( XP \rightarrow \ldots X \ldots \)
The sun will dry the grapes.
More PS- rules:

- Aux → tense +(M) +(perf) + (prog)
- M → model verb
- Perf → have + -en
- Prog → be + -ing
- VP → V +(NP) + (PP)
- PP → prep + NP
- Tense → pres/past
Ex. A girl has seen the man.
Transformational rules (T-rules) are the operations that add, delete or change elements in one structure to produce another structure. It refers to all the rules that apply after all lexicon items have been inserted into the structures.

Two obligatory T-rules:

1) **Flip-flop rule** (FF rule, affix-transformational/ shifting/ hopping rule): the affix and verb are shifted in order.

   Affix verb  →  verb affix #

   E.g. pres  be  –ing wash  →  be  pres # wash  –ing #
   Pres have  –en be  –ing  →  have pres # be  –en wash  –ing #

2) **Lexical formation rule** (LF rule): It requires the lexicon that determine the last appearance of the sentence.

   E.g. a  girl  pres  have  –en  see  the  man  →  
   a  girl  have  pres #  see  –en #  the  man  
   A  girl  has  seen  the  man.
Tree diagrams and structural ambiguities:

S
  └── Aux
       └── VP
            └── NP
                └── PP
                    The boy and the girl

S
  └── Aux
       └── VP
            └── NP
                └── NP
                    The mother of the boy and the girl
the house in the woods by the mountains near the river
Pat may think Bill will say Kim didn’t leave
4.3.2 The standard theory and after

- *Aspects of the Theory of Syntax* (1965)
- **Three major parts of language:** syntax, semantics and phonology

![Diagram of language components](attachment:image.png)

- Base Component
  - Categories
  - Lexicon
- Deep structure
- Transformational Component
- Surface structure
- Semantic Component
- Phonological Component
4.3.3 Government, binding, etc.

- Lectures on Government and Binding (1981)
- Two systems of a grammar: a rule system, a principle system

- System of principles:
  1) bounding theory
  2) government theory
  3) $\theta$-theory
  4) binding theory
  5) case theory
  6) control theory
C-command (Constituent command):

$\alpha$ c-commands $\beta$ if $\alpha$ does not dominate $\beta$ and every $\gamma$ that dominates $\alpha$ also dominates $\beta$.

(B c-commands C, E, F, but not D; C c-commands B, D, but not E, F.)
Ex.

```
  VP
   V
     PP
       P
           NP
               Det
                   N
                  language

speak about the language
```

(V c-commands PP, PP also c-commands V.)

“c-command” refers to the relation between an element and another of the same node in a tree diagram, and any others under the latter elements as well.
Binding Theory

A. An anaphor is bound in its governing category.
B. A pronominal is free in its governing category.
C. An r-expression is free.

- **Anaphor** is used in a narrow sense to include reflexives like *myself* and reciprocals like *each other*.
- **Pronominal** refer to pronouns other that reflexives and reciprocals.
- **R-expressions** (referential-expressions) cover all the other r-expressions except anaphors and pronominals, e.g. *John, Bill, the man*. 
Ex.
(a) John₁ likes himself₁.
(b) They₁ hit each other₁.
(c) John₁ doesn’t like Bill’s₂ criticism of himself₁.
(d) John₁ likes him₂.
(e) Bill₁ says John₂ likes him₂.
(f) Bill₁ says John₂ likes the man₃.
4.4 The functional approach

4.4.1 Functional sentence perspective (FSP)

- **Theme**: “that which is known or at least obvious in the given situation and from which the speaker proceeds”
- **Rheme**: “what the speaker states about, or in regard to, the starting point of the utterance” (Danes 1974)
- **Communicative dynamism (CD)**: “the extent to which the sentence element contributes to the development of the communication” (J. Firbas 1964)
4.4.2 Systemic-functional grammar

- **Three general functions of language** (Halliday):
  Ideational function (a. experiential b. logical)
  Interpersonal function
  Textual function

- **Three grammatical systems** (Halliday):
  Transitivity
  Mood
  Theme
Questions and Exercises

- What is the criterion used in IC analysis?
- In what ways is IC analysis better than traditional parsing?
- What are the problems in IC analysis?
- Discuss Chomsky’s binding theory in relation to the Chinese reflexive 自己.
- In what sense is the analysis of a sentence in terms of theme and rheme functional?