



Generative Grammar

- I. Introduction
 - a. A “grammar” is a set of statements (rules) about how sentences are formed
 - b. Really doesn’t say anything about prescriptive rules
 - c. Chomsky is the big name here
 - d. What does an English sentence consist of?
 - i. Two constituents
 - ii. $S \rightarrow NP + VP$
 - iii. $NP \rightarrow (Det) + N$
 - iv. $VB \rightarrow V_t + NP$ Transitive Verb
 - e. Characteristics
 - i. Always start with a sentence (S)
 - ii. Goal is to create explicit rules for all sentences
 - iii. Want to get a grammar simple enough that a child can learn it
 - iv. Look at the constituent, get to the constituent structure
 - f. Government-Binding Approach
 - i. Within each sentence, verbs are the most important
 1. Verb and its *form* determine what the rest of the sentence can be
 2. Verbs *govern* the rest of the sentence
 - ii. Other pieces are *bound* to the verb
 - iii. “Learnability”
 1. Children must be able to learn the grammar
 2. Chomsky says humans are born with intuitive grammar; allows them to learn language. When we hear language, we just need to figure out which of the possibilities our particular language uses.
 3. That is, we’re not starting completely from scratch.
 - g. Recursion
 - i. Have the capacity for an infinite number of sentences
 - ii. Only have a finite number of words!
 - iii. Need some recursive ability
- II. Generative Grammar
 - a. Finite set of principles
 - b. Recursion
 - c. Every sentence has a structural description, or the potential to create a tree
 - d. Every word has a category
 - e. Want to study the relationships between:
 - i. D(eep) structure
 1. Underlying grammatical meaning
 2. Really hard to even talk about (stuck using words to do it)
 - ii. S(urface) structure – What you read / write / say / hear
 - iii. Transformations – How to move from one level to the other
 - f. Passives
 - i. “The Ideal Relationship”
 - ii. Active and passive sentences *mean* the same thing,
 - iii. They have the same deep structure, but have two completely different surface structures. That’s the whole idea here.
 - iv. Same applies to questions (same D structure, different S structure)
 - v. $[X] \text{ tense (be -en) } V_t [Y] \text{ (by } [Z])$ \leftarrow D structure for any transitive verb
 - vi. Examples
 1. Eileen Kicked the Ball
 - a. Step 1: Determine which formula to use.
 - b. Step 2: Insert elements from the goal
 - c. $[X] \text{ tense (be -en) } V_t [Y] \text{ (by } [Z])$
 - d. [Eileen] past (be -en) kick [the ball] (by [Z])

2. John ate the hamburger
 - a. [X] tense (be –en) Vt [Y] (by [Z])
 - b. [John] past (be –en) eat kick [the ball] (by [Z])
3. The portrait was painted by Alice
 - a. [X] tense (be –en) Vt [Y] (by [Z])
 - b. [Alice] past (be –en) paint [the portrait] (by [Z])
- g. Passive Transformation
 - i. Triggered by finding be –en in the goal sentence
 - ii. Steps
 1. Move [X] to [Z]
 2. Move [Y] to [X]
 3. Delete anything that's not filled
 4. The ball was kicked by Eileen
 - a. [X] tense (be –en) Vt [Y] (by [Z])
 - b. [Eileen] past (be –en) kick [the ball] (by [Z])
 - c. [X] past be –en kick [the ball] by [Eileen]
 - d. [The ball] past be –en kick [Y] by [Eileen]
 - e. [The ball] past be –en kick by [Eileen]
- h. Active
 - i. If be –en is absent, just remove the empty slots
 - ii. [Eileen] past kick [the ball]
- i. Verbs agree with the *surface* structure subject!
- j. Cleanup Transformations
 - i. Affix Hopping
 1. Have tense markers before verbs that need to go *after* the verb
 2. past jump → jumped
 3. Reason to start with the affix before the verb is that the system supposedly works for all languages, and not all languages put the affix after the verb.
 4. Still called affix hopping even for irregular verbs. past be → was
 - ii. Splitting the Verb Phrase
 1. Done before passive / question / negative transformation
 2. Split tense + modal / be / have from the rest of the verb
 3. [Helen] pres be –ing sing
 4. [Helen] [pres be] [–ing sing]
 5. [He] [pres have] [–en be –ing eat] [it]
 - iii. Do Support
 1. Sometimes after splitting the verb phrase, cannot affix hop
 2. John past go home
 3. John [past] [go] home
 4. John [past] NEG [go] home
 5. Negative marker blocks the affix hopping
 6. Need something to which the affix can hop. Add “do!”
- k. Inverting and Inserting
 - i. Inverting for Questions – After bracketing verb, move first piece to the front.
 - ii. Inserting Negative Marker – Insert between verb pieces
 - iii. Inserting Stress – ['] between verb pieces
- l. Order of Transformations
 - i. Split the Verb Phrase
 - ii. Passive Transformation
 - iii. Invert or Insert
 - iv. Affix Hopping
 - v. Do Support
 - vi. Agreement Transformation
 - vii. Bracket Removal
- m. Examples

- i. Goal: John kicked the ball
 - 1. [X] tense (be –en) Vt [Y] (by [Z])
 - 2. [John] past (be –en) kick [the ball] (by [Z])
 - 3. No passive invert / insert
 - 4. [John] [past] [kick] [the ball]
 - 5. [John] [kicked] [the ball]
- ii. Goal: John didn't kick the ball
 - 1. [X] tense (be –en) Vt [Y] (by [Z])
 - 2. [John] past (be –en) kick [the ball] (by [Z])
 - 3. [John] [past] [kick] [the ball]
 - 4. [past] [John] [kick] [the ball]
 - 5. [past do] [John] [kick] [the ball]
 - 6. [Did] [John] [kick] [the ball]
 - 7. Did John kick the ball?
- iii. Goal: Mistakes were made by the mayor
 - 1. [X] tense (be –en) Vt [Y] (by [Z])
 - 2. [The mayor] [past (be) [–en) make] (by [Z])
 - 3. [X] [past be] [en make] [mistakes] by [the mayor]
 - 4. [Mistakes] [past be] [en make] by [the mayor]
 - 5. [Mistakes] [were] [made] by [the mayor]
- iv. Goal: Were mistakes made by the mayor?
 - 1. [X] tense (be –en) Vt [Y] (by [Z])
 - 2. [The mayor] [past (be) [–en) make] (by [Z])
 - 3. [X] [past be] [en make] [mistakes] by [the mayor]
 - 4. [Mistakes] [past be] [en make] by [the mayor]
 - 5. [past be] [mistakes] [en make] by [the mayor]
 - 6. [Were] [mistakes] [made] by [the mayor]