

COURSE TITLE: SYNTAX

WEEK 9: PHRASE STRUCTURE GRAMMAR
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INTRODUCTION

- ▶ PHRASE STRUCTURE GRAMMAR (PS GRAMMAR)
- ▶ Chomsky
- ▶ Part of Transformational generative grammar
- ▶ Two components:
 - a. Phrase structure /generative component
 - b. Transformational component

Lesson objectives

- ▶ By the end of the lesson, you should be able to:
 - ▶ i. Derive PS rules
 - ▶ ii. Explain the role of PS rules
 - ▶ iii. Analyze sentences into their parts
 - ▶ iv. Examine the role of the lexicon
 - ▶ v. Discuss the strengths and weaknesses of PS grammar

Language acquisition

- ▶ Chomsky countered Behaviourism:
- ▶ Children are able to produce structures beyond the input they receive.
- ▶ language acquisition is a mental process.
- ▶ Human beings are born with a Language Acquisition Device (LAD) in the mind
- ▶ Makes it possible to acquire any language easily.
- ▶ With unlimited input a child can manipulate this and come up with a complex structure such as
- ▶ ‘I want milk’ and not ‘*Food I want.’

TGG

- ▶ TGG attempts to counter the weaknesses of both Traditional and Structural Grammar.
- ▶ Prescriptivism and descriptivism are countered as well.

Rules vs language description

- ▶ It goes beyond merely analyzing already formed sentences
- ▶ seeks to explain the native speaker's inborn knowledge of the language.

GENERATIVE GRAMMAR

- ▶ To generate is to enumerate i.e., to specify how to form structures.
- ▶ (I.E to enumerate the steps or rules involved in forming a structure such as:
 - ▶ a noun phrase, a sentence, a verb phrase etc.
- ▶ Generative Grammar explains the language process in the brain and attempts to understand how it operates.
- ▶ This is understood by looking at the structures produced.
- ▶ The grammar seeks to explain the nature of a native speakers' competence (inborn knowledge) which enables them to:

GENERATIVE GRAMMAR

- ▶ Produce and understand an infinite number of sentences produced from a finite number of rules.
- ▶ b) Recognize grammatical and ungrammatical sentences e.g. dog boy stick killed a with
- ▶ d) Recognize sentences that are paraphrases of each other e.g. Bring the boxes in, bring in the boxes.
- ▶ e) Recognize ambiguous sentences e.g. The police arrested the woman with an umbrella.

GENERATIVE GRAMMAR

- ▶ This grammar is concerned with sentence form and distinguishes between “grammatical” and “meaningful” sentences e.g. *the apple ate the girl.
- ▶ Although this sentence is grammatical because its structure is acceptable in English, semantically it is unacceptable because it is nonsensical.
- ▶ Transformational Generative Grammar assumes that a sentence has two levels:- (Chomsky, 2002)
- ▶ i) Deep structure - the abstract underlying level where the meaning of the sentence lies.
- ▶ i) Surface structure - carries pronunciation of the sentence and resembles the ordinary sentence.

Chomsky, N. (2002). *Syntactic structures (2nd edition)*. Berlin: Mouton de Gruyter.

GENERATIVE GRAMMAR

- ▶ When a sentence has only one meaning or interpretation, it has one deep structure and one surface one e.g.
- ▶ The police arrested the woman.
- ▶ If one sentence has two different meanings or interpretations,
- ▶ then it has one surface structure and two deep structures e.g.
- ▶ The police arrested the woman with an umbrella. (Ambiguous)

GENERATIVE GRAMMAR

- ▶ What are the two different meanings?
- ▶ It is possible to have two surface structures but only one deep structure e.g.
- ▶ Jane read the book.
- ▶ paraphrasing
- ▶ The book was read by Jane.
- ▶ NB: The deep structure and surface structure are produced by different types of rules.
- ▶ deep structures are produced by Phrase Structure Rules.
- ▶ After this, the second type of rules called Transformational Rules come in to change the deep structures into a surface structure.

PHRASE STRUCTURE COMPONENT

- ▶ Phrase Structure Component/ Grammar is the generative component/ base component (starting point) (Brinton and Brinton, 2010)
- ▶ provides rules that can be used to generate an infinite number of well-formed sentences;
- ▶ most of which may never have been produced before.
- ▶ Unlike the rules in Traditional Grammar, these rules are constitutive i.e. they tell us what constituents go into generating a sentence.
- ▶ These rules have two parts:
 - ▶ a) Re-write Rules (phrase structure rules)
 - ▶ b) Lexicon Rules

Brinton, L., & Brinton, D. (2010). *The Linguistic structure of Modern English*. Amsterdam: John Benjamin.

Phrase Structure Rules/ Expansion/ Re-write Rules

- ▶ These rules are used to produce basic/kernel sentences such as active (as opposed to passive), statements (as opposed to imperatives or questions) and positive (as opposed to negative).
- ▶ These rules are few and have the potential to generate an infinite number of actual and possible sentences.
- ▶ They are ordered systematically and applied stepwise.
- ▶ A re-write rule consists of a single symbol on the left followed by an arrow and then one or more symbols to the right of the arrow e.g.
- ▶ S _____ NP + VP

Phrase structure component

- ▶ The arrow shows that the left symbol is “re-written” as “/’expanded as’ / consists of the symbol to the right.
- ▶ The symbol + means “followed by”. The symbols used are abbreviations e.g. ‘S’ for sentence ‘NP’ for noun phrase etc and are always capitalized.
- ▶ Re-write rules show the linear order of elements in the deep structure of a sentence. The re-write the symbol ‘S’ can be written in two ways:
 - ▶ i) $S \longrightarrow NP + VP$
AUX is integral part of the VP
 - ▶ ii) $S \longrightarrow NP + AUX + VP$
Aux is separated

S- NP + AUX+VP

- ▶ Assumption- a sentence consists of a subject in the form of NP, an Aux and a VP.
- ▶ The Aux is regarded as a separate constituent from the VP (predicate).
- ▶ The syntactic reasons for this are that the aux can occur independently and that it can be separated from the predicate by an adverb and so on e.g.
- ▶ a) Can she sing?
- ▶ Aux main verb
- ▶ b) Yes she can/ Yes she can do so.
- ▶ c) She can certainly sing.
- ▶ S AUX MV
- ▶ semantic reason; the main verb denotes state, action, or event while auxiliary elements expresses grammatical notions such as tense, aspect, voice, modality etc.

S- NP + AUX+VP

- ▶ Symbols used in Re-write Rules
- ▶ a) Terminal symbols
- ▶ i) N (Noun) e.g. teacher, desk
- ▶ ii) V (Verb) e.g. run, smile
- ▶ iii) Adj (Adjective) e.g. sweet, smart
- ▶ iv) Adv (Adverb) e.g. quickly, slowly
- ▶ v) Prep (Preposition) e.g. on, beside, over
- ▶ vi) Pron (Pronoun) e.g. he, she, it.
- ▶ vii) Det/D (Determiner) e.g. a, an, all, some

S- NP + AUX+VP

- ▶ Non-terminal symbols
- ▶ They are called so because you need to re-write (expand) them because they aren't final e.g.
- ▶ i) S - Sentence
- ▶ ii) NP - Noun Phrase
- ▶ iii) VP - Verb Phrase
- ▶ iv) Adj. P/ AP - Adjective Phrase
- ▶ v) Adv. P - Adverb Phrase
- ▶ vi) PP - Prepositional Phrase

S- NP + AUX+VP

- ▶ Other symbols include:-
- ▶ i) () – curved brackets. They indicate option. This should be understood differently from choice. Option means you may or may not have it in a sentence e.g.
- ▶ NP (Det) + (Adj) + N + (PP) means only the N is obligatory
- ▶ ii) { } – braces/curly brackets: they indicate choice e.g.
- ▶ NP Det + (Adj) + Noun e.g. The African soldier
- ▶ Det + N e.g. the soldier,

S- NP + AUX+VP

- ▶ PN (Proper Noun) e.g. Nairobi, Mombasa,
- ▶ Pron e.g. he, she,
- ▶ Det + (Adj) + N + (PP) e.g. the smallest boy in the class
- ▶ This means the NP can be re-written as only one of the choices given
- ▶ iii) \rightarrow - Arrow: indicates what a symbol consists of or can be re-written as. This means a symbol to the left of the arrow can be written as the symbol to the right e.g.
- ▶ $NP \rightarrow Det + N$
- ▶ iv) + or , (plus/comma): This indicates a syntagmatic relationship among or between items. It is an 'and' relationship e.g.
- ▶ $S \rightarrow NP + Aux + VP$ or
- ▶ $S \rightarrow NP, Aux, VP$

PHRASE STRUCTURE RULES

- ▶ Phrase Structure Rules
- ▶ 1. $S \rightarrow NP + Aux + VP$
- ▶ 2. $NP \rightarrow N - Teacher$
- ▶ (Det) + N – The Teacher
- ▶ (Det) + (AP) + N + (PP) – The wise teacher in the class.
- ▶ PN (Proper Noun) – Mombasa
- ▶ Pron - He
- ▶ 3. $Aux \rightarrow Tense + (Modal) + (have + en) + (be + ing) + (be + en)$

S- NP + AUX+VP

- ▶ Tense → past
- ▶ Non-past
- ▶ Non past refers to the present tense and can also accommodate future time.
- ▶ 5. VP → V + -
- ▶ NP e.g. The new student
- ▶ Adj P e.g. new
- ▶ Adv P e.g. softly
- ▶ PP e.g. to the market

S- NP + AUX+VP

- ▶ PP → P + NP e.g. (to) to win
- ▶ Adv P e.g. (over) here
- ▶ Adj P e.g. (in) public
- ▶ PP e.g. (out) in the open
- ▶ AP → (Adv P) + Adj P + (Adv P) + (PP) e.g.
▶ very good indeed at English
- ▶ Adv P → (Adv P) + Adv + (Adv P)
▶ Very softly indeed

THE LEXICON RULES

- ▶ The lexicon is like a dictionary which consists of a list of words and affixes.
- ▶ However it is more detailed in giving information about features of words and affixes.
- ▶ information relates to spelling, pronunciation, affixes associated with a word or bases associated with an affix,
- ▶ syntactic environment in which the word can occur and the meaning of the word/affix
- ▶ Mental dictionary
- ▶ Goes beyond what appears in a regular dictionary
- ▶ While re-written rules give us symbols (as seen when we remove the examples given in the rules above) the lexicon can provide us with words.

Lexicon rules

- ▶ i) They ran
- ▶ $S \rightarrow NP + Aux + VP$
- ▶ $NP \rightarrow Pron.$
- ▶ $Aux \rightarrow Tense$
- ▶ $Tense \rightarrow past$
- ▶ $VP \rightarrow V$
- ▶ $Pron. \rightarrow They$
- ▶ $V \rightarrow run$

THE LEXICON RULES

- ▶ ii) John kicked the ball
- ▶ $S \rightarrow NP + Aux + VP$
- ▶ $NP1 \rightarrow N$
- ▶ $Aux \rightarrow Tense$
- ▶ $Tense \rightarrow past$
- ▶ $VP \rightarrow V + NP2$
- ▶ $NP2 \rightarrow Det + N$
- ▶ $N \rightarrow John, ball$
- ▶ $V \rightarrow kick$
- ▶ $Det \rightarrow the$
- ▶ $N- ball$

Exercise

- ▶ 1. The twin towers might have been bombed by the terrorists.
- ▶ 2. The prime minister is doing a good job.
- ▶ 3. The noisy politicians are disappointing us.
- ▶ 4. They cheered enthusiastically.

PS Rules

- ▶ Phrase structure rules produce the deep structure.
- ▶ This is where the meaning is represented. Consider 'have eaten' this expresses the perfective aspect. Although '-en' is suffixed to 'eat' to form 'eaten', '-en' is more closely related to 'have'.
- ▶ The two work together to express the meaning that the action was completed prior to the moment of speech (perfective aspect).
- ▶ we cannot say:
 - ▶ • I have eat or
 - ▶ • I eaten
- ▶ 'eat' expresses the action involved while have + en jointly express the perfective aspect.

PS Rules

- ▶ In the same way the meaning that the action is still continuing (progressive aspect) is carried by be + ing.

Hence we cannot say

- ▶ • I am eat
- ▶ • I eating
- ▶ Aux includes tense (obligatory), primary auxiliary and modal auxiliary.
- ▶ Tense attaches to the verb on its immediate right e.g.
- ▶ S → Det + Adj + N - past + have + V + Adv (The little girl had smiled shyly)

Ps rules

- ▶ Both the symbols and the words can be presented in the form of branching tree diagrams in Phrase Structure Grammar (PSG) and;
- ▶ Transformational Generative Grammar in general.
- ▶ Such trees are referred to as Phrase-Markers.
- ▶ P S rules do not generate finished sentences since no ordinary sentence would have the words have + en or be + ing on the surface.
- ▶ Instead these give us the underlying (deep) structure of the structure.

Weakness of PS rules

- ▶ It is unable to generate some types of sentences since it only caters for the basic or kernel ones.
- ▶ The complex ones are therefore not adhered to e.g.
- ▶ The principal said that the student who stole the books believed that he had not been seen.
- ▶ It does not capture the relationship between sentence types as in the case of active versus passive.
- ▶ It is not able to handle discontinuous elements such as the auxiliary and the main verb in question e.g. Are you coming with us?

Weaknesses

- ▶ It cannot handle stylistic variations such as:
- ▶ *Mysteriously, the strange man disappeared from the village*
- ▶ *The strange man mysteriously disappeared from the village*
- ▶ *The strange man disappeared mysteriously from the village*
- ▶ *The strange man disappeared from the village mysteriously.*
- ▶ PSG gives a different re-write for each instead of capturing the fact that the four versions are paraphrases of one another

Weaknesses of PS Grammar

- ▶ Much as it could handle structural ambiguity (occasioned by the arrangement of words), it had no answer for lexical ambiguity such as:
- ▶ She liked the subject.
- ▶ **Practice exercise**
- ▶ Provide a sentence for the re-write rule below:
- ▶ Det + Adj + Past tense + modal + have + en + V + Adv + Adv

Next lesson

- ▶ PS Grammar cannot show the relationship between different sentence types:
- ▶ TRANSFORMATIONS can do this.
- ▶ Next lesson: Transformational Generative Grammar.

References

- ▶ Brinton, L., & Brinton, D. (2010). *The Linguistic structure of Modern English*. Amsterdam: John Benjamin.
- ▶ Chomsky, N. (2002). *Syntactic structures* (2nd edition). Berlin: Mouton de Gruyter.