Unit 4: Lexical Features

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- To recap the following are all phrase structure rules that we can use to generate English sentences:

- Symbols like **N, Det, present** are called **P-terminal symbols**. **Terminal symbols** are the basic units of a language and cannot be further decomposed.
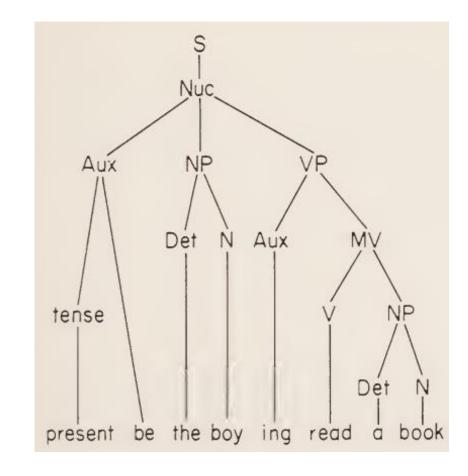
$$P1: \; S \rightarrow (SM) \; Nuc$$

$$P2: \; Nuc \rightarrow NP + VP$$

$$P3: \; VP \rightarrow Aux + MV \; (manner) \; (place) \; (time) \; (reason)$$

$$P4: \; Aux \rightarrow tense \; (M) \; (have + en) \; (be + ing)$$

$$P5: \; Tense \rightarrow \begin{Bmatrix} present \\ past \end{Bmatrix}$$

$$P6: \; MV \rightarrow \begin{Bmatrix} be \begin{Bmatrix} NP \\ AP \\ Place \end{Bmatrix} \\ V \; (NP) \end{Bmatrix}$$

$$P7: \; NP \rightarrow (Det) \; N \; (Pl)$$

$$P8: \; AP \rightarrow (Intens) \; Adj$$

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- A sequence of string of these symbols is called a **p-terminal string**. Which is the underlying structure of a sentence.

- Therefore, from a p-terminal string we can formulate countless sentences, for example the following string:-

Det+N+Present+Be+Ing+V+Det+N

- Possible sentences from this structure are:
  - The boy is driving a bicycle.
  - The doctor is checking the patient.
  - The detective is investigating a crime.

- When creating such sentences, we are replacing the p-symbols with **lexicons**.

- The term **"lexicon"** refers to the set of all the words in a language and the information associated with each word.

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- The lexicon represents the individual meanings of words while the **semantic meaning** represents the logical order of words that we can use to have a meaningful sentence.

- Furthermore, we can use transformational rules to derive further structures from a p-terminal string. For example, we can make a question from the statement 'the boy is reading a book'. As in following tree structure.

- Practice: Draw tree structure for the following questions:
  - Is the doctor checking the patient?
  - Is the detective investigating the crime?

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- Grammar in transformational grammar refers to the rules that enable us to create grammatical structures in a language. Such rules consist of the following components:-

1. The syntactic component contains the phrase-structure and transformational rules and provides the **structure** of the sentence.

2. The semantic component operates on the P-terminal string after entries from the lexicon have been added and gives the sentence its **meaning**.

3. The phonological component operates on the sentence after all transformations have been applied and gives the sentence its final **form**.

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- **Transitive and Intransitive Restrictions**:

- In generative grammar, transitivity refers to whether a verb requires or allows a direct object. Verbs can be categorized as either transitive or intransitive based on their syntactic requirements. Let's explore these concepts:

- **Transitive Verbs: [+___NP]**
  - Definition: Transitive verbs are verbs that require a direct object to complete their meaning.
  - Example: In the sentence "She eats an apple," "eats" is a transitive verb, and "an apple" is the direct object. The verb "eats" is incomplete without an object.

- **Intransitive Verbs: [-____NP]**
  - Definition: Intransitive verbs are verbs that do not require a direct object to complete their meaning.
  - Example: In the sentence "He sleeps," "sleeps" is an intransitive verb. It doesn't require a direct object; the verb is complete on its own.

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- While intransitive verbs typically do not require a direct object, they can often be accompanied by adverbials (adverbs or prepositional phrases) to provide additional information about the action.

- These verbs are represented by the symbol [+____place]

- **For example:**
  - He laid on the ground.
  - The thief lurked outside.

- There are also transitive verbs that have adverbials of place. [+____NP place]. For example:
  - He handed the paper to me
  - She set the book there

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- **Subject-verb restrictions:**

- It is essential in a sentence for the subject and the verb to be compatible in terms of the semantic meaning. For example:
    - The man drove the car.
    - *the man bit me.

- The first sentence is viable because the verb drove requires a human to perform it, hence we refer to it as [+____Human].

- The second sentence is not acceptable because the verb does not refer to a human action, hence we refer to it as [-____Human].

- cat, door, chair, book are referred to as [-____Human]

- Boy, man, uncle are referred to as [+____Human]

- A final noun distinctions we be abstract and concrete nouns.

- Abstract nouns like Love, freedom, curiosity [-_____concrete]

- Concrete nouns like Table, dog, mountain [+_____Concrete]

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- **Determiner and Noun restrictions:**

- Common Nouns: Common nouns refer to general, non-specific people, places, things, or ideas. They do not begin with a capital letter unless they start a sentence. [+_____Common]

- Examples:
    - person: teacher
    - place: city
    - thing: book
    - idea: happiness

- Proper Nouns: Proper nouns refer to specific, unique people, places, things, or ideas. They always begin with a capital letter. [-_____Common]

- Examples:
    - person: Mary
    - place: Paris
    - thing: The Eiffel Tower
    - idea: The Renaissance

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- **Determiner and Noun restrictions:**

- Countable Nouns: Countable nouns are individual items that can be counted as separate units. They have both singular and plural forms. [+___Countable]

- Examples:
    - singular: book, apple, dog
    - plural: books, apples, dogs

- Uncountable Nouns (Mass Nouns): Uncountable nouns, also known as mass nouns, are substances, concepts, or things that cannot be counted as separate units. They don't have a distinct plural form, and you usually talk about them in general terms. [-___Countable]

- Examples:
    - water (uncountable)
    - sugar (uncountable)
    - information (uncountable)

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- **Determiner and Noun restrictions:**

- Animate Nouns: Animate nouns refer to living beings—those with the ability to move, grow, and typically possess consciousness. [+_____Animate]

- Examples:
  - person: man, woman, child
  - animal: dog, cat, bird
  - fictional character: Harry Potter, Elsa (from Frozen)

- Inanimate Nouns: Inanimate nouns refer to non-living things—objects, concepts, or entities without biological life. [-_____Animate]

- Examples:
  - object: table, chair, book
  - concept: love, time, happiness
  - natural phenomena: rain, sunshine, wind

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- **Determiner and Noun restrictions:**

- To summarise the determiner and noun restrictions, check the following table:

	woman	*Mary*	*cat*	*truth*
N	+	+	+	+
common	+	−	+	+
count	+	−	+	−
concrete	+	+	+	−
animate	+	+	+	−
human	+	+	−	−