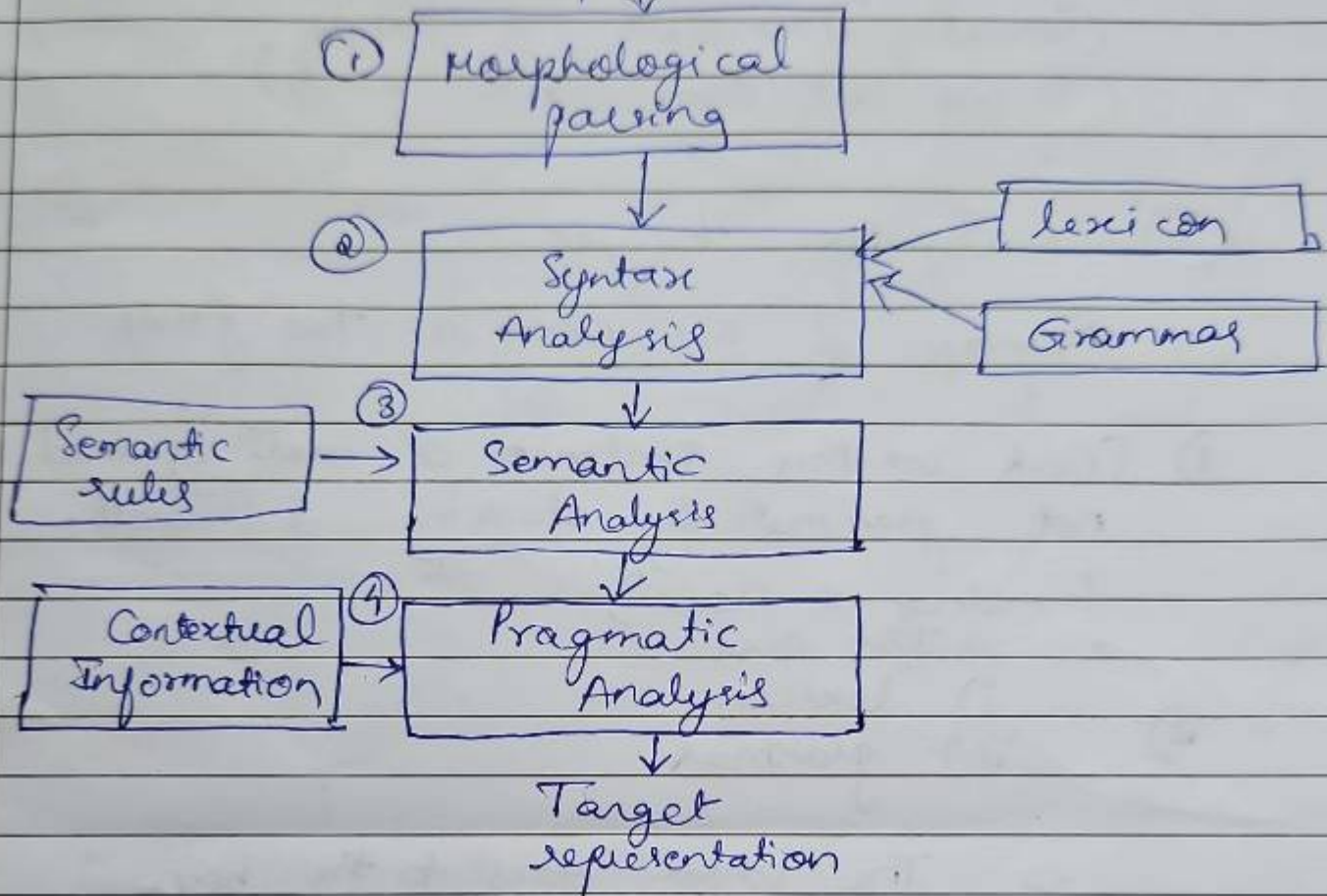


# \* # NLP Phases / Levels



- Once input text comes, it goes into 1<sup>st</sup> phase i.e. morphological processing.

①

- It ~~is~~ is the first phase of NLP

- The purpose of this phase is to break chunks of language input into sets of tokens corresponding to paragraphs, sentences & words.

- eg uneasy

un ← easy

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- Divided the sentences & words into different parts.
- Morphology means  $\Rightarrow$  root of the word.  
Generation/Formation of words.  
(So we cut them into parts)

## ② Syntax analysis.

- Purpose of this part is two folds.

1) Check whether sentence is well formed or not (grammatically checking of well-formedness is done)

- If it is
- i) lexicon
  - ii) grammar

eg: The school goes to the boy.

$\Rightarrow$  No grammatical meaning to above sentence.

2) Taking input data & gives structure/representation of input data.

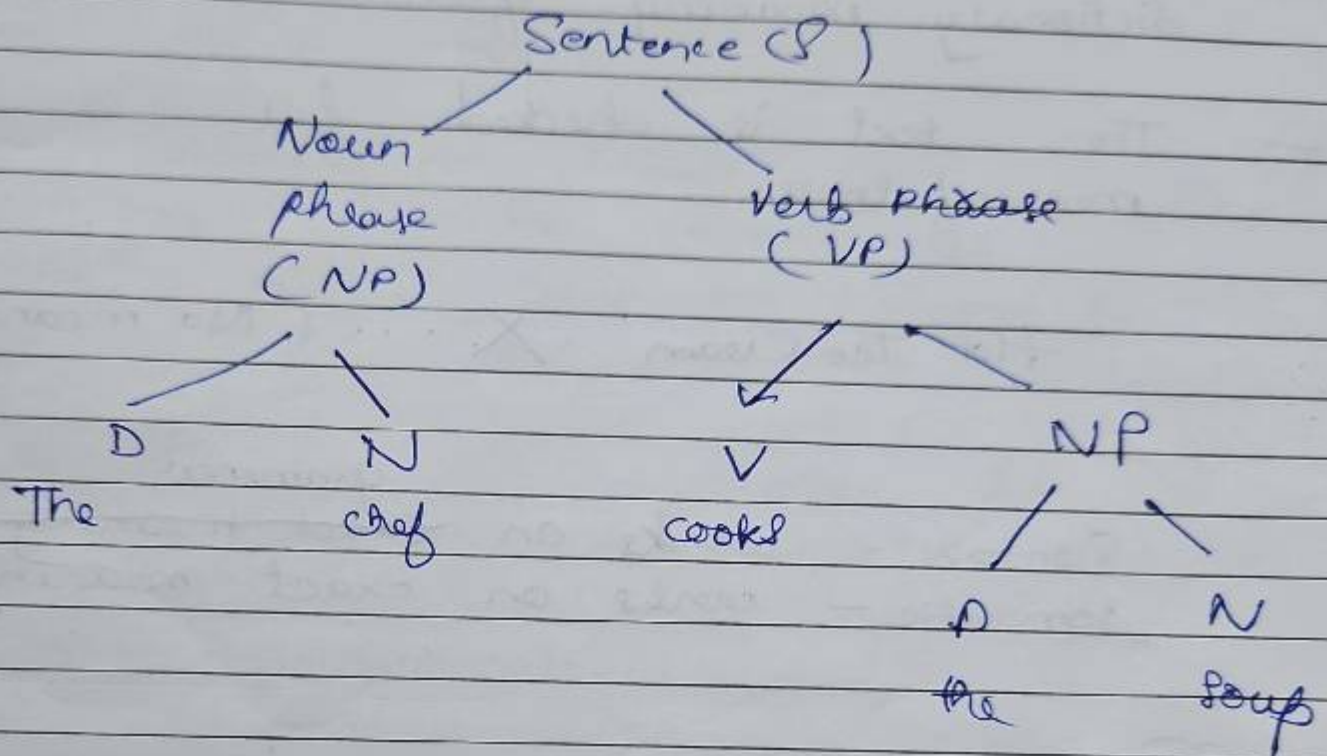
eg.

Parsers  $\rightarrow$  If it is  $\rightarrow$  Structured form  
"Parse tree"

If it is wellformed, then parse tree is prepared.



eg The chef cooks the soup.



D  $\Rightarrow$  determinants

N  $\Rightarrow$  Noun.

V  $\Rightarrow$  verb.

End result .

$\rightarrow$  checks sentence is grammatically correct or not.

$\rightarrow$  Is a parser that generates "parse tree".

Note :- Separate chap. on this.

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### ③ Semantic Analysis.

- The purpose of this phase is to draw exact meaning <sup>of word</sup>, or you can say dictionary meaning from the text.
- The text is checked for meaningfulness.

Hot Ice Cream X ... (No meaning)

Syntax - words on <sup>grammar</sup> ~~exact meaning~~  
Semantic - words on exact meaning.

### ④ Pragmatic Analysis

- Simply fits the actual objects / events which exist in a given context with object references obtain during last phase.

• Seema loves her mother and shreya does too.

• The car hit the pole while it was moving.

- Semantic Ambiguity - 1 sentence has

- Here, then pragmatic analysis comes into picture.



Semantic Ambiguity  
 2 meanings of 1 sentence  
 Object / event

1 meaning :-

→ Seema loves her mother &  
 shreya loves her mother too  
 OR

→ 2nd meaning

seema loves her mother &  
 shreya loves seema's mother too.

~~here, pragmatic~~

⇒ here, pragmatic analysis helps to  
 find <sup>exact</sup> 1 meaning of the sentence

For which, real world info is  
 required.

② The car hit the pole while  
 car was moving.

OR

The car hit the pole while  
 pole was moving.

→ This is done by pragmatic analysis to  
 find exact meaning.

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Semantic rules → Semantic Analysis



how to arrange sentence to remove exact meaning

(remove hot ice cream)

Contextual info → Pragmatic Analysis



to find which of the  
2 meanings is exact  
& right to be  
~~chosen~~ chosen

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① Lexicon :- A list of words that are used in a certain language, profession or hobby

→ Dictionary :- A list of words commonly used in a lexicon & their definitions.

They also look at the history of the word's usage & its origin.

② Grammar :- comprises the entire system of rules for a language, including syntax.  
Syntax → Subdivision of grammar

→ It deals with the way that words are put together to form phrases, clauses & sentences.