In the name of Allah, the most Beneficent, the most Merciful.

Deep and Surface Structure

- Charlie broke the window. (Active Voice)
- The window was broken by Charlie. (Passive Voice)
- Jack loves his brother. (Active Voice)
- His brother is loved by Jack. (Passive Voice)

Some linguists, in particular *Noam Chomsky*, have tried to account for this similarity by positing that these two sentences are distinct (different) *surface forms* that derive from a common *deep structure*.

Deep and Surface Structure

- Charlie broke the window. (Active Voice)
- The window was broken by Charlie. (Passive Voice)
- Jack loves his brother. (Active Voice)
- His brother is loved by Jack. (Passive Voice)

The distinction between them is a difference in their surface structure. They have different syntactic forms of individual sentence. This superficial difference is called ***surface structure.***

Deep and Surface Structure

The sentences can have deep structure like this:

- It was Charlie who broke the window.
- Was the window broken by Charlie?
- It is Jack loves his brother.

And so on…

An abstract level of structural organization in which all the elements determining structural interpretation are represented is called ***deep structure. OR*** The underlying level where the basic components can be represented is called their ***deep structure***.

Structural Ambiguity

- Annie bumped into a man with an umbrella.
- Small boys and girls are playing hide and seek.

Explanation can show in the first sentence two ideas:

i. Annie had an umbrella and she bumped into a man.

ii. Annie bumped into a man when he happened to be carrying an umbrella.

Explanation can show in the first sentence two ideas:

i. Small boys are playing with young girls.

ii. Small boys and all girls are playing.

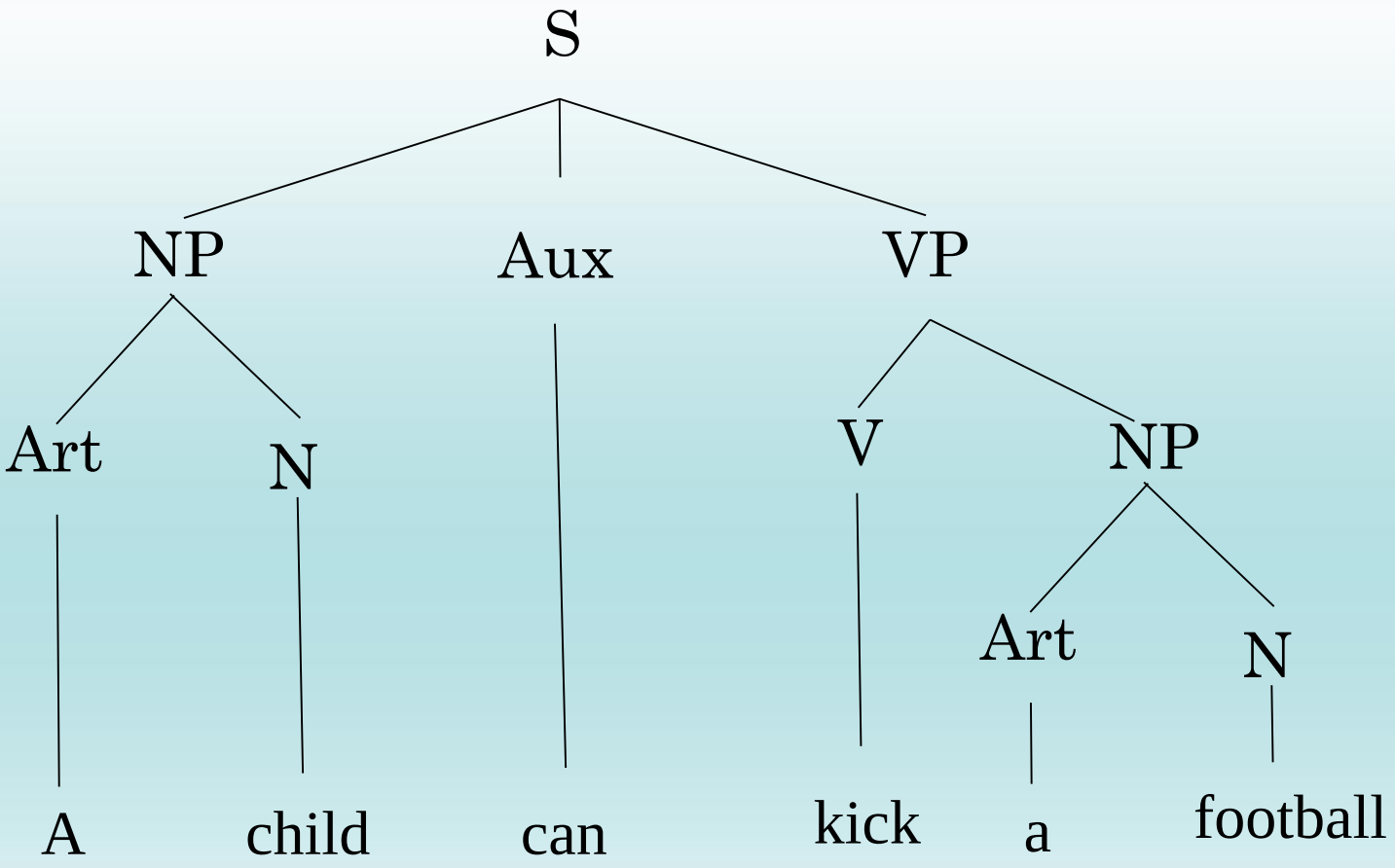
Distinct underlying interpretations that have to be represented differently in deep structure is called ***Structural Ambiguity.***

Tree Diagram

- A tree diagram is a way of representing the hierarchical nature of a structure in a graphical form. It is named a "tree diagram" because the classic representation resembles a tree, even though the chart is generally upside down compared to an actual tree, with the "root" at the top and the "leaves" at the bottom.
- Tree diagram provides us visual representation of the constituents of the corresponding expression.

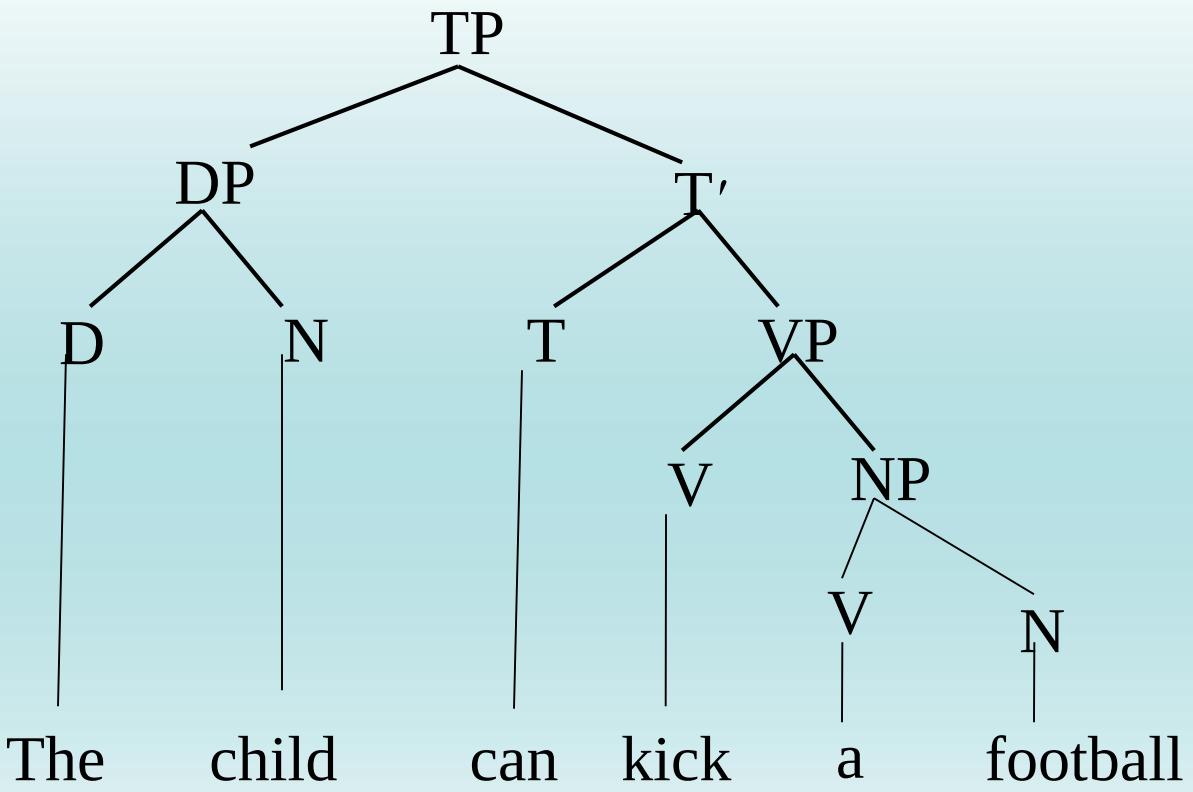
Tree Diagram

- E.g. A child can kick a football.



Tree Diagram

- E.g. A child can kick a football.



Symbols used in Tree Diagram

- S - Sentence
- NP- Noun Phrase
- PN- Proper Noun
- N-Noun
- VP-Verb Phrase
- Adv-Adverb
- V-Verb
- Adj-Adjective
- Prep-Preposition
- Art-Article

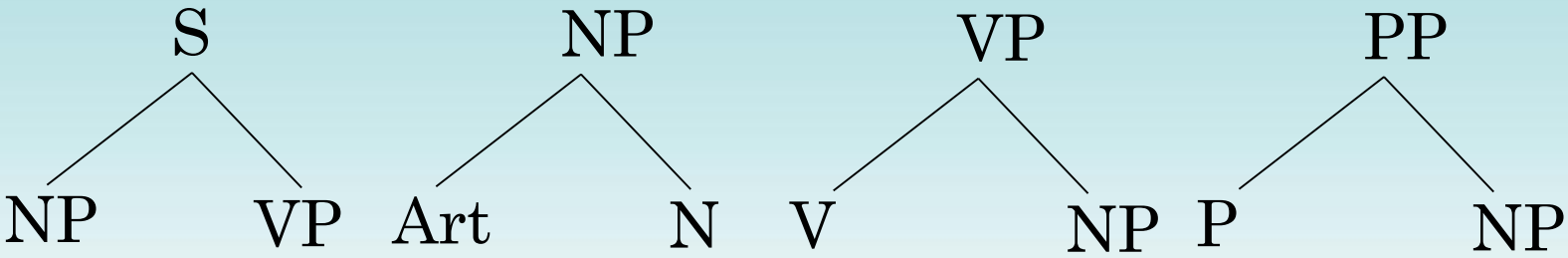
- Pro-Pronoun
- PP-Prepositional Phrase
- * Ungrammatical Sentence
- → Consists of / rewrites as
- **( )** Optional Constituent
- **{ }** Only one of these constituents must be selected

Phrase Structure Rules

Phrase structure rules generate structures.

- TP/S ⟶ NP VP
- NP ⟶ {Art (Adj+) N, Pro, PN}
- VP ⟶ V NP (PP) (Adv)
- PP ⟶ P NP

Tree Diagrams



Lexical Rules

As we know, phrase structure rules generate structures. To turn those structures into recognizable English, we also need lexical rules that specify which words can be used when we rewrite constituents such as N.

- PN ⟶ { Mary, George }
- N ⟶ { Girl, Dog, Boy }
- Pro ⟶ { It, you, he }
- Art ⟶ { A, An, the }
- V ⟶ { Help, run, play }

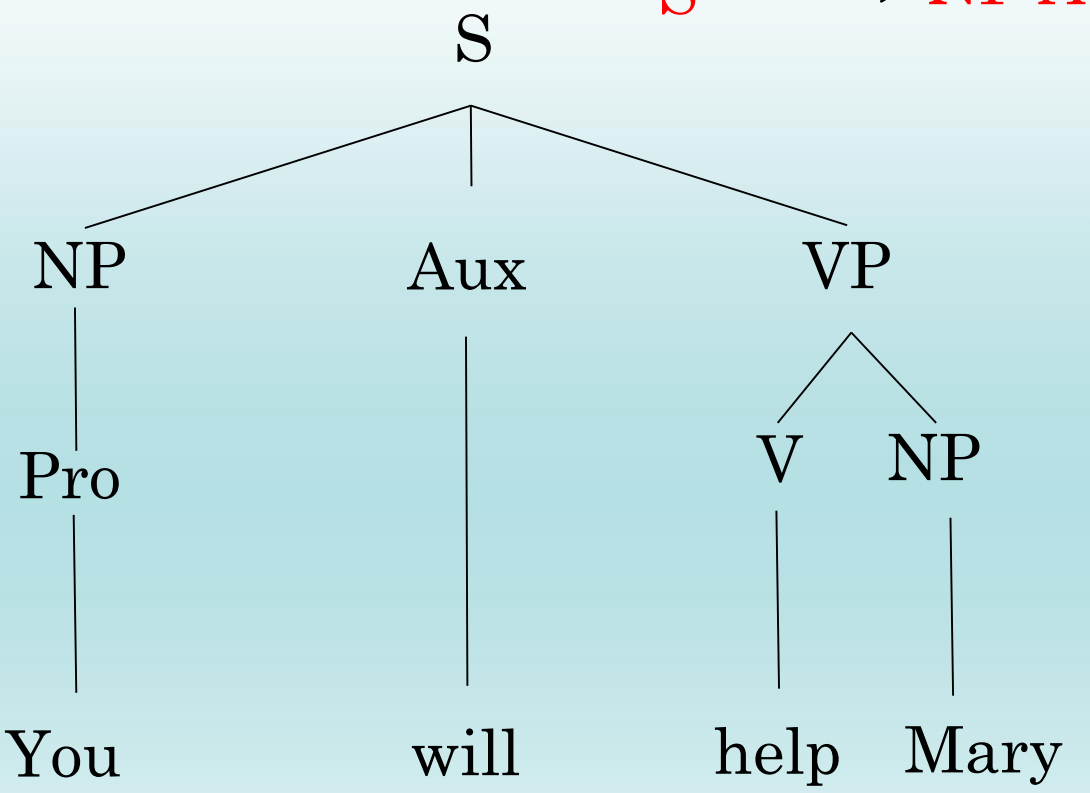
We can rely on these rules to generate the grammatical sentences but not ungrammatical sentences.

Movement rules

It is easy to represent Declarative forms in tree diagrams.

e.g. You will help Mary.

S ⟶ NP Aux VP



Movement rules

It is easy to represent Declarative forms in tree diagrams.

e.g. You will help Mary.

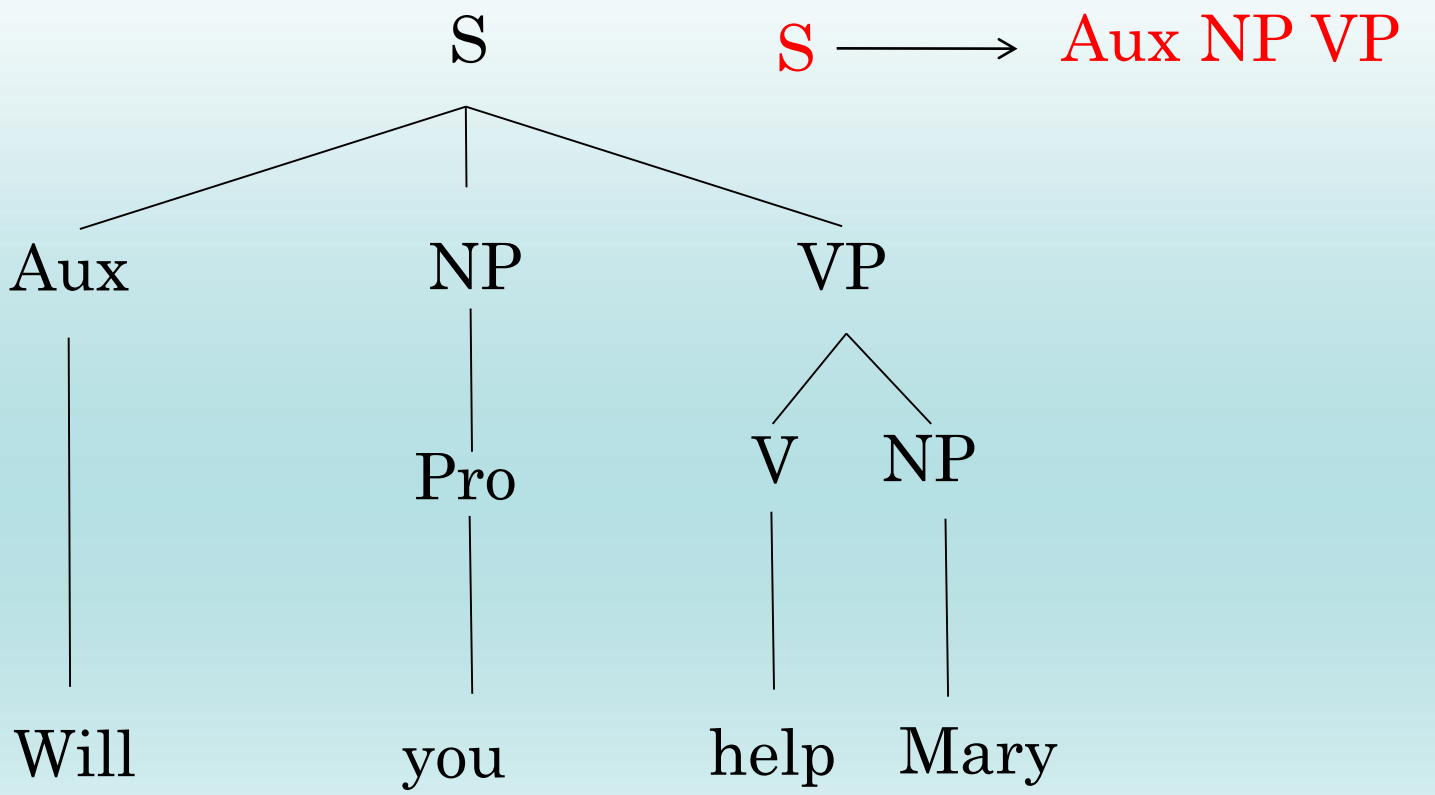
BUT HOW CAN YOU REPRESENT THIS ONE?

Will you help Mary?

Movement rules

Simply

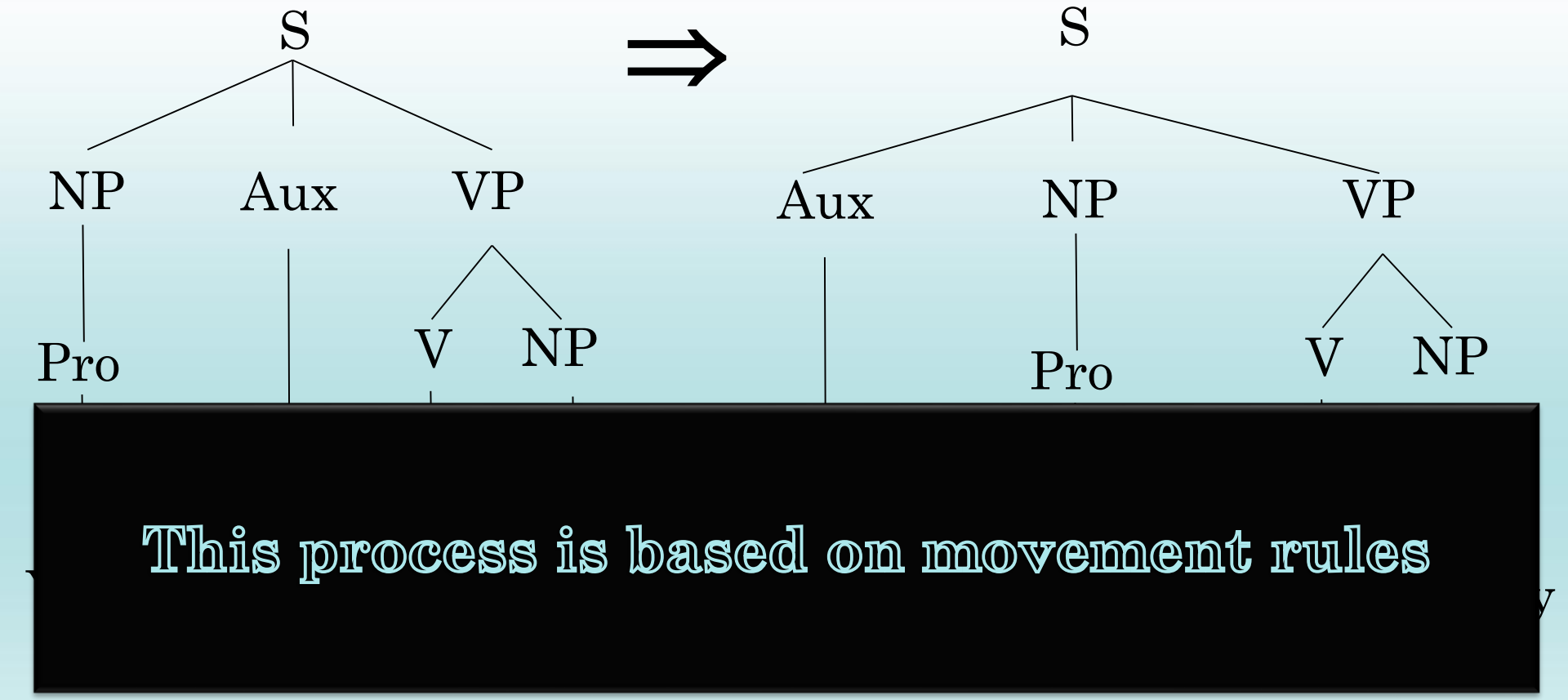
Will you help Mary?



Movement rules

You will help Mary.

Will you help Mary?



This process is based on movement rules

S ⟶ NP Aux VP

S ⟶ Aux NP VP

Recursion

Examples:

- a. ab
- b. aabb
- c. aaabbb
- a. The man [who the girl saw is my friend
- b. The man [who the girl [who sneezed] saw] is my friend.
- c. The man [who the girl [who Peter [who knows] met] saw] is my friend.

Recursion

The rules of grammar will also need the crucial property of *recursion*. In this, we can put sentences inside other sentences and these sentences can be generated inside another sentences.

Notice these:

- Mary helped George.
- Cathy knew that Mary helped George.
- John believed that Cathy knew that Mary helped George.

Complement Phrase

- Mary helped George.
- Cathy knew that Mary helped George.
- John believed that Cathy knew that Mary helped George.

Traditionally, such sentences are called clauses (***that-clause)***

In the above examples, *that* is called ***complementizer (C).***

We can say that sentences with *that* are ***Complement Phrase (CP).***

Complement Phrase Rule

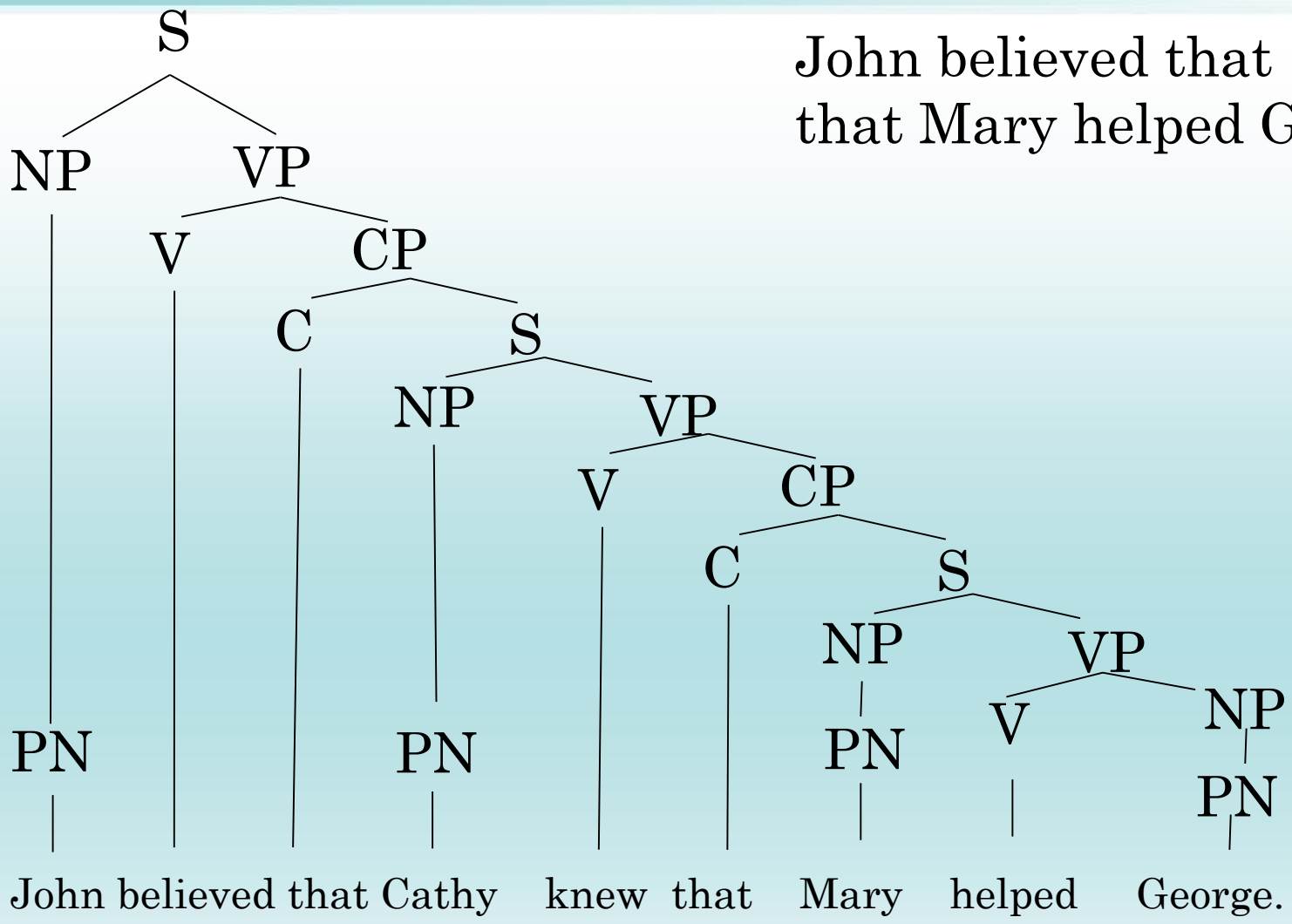
$$S \longrightarrow NP\ VP$$

$$VP \longrightarrow V\ CP$$

$$CP \longrightarrow C\ S$$

Complement Phrase

John believed that Cathy knew that Mary helped George.



Query Session

Thanks

Stay blessed!

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