

# Week 12: Syntax

## Study Guide

### Phrases

*Corresponds to the first syntax lecture*

Phrases are sequences of words that behave as a syntactic unit (a constituent!). In lecture, we considered several properties of phrases:

- (1) **Phrases have properties of the head**, independent of what else might be there. The head of a phrase defines what the phrase is about. For example, the phrases *[the big cat]* and *[the cat in the hat]* both have the same head: cat. Since cat is a noun, we call these **Noun Phrases** (NPs).
- (2) **Phrases can contain other phrases**, allowing us to start with words and assemble them into larger and larger objects. For example, the phrase *[kick the ball]* is a Verb Phrase (VP) that is headed by the verb *kick*, which contains a **Noun Phrase** (NP) *[the ball]*, headed by the noun *ball*.
- (3) **Phrases can stand alone**. While *[in front of the mirror]* and *[be patient]* are phrases, *[drink plenty of]* and *[peter likes]* are not.
- (4) **Phrases can contain themselves (recursion)**. A phrase can include another phrase of the same type — a Noun Phrase can contain another Noun Phrase; a Verb Phrase can contain another Verb Phrase. This concept is called recursion.

### Constituency tests

*Corresponds to the first syntax lecture and section 5.3 of the reading*

The organization of words and phrases into larger units involves the notion of a constituent (a unit). Some things form a syntactic constituent and some things do not. We use constituency tests to tell the difference!

- (1) The **substitution test** asks whether a group of words can be replaced by a single word (or simple phrase). If yes, then you have a constituent. Use pro-forms: Pronouns (he/him, she/her, it, they/them, one, that), Pro-verbs (do (so), be, have) and there, then, and such (for prepositions).
- (2) The **movement test** asks whether a group of words can be moved together and make a grammatical sentence. If yes, you have a constituent. To use this test, be Yoda and move the group of words to the front of a sentence (Judge me by my size, do you \_\_\_\_?)

- (3) In the **clefting test**, we use a cleft — displacing (moving) the constituent to the left — and see whether the cleft is grammatical. For our purposes, we can use the general form ***It was X that Y***, where X is the displaced constituent and Y is the rest.

In general, it's best to be cautious about Nos in constituency tests. A Yes generally means the unit is a constituent, but a No might not be a true No. If you get a No, try another test to confirm. Below are examples that show the constituency tests in action.

- (1) Is 'on the desk' a constituent of 'the cat was sleeping on the desk'?

**Substitution test:** *the cat was sleeping there.* Yes

**Movement test:** *On the desk, the cat was sleeping.* Yes

**Clefting test:** *It was on the desk that the cat was sleeping.* Yes

- (2) Is 'on the' a constituent of 'the cat was sleeping on the desk'?

**Substitution test:** *\*The cat was sleeping {it/there/then/such/do so} desk.* No

**Movement test:** *\*On the, the cat was sleeping desk.* No

**Clefting test:** *\*It was on the that the cat was sleeping desk.* No.

- (3) Is 'sleeping on the desk' a constituent of 'the cat was sleeping on the desk'?

**Substitution test:** *The cat was doing so.* Yes

**Movement test:** *Sleeping on the desk, the cat was.* Yes

**Clefting test:** *\*It was sleeping on the desk that the cat was.* No. (a cautionary tale!)

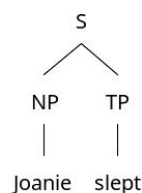
## Phrase structure rules

*Corresponds to the second syntax lecture and section 5.5 of the reading*

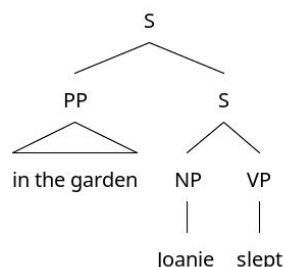
We can use **phrase structure rules** to capture patterns of syntactic combination, allowing us to define how expressions combine to form larger and larger expressions. We can display the way a sentence is built up from our phrase structure rules by using a **phrase structure tree**.

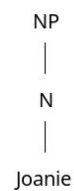
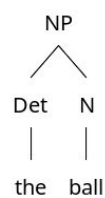
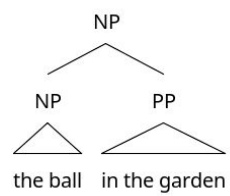
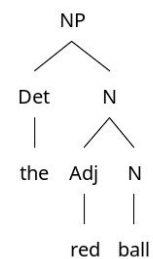
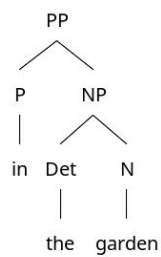
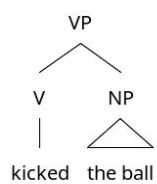
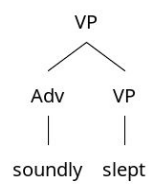
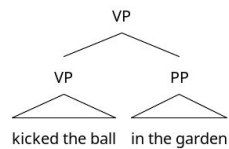
- (1) **Sentence** phrase structure rules and their trees

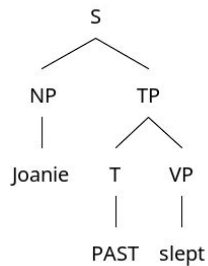
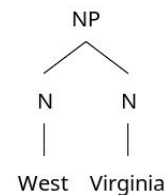
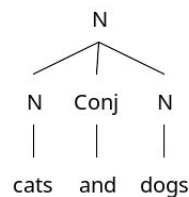
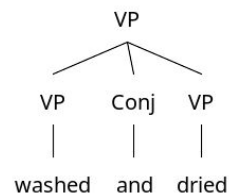
**$S \rightarrow NP TP$**



**$S \rightarrow PP S$**



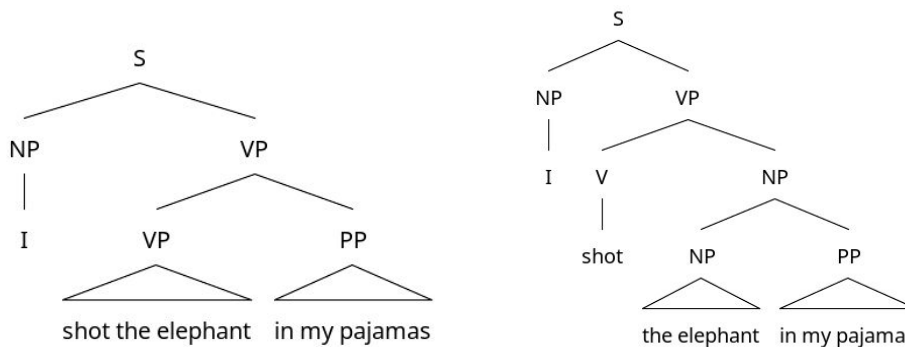
(2) **Noun Phrase** phrase structure rules and their trees**NP → N****NP → Det N****NP → NP PP****N → Adj N**(3) **Prepositional Phrase** phrase structure rules and their trees**PP → P NP**(4) **Verb Phrase** phrase structure rules and their trees**VP → NP****VP → Adv VP****VP → VP PP**

(5) **Tense Phrase** phrase structure rules and their trees**TP → T VP**(6) **Conjunction** and **Compound** phrase structure rules and their trees.**XP → XP Conj XP****X → X Conj X****NP → N N****Ambiguity***Corresponds to the second syntax lecture and section 5.5 of the reading*

As in morphology, structure is crucial to function in syntax. In some cases, we can have structural ambiguity, in which a single sentence has more than one possible structure, resulting in more than one possible meaning. In class we considered: *I shot the elephant in my pajamas*, which has two readings:

- (1) I shot the elephant wearing my pajamas
- (2) The elephant I shot wore my pajamas (for some reason)

The two readings arise due to two different structures. In this case, which thing the PP is modifying: the NP or the VP.



- (1) The shooting is being done in pajamas    (2) the elephant is wearing my pajamas

## Traces

*Corresponds to the second syntax lecture*

Verbs are looking for their arguments in certain positions. In [*Joanie kicked the ball*], *Joanie* is the verb's agent (the kicker), while *the ball* is the verb's patient (the thing being kicked). We can imagine that the verb can "tell" that *the ball* is the patient because it is in **Object** position, via our phrase structure rule: **VP** → **V NP**. But what happens when we use structures that don't obey these canonical positions — like passives: *the ball was kicked by Joanie*? — what's a verb to do?

In order for a structure to derive the correct meaning, theories have proposed that the patient here has to maintain some relationship to where it came from. So, we say it moves out of Object position, but has **left a trace** there, allowing us to interpret it as the patient.

- (1) [the ball] was kicked \_\_\_\_\_.

What you want to understand about traces to be able to do the practice problems is to be able to tell where a moved structure came from. For example, in

- (2) **Who** was John talking to?

**Who** has moved from its original syntactic position. Your job is to determine what position it was originally in and indicate that as the position of the trace. It can help to think of the declarative form of the sentence. If John had been talking to Sally, it would be:

- (3) John was talking to **Sally**.

Since Sally is the object of talking, we can say the trace is left there, in Object position, like this:

- (4) Who was John talking to \_\_\_\_\_?