

Syntactic movement

LING 20: Introduction to Linguistic Analysis

UCLA · Winter 2022

An impossible sentence

- The following sentence is ungrammatical in English:
(1) *The parrot is sitting on.
- **PP → P DP**
A preposition is always followed by a DP.

A new construction

- **Problem:**

There are sentences that our phrase-structure rules cannot handle:

(2) I know whose shoulder the parrot is sitting on.

A new construction

- **Problem:**

There are sentences that our phrase-structure rules cannot handle:

(2) I know whose shoulder the parrot is sitting on.

- **Surprising properties:**

1. The *P on* is **not** followed by a DP.
2. *whose shoulder* occurs in a position that our phrase-structure rules cannot put it into.
3. In the meaning of the sentence, *whose shoulder* and *on* are linked: The parrot is sitting on someone's shoulder.

The limits of phrase-structure rules

The extra DP can appear only if there is an DP missing somewhere else:

- (3) a. I know that the parrot is sitting on **her shoulder**.
b. I know **whose shoulder** the parrot is sitting on _____.
c. *I know **whose shoulder** the parrot is sitting on his shoulder.
d. *I know that the parrot is sitting on _____.

The limits of phrase-structure rules

The problem:

Phrase-structure rules are unable to handle this:

- We can add rules that allow for an extra DP and rules that allow for missing DPs.
- **But:** This extra DP is okay if and only if a DP is missing someplace else.
- There is no way to connect the two with phrase-structure rules.

Solution

- **Key idea:**

Sometimes phrases can be spoken in a position different from where phrase-structure rules put them.

- In other words: *whose shoulder* starts out after *on* but then **moves** to a different position, where it is pronounced.
- Thus, our phrase-structure rules produce the following:
(4) I know that the parrot is sitting on **whose shoulder**.

Towards the movement rule

- (5) a. I know that the parrot is sitting on **whose shoulder**.
- b. I know **whose shoulder** the parrot is sitting on.

In order to get from sentence (5a) to sentence (5b), two things need to happen:

Towards the movement rule

- (5) a. I know that the parrot is sitting on **whose shoulder**.
b. I know **whose shoulder** the parrot is sitting on.

In order to get from sentence (5a) to sentence (5b), two things need to happen:

1. The complementizer *that* disappears.

Towards the movement rule

- (5) a. I know that the parrot is sitting on **whose shoulder**.
b. I know **whose shoulder** the parrot is sitting on.

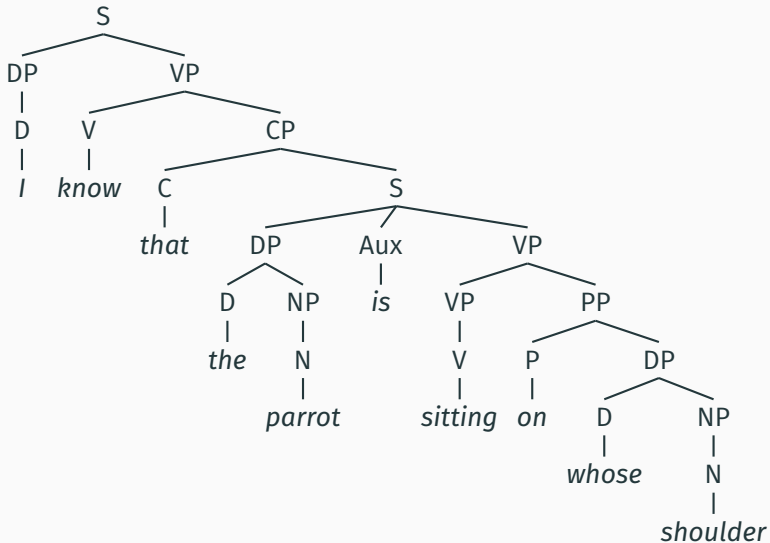
In order to get from sentence (5a) to sentence (5b), two things need to happen:

1. The complementizer *that* disappears.
2. *whose shoulder* takes the place of *that*.

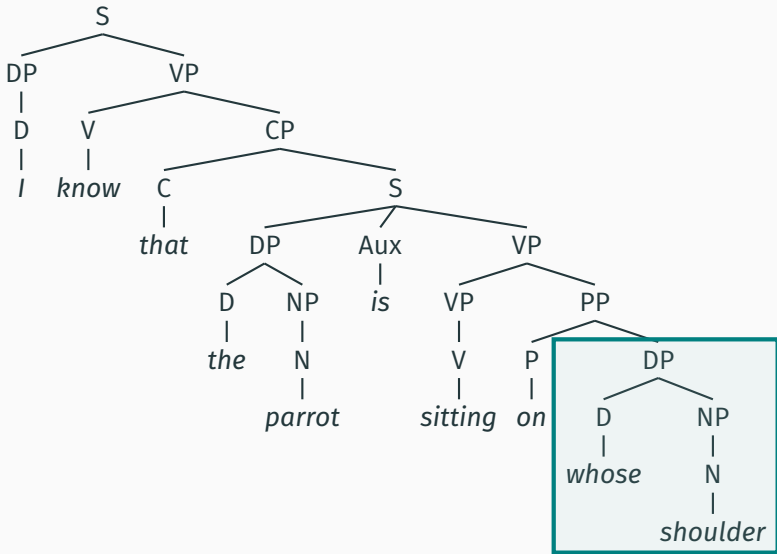
Movement

- **Movement rule (will be slightly revised):**
Move an element that contains a question word to C, replacing *that*.
- Because most question words start with “wh” in English (*what, which, who, whose, ...*), this rule is often called **WH-MOVEMENT**.

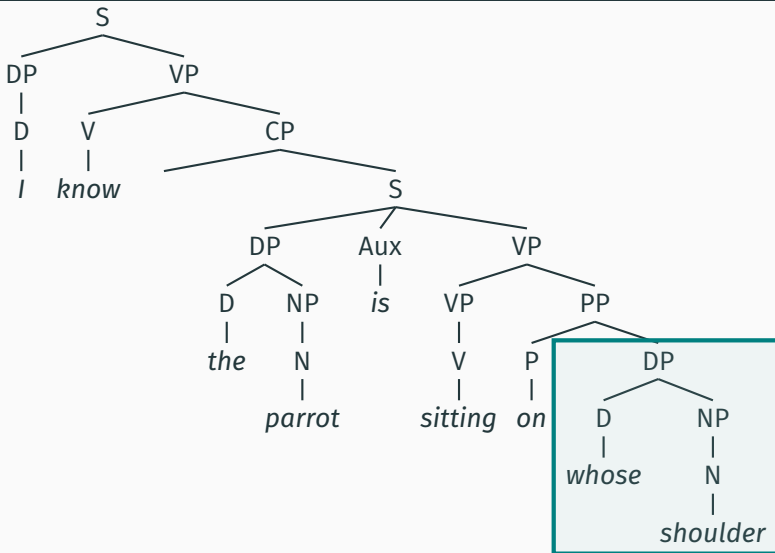
Applying the movement rule



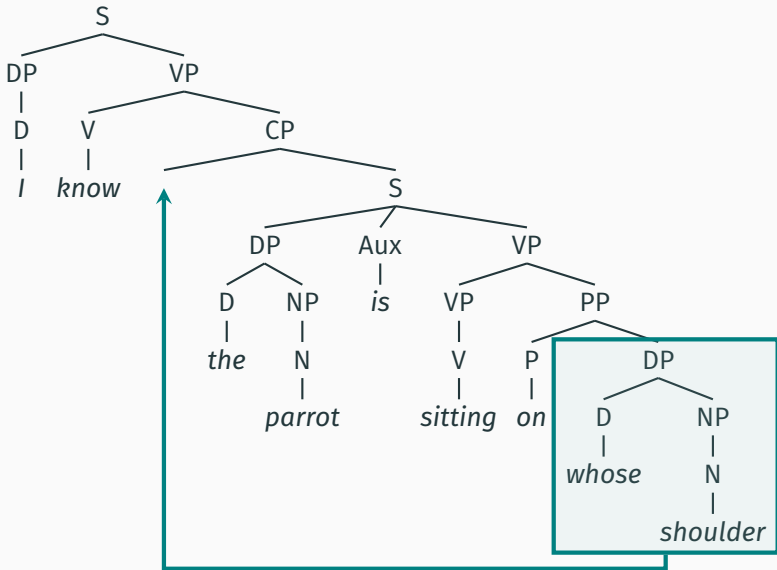
Applying the movement rule



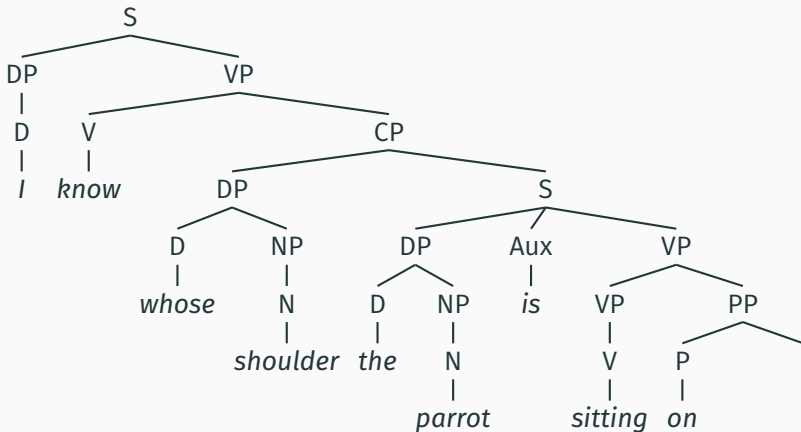
Applying the movement rule



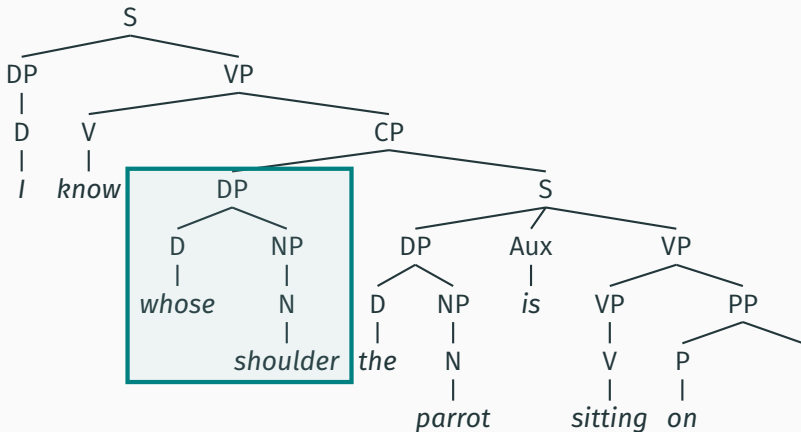
Applying the movement rule



Structure after movement



Structure after movement

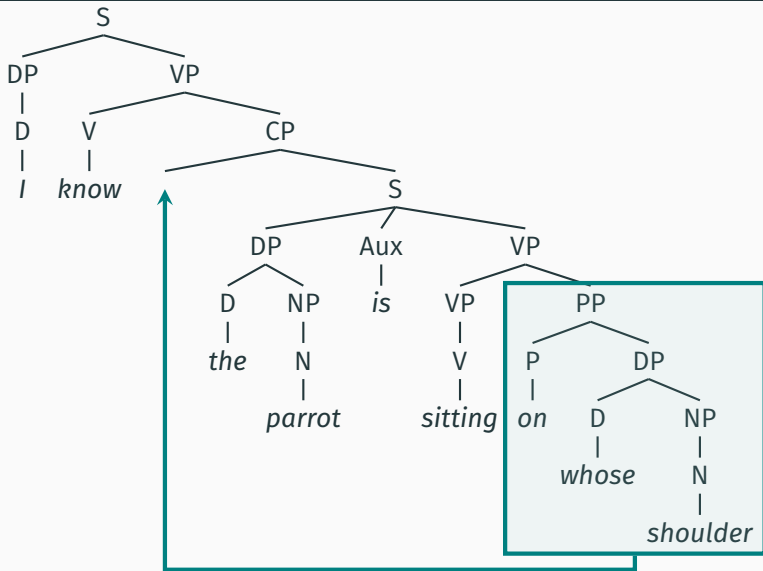


PP movement

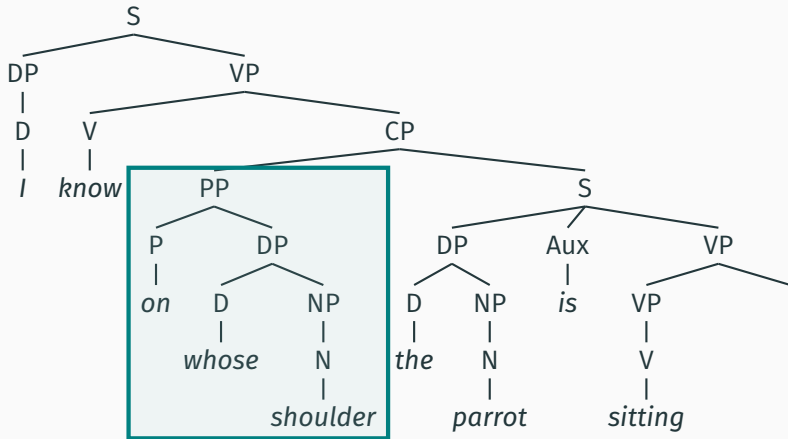
DPs are not the only elements that can move. PPs can move as well:

(6) I know [_{PP} on whose shoulder] the parrot is sitting.

PP movement



Structure after movement



Movement and constituents

- Not just any string of words can be moved:
 - (7) a. I know that the parrot is sitting on whose shoulder.
 - b. *I know [**on whose**] the parrot is sitting ____ shoulder.
- **Question:**

Why can we move *whose shoulder* and *on whose shoulder* but not *on whose*?

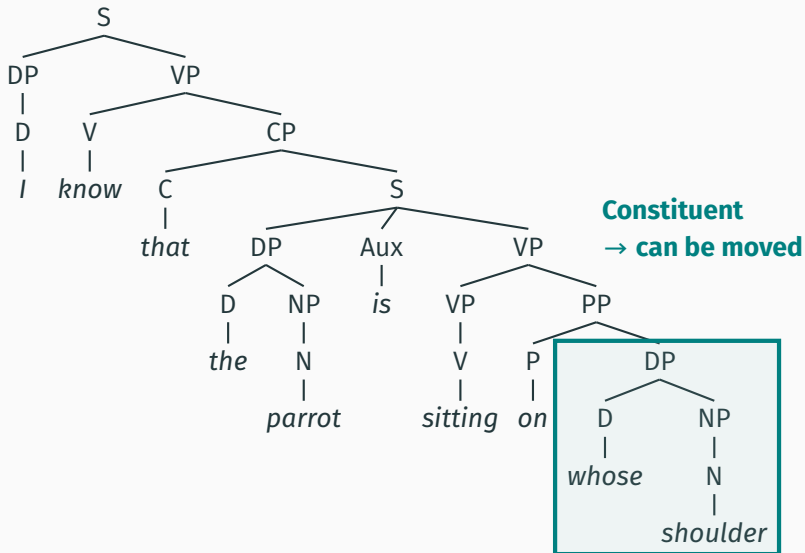
Movement and constituents

Terminology: Constituent

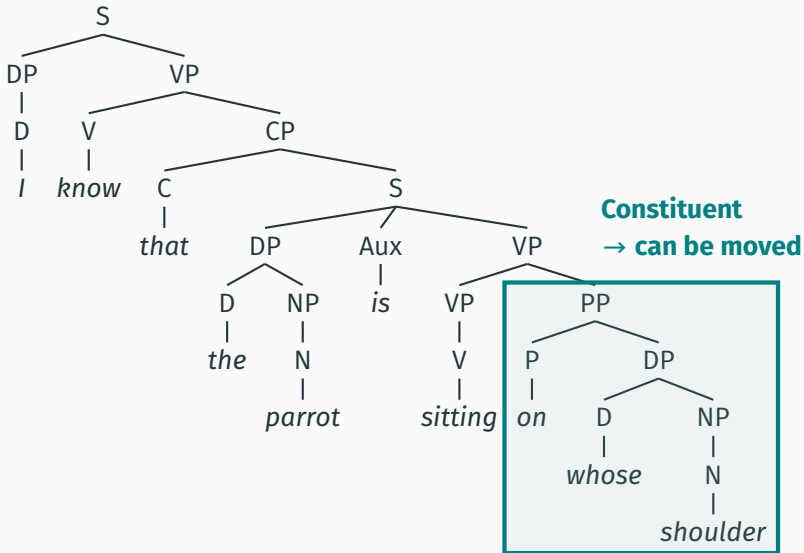
A complete subtree is a **CONSTITUENT**.

- In short, a node plus anything under it (“anything that hangs off of it”) is a constituent.
- **Restriction:**
Only constituents can be moved.

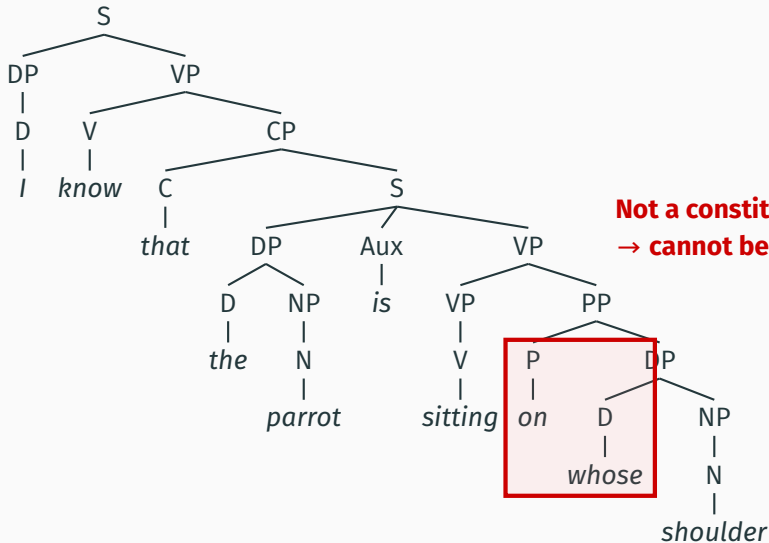
Movement and constituents



Movement and constituents



Movement and constituents



Finalizing the movement rule

Movement rule:

A constituent containing a question word moves to a C, replacing *that*.

Summary:

- **DPs and PPs start out where the phrase-structure rules put them.**
- **However, they can then move to another position.**
- **Result: The DP/PP shows up somewhere else, leaving behind a gap.**