

II ELBA WORKSHOP
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Linearity determines Chain pronunciation

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This presentation is available as a pdf in
<https://sites.google.com/site/munozperezc/publications-talks/linearity-ELBA.pdf>

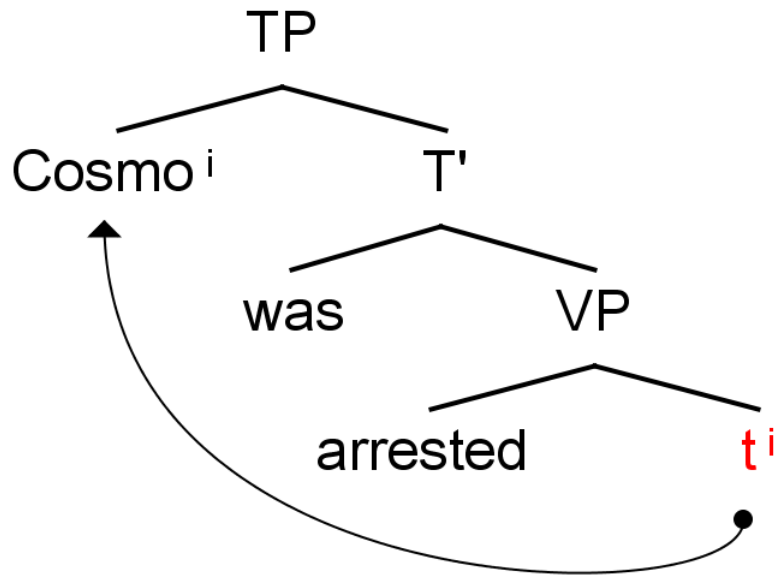
Introduction

I'll talk about the mechanisms that regulate the distribution of movement gaps.

- (1) Cosmo was arrested e_{gap}
- (2) * e_{gap} was arrested Cosmo
- (3) What book did Elaine read e_{gap} ?
- (4) * e_{gap} did Elaine read what book?

Introduction

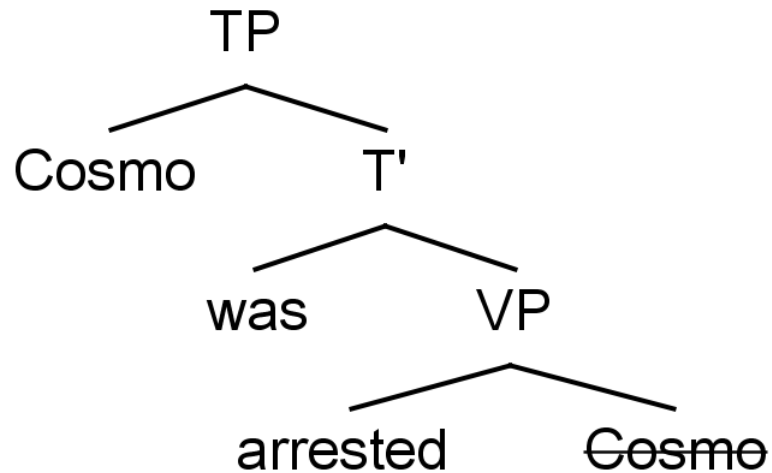
Different ways of explaining these facts under *Trace Theory* (Chomsky 1973, Fiengo 1977, i.a.)



- *Proper Binding Condition* (Fiengo 1977, Lasnik & Saito 1992)
- *Empty Category Principle* (Chomsky 1981)
- *Cyclicity*
- Other alternatives I don't know...

Introduction

A similar intuition applies under the *Copy Theory* of movement (Chomsky 1993, Nunes 1995, i.a.).



- Pronounce the “most interpretable” copy (Nunes 1995, 2004)
- *Transparency* (Brody 1995)
- *I-Assignment* (Saab 2008)
- *Form Chain* (Groat & O’Neil 1996)
- Many others

Introduction

Let's summarize these proposals under a unique rule of chain pronunciation.

P-Highest

Given a chain $CH=\{\alpha^1, \dots, \alpha^n\}$, pronounce the occurrence of α that *c-commands* any other occurrence of α .

According to this definition, the distribution of movement gaps is based on structural relations.

Introduction

I argue that *P-Highest* should be replaced by a distinct rule of chain pronunciation.

P-Leftmost

Given a chain $CH = \{\alpha^1, \dots, \alpha^n\}$, pronounce the occurrence of α that precedes any other occurrence of α .

According to this definition, the distribution of movement gaps is based on linear relations.

Introduction

P-Leftmost requires pronouncing the first copy in linear order.

- (1) Cosmo was arrested ~~Cosmo~~
- (2) *~~Cosmo~~ was arrested Cosmo
- (3) What book did Elaine read ~~what book~~?
- (4) *~~What book~~ did Elaine read what book?

What's the advantage?

There are two main reasons to prefer **P-Leftmost** over **P-Highest**.

- i. The distribution of gaps seems to be sensitive to linearity.
- ii. There is an asymmetry between the left and the right peripheries of a sentence regarding movement.

What's the advantage?

Data from Romanian.

(5) Cine ce precede?

who what precedes

(6) *Cine precede ce?

who precedes what

(7) *Ce ce precede?

What what precedes

(8) Ce precede ce?

What precedes what

Bošković (2002): this is a *superficial restriction on pronouncing two linearly adjacent homophonous words*. (5) and (8) are generated through the same derivation.

What's the advantage?

(5) **Cine ce** precede?
Who what precedes

(9) [_{CP} **cine**_{SUBJ} ... **ce**_{OBJ} ... [_{TP} ~~ee~~_{SUBJ} ... precede ... ~~ee~~_{OBJ}]]

However, if both pronouns are homophonous...

(8) **Ce** precede **ce**?
What precedes what

(10) [_{CP} **ce**_{SUBJ} ... ~~ee~~_{OBJ} ... [_{TP} ~~ee~~_{SUBJ} ... precede ... **ce**_{OBJ}]]

What's the advantage?

A similar pattern is attested in Bulgarian.

(11) Koj kogo na kogo e pokazal?
who whom to whom is pointed-out

(12) *Koj na kogo kogo e pokazal?
who to whom whom is pointed-out

(13) Koj na kogo e pokazal kogo?
who to whom is pointed-out whom

(14) [CP koj_{SUBJ} ... [PP na kogo_{IO}] ... ~~kogo~~_{OBJ} ... e pokazal ... kogo_{OBJ}]

What's the advantage?

If Bošković's analysis is on the right track, these patterns constitute cases of linearity-based relations between constituents feeding the mechanisms of chain pronunciation.

- This is both surprising and difficult to capture under **P-Highest**.
- These kind of restrictions on chain pronunciation are expected under **P-Leftmost**.

What's the advantage?

There is still one more reason to prefer **P-Leftmost** over **P-Highest**.

✓ The distribution of gaps seems to be sensitive to linearity.

- ii. There is an asymmetry between the left and the right peripheries of a sentence regarding movement.

What's the advantage?

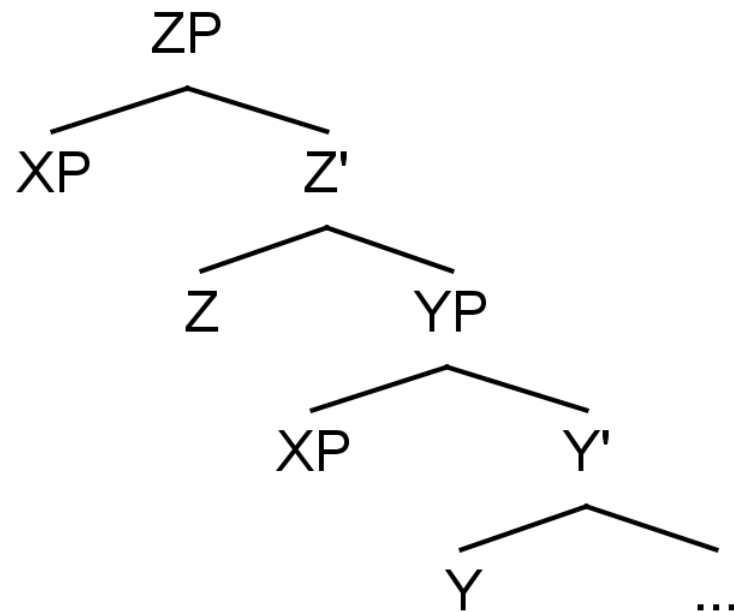
Consider the following.

P-Highest establishes a “vertical” constraint for distribution of unpronounced copies.

P-Leftmost introduces a “horizontal” type of restriction.

What's the advantage?

Assume both occurrences of XP form a chain.

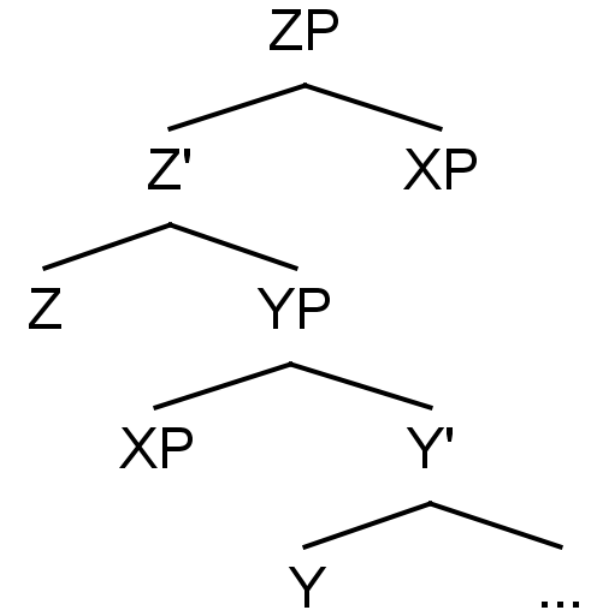


P-Highest

$XP < Z < Y$

P-Leftmost

$XP < Z < Y$



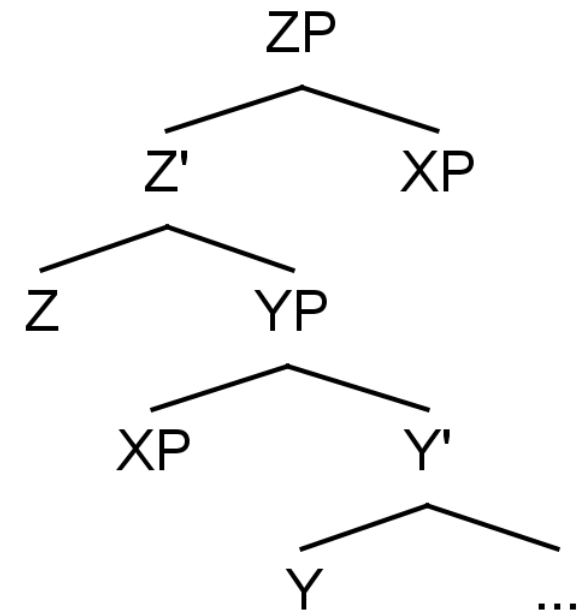
$Z < Y < XP$

$Z < XP < Y$

What's the advantage?

The lack of overt “rightward movement” allows explaining many things.

- It is rare.
- Kayne (2003): There are *no verb penultimate languages* (vs. V2 languages).
- Abels & Neeleman (2009): *Greenberg's Universal 20*
- Zeijlstra (2015): *FOFC*



P-Highest

$Z < Y < XP$

P-Leftmost

$Z < XP < Y$

OK, now what?

So there are some nice consequences of preferring **P-Leftmost** to **P-Highest**.

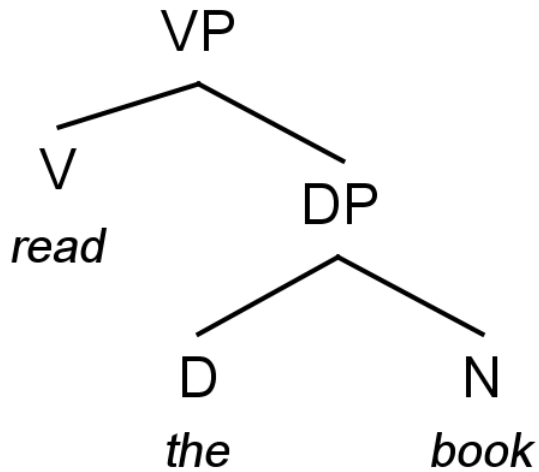
Now we face with a technical issue:

*How do we implement **P-Leftmost** in an explicit way?*

Assumptions

- No linear order in narrow syntax (cf. Chomsky 1995). It is computed at PF.
- *Late Insertion* (Halle & Marantz 1993). *Vocabulary Insertion* (VI) introduces phonological matrixes into abstract syntactic nodes at PF.
- VI is sensitive to linear order (e.g., Arregi and Nevins 2012) and applies according to it, i.e., you assign phonological representation to constituents from “left to right”.

How it works



Assume than an operation *Lin* takes as input a branching node α and creates a linearization statement $\langle \beta, \gamma \rangle$ with α 's daughters.

Then, VI introduces phonological matrixes according to this information.

a. $\text{Lin}(\text{VP}) = \langle \text{V}, \text{DP} \rangle$

b. $\text{Lin}(\text{DP}) = \langle \text{D}, \text{N} \rangle$

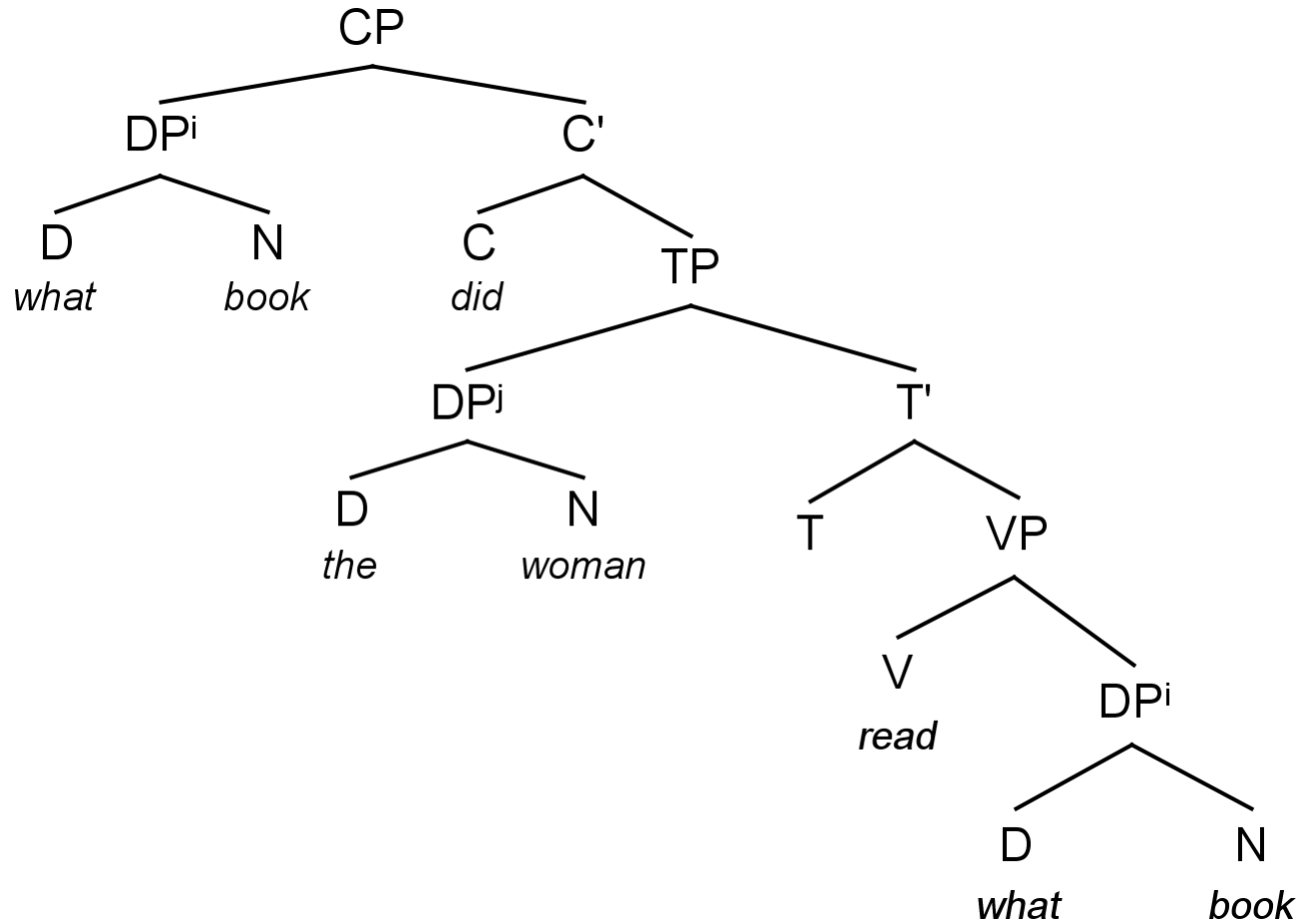
read the book

How it works

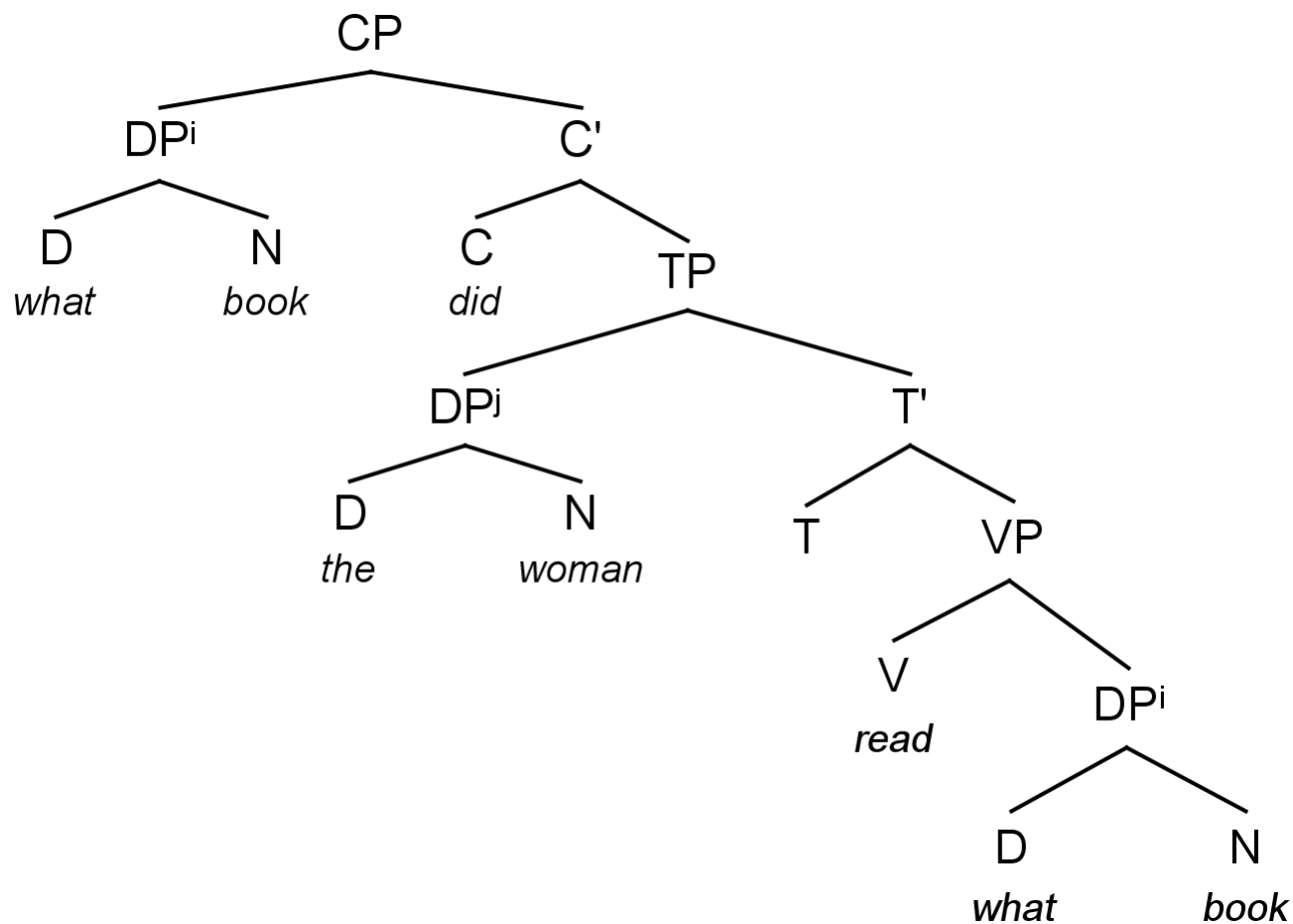
Should we apply *Lin* to both copies of *what book*?

Assume that *Lin* obeys economy conditions: you apply it only once per chain.

Lin applies in cycles. First to the main c-command unit, and then to specs and adjuncts.



How it works



Lin – First cycle

a. $\text{Lin}(\text{CP}) = \langle \text{DP}^i, \text{C}' \rangle$

b. $\text{Lin}(\text{C}') = \langle \text{C}, \text{TP} \rangle$

c. $\text{Lin}(\text{TP}) = \langle \text{DP}^j, \text{T}' \rangle$

d. $\text{Lin}(\text{T}') = \langle \text{T}, \text{VP} \rangle$

e. $\text{Lin}(\text{VP}) = \langle \text{V}, \text{DP}^i \rangle$

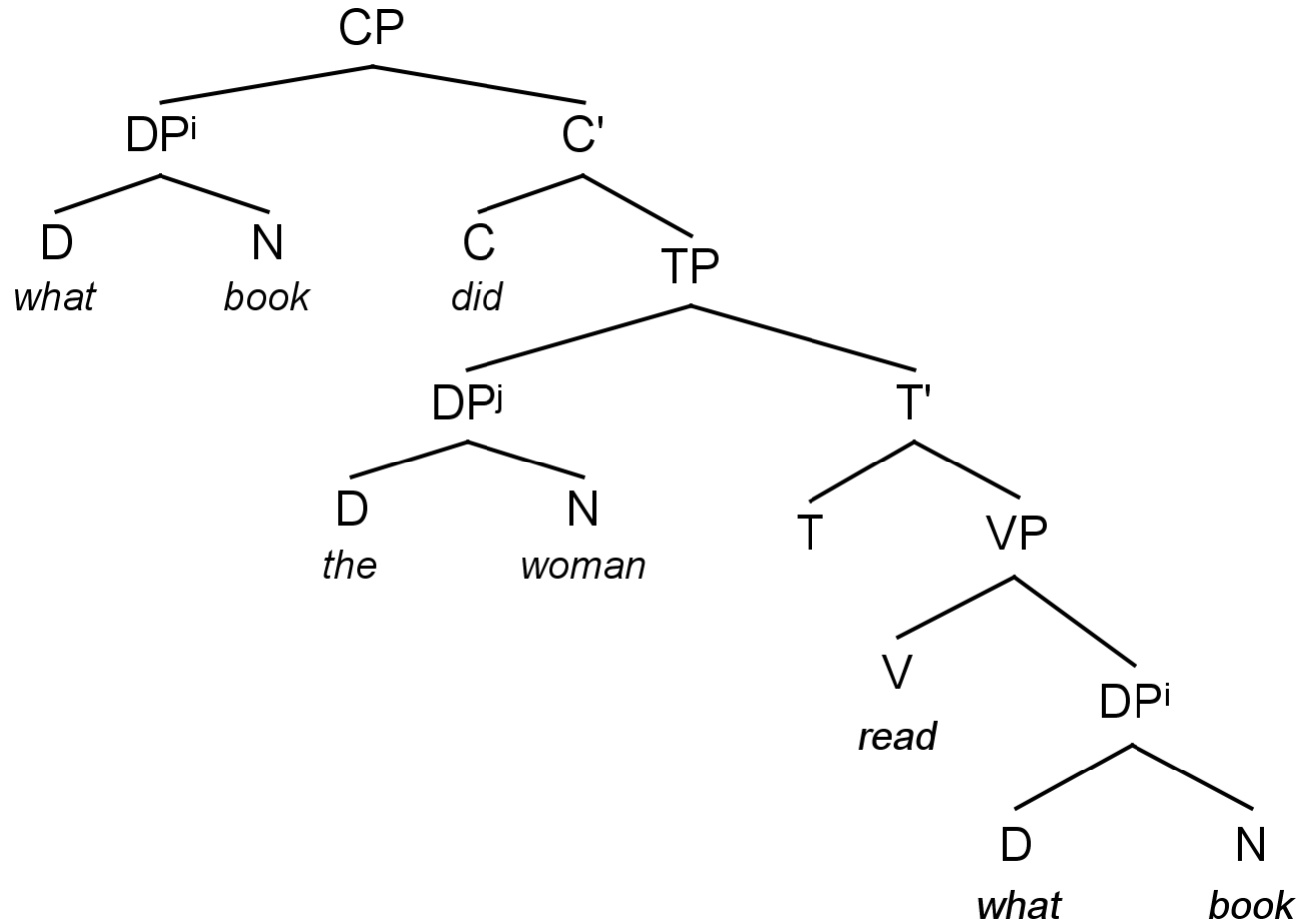
f. $\text{Lin}(\text{DP}^i) = \langle \text{D}, \text{N} \rangle$

Lin – Second cycle

a. $\text{Lin}(\text{DP}^j) = \langle \text{D}, \text{N} \rangle$

what book did the woman read

Remnant Movement



Lin – First cycle

a. $\text{Lin}(\text{CP}) = \langle \text{DP}^i, \text{C}' \rangle$

b. $\text{Lin}(\text{C}') = \langle \text{C}, \text{TP} \rangle$

c. $\text{Lin}(\text{TP}) = \langle \text{DP}^j, \text{T}' \rangle$

d. $\text{Lin}(\text{T}') = \langle \text{T}, \text{VP} \rangle$

e. $\text{Lin}(\text{VP}) = \langle \text{V}, \text{DP}^i \rangle$

f. $\text{Lin}(\text{DP}^i) = \langle \text{D}, \text{N} \rangle$

Lin – Second cycle

a. $\text{Lin}(\text{DP}^j) = \langle \text{D}, \text{N} \rangle$

what book did the woman read

Remnant Movement

Remnant Movement dependencies are an apparent counterexample to **P-Leftmost**.

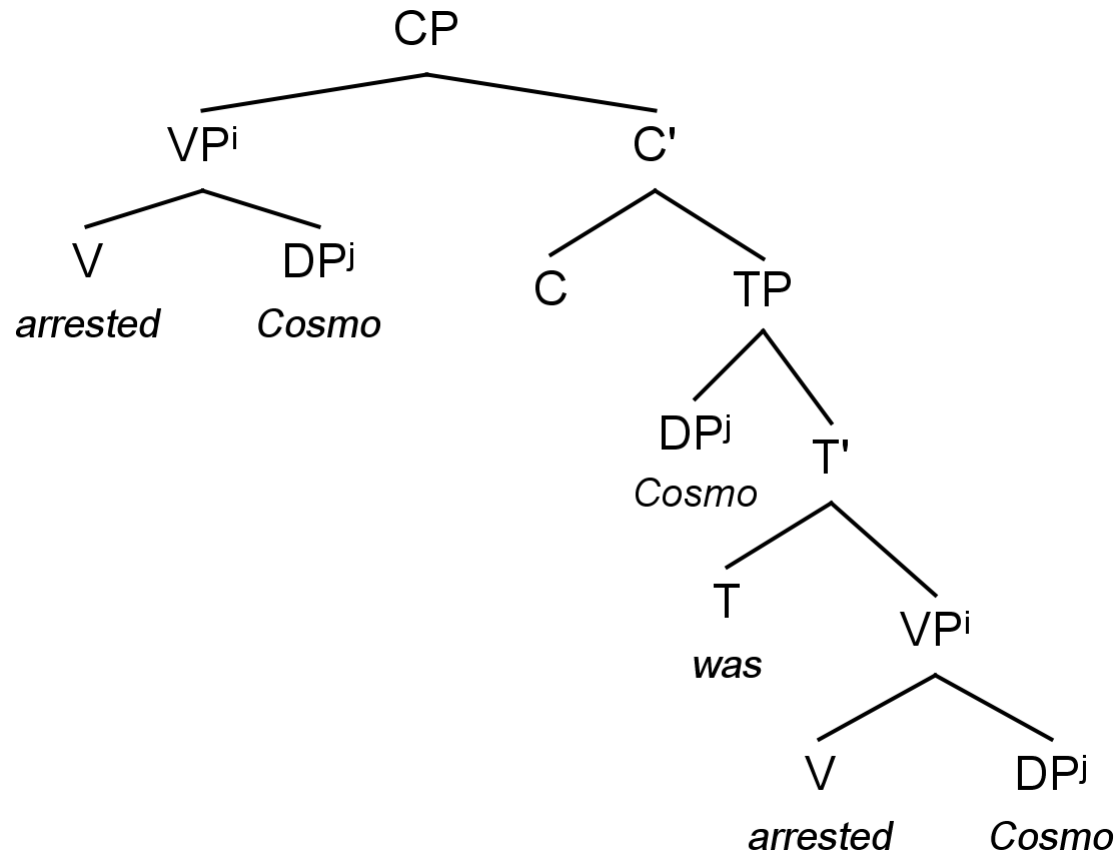
(15) ... and arrested Cosmo was.

(16) [_{CP} [_{VP} arrested ~~Cosmo~~] [_{C'} C [_{TP} **Cosmo** [_{T'} was [_{VP} arrested ~~Cosmo~~]]]]]

In (16) an unpronounced copy of *Cosmo* precedes the Spec,T position.

Remnant Movement

Well, this is not a problem **AT ALL**.



arrested Cosmo was

Lin – First cycle

a. $\text{Lin}(\text{CP}) = \langle \text{VP}^i, \text{C}' \rangle$

b. $\text{Lin}(\text{C}') = \langle \text{C}, \text{TP} \rangle$

c. $\text{Lin}(\text{TP}) = \langle \text{DP}^j, \text{T}' \rangle$

d. $\text{Lin}(\text{T}') = \langle \text{T}, \text{VP}^i \rangle$

e. $\text{Lin}(\text{VP}) = \langle \text{V}, \text{DP}^i \rangle$

Lin – Second cycle

f. -----

Concluding Remarks

- P-Leftmost supposes a direct relation between linear order and chain pronunciation, which allows explaining the data from Romanian and Bulgarian.
- P-Leftmost derives the asymmetry between leftward and rightward movement without adopting additional assumptions.
- The version of P-Leftmost introduced here allows accounting for Remnant Movement dependencies

Thank you!