An introduction and motivation of X-bar theory in syntax
A small gnome in the garden wiped his hands.
The small gnome in the garden wiped his hands quickly.
‘flat’ structures

S
  /   
NP     AdvP    VP
  /     
NP     det     adj     N     PP
Arguments against ‘flat’ structures:

- Miss Marple will read the letters in the garden shed this afternoon
A sentence structure

```
S
  /  \
/    |
NP    VP
     /  \
V     V
     /  \
|     |  
|     |   
Miss Marple will read the letters
     PP
     /  \
     |   |
     |   |
in the garden shed
     NP
     /
this afternoon
```
Arguments against ‘flat’ structures:

• Miss Marple will read the letters in the garden shed this afternoon
Arguments against ‘flat’ structures:

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.
... and HP will do so too

```
S
   NP
       V
       V
       NP
       PP
       NP

Miss Marple   will  read  the  letters  in the  garden shed  this  afternoon
```
Arguments against ‘flat’ structures:

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.
Arguments against ‘flat’ structures:

- Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.

- Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will **do so tonight**.
Arguments against ‘flat’ structures:

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.
• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so tonight.

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so in the garage tonight.
Arguments against ‘flat’ structures:

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.
• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so tonight.
• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so in the garage tonight.

• * Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so the diaries in the garage after dinner.
Arguments against ‘flat’ structures:

– VP → V NP (PP)*

• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so too.
• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so tonight.
• Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so in the garage tonight.

* Miss Marple will read the letters in the garden shed this afternoon and Hercule Poirot will do so the diaries in the garage after dinner.
The old VP structure

[S
  NP
    Miss Marple
  VP
    V will
    V read
    NP the letters
    PP in the garden shed
    NP this afternoon]
The new VP structure

V''
|     (= VP)
V''
|     
V''
|      
V''
|       
V | V | NP | PP | NP
|---|---|----|----|----|
read | the letters | in the garden shed | this afternoon
The new VP structure

V''
   /
  /  
V'   (= VP)
  /    /
V'    /
      /
do so

V'
 |
V'
 |
V'
 |
read the letters
 |
PP
 |
in the garden shed
 |
NP
 |
this afternoon
The new VP structure

\[ \begin{align*}
V'' & \quad (= \text{VP}) \\
\downarrow & \\
V' & \\
\text{do so} & \quad \rightarrow \\
\text{read the letters in the garden shed this afternoon} & \\
\text{NP} &
\end{align*} \]
The new VP structure

do so \rightarrow V'' (= VP)

read the letters in the garden shed this afternoon
The new VP structure

```
V''
 |  
V'  
 |   
V'   (= VP)
 |     
V'         
 |         
V'           
 |           
V                
 |              
read  the  in the  this
|   NP    PP    NP
|    letters garden shed afternoon
```
• All the detectives have read the letters in the garden shed after lunch.

• They have?
• All the detectives have read the letters in the garden shed after lunch.
• They have?

• The detectives have all read the letters in the garden shed after lunch.
• * They have all?

• The police have all done so too.
The new VP structure

do so \rightarrow V'' (= VP)

all

read the letters in the garden shed this afternoon
A new constituent: **Specifier**

- The detectives have *all* read the letters in the garden shed after lunch.
- The police have *all* done so too.
- The police have *all* done so after lunch.
- The police have *all* done so in the garden shed after lunch.
The new VP structure: ‘projections’

V'' (= VP)

Spec

V'

V'

V'

V

all

read

the letters

in the garden shed

this afternoon

NP

PP

NP
Nominal Phrases

• the investigation of the corpse after lunch

• the investigation of the corpse after lunch was less horrible than the one after dinner

• they investigated the corpse vs. the investigation of the corpse
Nominal Phrases

• $NP \rightarrow Det\ N\ (PP)^*$
The new NP structure: ‘projections’

Spec

\[ \text{N}'' (= \text{NP}) \]

\[ \text{Spec} \quad \text{N}' \]

\[ \text{the} \quad \text{investigation} \]

\[ \text{PP} \]

\[ \text{of the corpse} \]

\[ \text{PP} \]

\[ \text{after lunch} \]
Adjective Phrases

- Jeeves is envious
- Jeeves is envious of Poirot
- Jeeves is rather envious of Poirot
- He is true to his principles
- Er ist seinen Grundsätzen treu.
Prepositional Phrases

• across the bridge
• right across the bridge

• Prepositions:  *by car, mit dem Auto*
• Postpositions:  *kuruma-de*
Some phrases…

• frequently open the door in the morning
• early in the morning on Wednesday
• extremely fond of chocolate with breakfast
• a painter of portraits in the 1920’s

• a famous painter of portraits in the 1920’s
The rise of ‘X-bar’ syntax

- Arguments against ‘flat’ structures
- Basic reoccurring patterns in the *different types of phrases* that we find in a language
- Basic reoccurring patterns in the structures found *across languages*
The X-bar schema

Noam Chomsky

X'' (= XP)

Spec

X'

X''

X'

ZP

YP
X-bar Theory

• $X'' \rightarrow \text{Spec}; X'$
• $X' \rightarrow X'; ZP$
• $X' \rightarrow X; YP$
The strike continued for some weeks
The strike some weeks for continue-ed
The strike continued for some weeks.
\[(I'' = IP = S)\]
(I'' = IP = S)
Relation between form and function

Spec

\( V' \)

\( V'' \)

Participants

Circumstances

\( V' \)

\( V' \)

\( V' \)

\( V \)

NP

PP

NP

Circumstances

Circumstances
X-bar Theory

- \( X'' \rightarrow \text{Spec}; \ X' \)
- \( X'^* \rightarrow X'; \ ZP \)
- \( X' \rightarrow X; \ YP \)

“If we can treat phrase structure universally in terms of this general projection schema, then we may further assume that the child learning a language need not construct this schema as part of its grammar. The principles of X-bar theory will be part of [Universal Grammar], they are innate.” (Haegeman, 1991:96)
Binary Branching and ‘Language Acquisition’

• Less options for the child to discriminate amongst.....
  – a sensible claim?

  – “Mummy must go now.”

  *how many trees?*
Exercises... What would be sensible X-bar trees for the following sentences?

• Poirot will meet the new governess in the foyer of the opera.

• Miss Marple cleaned the knife carefully with a handkerchief.

• Maigret is quite fond of his assistant.

• The announcement of the news on local radio surprised the students of linguistics from England.