A Unified Theory of Movement

©Andrew Carnie, 2006

The model of Grammar we've developed in this class so far

©Andrew Carnie, 2006

The Lexicon

The model of Grammar we've developed in this class so far

©Andrew Carnie, 2006

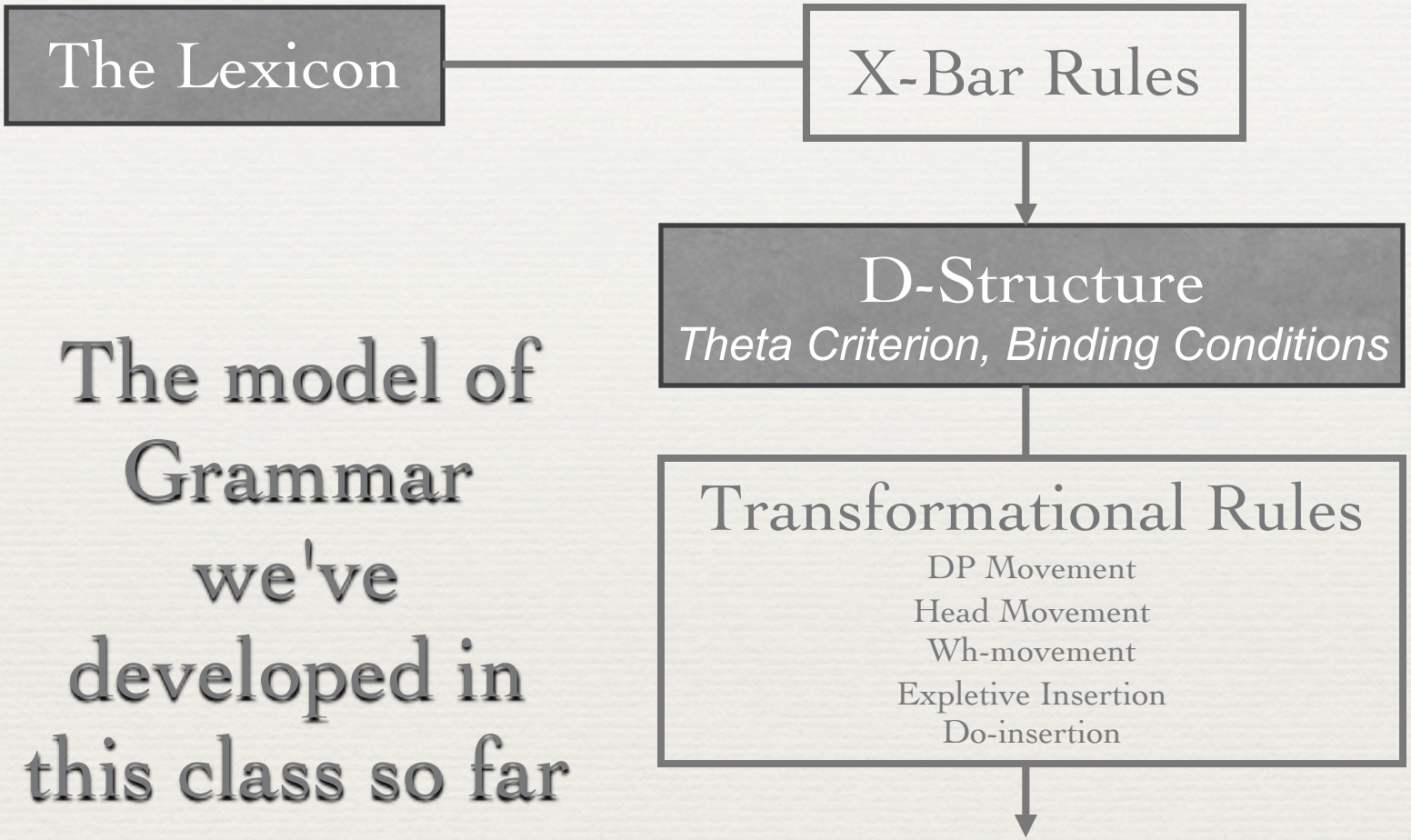
The model of Grammar we've developed in this class so far

©Andrew Carnie, 2006

The model of Grammar we've developed in this class so far

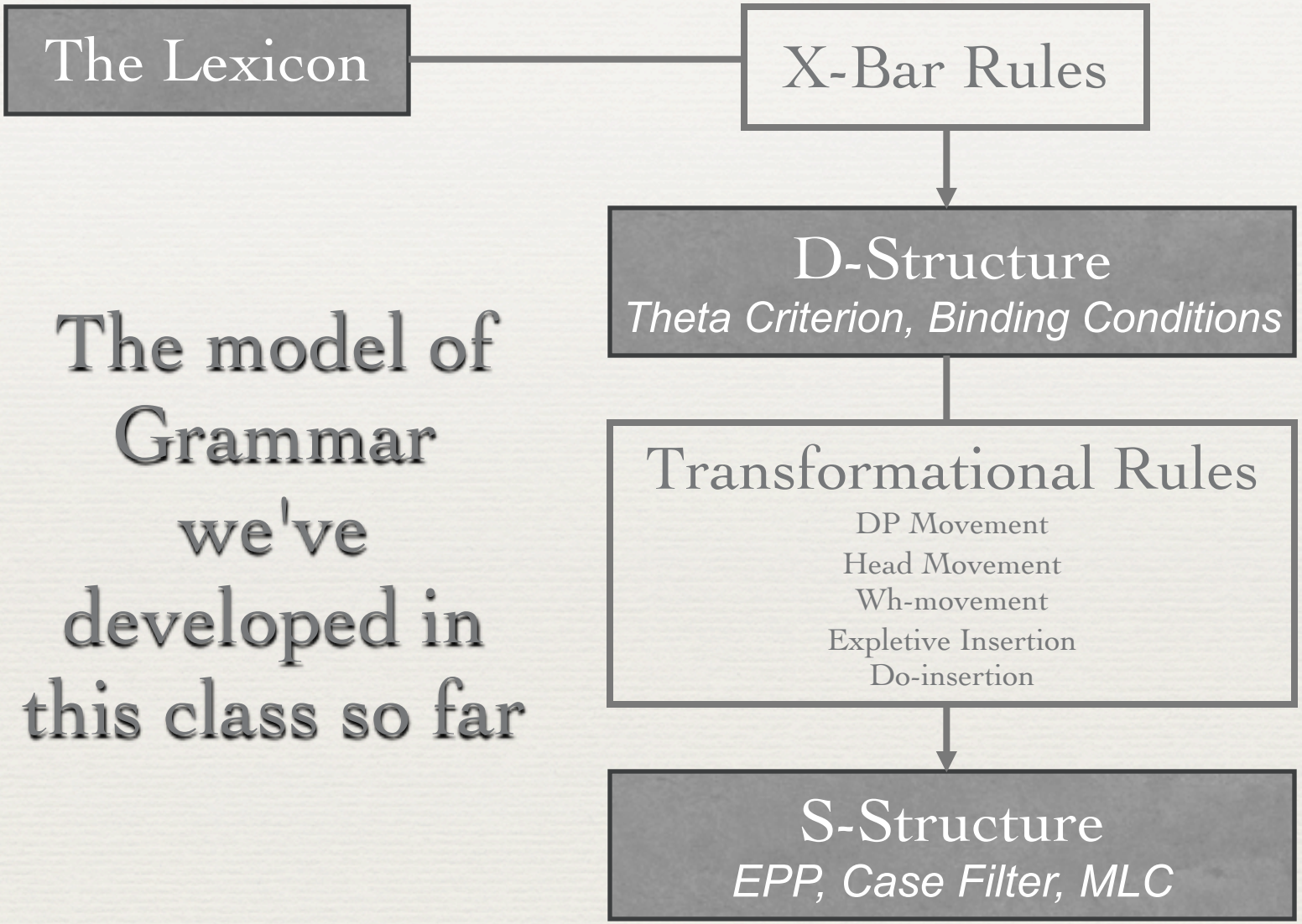
©Andrew Carnie, 2006

The model of Grammar we've developed in this class so far



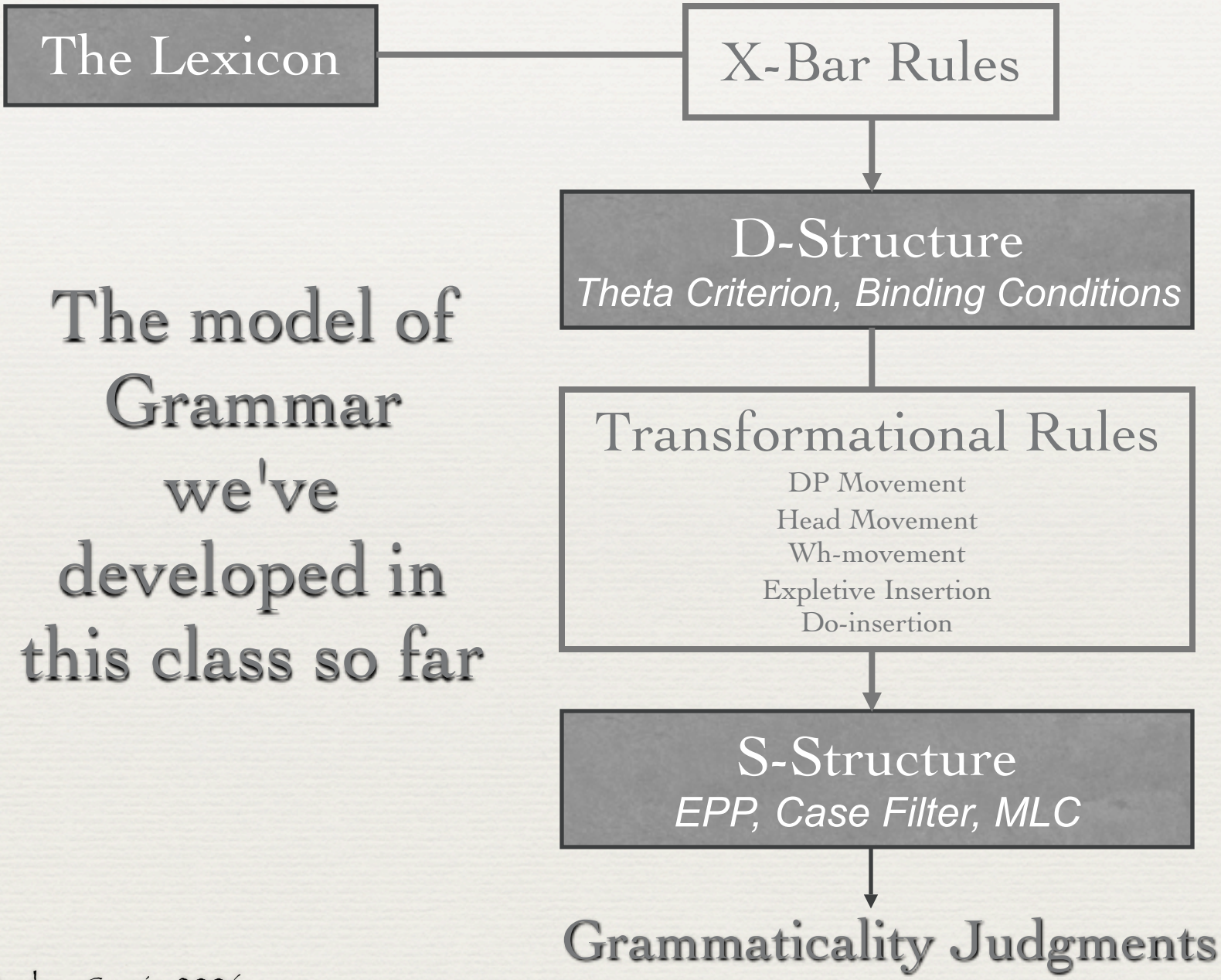
©Andrew Carnie, 2006

The model of Grammar we've developed in this class so far



©Andrew Carnie, 2006

The model of Grammar we've developed in this class so far



©Andrew Carnie, 2006

Evaluating the grammar

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?
  - Partly, it certainly accounts for much of the data you might run across in a corpus (although not all).

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?
  - Partly, it certainly accounts for much of the data you might run across in a corpus (although not all).
- Descriptive?

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?
  - Partly, it certainly accounts for much of the data you might run across in a corpus (although not all).
- Descriptive?
  - Partly, it does account for many grammaticality judgments (although not all)

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?
  - Partly, it certainly accounts for much of the data you might run across in a corpus (although not all).
- Descriptive?
  - Partly, it does account for many grammaticality judgments (although not all)
- Explanatory?

©Andrew Carnie, 2006

Evaluating the grammar

- Observational?
  - Partly, it certainly accounts for much of the data you might run across in a corpus (although not all).
- Descriptive?
  - Partly, it does account for many grammaticality judgments (although not all)
- Explanatory?
  - Since much of the grammar is innate, and the rest is parameterized, yes.

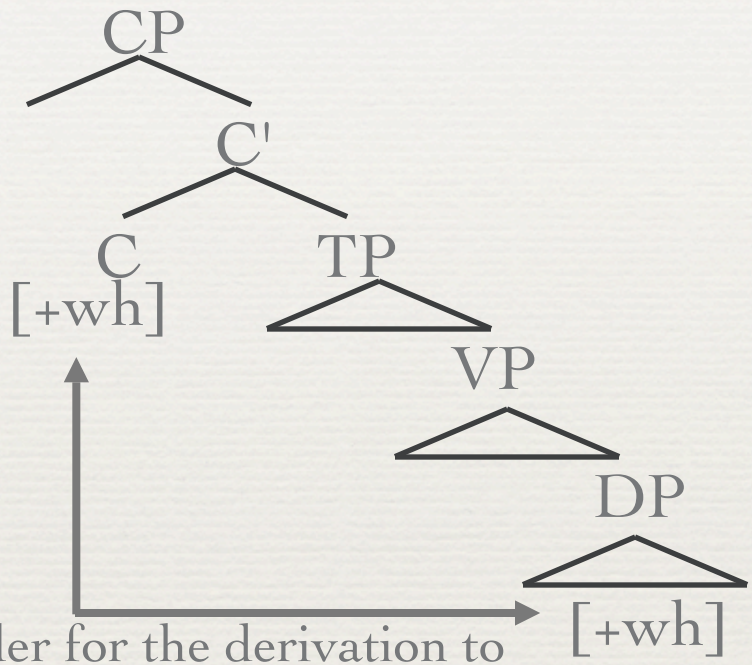
©Andrew Carnie, 2006

But could it be simpler?

Unifying the three types of movement

©Andrew Carnie, 2006

Wh-features

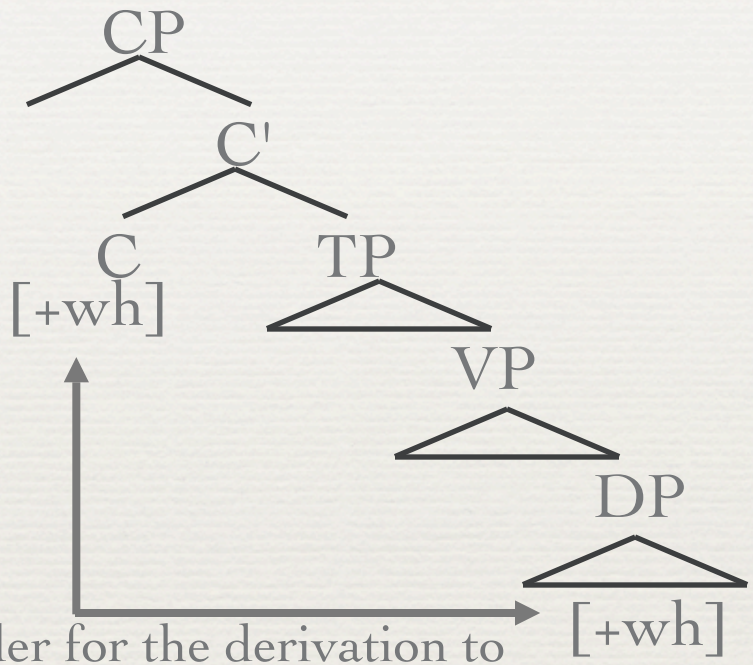


In order for the derivation to "converge", the two [+wh] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement

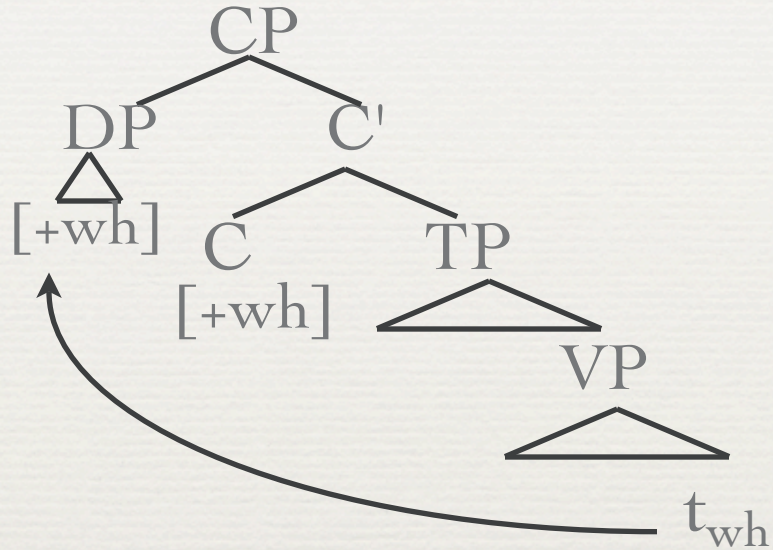
©Andrew Carnie, 2006

Wh-features



In order for the derivation to "converge", the two [+wh] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement

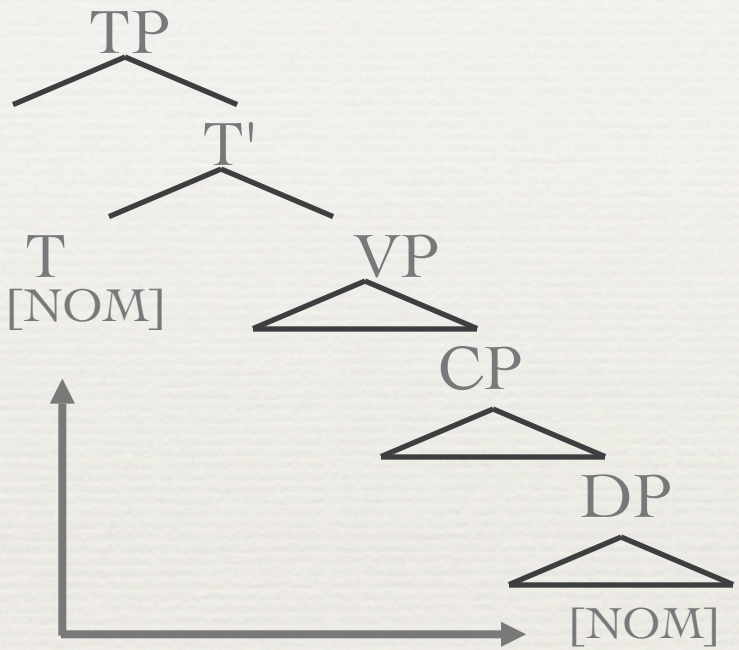


After movement, the [wh] features are close to one another, so can they can check

After movement

©Andrew Carnie, 2006

[NOM] Case-features

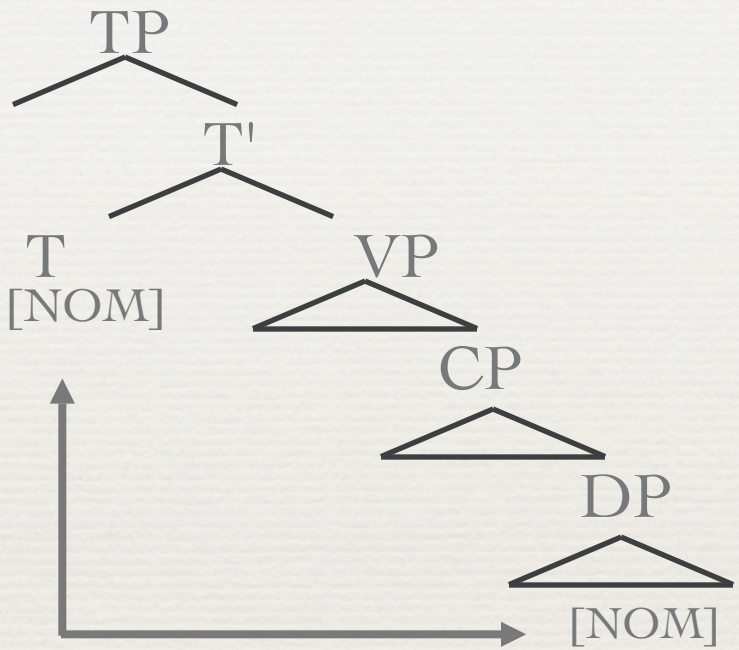


In order for the derivation to "converge", the two [NOM] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement

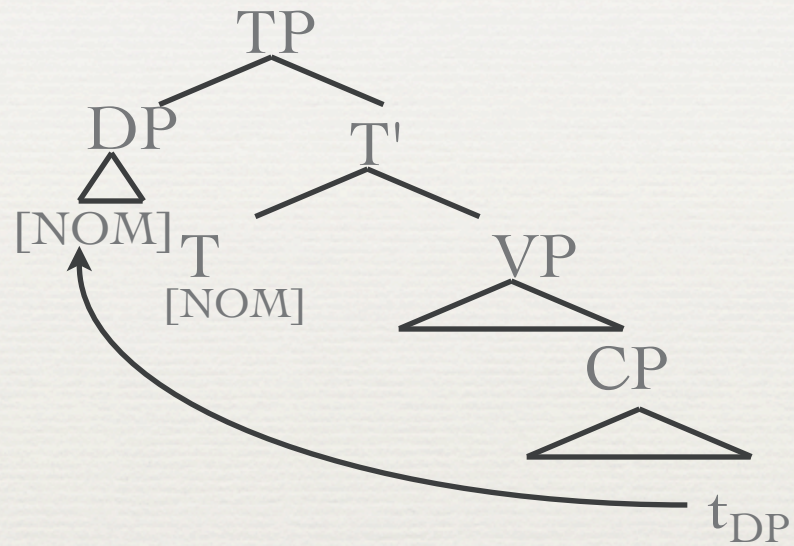
©Andrew Carnie, 2006

[NOM] Case-features



In order for the derivation to "converge", the two [NOM] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement

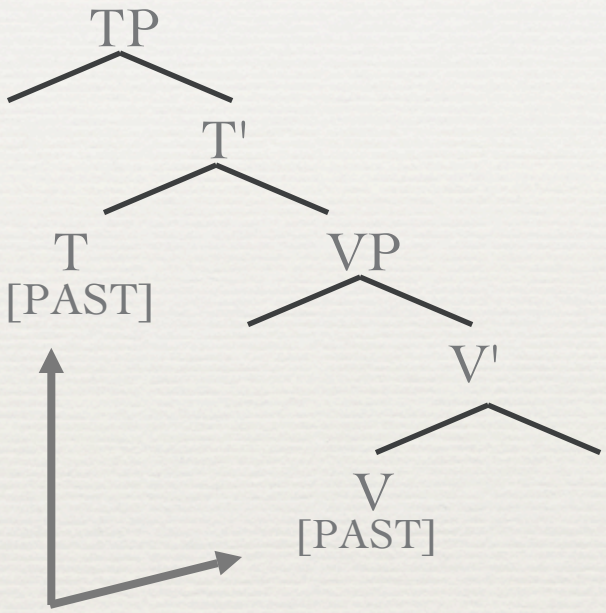


After movement, the [NOM] features are close to one another, so can they can check

After movement

©Andrew Carnie, 2006

Tense-features, [Q] features etc.

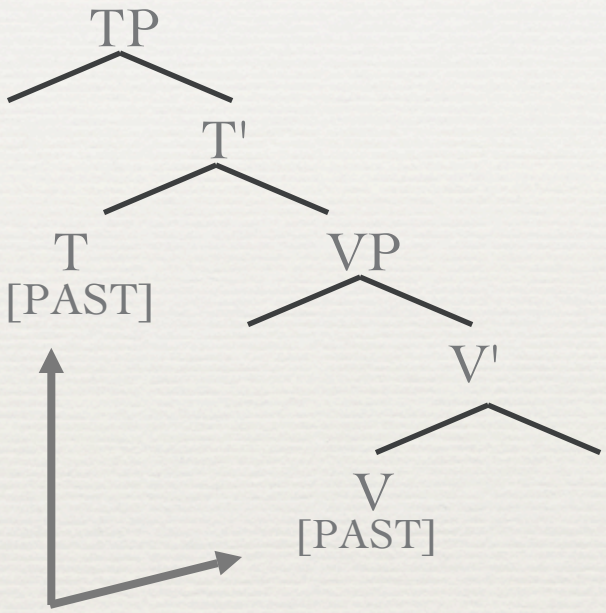


In order for the derivation to "converge", the two [Past] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement

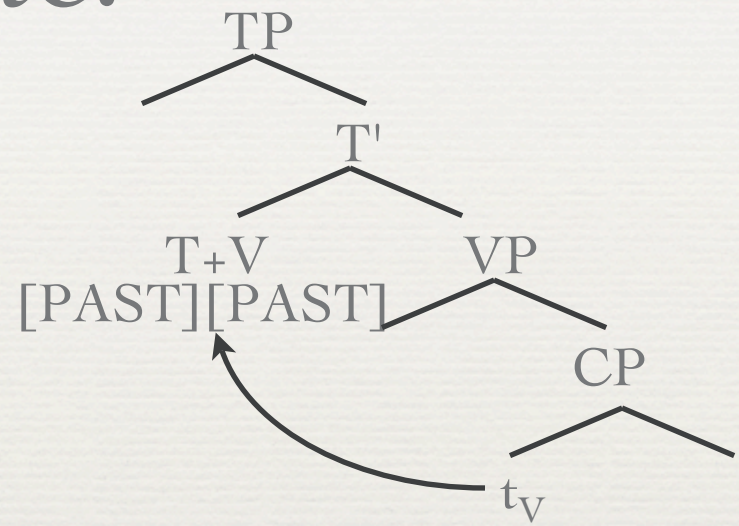
©Andrew Carnie, 2006

Tense-features, [Q] features etc.



In order for the derivation to "converge", the two [Past] features must "check" against each other. But in order to do so they must be local. Here there are too far apart.

Before movement



After movement, the [PAST] features are close to one another, so can they can check

After movement

©Andrew Carnie, 2006

Local Configuration

- ***Principle of Full Interpretation*: Features must be checked in a local configuration**
- Local Configuration
  - [ACC] features: Head/Complement configuration
  - [PAST], etc., [Q] features: Head-head configuration
  - [WH]: Specifier/Head configuration.

©Andrew Carnie, 2006

Move

- With this in place we can simplify our movement rules down to one rule:
- Move: Move stuff around.
- This is filtered by FI: movement happens only to get features close to one another.

©Andrew Carnie, 2006

Merge

- There is an equivalent single rule that replaces the three X-bar rules. This is MERGE. We're not going to spend any time on this rule. But roughly it's "stick stuff together" and then it is filtered by FI. The X-bar rules can be viewed as constraints that hold over the output.

©Andrew Carnie, 2006

Explaining Cross Linguistic Variation

©Andrew Carnie, 2006

Giving a more uniform explanation to cross-linguistic variation

©Andrew Carnie, 2006

Giving a more uniform explanation to cross-linguistic variation

- How do we account for the fact that English lowers its T and French raises its V etc.?

©Andrew Carnie, 2006

Giving a more uniform explanation to cross-linguistic variation

- How do we account for the fact that English lowers its T and French raises its V etc.?

©Andrew Carnie, 2006

Giving a more uniform explanation to cross-linguistic variation

- How do we account for the fact that English lowers its T and French raises its V etc.?
- To answer this question we need to take a little detour into semantics:

©Andrew Carnie, 2006

Two kinds of Quantifiers

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Universal Quantifier (∀): Every, All,

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Universal Quantifier (∀): Every, All,
- Existential Quantifier (∃): Some, A, One

©Andrew Carnie, 2006

Two kinds of Quantifiers

- **Universal Quantifier (∀): Every, All,**
- **Existential Quantifier (∃): Some, A, One**
- Notice that the following sentence is ambiguous
  - Everyone ate an apple.
    - Meaning 1: Each person ate their own apple
    - Meaning 2: There was a single apple that everyone had a piece of.

©Andrew Carnie, 2006

Two kinds of Quantifiers

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:
      - $\forall x(\exists y[x \text{ ate } y])$ (Universal quantifier has "wide scope")

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:
      - $\forall x(\exists y[x \text{ ate } y])$ **(Universal quantifier has "wide scope")**
  - Meaning 2: There was a single apple that everyone had a piece of.

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:
      - $\forall x(\exists y[x \text{ ate } y])$ **(Universal quantifier has "wide scope")**
  - Meaning 2: There was a single apple that everyone had a piece of.
    - For some apple y, and every person x ate y.

©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:
      - $\forall x(\exists y[x \text{ ate } y])$ (Universal quantifier has "wide scope")
  - Meaning 2: There was a single apple that everyone had a piece of.
    - For some apple y, and every person x ate y.
      - $\exists x(\forall y[x \text{ ate } y])$ (Universal quantifier has "narrow scope")

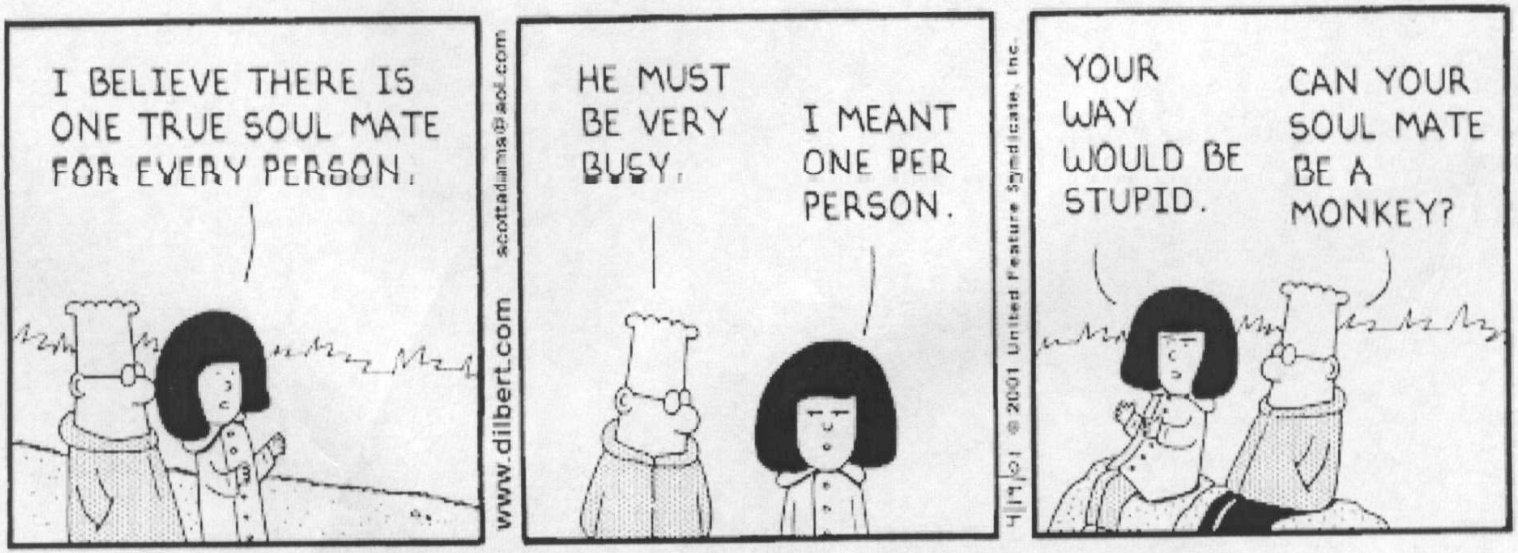
©Andrew Carnie, 2006

Two kinds of Quantifiers

- Everyone ate an apple.
  - Meaning 1: Each person ate their own apple
    - For every person x, there is some apple y, such that x ate y:
      - $\forall x(\exists y[x \text{ ate } y])$ (Universal quantifier has "wide scope")
  - Meaning 2: There was a single apple that everyone had a piece of.
    - For some apple y, and every person x ate y.
      - $\exists x(\forall y[x \text{ ate } y])$ (Universal quantifier has "narrow scope")

Let's translate into syntax: With wide scope the universal quantifier c-commands the existential quantifier, with narrow scope the c-command relationships are reversed.

©Andrew Carnie, 2006



Copyright © 2001 United Feature Syndicate, Inc.
Redistribution in whole or in part prohibited

©Andrew Carnie, 2006

Ambiguity

©Andrew Carnie, 2006

Ambiguity

- Remember: Ambiguity is supposed to be structural -- appear in the tree.

©Andrew Carnie, 2006

Ambiguity

- Remember: Ambiguity is supposed to be structural -- appear in the tree.
- **How do we get the narrow scope reading, where *some* c-commands *every*?**

©Andrew Carnie, 2006

Ambiguity

- Remember: Ambiguity is supposed to be structural -- appear in the tree.
- **How do we get the narrow scope reading, where *some* c-commands *every*?**
- Movement:
  - **An apple$_i$ everyone ate t$_i$**

©Andrew Carnie, 2006

Ambiguity

- Remember: Ambiguity is supposed to be structural -- appear in the tree.
- **How do we get the narrow scope reading, where *some* c-commands *every*?**
- Movement:
  - **An apple$_i$ everyone ate t$_i$**
- But hold on a minute! This is the wrong order for the sentence.

©Andrew Carnie, 2006

Ambiguity

- Remember: Ambiguity is supposed to be structural -- appear in the tree.
- **How do we get the narrow scope reading, where *some* c-commands *every*?**
- Movement:
  - **An apple$_i$ everyone ate t$_i$**
- But hold on a minute! This is the wrong order for the sentence.
- **Uhm, maybe there is a kind of movement you can't hear? This is called COVERT movement.**

©Andrew Carnie, 2006

Saussurian Signs

- Every Linguistic expression consists of two linked parts: a signifier (sound) and a signified (meaning). Let's built on that concept and assume that there are really two parts to every sentence:
  - A Phonetic Form (PF) (signifier)
  - A Logical Form (LF) (signified)
- We call these "interface levels" because they are the interface between the syntax and the phonology/semantics.

©Andrew Carnie, 2006

A Minimalist Model

Lexicon

↓

X-bar or

→

merge

©Andrew Carnie, 2006

A Minimalist Model

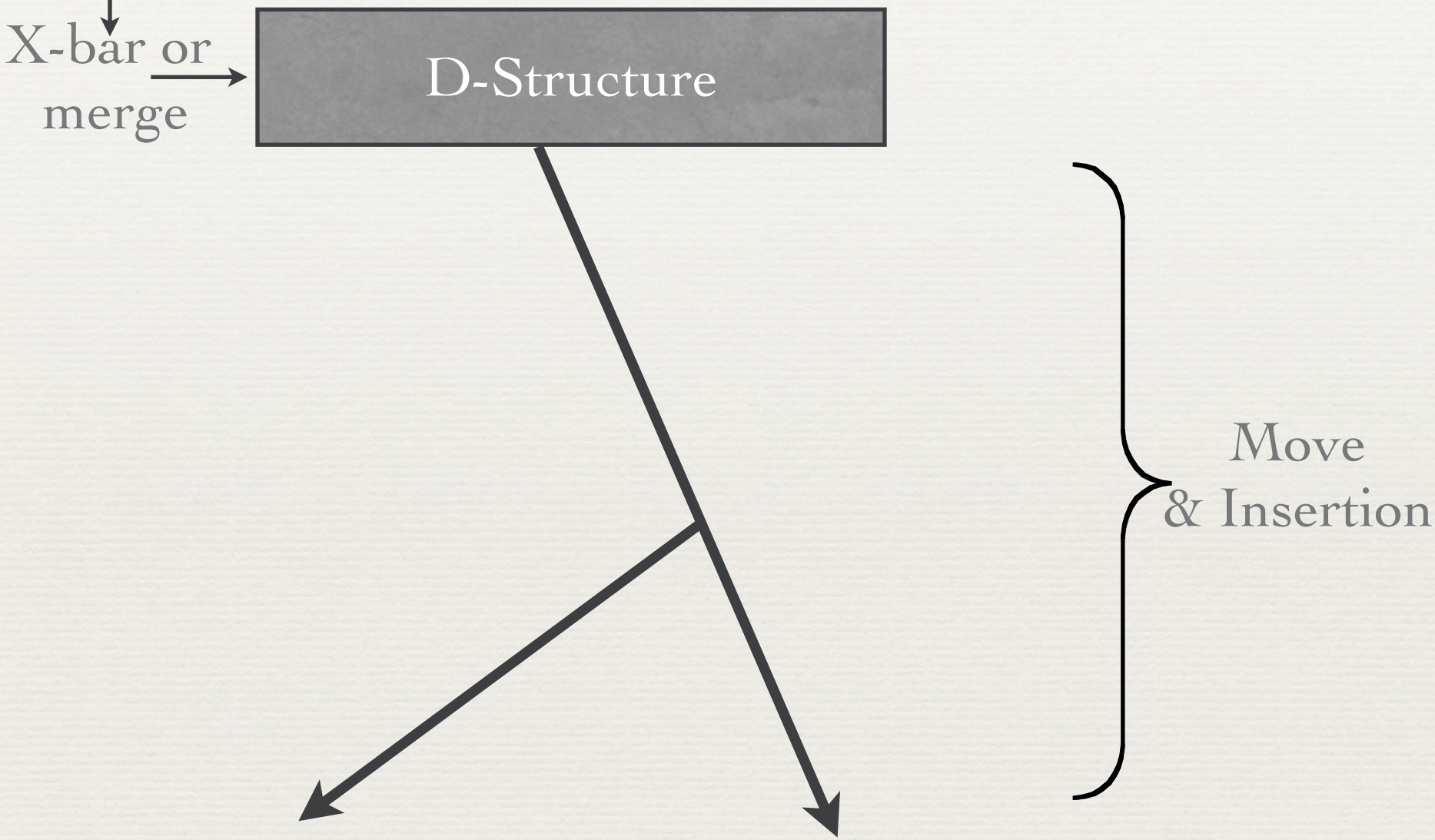
Lexicon

↓

X-bar or merge → D-Structure

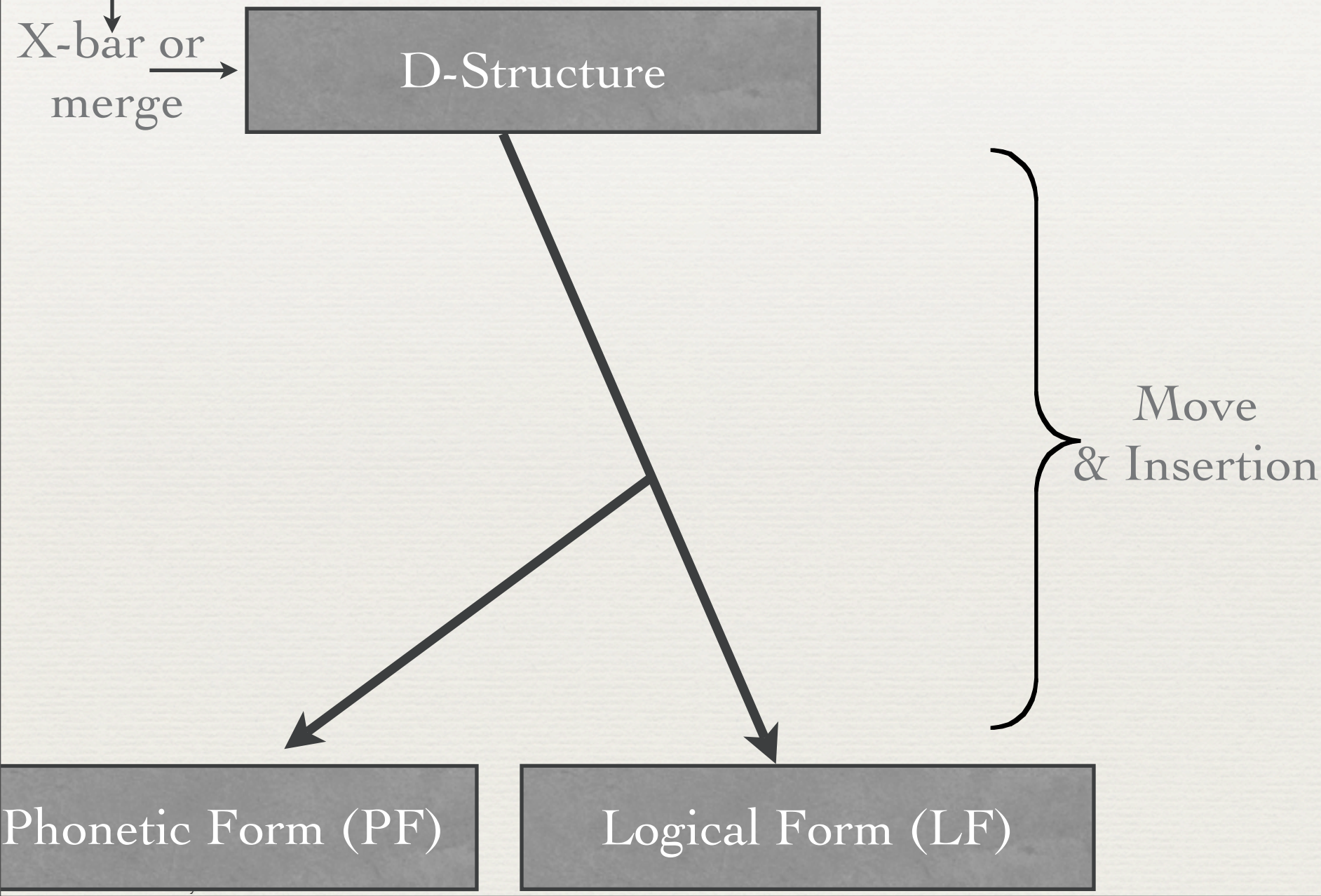
©Andrew Carnie, 2006

A Minimalist Model

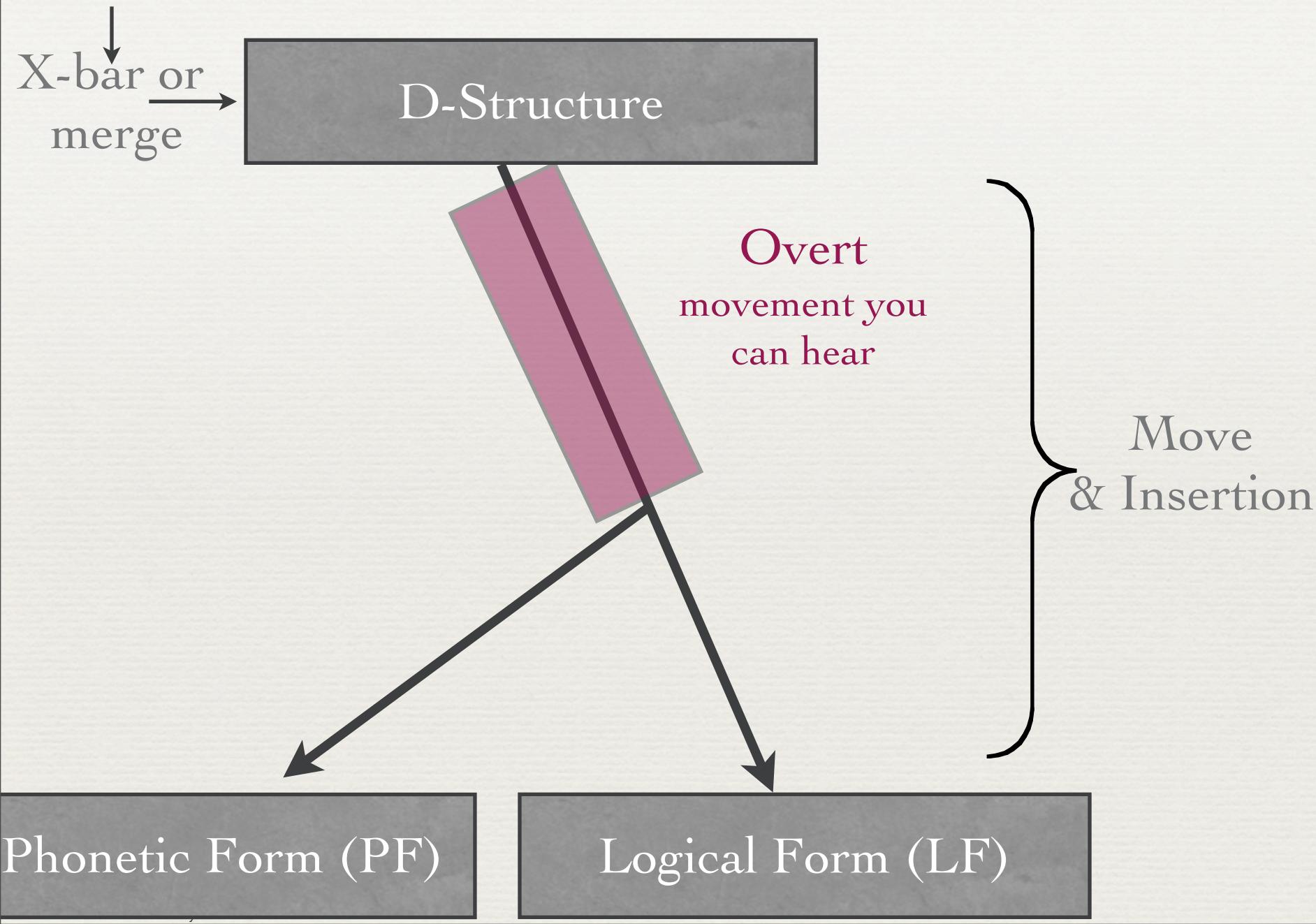


©Andrew Carnie, 2006

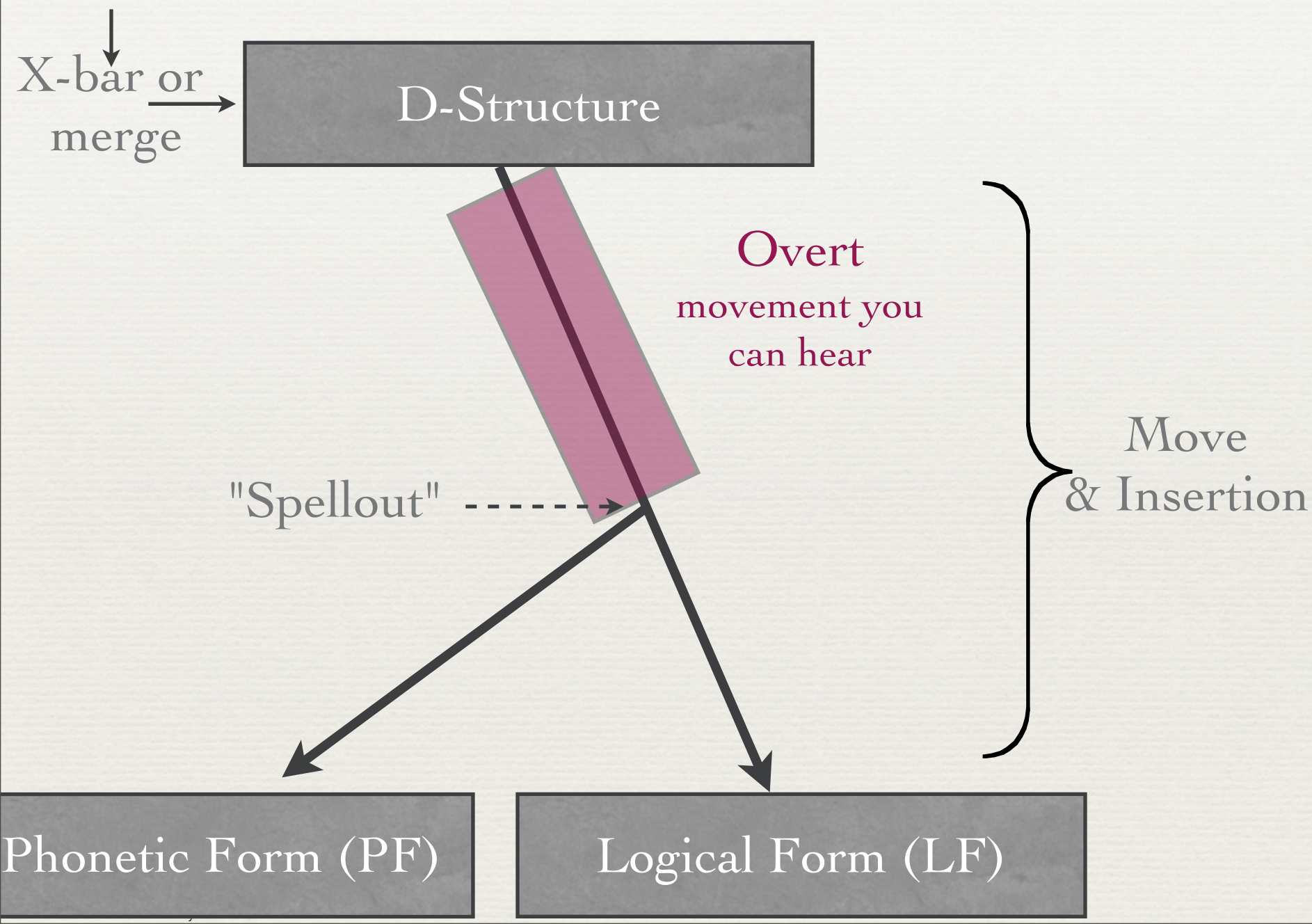
A Minimalist Model



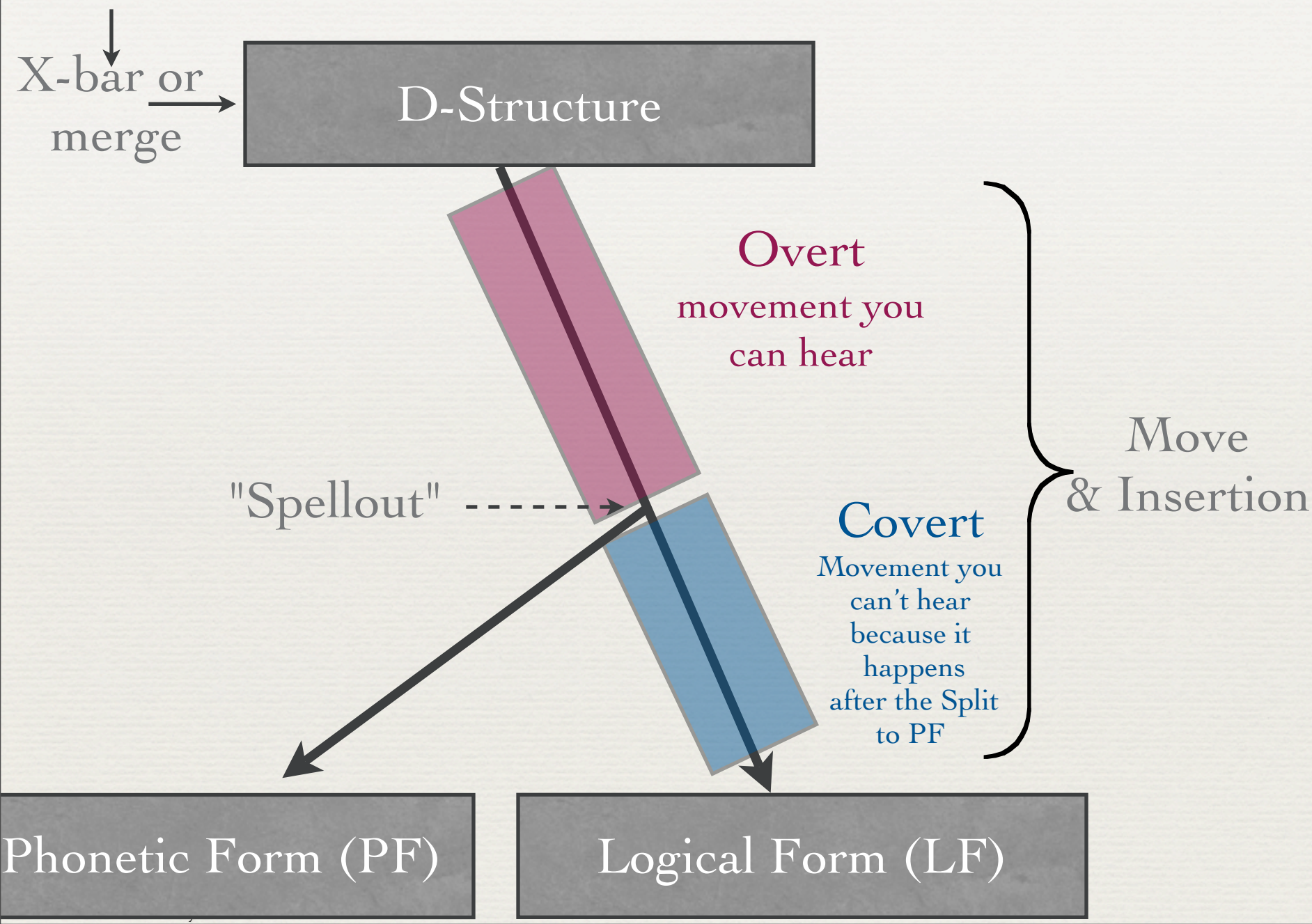
A Minimalist Model



A Minimalist Model



A Minimalist Model



Covert Quantifier Movement

$[_{CP}$ $[_{TP}$ Everyone ate an apple$]]$ "Spellout" (and PF)

©Andrew Carnie, 2006

Covert Quantifier Movement

$[_{CP}$ $[_{TP}$ Everyone ate an apple$]]$ "Spellout" (and PF)

Covert Movement

$[_{CP}$ an apple$_i$ $[_{TP}$ Everyone ate $t_i]]$ LF

©Andrew Carnie, 2006

The cross-linguistic claim

©Andrew Carnie, 2006

The cross-linguistic claim

- All languages have exactly the **same** movements. (i.e. English has verb raising).

©Andrew Carnie, 2006

The cross-linguistic claim

- All languages have exactly the **same** movements. (i.e. English has verb raising).
- BUT languages vary in whether the movement is overt or covert. This is encoded in parameters.

©Andrew Carnie, 2006

Head Movement

FRENCH Head Movement Overt	ENGLISH Head Movement Covert (main verbs)
Je $T_{[pres]}$ souvent $mange_{[pres]}$ des pommes	I $T_{[pres]}$ often $eat_{[pres]}$ apples

©Andrew Carnie, 2006

Head Movement

FRENCH Head Movement Overt	ENGLISH Head Movement Covert (main verbs)
Je $T_{[pres]}$ souvent $mange_{[pres]}$ des pommes	I $T_{[pres]}$ often $eat_{[pres]}$ apples
Overt Move	
Je $T_{[pres]}$+$mange_{[pres]}$ souvent t_V des pommes	I $T_{[pres]}$ often $eat_{[pres]}$ apples SO

©Andrew Carnie, 2006

Head Movement

FRENCH Head Movement Overt	ENGLISH Head Movement Covert (main verbs)
Je $T_{[pres]}$ souvent $mange_{[pres]}$ des pommes	I $T_{[pres]}$ often $eat_{[pres]}$ apples
Overt Move	
Je $T_{[pres]}$+$mange_{[pres]}$ souvent t_V des pommes	I $T_{[pres]}$ often $eat_{[pres]}$ apples **SO**
	Covert Move
Je $T_{[pres]}$+$mange_{[pres]}$ souvent t_V des pommes	I $T_{[pres]}$+$eat_{[pres]}$ often t_V apples **LF**

©Andrew Carnie, 2006

Wh-movement in Chinese

a) Ni kanjian-le shei?
You saw who
"Who did you see?"

b) *Shei ni kanjian-le *t*?
Who you saw
"Who did you see?"

©Andrew Carnie, 2006

Wh-movement

ENGLISH	CHINESE
Overt Wh-movement	Covert Wh-movement
$[_{CP}\ \ C_{[+wh]}\ [_{TP}$ You did see what$_{[+wh]}]]$	$[_{CP}\ \ C_{[+wh]}\ [_{TP}$ Ni kanjian-le shei$_{[+wh]}]]$

©Andrew Carnie, 2006

Wh-movement

ENGLISH

Overt Wh-movement

$[_{CP}\ \ C_{[+wh]}\ [_{TP}$ You did see what$_{[+wh]}]]$

Overt Move

$[_{CP}\ \ \text{what}_i$ did+$C_{[+wh]}\ [_{TP}$ You t_T see $t_i]]$

CHINESE

Covert Wh-movement

$[_{CP}\ \ C_{[+wh]}\ [_{TP}$ Ni kanjian-le shei$_{[+wh]}]]$

$[_{CP}\ \ C_{[+wh]}\ [_{TP}$ Ni kanjian-le shei$_{[+wh]}]]$

S
O

©Andrew Carnie, 2006

Wh-movement

ENGLISH

Overt Wh-movement

$[_{CP}\ C_{[+wh]}\ [_{TP}$ You did see what$_{[+wh]}]]$

Overt Move

$[_{CP}$ what$_i$ did+$C_{[+wh]}$ $[_{TP}$ You t_T see $t_i]]$

$[_{CP}$ what$_i$ did+$C_{[+wh]}$ $[_{TP}$ You t_T see $t_i]]$

CHINESE

Covert Wh-movement

$[_{CP}\ C_{[+wh]}\ [_{TP}$ Ni kanjian-le shei$_{[+wh]}]]$

$[_{CP}\ C_{[+wh]}\ [_{TP}$ Ni kanjian-le shei$_{[+wh]}]]$

Covert Move

$[_{CP}$ Shei $C_{[+wh]}$ $[_{TP}$ Ni kanjian-le $t_i]]$

SOLF

©Andrew Carnie, 2006

DP-movement

Assumption VP-internal Subjects

FRENCH	IRISH
Overt DP movement	Covert DP movement
$[_{TP}\ T_{[pres]}\ [_{VP}$ il mange$_{[pres]}$ des pommes$]]$	$[_{TP}\ T_{[pres]}[_{VP}$ sé itheann$_{[pres]}$ úill$]]$

©Andrew Carnie, 2006

DP-movement

Assumption VP-internal Subjects

FRENCH	IRISH
Overt DP movement	Covert DP movement
[$_{TP}$ T$_{[pres]}$ [$_{VP}$ il mange$_{[pres]}$ des pommes]]	[$_{TP}$ T$_{[pres]}$ [$_{VP}$ sé itheann$_{[pres]}$ úill]]
Overt Move	
il T$_{[pres]}$+mange$_{[pres]}$[$_{VP}$ t_{DP} t_{V} des pommes]	T$_{[pres]}$+Itheann [$_{VP}$ sé t_{V} úill]

SO

©Andrew Carnie, 2006

DP-movement

Assumption VP-internal Subjects

FRENCH	IRISH
Overt DP movement	Covert DP movement
[$_{TP}$ $T_{[pres]}$ [$_{VP}$ il mange$_{[pres]}$ des pommes]]	[$_{TP}$ $T_{[pres]}$ [$_{VP}$ sé itheann$_{[pres]}$ úill]]
Overt Move	
il $T_{[pres]}$+mange$_{[pres]}$[$_{VP}$ t_{DP} t_V des pommes]	$T_{[pres]}$+Itheann [$_{VP}$ sé t_V úill] **SO**
	Covert Move
il $T_{[pres]}$+mange$_{[pres]}$[$_{VP}$ t_{DP} t_V des pommes]	Sé $T_{[pres]}$+Itheann [$_{VP}$ t_{DP} t_V úill] **LF**

©Andrew Carnie, 2006

Is there any further evidence for covert movement?

- Note there are two kinds of wh-in-situ
  - English Echo Questions
  - Japanese/Chinese Wh-questions
- The latter kind involve movement, the first kind do not.
- Movement should trigger MLC effects -- you shouldn't be able to escape out of a wh-island.

©Andrew Carnie, 2006

MLC violations in Japanese

*Nani-o doko-de katta ka oboete-iru no?

What-acc where-at bought Q remember Q

“What do you remember where we bought?”

©Andrew Carnie, 2006

Summary

- Simplified Theory of movement:
  - 1 rule (move)
  - 1 principle (FI)
  - Move to get local
- Cross-linguistic variation is accounted for using timing. All movement types are universal, but whether that movement is overt or covert (silent) is parameterized

©Andrew Carnie, 2006