Finishing Syntax, Starting Semantics

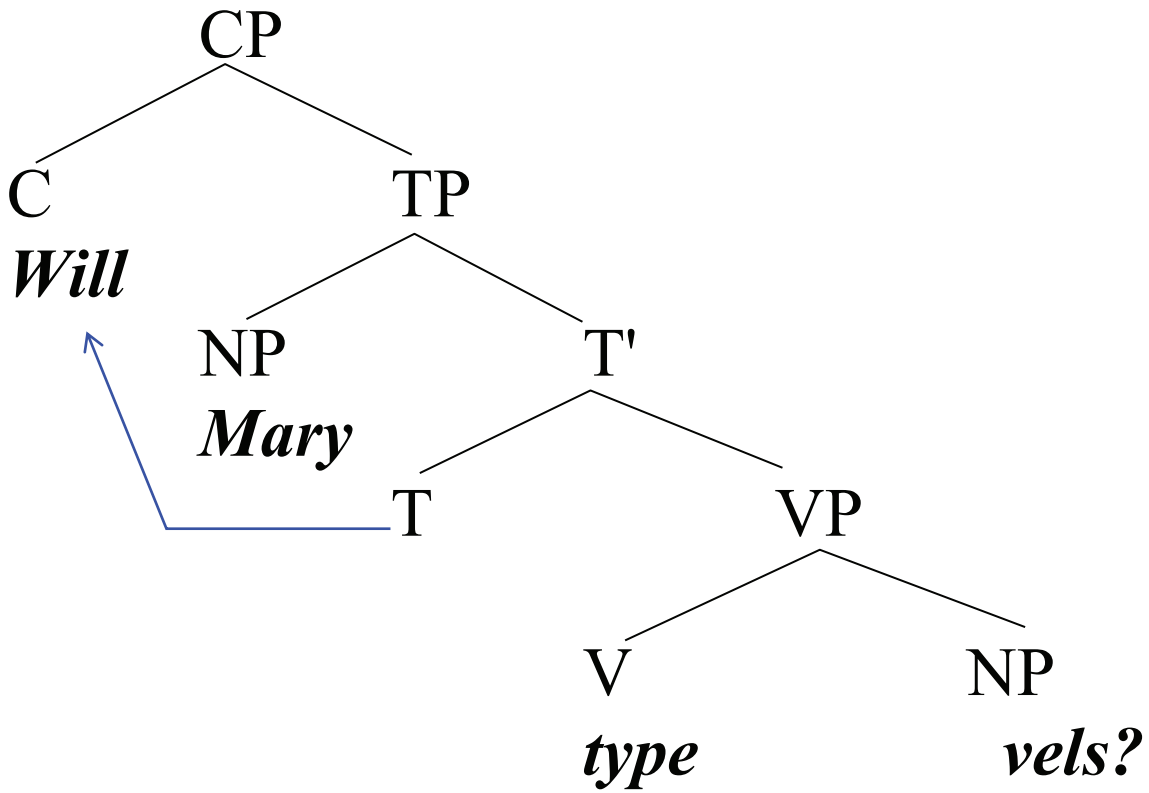
A number of kinds of restrictions on movement have been unified into a single condition: **Shortest Move**:

When several different movement operations are in principle possible, pick the **shortest*** one

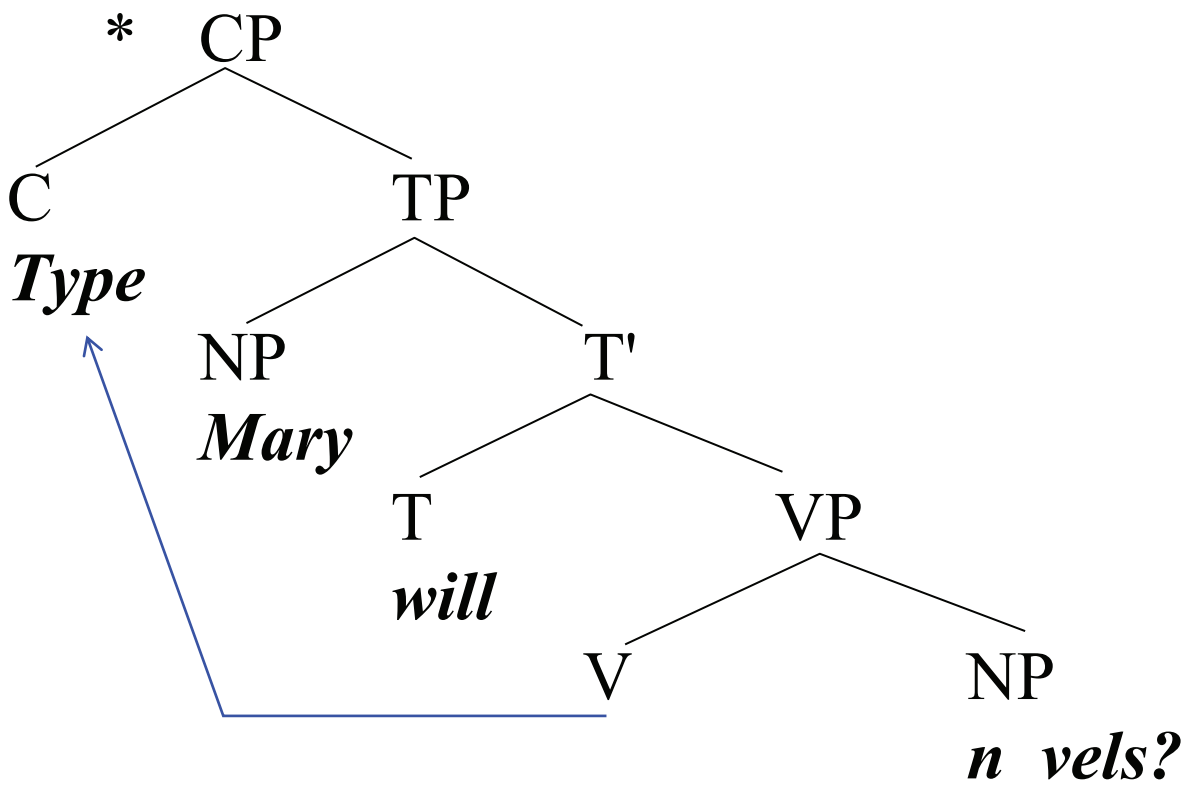
***shortest**: let the **path** of a movement be the set of nodes that dominate the original position of the moved item, and do not dominate the landing site.

Movement A is shorter than movement B if the path of A contains a smaller number of nodes than the path of B.

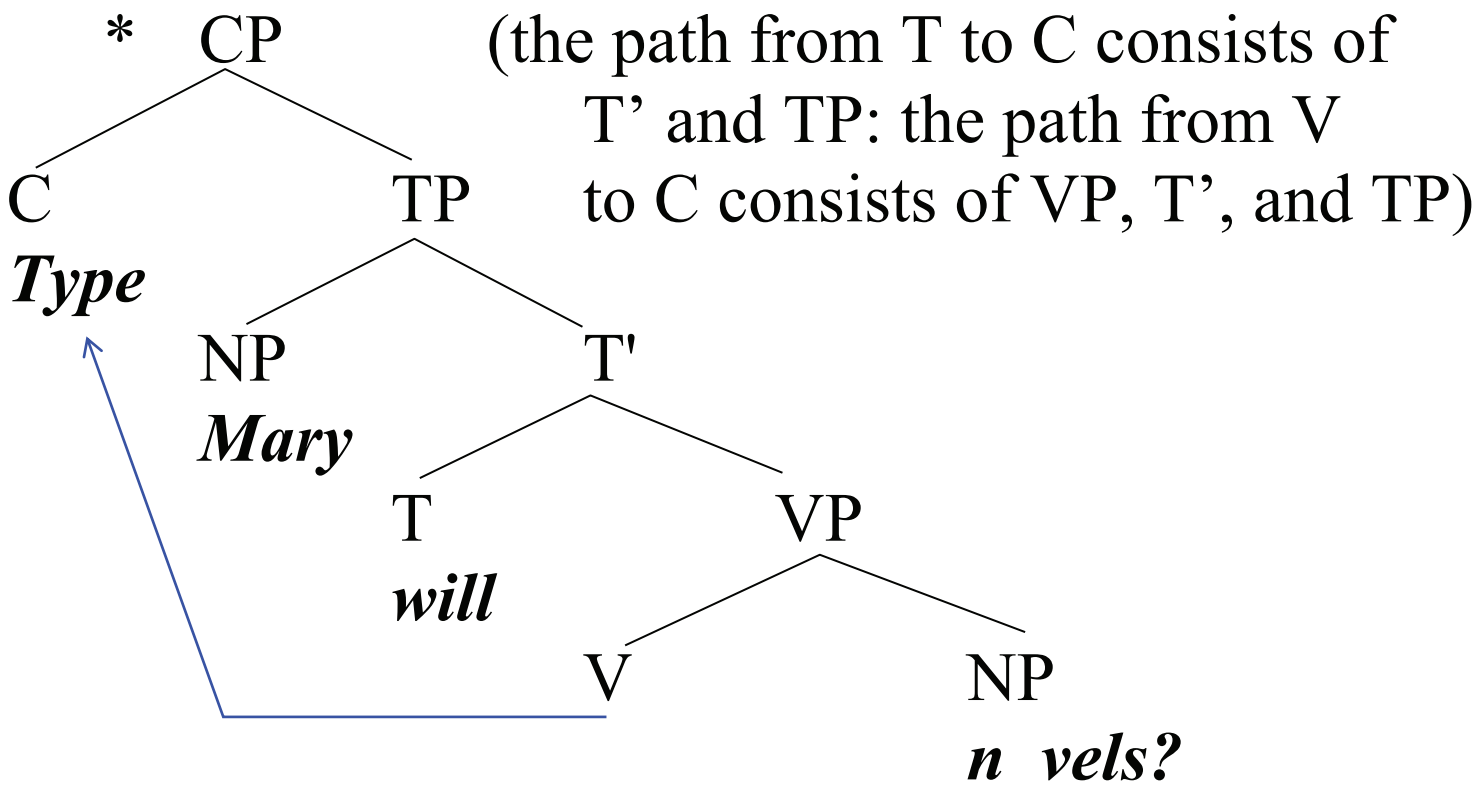
Shortest Move, case #1: the Head Movement Constraint



Shortest Move, case #1: the Head Movement Constraint



Shortest Move, case #1: the Head Movement Constraint



(the path from T to C consists of T' and TP: the path from V to C consists of VP, T', and TP)

Shortest Move, case #2: Superiority

Who __ bought **what**
***What** did **who** buy __ ?

What did you give __ to **whom**
***Who** did you give **what** to __ ?

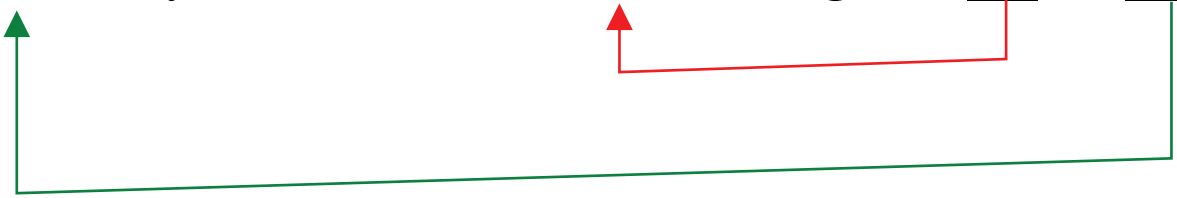
Shortest Move, case #3: wh-islands

I wonder [**what** Bill gave __ to Fred.]

Shortest Move, case #3: wh-islands

I wonder [**what** Bill gave __ to Fred.]

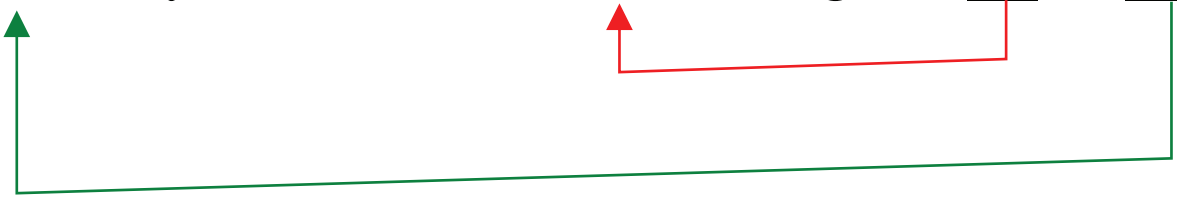
***Who** do you wonder [**what** Bill gave __ to __]?



Shortest Move, case #3: wh-islands

I wonder [**what** Bill gave __ to Fred.]

***Who** do you wonder [**what** Bill gave __ to __]?

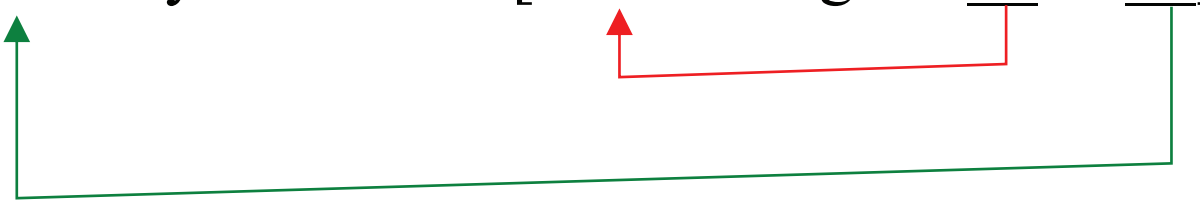


two things potentially wrong with the green arrow…

Shortest Move, case #3: wh-islands

I wonder [**what** Bill gave __ to Fred.]

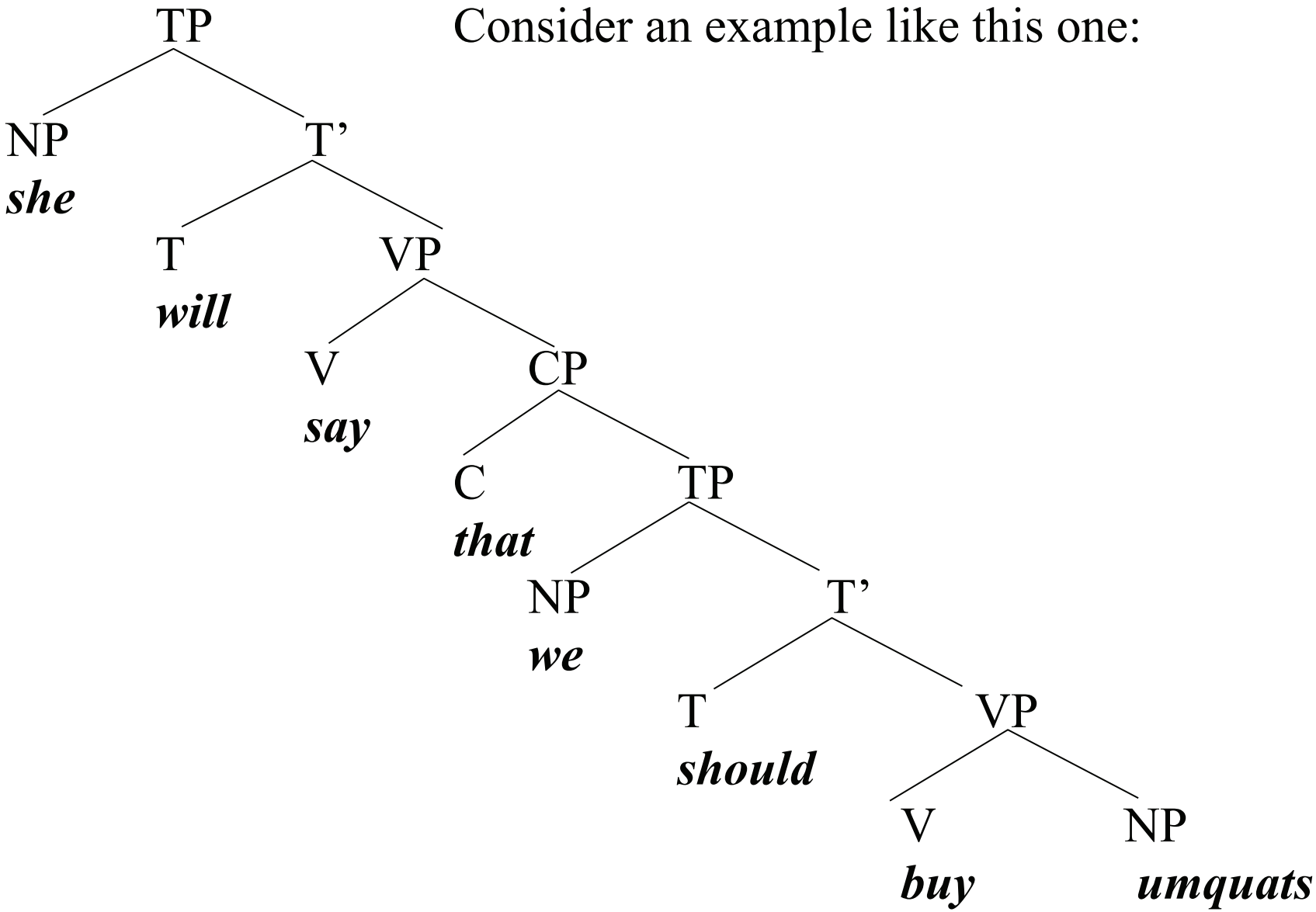
***Who** do you wonder [**what** Bill gave __ to __]?

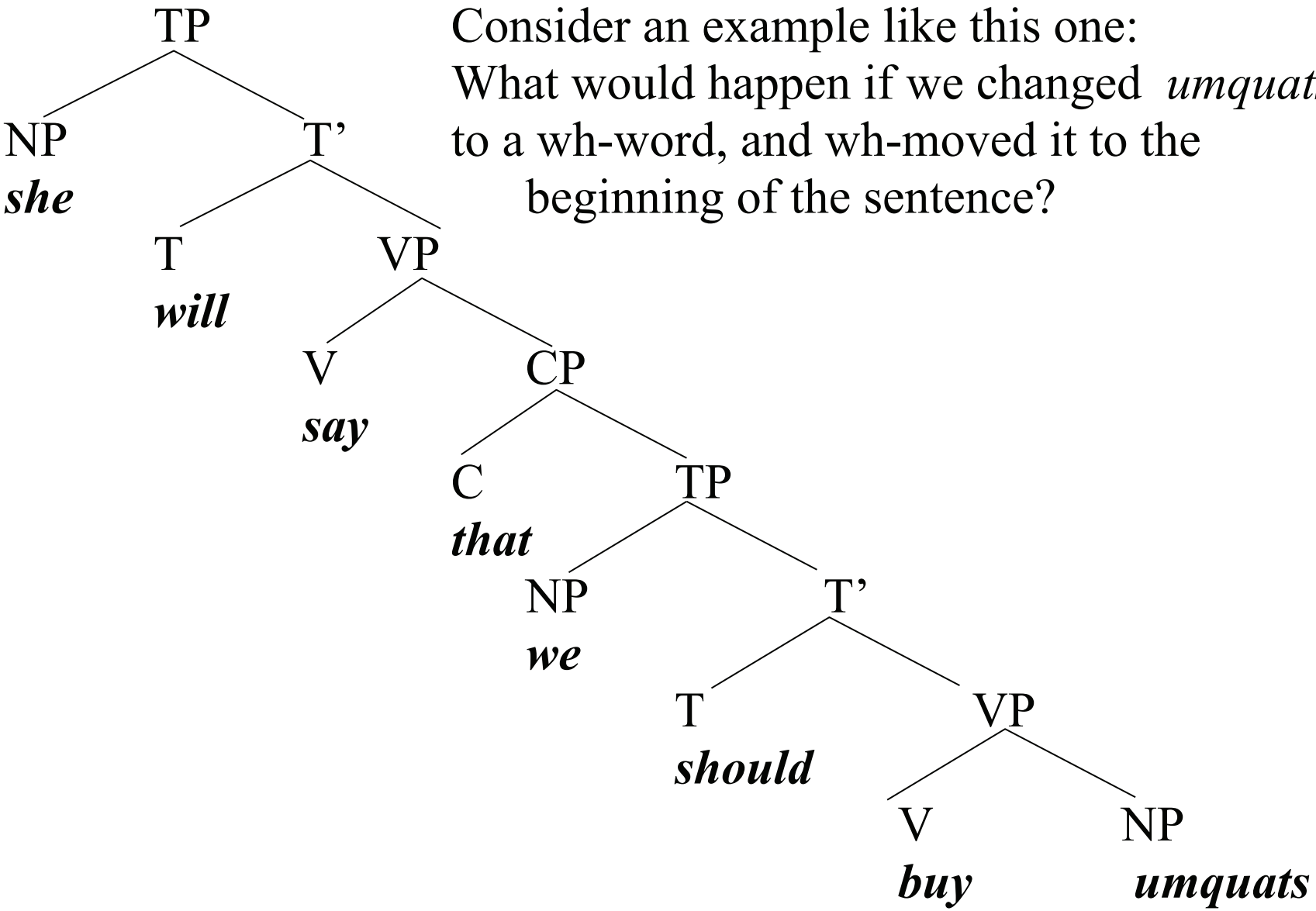


two things potentially wrong with the green arrow:

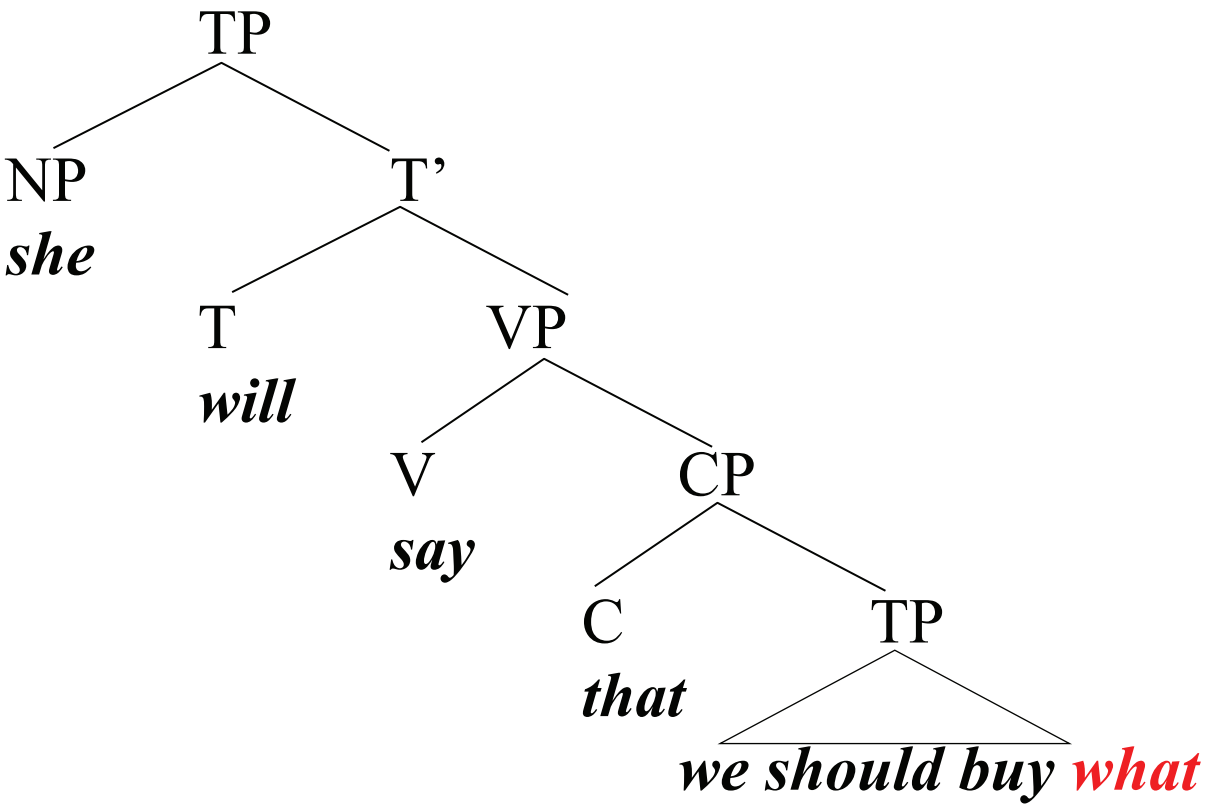
- movement is not of the highest wh-phrase *what*
- movement does not land in the specifier of the embedded CP (which is filled by *what*).

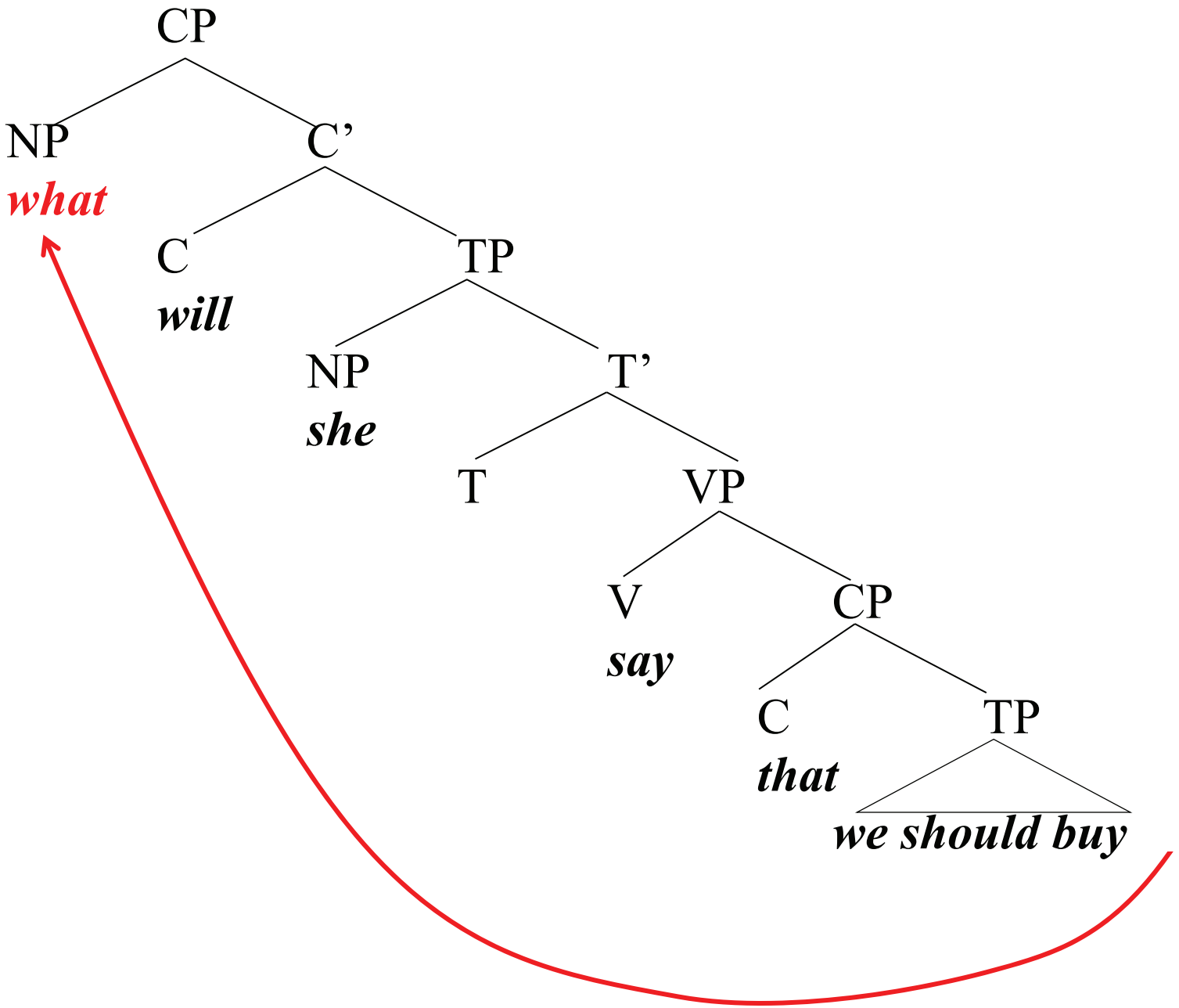
Consider an example like this one:

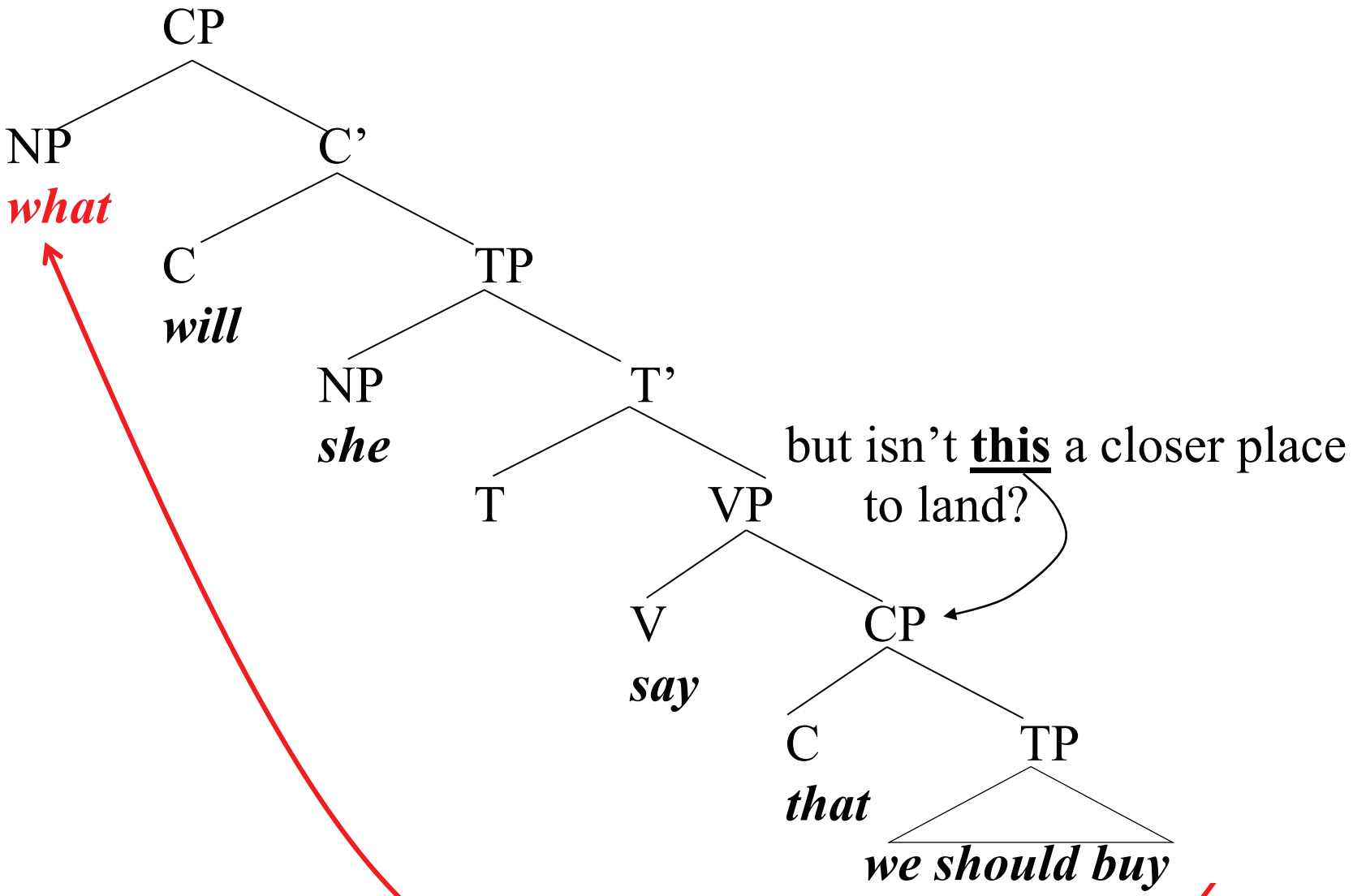




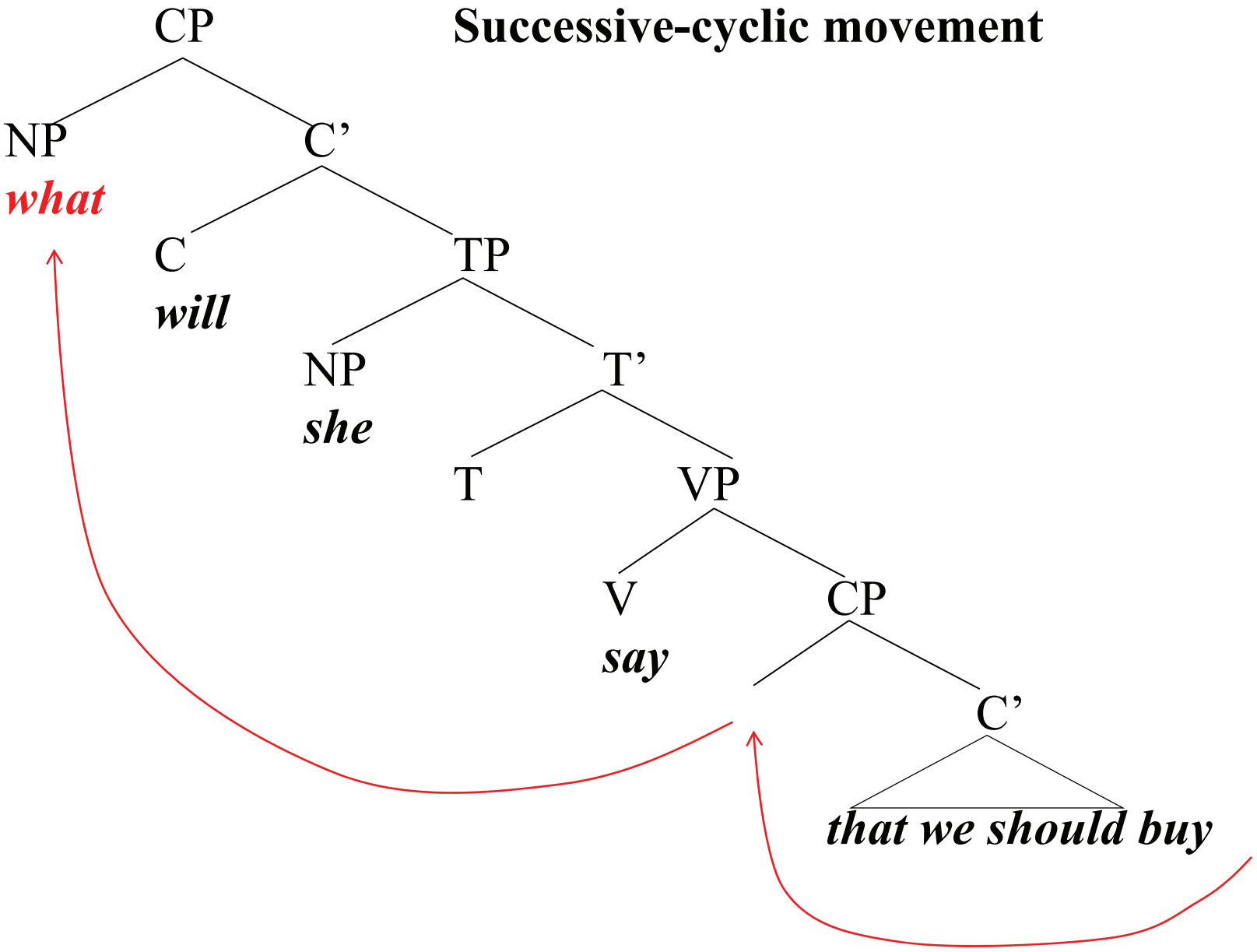
Consider an example like this one:
What would happen if we changed *umquats* to a wh-word, and wh-moved it to the beginning of the sentence?


TP
NP
she
T'
T
will
VP
V
say
CP
C
that
TP
we should buy what


CP
NP
what
C'
C
will
TP
NP
she
T'
T
VP
V
say
CP
C
that
TP
we should buy


CP
NP
what
C'
C
will
TP
NP
she
T'
T
VP
but isn't this a closer place to land?
V
say
CP
C
that
TP
we should buy

Successive-cyclic movement



Do we have evidence that this is right? You bet.

Dinka

Dinka is a Nilotic language, spoken in South Sudan and many diaspora communities, by roughly two million people.

Dinka

Dinka is a Nilotic language, spoken in South Sudan and many diaspora communities, by roughly two million people.

Its phonology is…challenging.

Dinka

Dinka is a Nilotic language, spoken in South Sudan and many diaspora communities, by roughly two million people.

Its phonology is…challenging.

three levels of vowel length:
cól ‘mouse’
cool ‘charcoal’
còool ‘pieces of charcoal’

Dinka

Dinka is a Nilotic language, spoken in South Sudan and many diaspora communities, by roughly two million people.

Its phonology is…challenging.

three levels of vowel length:
cól ‘mouse’
cool ‘charcoal’
còool ‘pieces of charcoal’

tone, and creaky/breathy voice contrast:
làang ‘berries’ (creaky)
diậ̰ar ‘women’ (breathy)

Dinka

Cạ̀n	à-bẹ́	Bò̱l	ɰɔ̱̀c	aléth	rɔ̱̀ɔ̱k.
Can	G -FUT	Bol	buy	clothes	town.LOC

'Can will buy Bol clothes in town'

Aléth	aa-bíi	Cạ́n	Bò̱l	ɰɔ̱̀c	rɔ̱̀ɔ̱k.
clothes	L -FUT	Can.GEN	Bol	buy	town.LOC

ɔ´k	à-bíi	Cạ́n	Bò̱l	ɰɔ̱̀c	aléth.
town	G -FUT	Can.GEN	Bol	buy	clothes

*	à-bíi	Cạ́n	Bò̱l	ɰɔ̱̀c	aléth.
	3SG-FUT	Can.GEN	Bol	buy	clothes

Dinka …is V2.

Cạ̀n	à-bẹ́	Bò̱l	ɰɔ̱̀c	aléth	rɔ̱̀ɔ̱k.
Can	G -FUT	Bol	buy	clothes	town.LOC

'Can will buy Bol clothes in town'

Aléth	aa-bíi	Cạ́n	Bò̱lɰɔ̱̀c	rɔ̱̀ɔ̱k.
clothes	L -FUT	Can.GEN	Bolbuy	town.LOC

ɔ́k	à-bíi	Cạ́n	Bò̱lɰɔ̱̀c	aléth.
town	G -FUT	Can.GEN	Bolbuy	clothes

*	à-bíi	Cạ́n	Bò̱lɰɔ̱̀c	aléth.
	3SG-FUT	Can.GEN	Bolbuy	clothes

Dinka

There is another position in the Dinka clause that has to be occupied.

ɰɛ̀n cḛ́ **mîir** tḭ̂iŋ
I AST giraffe see
'I saw a giraffe'

*ɰɛ̀n cḛ́ [ ] tḭ̂iŋ mḭ̂ir
I AST see giraffe

Dinka

There is another position in the Dinka clause that has to be occupied. Sometimes you have choices about what to occupy it with:

ɰɛ̀n	cḛ́	**kitàp**	yiɛ́n	Ayén
I	AST	book	give	Ayen

'I gave Ayen a book'

ɰɛ̀n	cḛ́	**Ayén**	yiɛ́n	kitàp
I	AST	Ayen	give	book

* ɰɛ̀n	cḛ́		yiɛ́n	Ayén	kitàp
I	AST		give	Ayen	book

Dinka

So Dinka has two positions in the clause that have to get occupied: the specifier of CP, and some position right before the verb (let's not worry about where that one is in a tree).

Yàar	a-cé̱	**Ayén**	lɛ̱́k,	yè	**Bòl**	a-cé̱	**ɛ̀ŋ**	tuɔ́ɔc	wṵ̱ut
Yaar	G - T	Ayen	told	that	Bol	G - T	Deng	send	cattle.camp (LOC)

'Yaar told Ayen that Bol sent Deng to the cattle camp'

Dinka

So Dinka has two positions in the clause that have to get occupied: the specifier of CP, and some position right before the verb (let's not worry about where that one is in a tree).

Yàar a-cé̱ **Ayén** lé̱k, yè **Bòl** a-cé̱ **ɛ̀ŋ** tuɔ́ɔc wṳ́ut
Yaar G - T Ayen told that Bol G - T Deng send cattle.camp (LOC)

'Yaar told Ayen that Bol sent Deng to the cattle camp'

Yeŋà cíi Yà̱ar ☐ lé̱k Ayén, yè ☐ cíi Bòl ☐ tuɔ́ɔc wṳ́ut?
who T Yaar tell Ayen that T Bol send cattle.camp (LOC)

'Who did Yaar tell Ayen that Bol sent __ to the cattle camp?'

Dinka

So Dinka has two positions in the clause that have to get occupied: the specifier of CP, and some position right before the verb (let's not worry about where that one is in a tree).

Yàar a-cé̱ **Ayén** lé̱k, yè **Bòl** a-cé̱ **ɛ̀ŋ** tuɔ́ɔc wú̱ut
Yaar G - T Ayen told that Bol G - T Deng send cattle.camp (LOC)

'Yaar told Ayen that Bol sent Deng to the cattle camp'

Yeŋà cíi Yà̱ar ___ lé̱k Ayén, yè ___ cíi Bòl ___ tuɔ́ɔc wú̱ut?
who T Yaar tell Ayen that T Bol send cattle.camp (LOC)

'Who did Yaar tell Ayen that Bol sent ___ to the cattle camp?'

inka

Yeŋà cíi Bôl tî̤iŋ?
who T Bol.GEN see
'Who did Bol see?'

Yèyíŋà cíi Bôl **ké** tî̤iŋ?
who. L T Bol.GEN L see
'Who all did Bol see?'

Dinka

Yeŋà cíi Bôl tɨ̤̂iŋ?
who PST Bol.GEN see
'Who did Bol see?'

Yèyíŋà cíi Bôl **ké** tɨ̤̂iŋ?
who.PL PST Bol.GEN PL see
'Who all did Bol see?'

Yèyíŋà yɨ̤́i **ké** tàak, cíi Bôl **ké** tɨ̤̂iŋ?
who.PL IMPF SG PL think PST Bol.GEN PL see
'Who all do you think Bol saw?'

Semantics

We've had *morphology* :

building words up out of morphemes

and *syntax*:

building sentences up out of words

We've had *morphology* :

building words up out of morphemes

and *syntax*:

building sentences up out of words

Now for *semantics*:

building meanings up out of…meanings.

Now for *semantics*:
building meanings up out of…meanings.

A going hypothesis: *compositionality*:
once you specify the meanings of the parts of a sentence, you should have the meaning of the sentence.

meaning relations involving words:

- synonymy (purchase, buy)
- antonymy (up, down)

But there are some fancier things about meaning...

...for example, consider the various ways we might refer to me:

Professor Richards

...for example, consider the various ways we might refer to me:

Professor Richards

Norvin

...for example, consider the various ways we might refer to me:

Professor Richards

Norvin

that guy with the beard

...for example, consider the various ways we might refer to me:

Professor Richards

Norvin

that guy with the beard

that @#$* who gave me a C

and so on.

You can typically substitute these for each other in a sentence, and the sentence will still be true (or false, if it was false before):

Professor Richards is from Alabama.

You can typically substitute these for each other in a sentence, and the sentence will still be true (or false, if it was false before):

Professor Richards is from Alabama.
Norvin...
That guy with the beard...

getting a little fancier with word meaning:

intension: the function for determining the reference of a word/phrase

extension: the value of that function

getting a little fancier with word meaning:

	President of the US
intension:	winner of the election
extension:	Joe Biden

getting a little fancier with word meaning:

the current temperature

intension: what the thermometer says

extension: 45 degrees (or whatever)

using intensions and extensions:

The temperature is 45 degrees
That guy with the beard is Professor Richards

using intensions and extensions:

The temperature is 45 degrees
That guy with the beard is Professor Richards

• 'that guy with the beard' and 'Professor Richards' are (mostly) substitutable for each other...

using intensions and extensions:

The temperature is 45 degrees
That guy with the beard is Professor Richards

- 'that guy with the beard' and 'Professor Richards' are (mostly) substitutable for each other...

  so how about 'the temperature' and '45 degrees'?

using intensions and extensions

The temperature is rising.

using intensions and extensions

The temperature is rising.

45 degrees is rising.

oops.

using intensions and extensions:

intension

The temperature is rising

The temperature is 45°

extension

meaning relations involving sentences:

- entailment

John killed the ant.
The ant is dead.

A entails B if whenever A is true, B is true.

meaning relations involving sentences:

- entailment

John killed the ant.
The ant is dead.

Norvin is Don's nephew.
Don is Norvin's uncle. (assuming both are male)

meaning relations involving sentences:

- entailment

John killed the ant.
The ant is dead.

Norvin is Don's nephew.
Don is Norvin's uncle.

If John is here, then Mary is here, and John is here.
Mary is here.

meaning relations involving sentences:

- entailment

careful! entailment relations aren't about whether the sentences actually are true:

Joe Biden is a bachelor
Joe Biden is unmarried

meaning relations involving sentences:

- equivalence

A and B are in an **equivalence** relation if they entail each other.

Mary ate the bagel.
The bagel was eaten by Mary.

meaning relations involving sentences:

- contradiction

A and B **ontradict** each other if each entails that the other is false.

Noam is here.
Noam is not here.

meaning relations involving sentences:

- presupposition

The present king of France is bald.

meaning relations involving sentences:

- presupposition

The present king of France is bald.
There is a present king of France.

meaning relations involving sentences:

- presupposition

crucially different from entailment, in that A's presuppositions remain if we negate A, wonder about A, etc...

The present king of France is bald.
The present king of France is **not** bald.
Is the present king of France bald?
→ There is a present king of France.

meaning relations involving sentences:

- presupposition vs. entailment:

The present king of France is bald.

entails: he has no hair.

meaning relations involving sentences:

- presupposition vs. entailment:

The present king of France is bald.

entails: he has no hair.

The present king of France is **not** bald.
Is the present king of France bald?
→ lack this entailment.

Your reaction to a presupposition will vary, depending on the presupposition…

For example*, if we hear scratching at the door, I could say:

The cat is at the door

*[example taken from Kai von Fintel, lecture notes]

Your reaction to a presupposition will vary, depending on the presupposition…

For example*, if we hear scratching at the door, I could say:

The cat is at the door

Here **the** triggers a presupposition: *There is a cat.*
Even if you didn't know I had a cat, you might *accommodate* this presupposition; you didn't know I had a cat, but now you do.

*[example taken from Kai von Fintel, lecture notes]

Your reaction to a presupposition will vary, depending on the presupposition…

For example*, if we hear scratching at the door, I could say:

The cat is at the door

Here **the** triggers a presupposition: *There is a cat.*
Even if you didn't know I had a cat, you might *accommodate* this presupposition; you didn't know I had a cat, but now you do.

On the other hand, if I say:

The giraffe is at the door. **…**

*[example taken from Kai von Fintel, lecture notes]

more fun with presuppositions:

Have you stopped beating your wife?

more fun with presuppositions:

Have you stopped beating your wife?

I regret having been born in 1857.

more fun with presuppositions:

Have you stopped beating your wife?

I regret having been born in 1857.

(okay, fine. I **don't** regret having been born in 1857, then.)

meaning relations involving sentences:

- **implicature**: something you would generally infer from hearing a sentence, though it may not be true.

meaning relations involving sentences:

- implicature

Utterance	Implicature
"Can you open the window?"	Speaker wants you to open the window.

meaning relations involving sentences:

- implicature

Utterance	Implicature
"Can you open the window?"	Speaker wants you to open the window.
"Where's the salt?"	Speaker wants salt.

meaning relations involving sentences:

- implicature

Utterance	Implicature
"Can you open the window?"	Speaker wants you to open the window.
"Where's the salt?"	Speaker wants salt.
"I'm 21"	Speaker is exactly .

meaning relations involving sentences:

- implicature

Utterance	Implicature
"Can you open the window?"	Speaker wants you to open the window.
"Where's the salt?"	Speaker wants salt.
"I'm 21"	Speaker is exactly .
“Mary ate some of the cookies.”	She didn’t eat them all.

meaning relations involving sentences:

- implicatures can be cancelled.

Utterance	Implicature cancelled
"Can you open the window?"	"...I'm studying physical fitness in MIT students"
"Where's the salt?"	"...I'm making a map of the kitchen"
"I'm 21"	"...in fact, I'm 50."

Utterance	Implicature cancelled
"Mary ate some of the cookies"	"…in fact, she may have eaten all of them."

...presuppositions, on the other hand, can't be cancelled:

The king of France is bald...
...oh, and, by the way, there is no king of France.

summarizing:

a sentence A's...

- entailments: have to be true if A is true.

summarizing:

a sentence A's...

- entailments: have to be true if A is true.
- presuppositions: have to be true if A is true, or if A is false, or...

summarizing:

a sentence A's...

- entailments: have to be true if A is true.
- presuppositions: have to be true if A is true, or if A is false, or...
- implicatures: are probably true if A is true, but might be false, and can be cancelled.

or, to put it another way:

is P an entailment, a presupposition, or an implicature of A?

or, to put it another way:

is P an entailment, a presupposition, or an implicature of A?

- oes P have to be true if A is true or false (or questioned, etc...)?
  → **Presupposition**

or, to put it another way:

is P an entailment, a presupposition, or an implicature of A?

- oes P have to be true if A is true or false (or questioned, etc...)?
  → **Presupposition**
- oes P have to be true if A is true?
  → **Entailment** (if it's not a presupposition)

or, to put it another way:

is P an entailment, a presupposition, or an implicature of A?

- Does P have to be true if A is true or false (or questioned, etc...)?
  → **Presupposition**
- Does P have to be true if A is true?
  → **Entailment** (if it's not a presupposition)
- if not:
  → **Implicature**

Practice:

Bill isn't aware that Susan is pregnant.

Practice:

Bill isn't aware that Susan is pregnant.

Susan is pregnant.
You should tell Bill.

Practice:

Bill isn't aware that Susan is pregnant.

Susan is pregnant. → **presupposition**
You should tell Bill. → **implicature**

MIT OpenCourseWare
https://ocw.mit.edu

24.900 Introduction to Linguistics Spring 2022
For more information about citing these materials or our Terms of Use, visit https://ocw.mit.edu/terms.