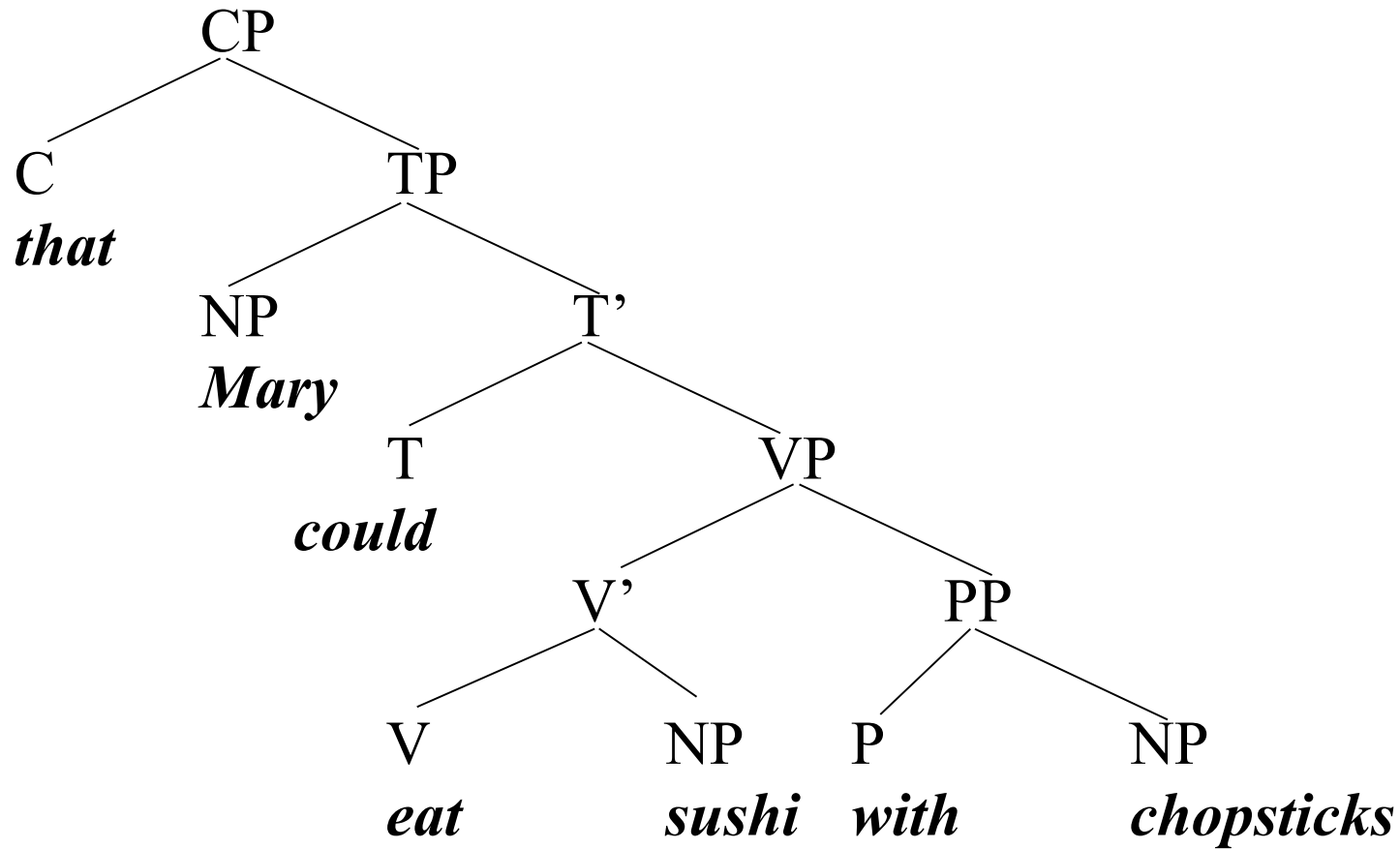


Syntax 6

next up: let's talk about another way in which languages can vary (though, again, there are imaginable kinds of languages that we don't find).

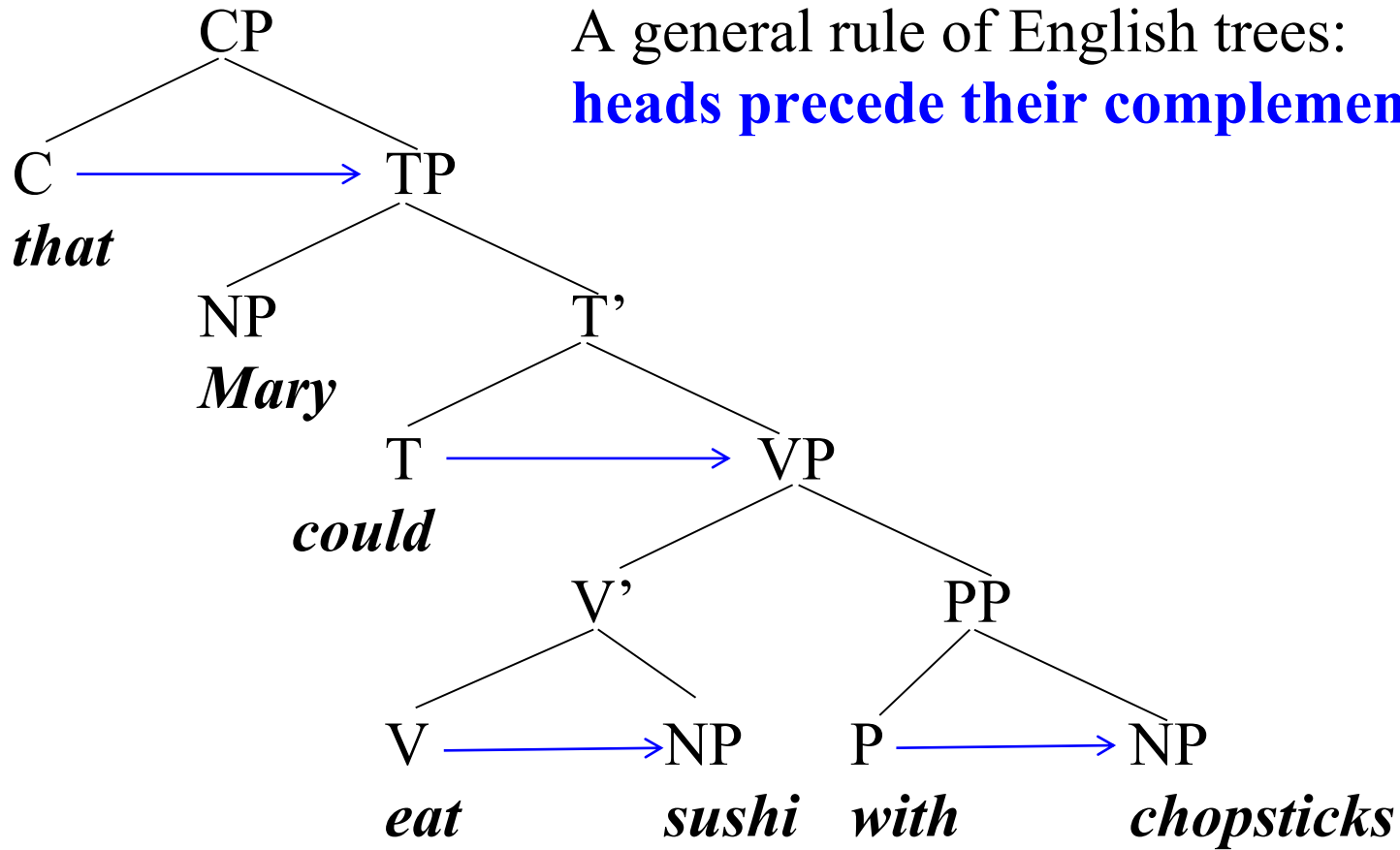
I thought [**that Mary ate sushi with chopsticks**]

I thought [**that Mary could eat sushi with chopsticks**]

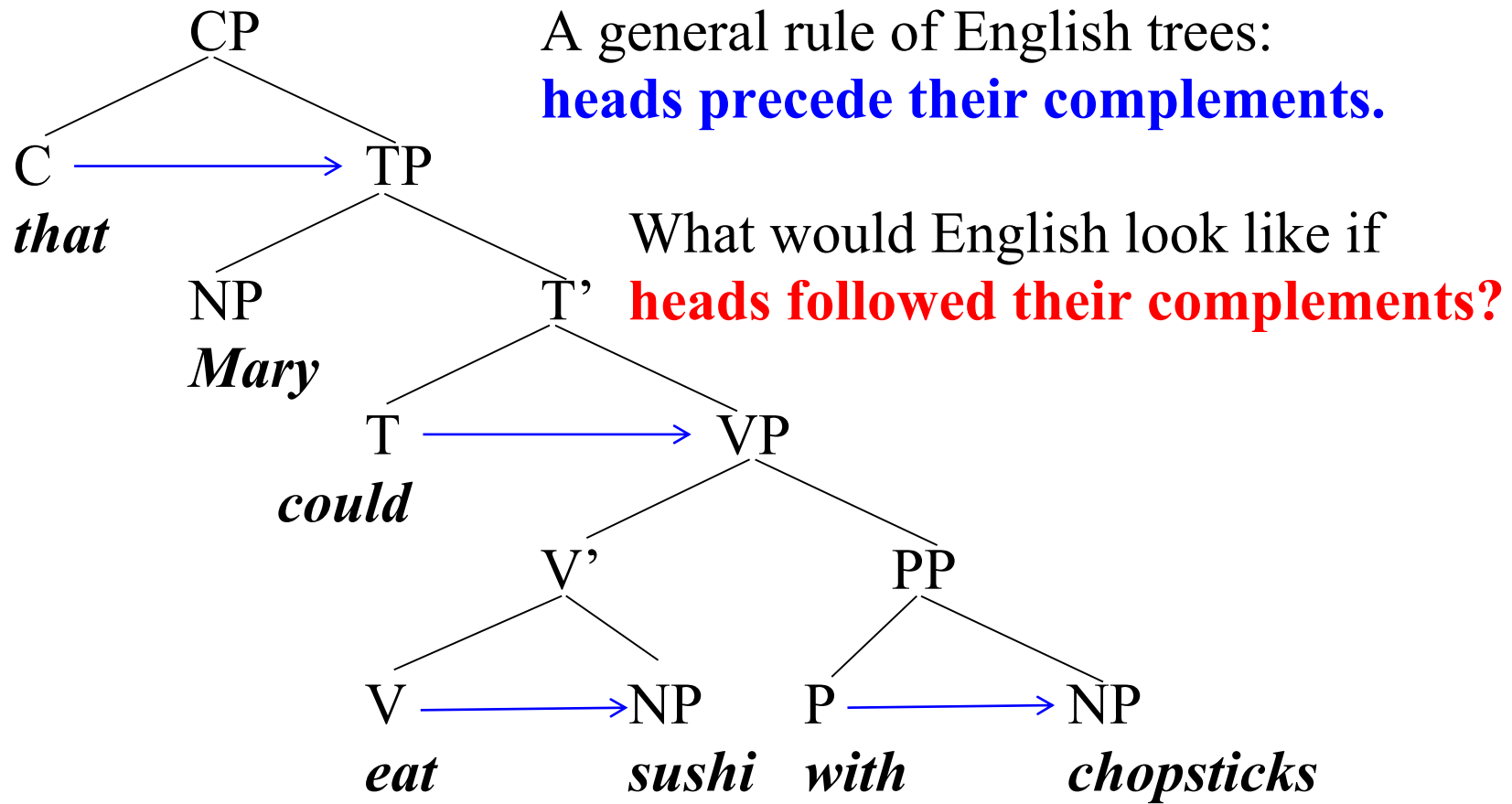


I thought [**that Mary could eat sushi with chopsticks**]

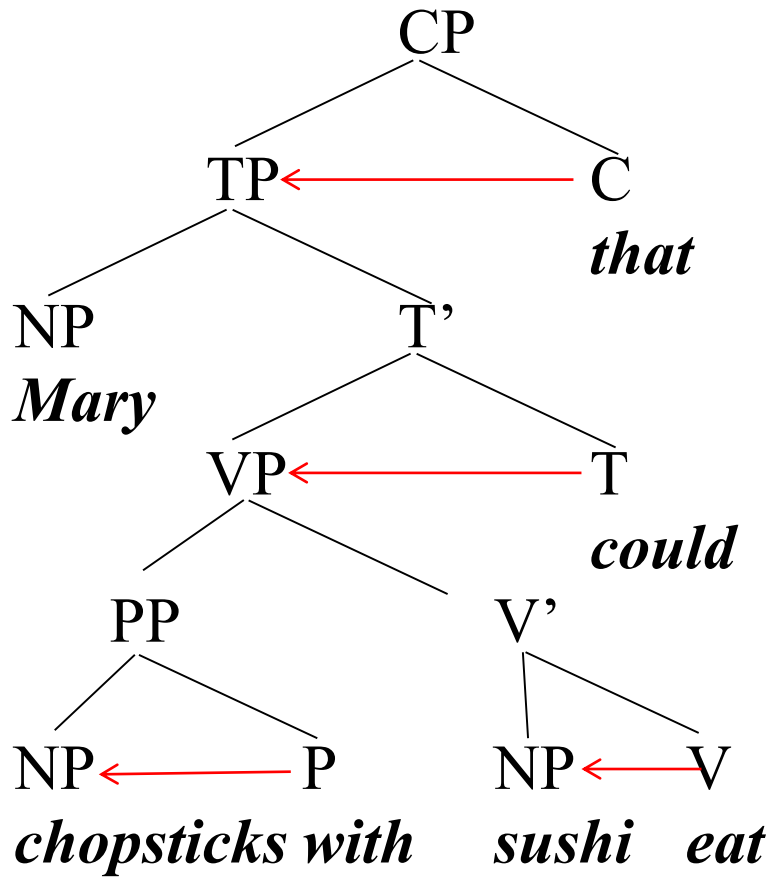
A general rule of English trees:
heads precede their complements.



I thought [**that Mary could eat sushi with chopsticks**]



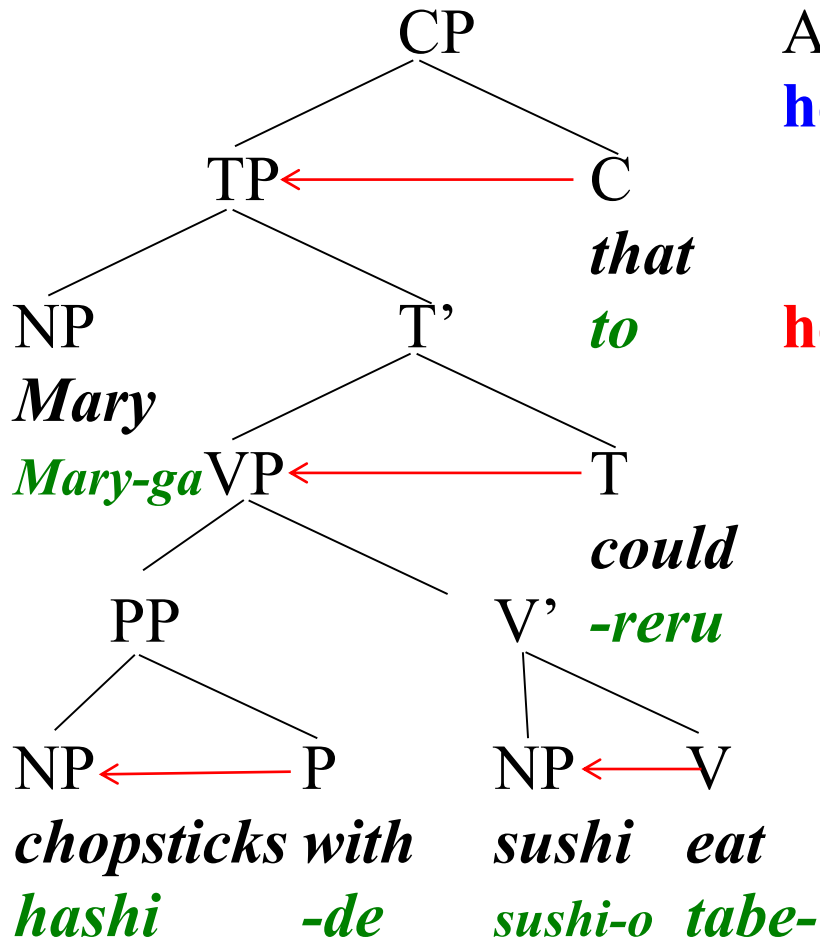
I thought [**that Mary could eat sushi with chopsticks**]



A general rule of English trees:
heads precede their complements.

What would English look like if
heads followed their complements?

I thought [that Mary could eat sushi with chopsticks]

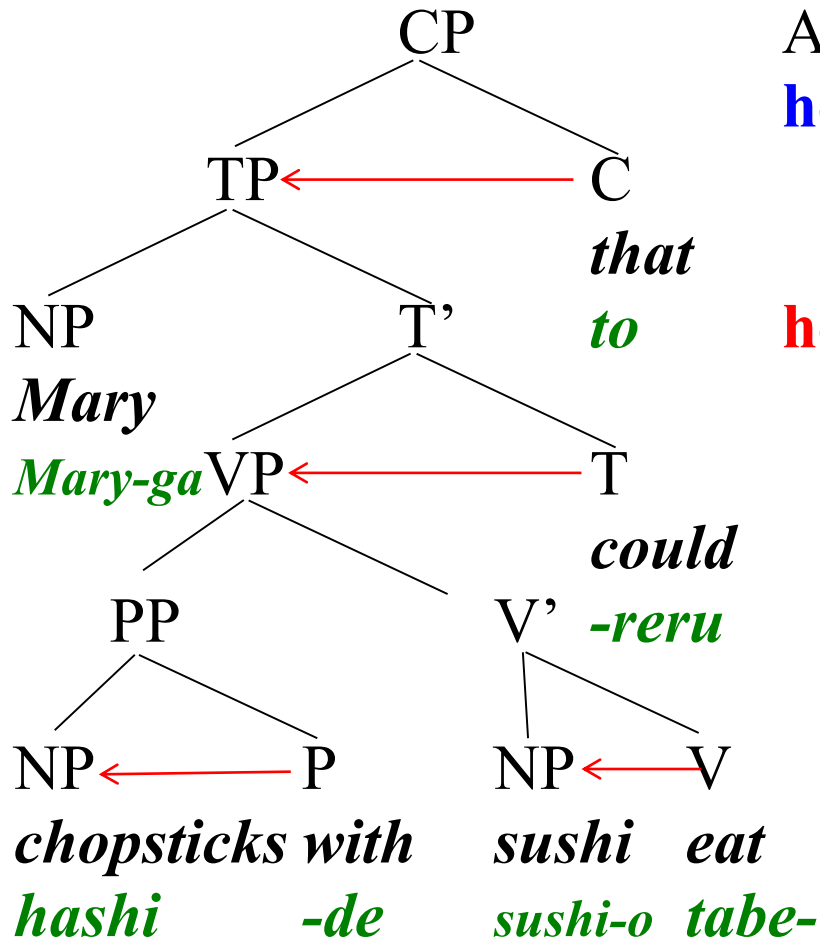


A general rule of English trees:
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What would English look like if
heads followed their complements?

It would look like Japanese...

I thought [that Mary could eat sushi with chopsticks]



A general rule of English trees:
heads precede their complements.

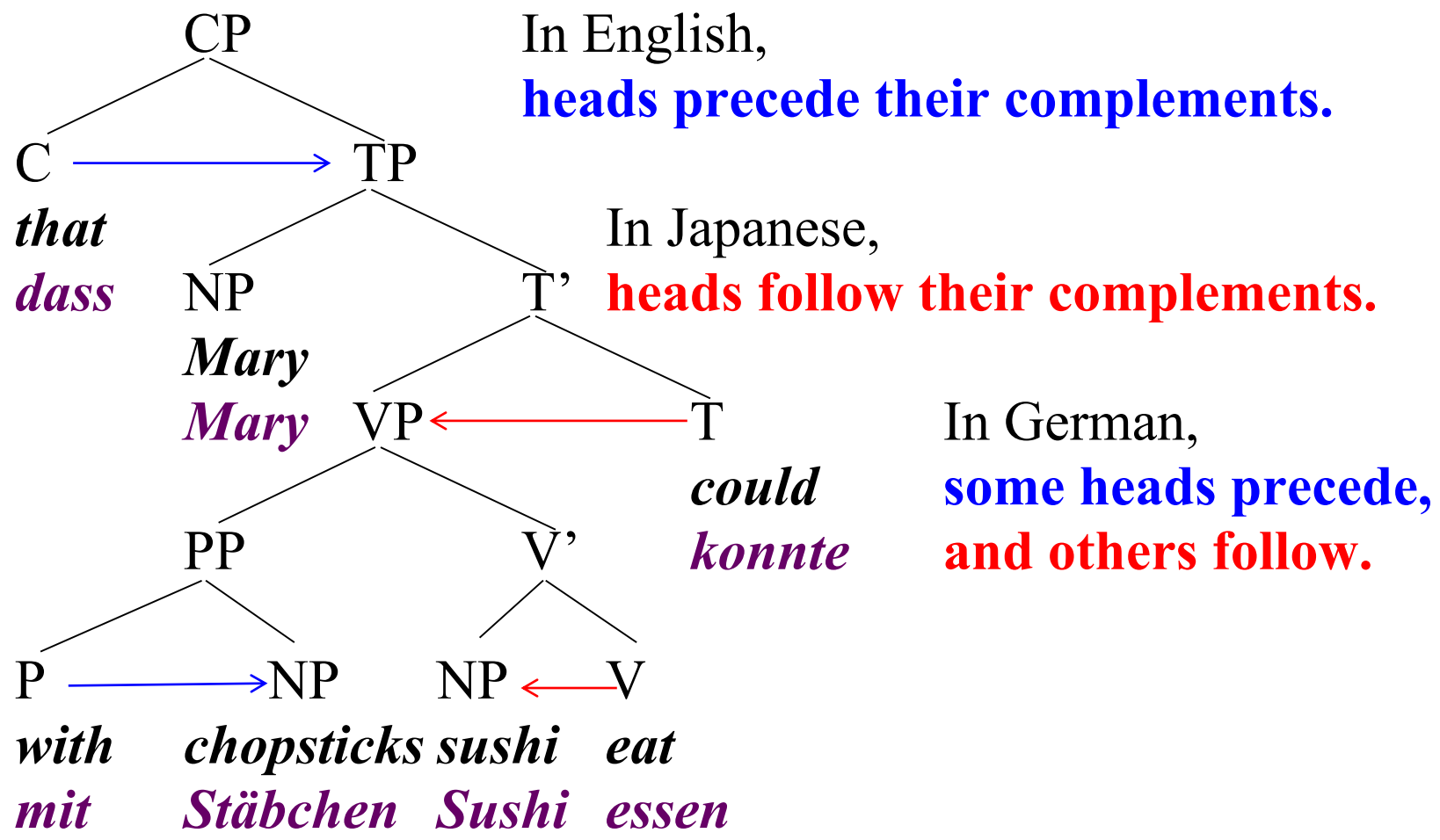
What would English look like if
heads followed their complements?

It would look like Japanese...
(and Tibetan, and Korean,
and Chaha, and Navajo,
and Basque, and...)

Languages like English (etc.) are sometimes called *head-initial*.
Languages like Japanese (etc.) are sometimes called *head-final*.

There are also languages with *mixed headedness*:

I thought [that Mary could eat sushi with chopsticks]



So, is every possible arrangement of head-direction attested?

Interestingly, there appear to be gaps...

I think...

[that John **has read** the book]

I think...

[**that John has read the book**]

[**dass John das Buch gelesen hat**] [*German*]

[**dat Jan wilt een huis kopen**] [*West Flemish*]

(that Jan wants a house to.buy)

I think...

[that John **has** **read** the book]

[dass John das Buch **gelesen hat**] [*German*]

[dat Jan **wilt** een huis **kopen**] [*West Flemish*]

(that Jan wants a house to.buy)

not attested:

[thät Jøhñ **rëäd** thè bøøk **hâş**]

I think...

[that John **has** **read** the book]

[dass John das Buch **gelesen hat**] [German]

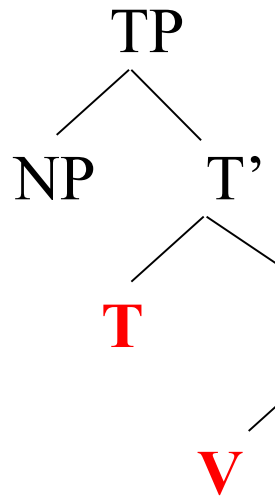
[dat Jan **wilt** een huis **kopen**] [West Flemish]

(that Jan wants a house to.buy)

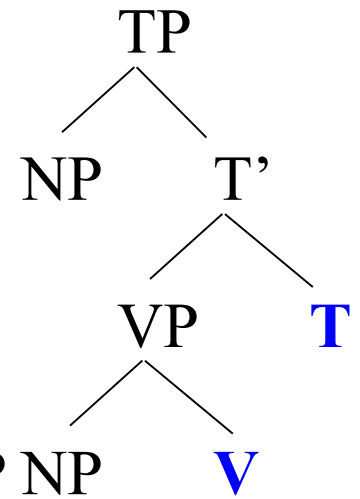
not attested:

[thät Jøhñ **reäð** thè bøøk **hâş**]

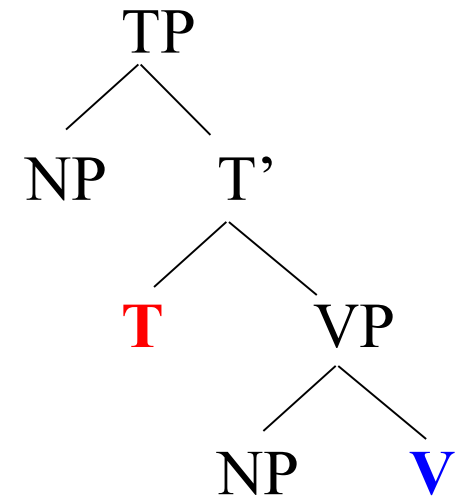
[English]



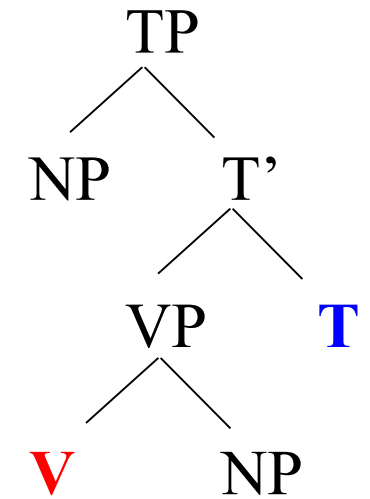
[German]



[West Flemish]



~~[NOBODY]~~



Finnish wh-question word orders:

Milloin Jussi **olisi** **kirjoittanut** romaanin?

when Jussi **would.have written** a.novel

‘When would Jussi have written a novel?’

Finnish wh-question word orders:

Milloin Jussi **olisi** **kirjoittanut** romaanin? [*English*
when Jussi **would.have written** a.novel order]
'When would Jussi have written a novel?'

Milloin Jussi romaanin **kirjoittanut olisi**? [*German* order]

Milloin Jussi **olisi** romaanin **kirjoittanut**? [*W. Flemish* order]

*Milloin Jussi **kirjoittanut** romaanin **olisi**?

Final-over-Final Constraint (FOFC):

For certain parts of the tree,

if A has in its complement another head B,

if A follows its complement,

B must also follow its complement.

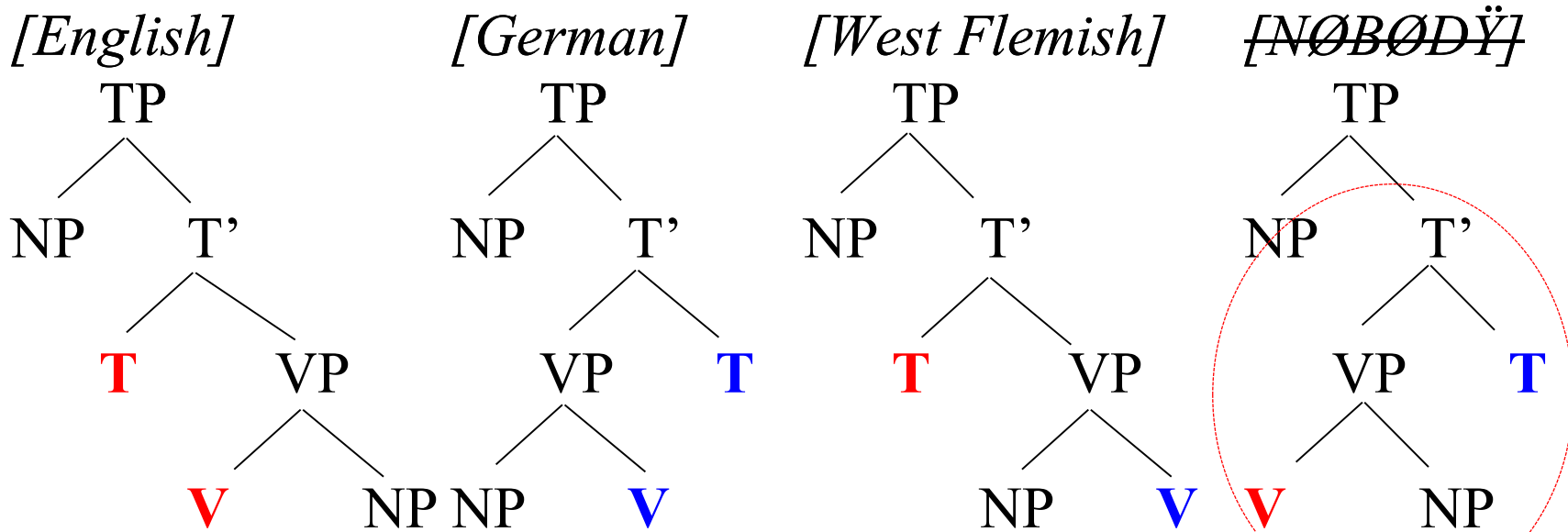
Final-over-Final Constraint (FOFC):

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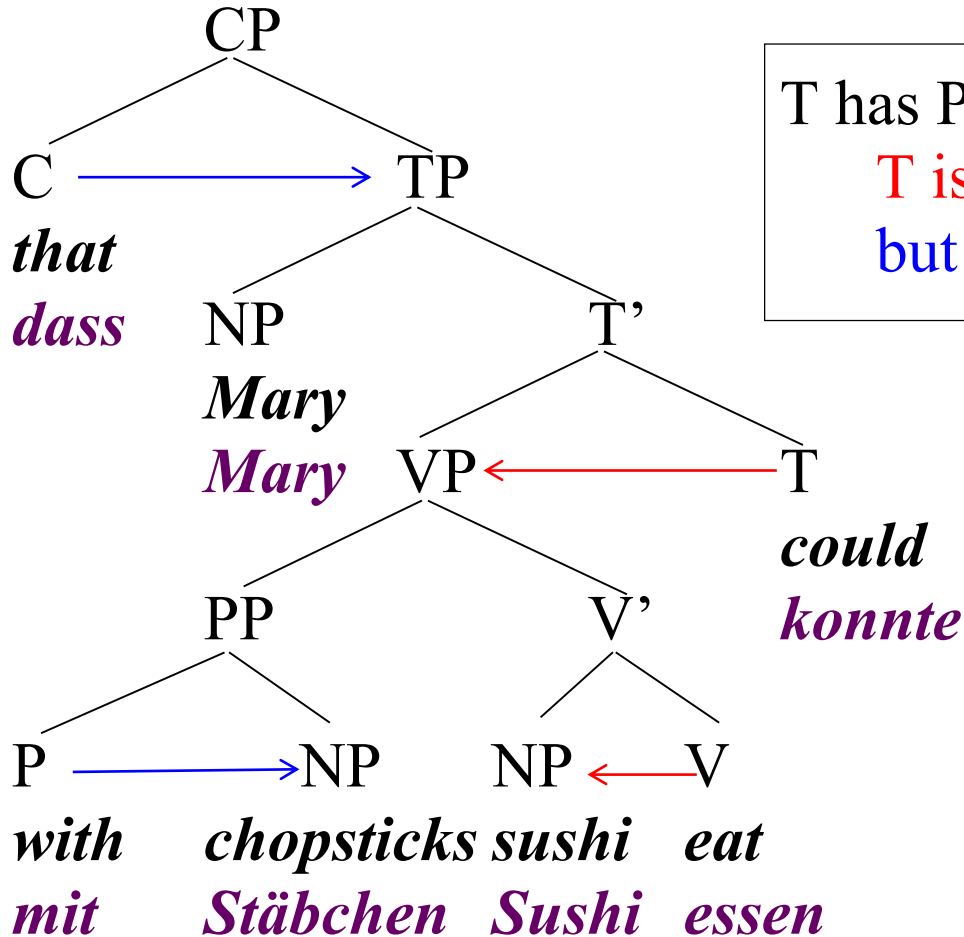
B must also follow its complement.



FOFC violation: T has V in its complement, and T follows VP, but V doesn't follow NP.

There have to be restrictions on where/how the FOFC applies:

I thought [that Mary could eat sushi with chopsticks]



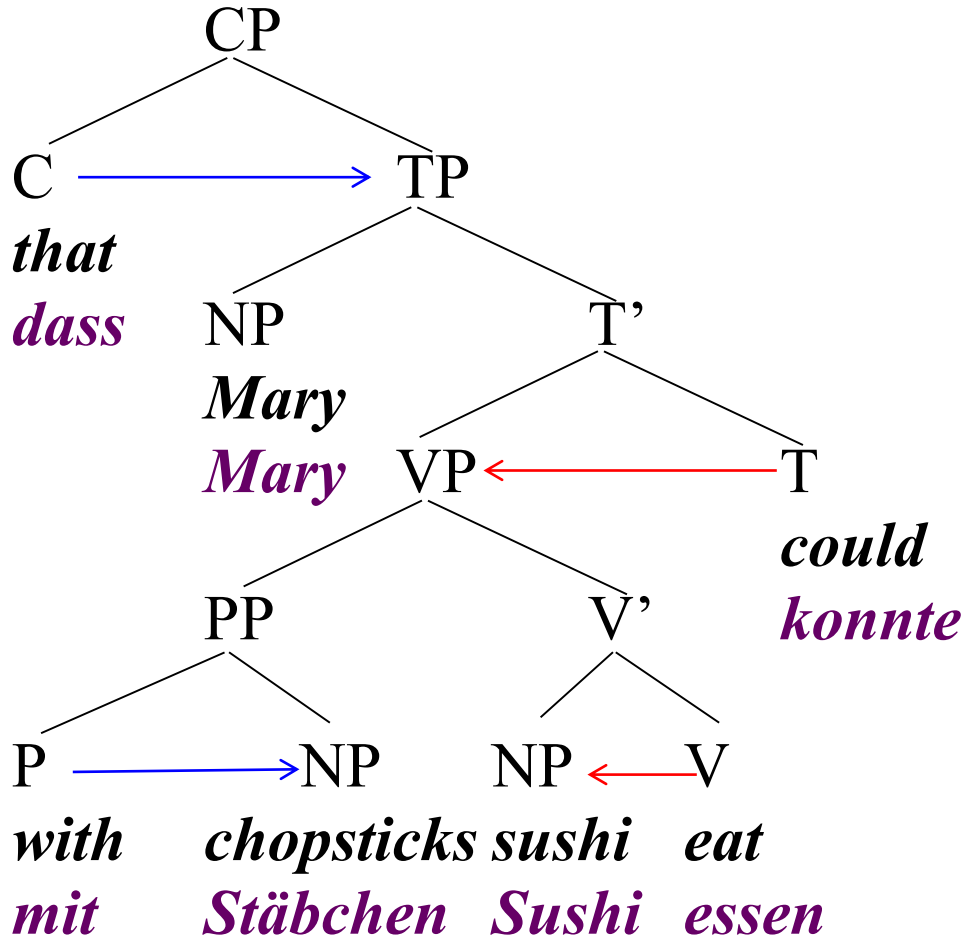
T has P in its complement,
T is head-final,
 but P is head-initial.

So, there are questions about the FOFC:
why is it true?
where in the clause is it true?

...but looks like another genuine case of a linguistic universal:
languages vary, but there are imaginable languages
we don't find.

Back to German

I thought [that Mary could eat sushi with chopsticks]



Back to German

This isn't the word order in main clauses, though:

Mary konnte mit Stäbchen Sushi essen.

Mary could with chopsticks sushi eat

'Mary could eat sushi with chopsticks'

Back to German

This isn't the word order in main clauses, though:

Mary konnte mit Stäbchen Sushi essen.

Mary could with chopsticks sushi eat

'Mary could eat sushi with chopsticks'

Mit Stäbchen konnte Mary Sushi essen.

Back to German

This isn't the word order in main clauses, though:

Mary konnte mit Stäbchen Sushi essen.

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Mit Stäbchen konnte Mary Sushi essen.

Sushi konnte Mary mit Stäbchen essen.

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Verb-Second (V2): German (main?) clauses must start with *exactly one phrase*, followed by the 'verb'.

Back to German

This isn't the word order in main clauses, though:

Verb-Second (V2): German (main?) clauses must start with *exactly one phrase*, followed by the 'verb'.

Not just main clauses, though:

Er sagte, [Mary wolle mit Stäbchen Sushi essen]

he said Mary want-SUBJ with chopsticks sushi eat

'He said Mary wanted to eat sushi with chopsticks'

Back to German

This isn't the word order in main clauses, though:

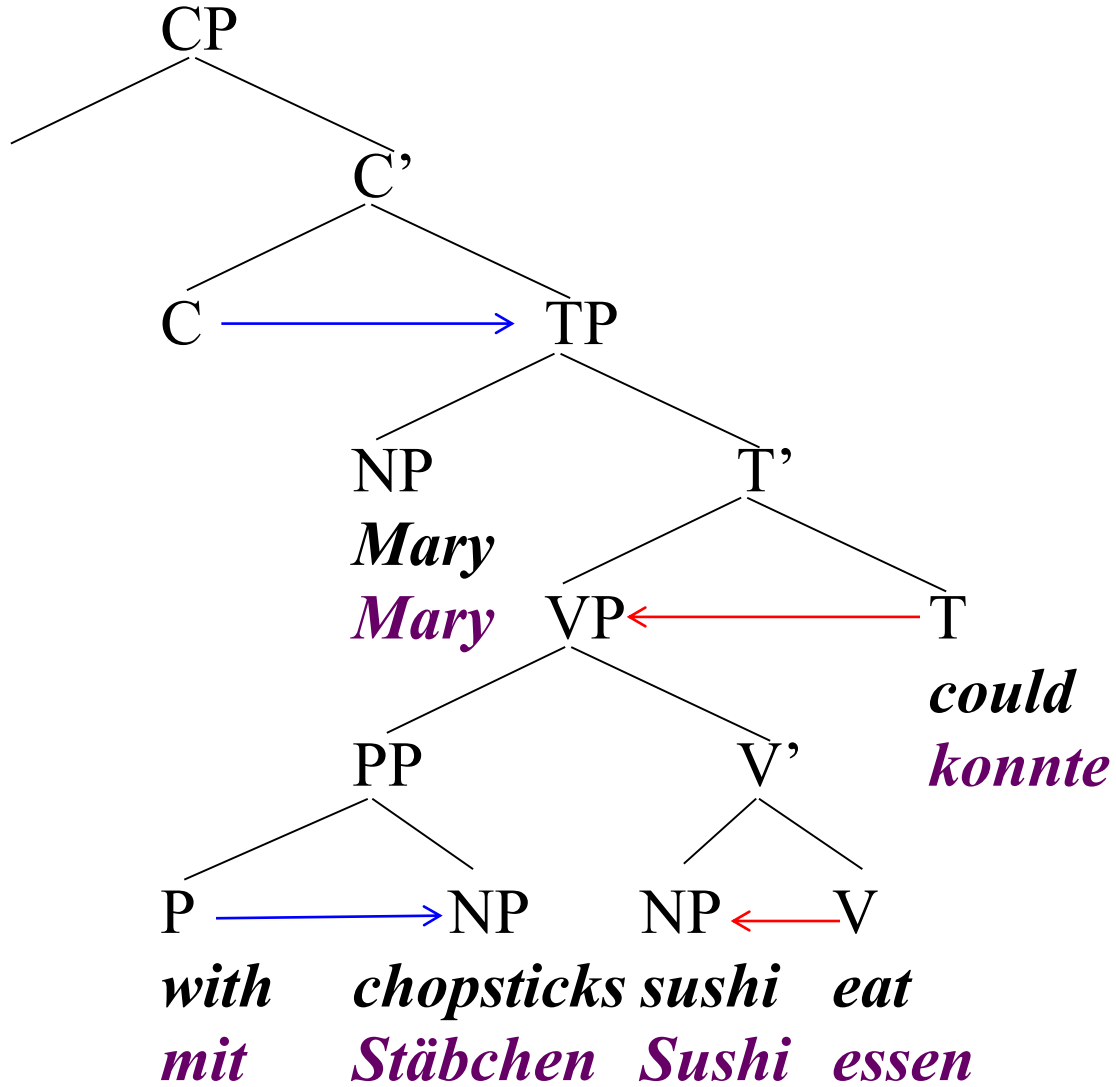
Verb-Second (V2): German (main?) clauses must start with *exactly one phrase*, followed by the 'verb'.

Not just main clauses, though:

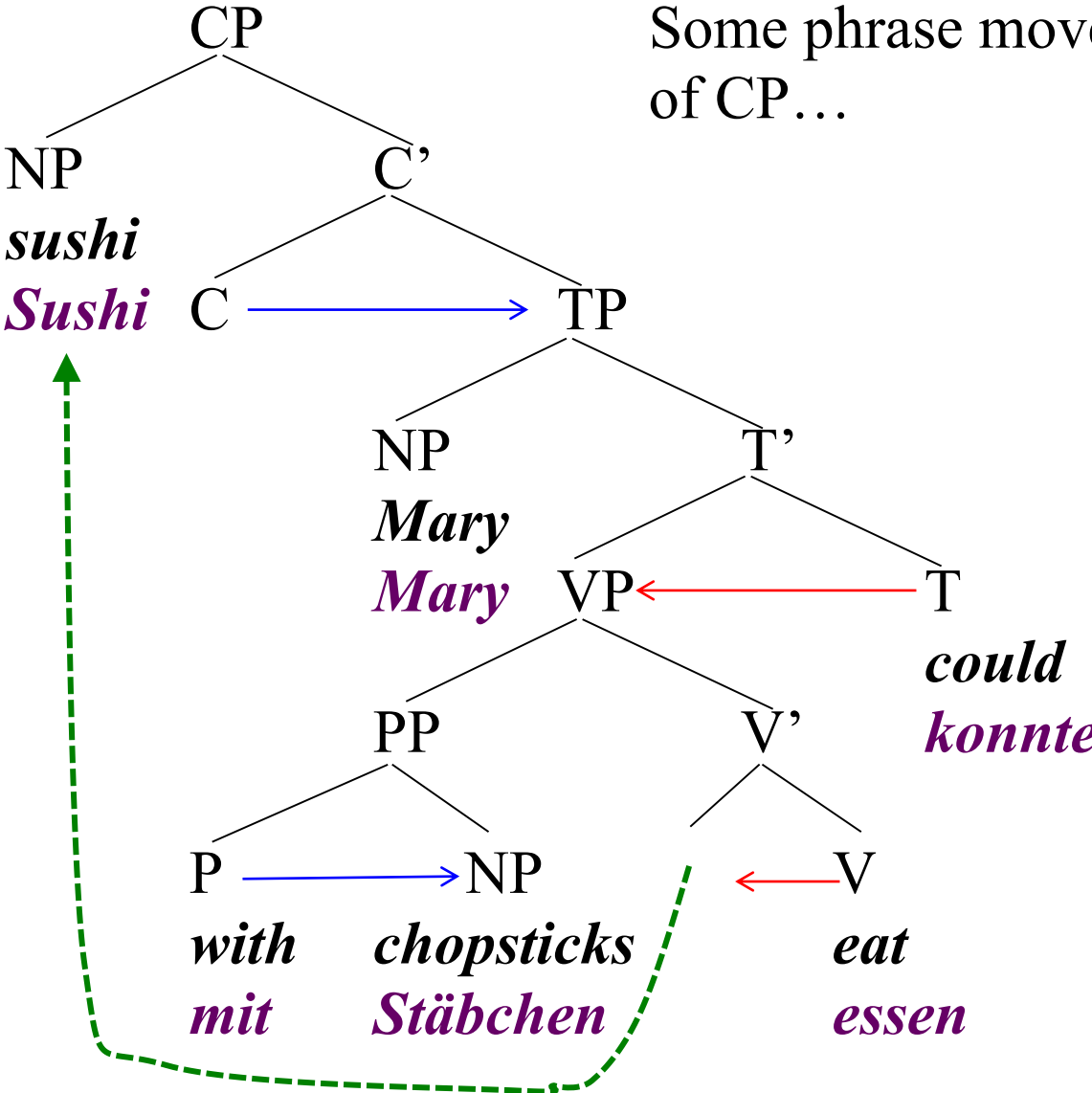
Er sagte, [Mary wolle mit Stäbchen Sushi essen]
he said Mary want-SUBJ with chopsticks sushi eat
'He said Mary wanted to eat sushi with chopsticks'

Er sagte, [dass Mary mit Stäbchen Sushi essen wolle]
he said that Mary with chopsticks sushi eat want-SUBJ

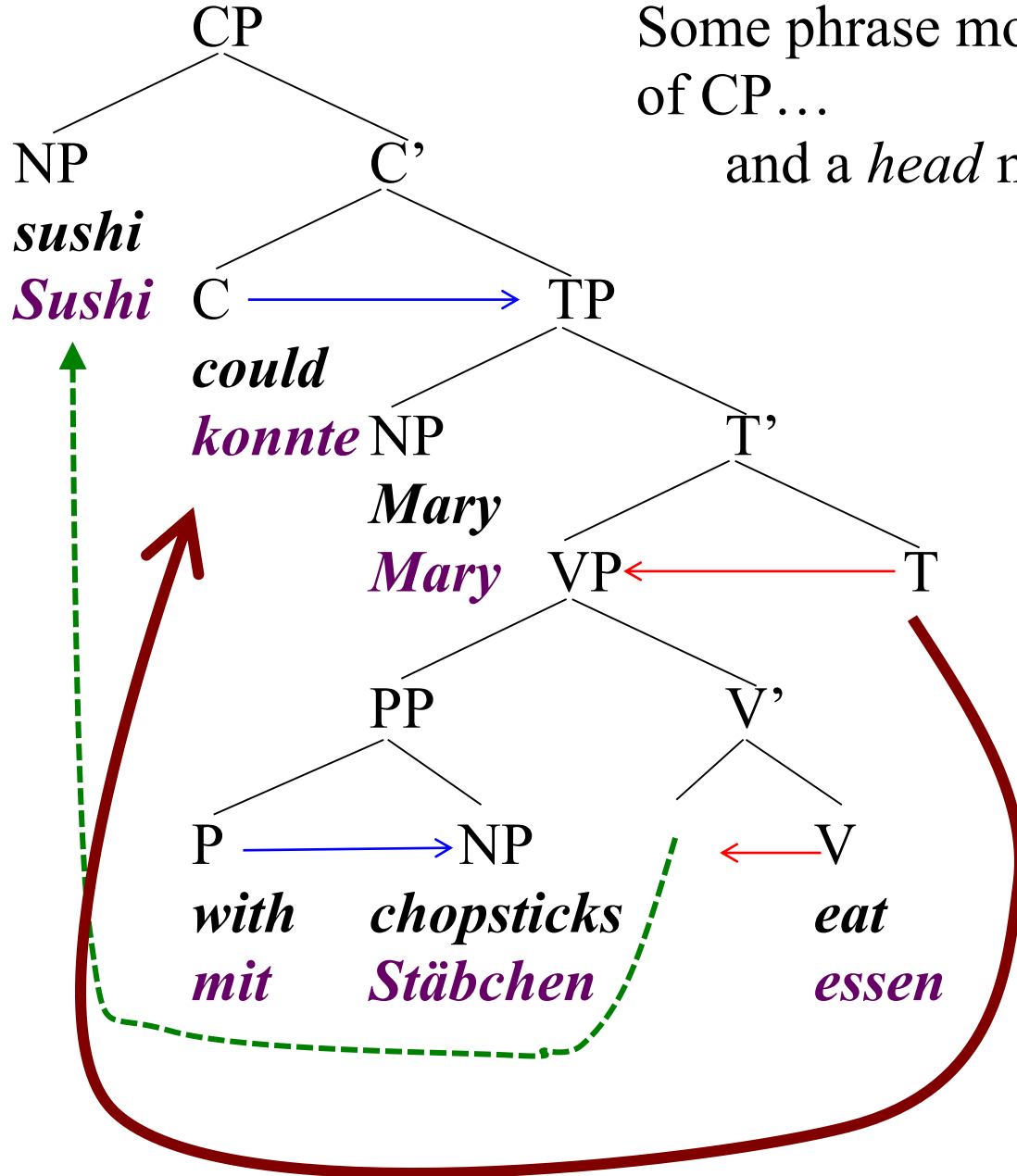
→ verb-second appears *in clauses where there is no C*.



Some phrase moves to the specifier of CP...



Some phrase moves to the specifier of CP...
and a *head* moves to C:



Cross-linguistically common:

Kashmiri

raman dits shamas kitab.
ram+infl gave sham+infl book
'Ram gave Sham a book'

ram chu shamas kitab divan
ram+infl is sham+infl book giving
'Ram is giving Sham a book'

varI-varI chu ram bat khevan.
slowly is ram rice eating
'Ram is eating rice slowly'

Vata (Kru, Ivory Coast)

N le bI saká.

I eat now rice

'I am eating rice now'

n ká yO-O slé-e mÍ saká nyÉ

I will child-the house-the in rice give

'I will give the child rice in the house'

à la saká li

we have rice eat

'we have eaten rice'

...and Karitiana (Tupi), Ingush (Nakh-Daghestanian),
Dinka (Nilotic)...

So, Verb-Second is everywhere. In our system, it consists of:
head-movement to (initial) C, and
movement of a phrase to the specifier of CP.

So, Verb-Second is everywhere. In our system, it consists of:
head-movement to (initial) C, and
movement of a phrase to the specifier of CP.

We know that C can be final (e.g., Japanese).
So is there a “verb-penultimate” language?

No such language has ever been found.

And although there are “verb-second” languages...

...there are no “direct-object-second” languages, or “subject-second” languages.

Moral:

languages differ, but in constrained ways; you keep getting the same peculiar patterns over and over again, all over the world. And certain peculiar patterns resolutely fail to show up.

→ **Universal Grammar**

Moral:

languages differ, but in constrained ways; you keep getting the same peculiar patterns over and over again, all over the world. And certain peculiar patterns resolutely fail to show up.

→ Universal Grammar

in this particular case:

- no V-penultimate
- no wh-movement to the right

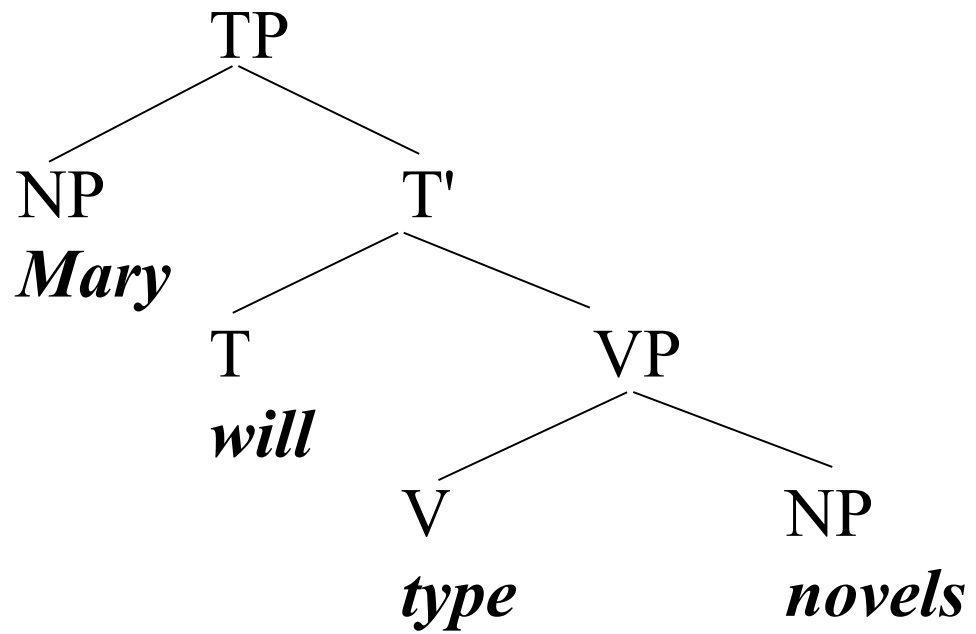
→ although *heads* may either precede or follow their sisters, *specifiers* always precede their sisters?

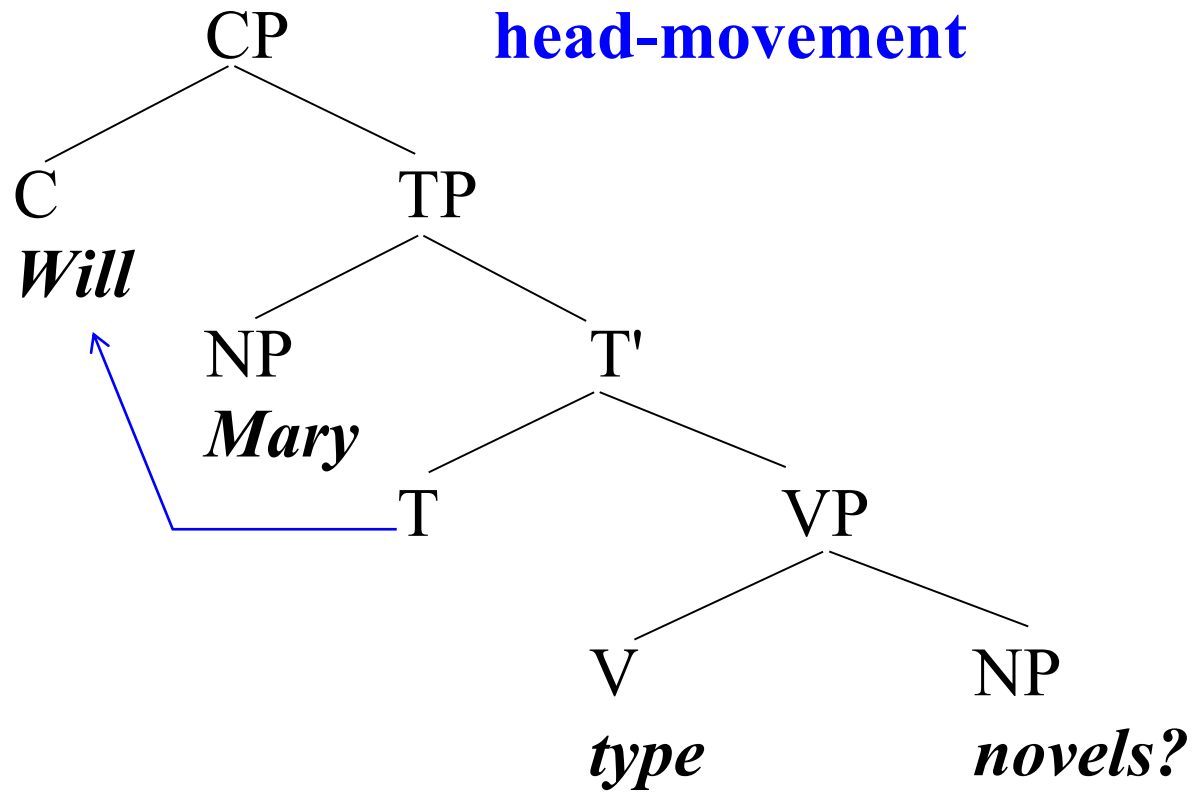
We've now seen several kinds of movement:

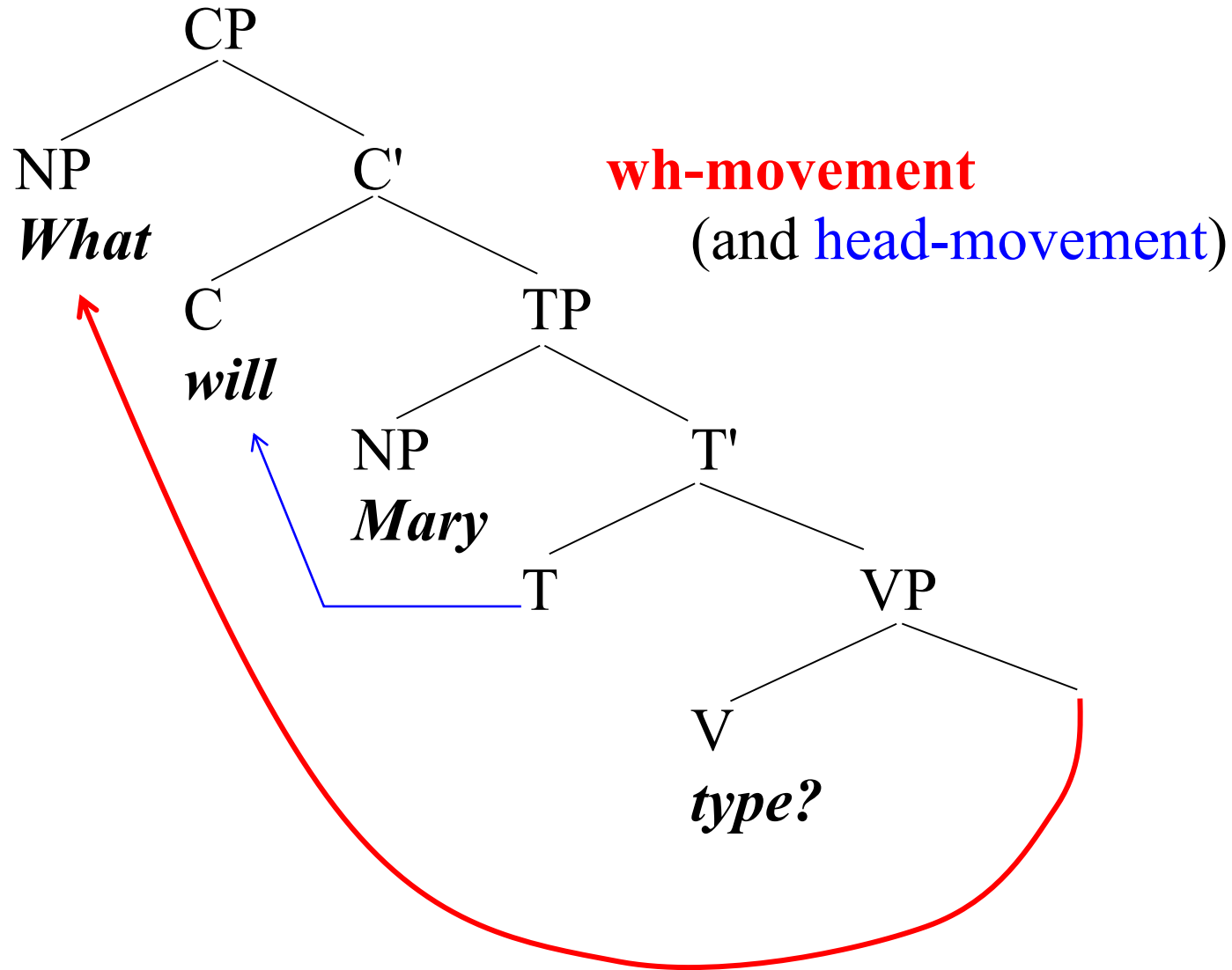
wh-movement

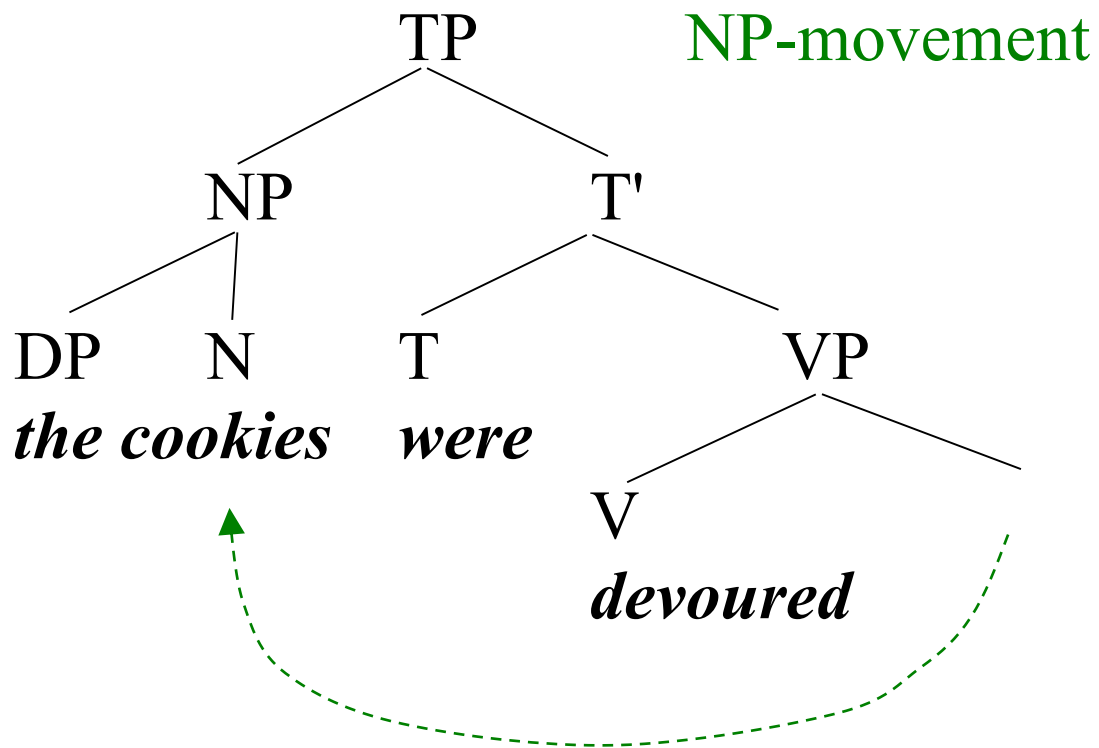
head-movement

NP-movement









We've seen that not all languages have all of these movements:

no wh-movement:

C'am^wit mir cək^wərəcɲim? [Chaha]

C'am^wit what cooked

'What did C'am^wit cook?'

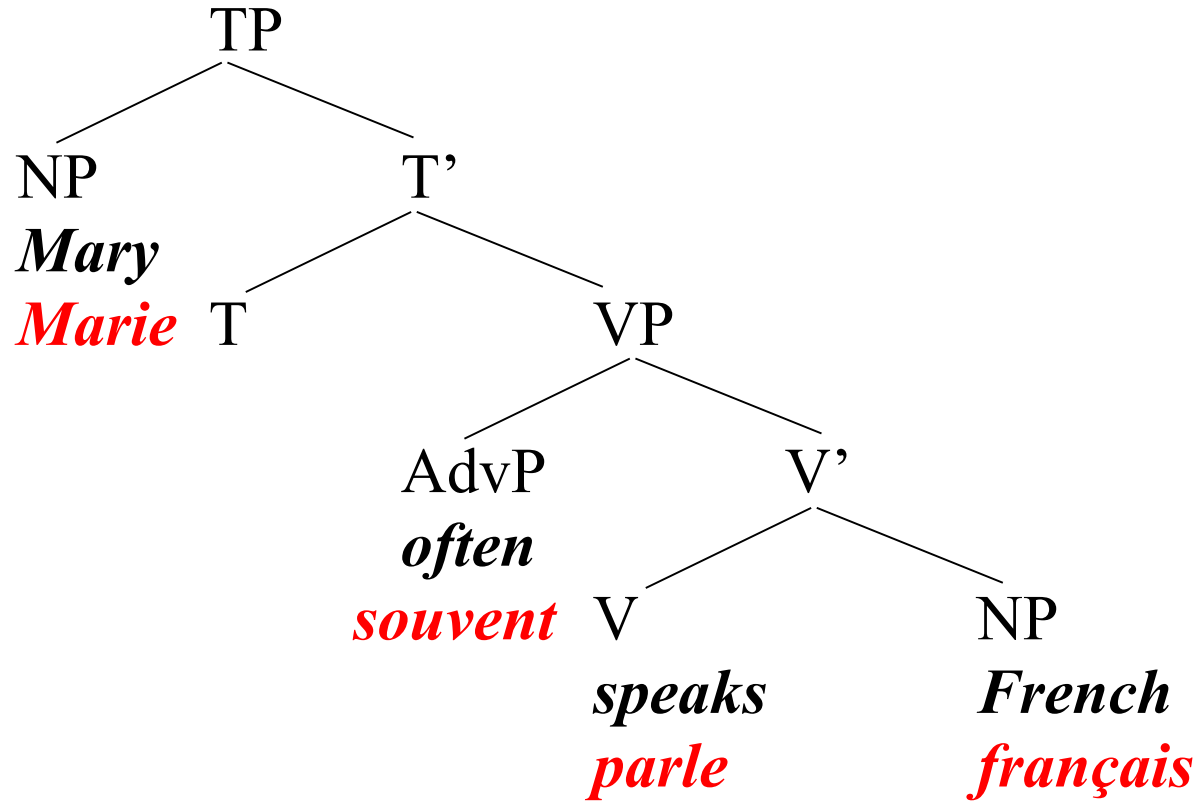
no NP-movement:

Sono stati mangiati i biscotti [Italian]

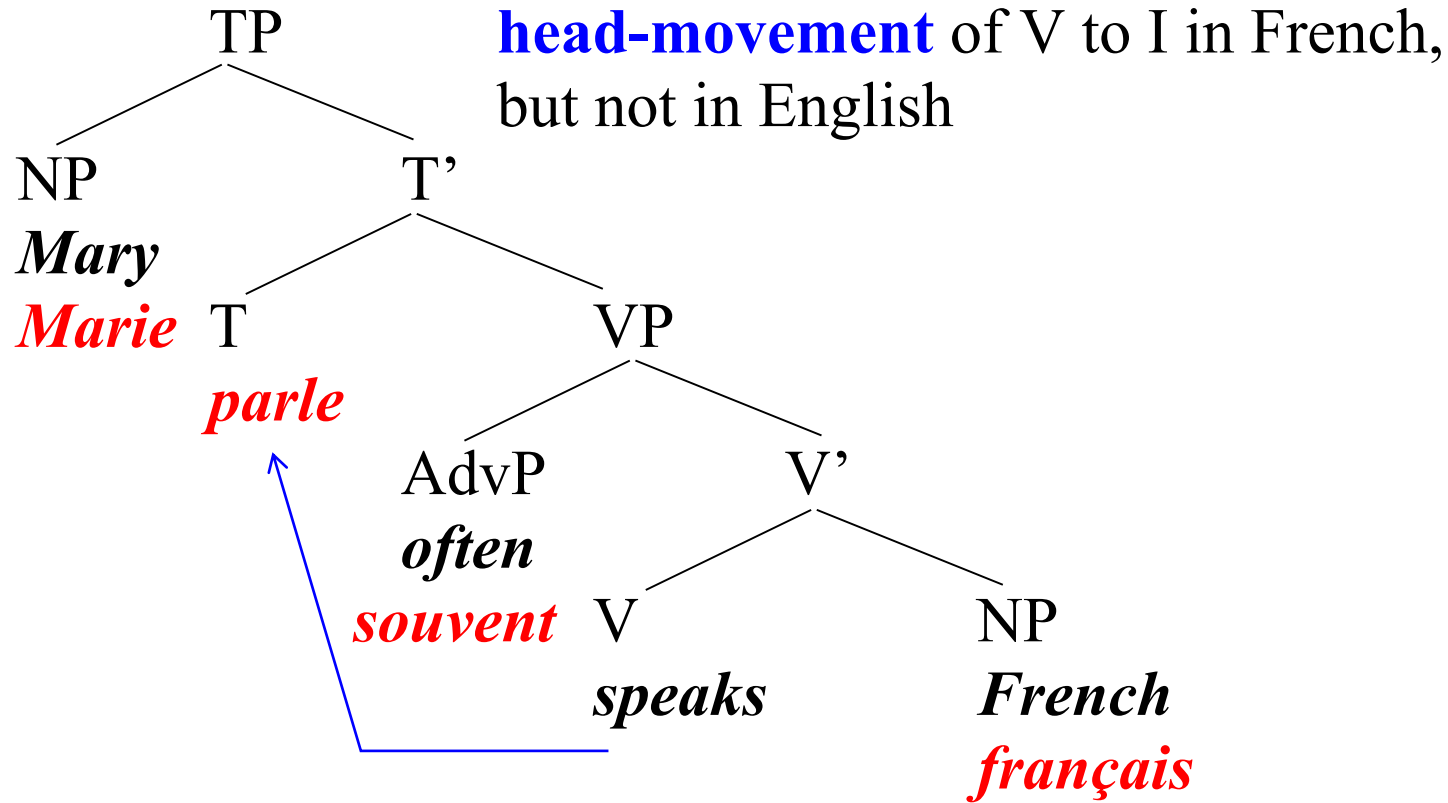
are been eaten the cookies

'The cookies have been eaten'

There are also cross-linguistic differences in the distribution of head-movement:



There are also cross-linguistic differences in the distribution of head-movement:



I haven't talked much about *why* these movements happen, and I won't much, partly for reasons of time.

But I do want to talk some about the conditions on movement.

Movement isn't always possible...

I ordered a hamburger and French fries.

***What** did you order a hamburger and _____ ?



[*Coordinate Structure
Constraint*]

Movement isn't always possible...

I ordered a hamburger and French fries.

***What** did you order a hamburger and _____ ?



[*Coordinate Structure
Constraint*]

I think Mary should win the election.

I think **that** Mary should win the election.

Movement isn't always possible...


I ordered a hamburger and French fries. [Coordinate Structure
***What** did you order a hamburger and ___? Constraint]




I think Mary should win the election.

I think **that** Mary should win the election.

Who do you think ___ should win the election? [*that-trace effect*]



***Who** do you think **that** ___ should win the election?



Movement isn't always possible...


I ordered a hamburger and French fries. [*Coordinate Structure Constraint*]
***What** did you order a hamburger and ___ ?




I think Mary should win the election.

I think **that** Mary should win the election.


Who do you think ___ should win the election? [*that-trace effect*]



***Who** do you think **that** ___ should win the election?



Who do you think (**that**) we should vote for ___ ?

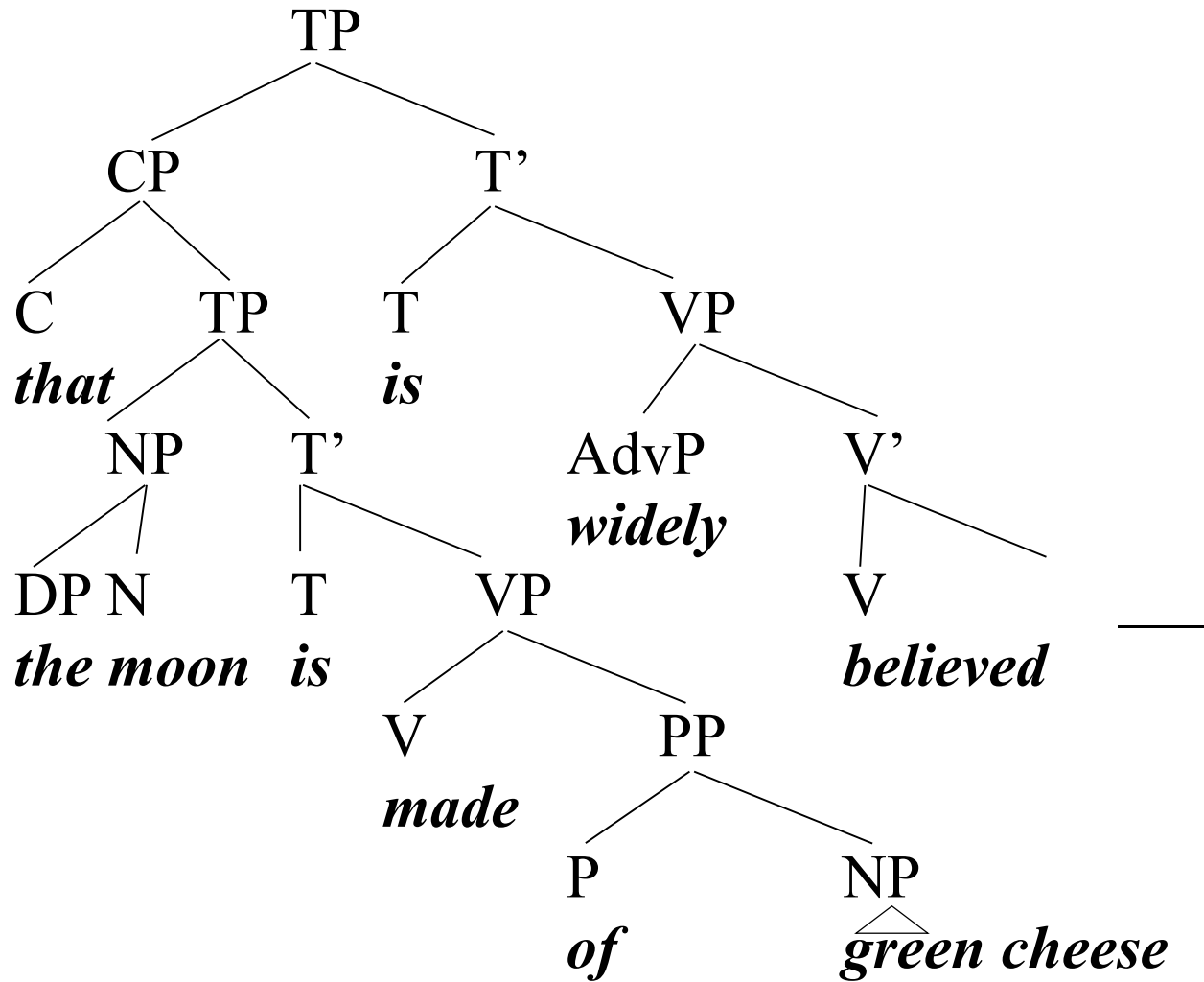


Movement isn't always possible...

People believe that the moon is made of green cheese.

[That the moon is made of green cheese] is widely believed.

[That the moon is made of green cheese] is widely believed.



Movement isn't always possible...

People believe that the moon is made of green cheese.

[That the moon is made of green cheese] is widely believed.

What do people believe that the moon is made of ___ ?



Movement isn't always possible...

People believe that the moon is made of green cheese.

[That the moon is made of green cheese] is widely believed.

What do people believe that the moon is made of ___ ?



***What** is [that the moon is made of ___] widely believed?



[*Subject Island*]

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.

(we will mostly know ‘shortest’ when we see it. One formal definition is on the next slide; there is no need to commit this formal definition to memory)

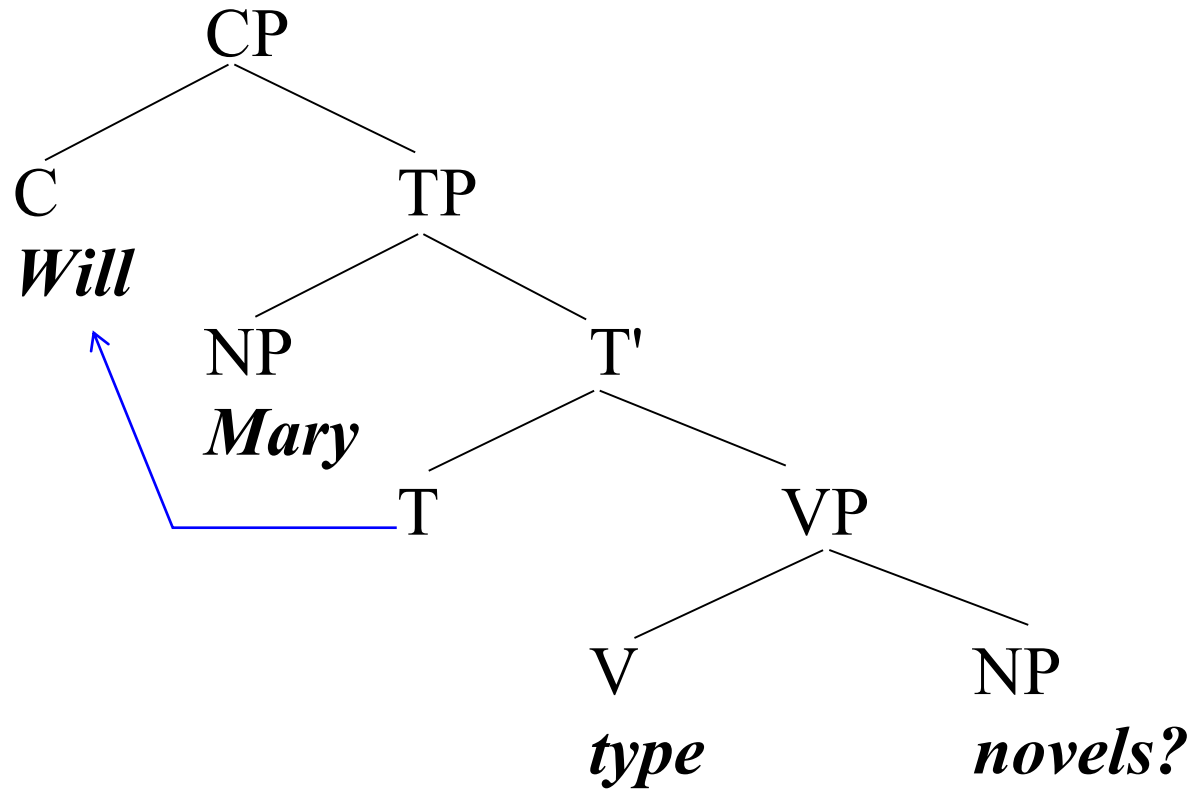
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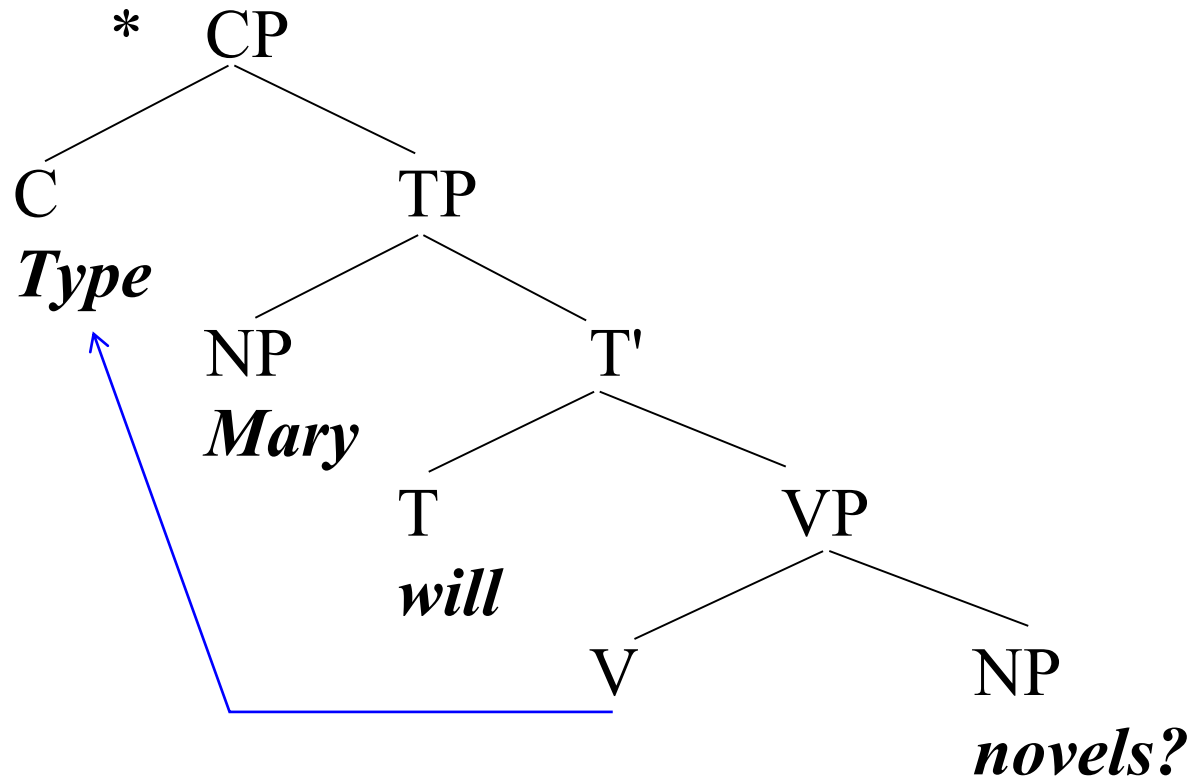
***shortest**: let the **path** of a movement be the set of nodes that dominate the original position of the moved item, and do not dominate the landing site.

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

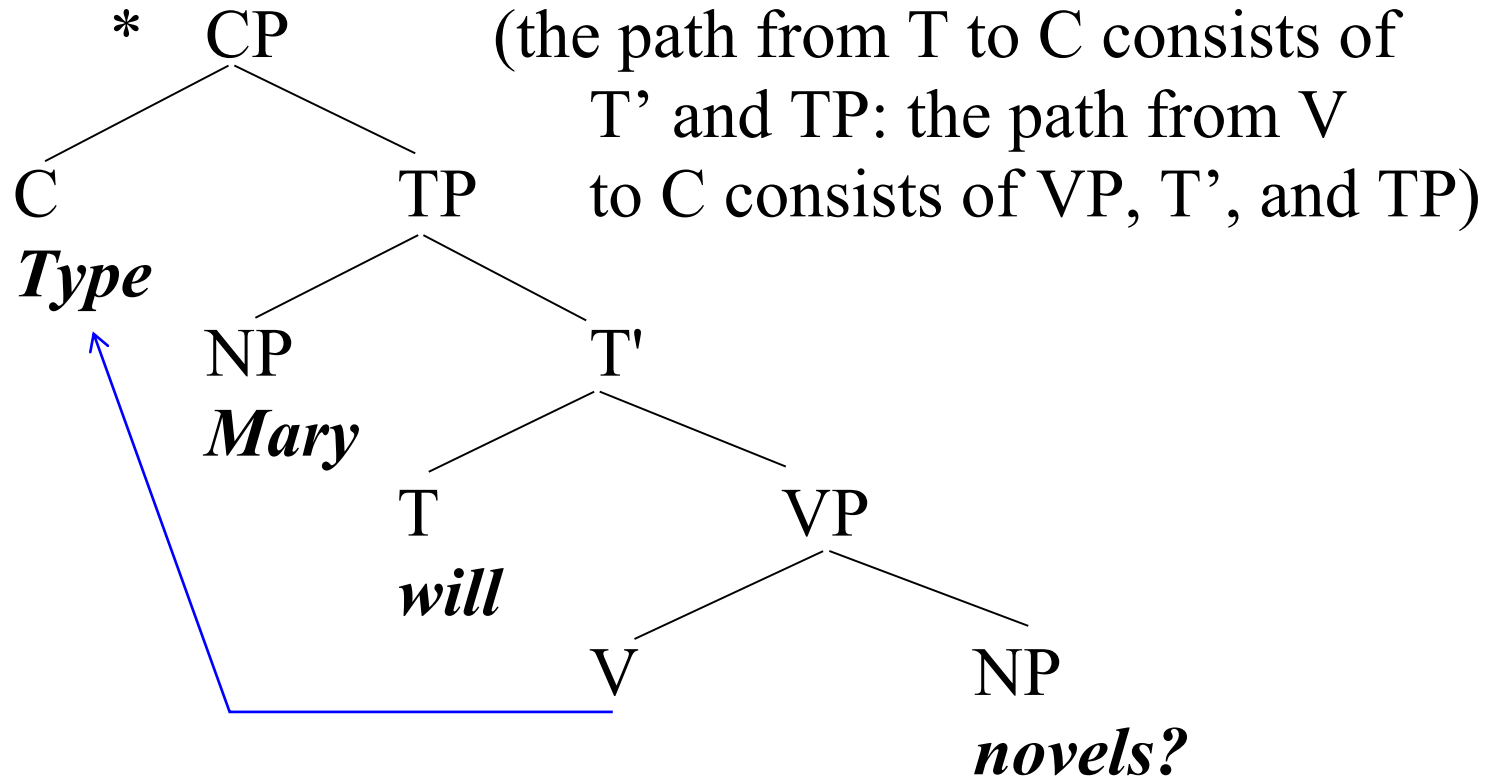
Shortest Move, case #1: the Head Movement Constraint



Shortest Move, case #1: the Head Movement Constraint



Shortest Move, case #1: the Head Movement Constraint



Shortest Move, case #2: Superiority

Who ___ bought **what**?

***What** did **who** buy ___ ?

What did you give ___ to **whom**?

***Who** did you give **what** to ___ ?

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