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# VP Ellipsis Revisited:

#### Optional deletion of non-finite auxiliaries

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## Overview

- 1. Introduction: the pattern
- 2. Preliminaries: the verbal structure
- 3. Analysis, Part I: the ellipsis site
- 4. Analysis, Part II: auxiliary ellipsis
- 5. Extending the analysis: VP fronting
- 6. Digging deeper: predicate ellipsis
- 7. Conclusion and further issues







#### Introduction: the pattern (1)

VP ellipsis (VPE) = non-pronunciation of the verb phrase

- (1) Betsy was hassled by the police, and Peter was, too.
  - = ... and Peter was [hassled by the police], too.

Finite auxiliary remains overt. (English) main verb is always deleted, even when finite.

- (2) Betsy ate an apple, and Peter **did**, too.
  - = ... and Peter [ate an apple], too.







## Introduction: the pattern (2)

Standardly:

Under a deletion approach to ellipsis, VPE is analysed as PF deletion of VP, or more recently vP, licensed by the auxiliary or the T head (Johnson 2001, 2004; Merchant 2001; Gengel 2007 and many others)







### Introduction: the pattern (3)

#### Main research question in this talk:

What happens in sentences with more than one auxiliary?

(3) Betsy must have been being hassled.

= finite modal – perfect *HAVE* – progressive *BE* – passive *BE* – V







### Introduction: the pattern (4)

Answer: More than just VP/vP is targeted by VPE (Akmajian & Wasow 1975, Sag 1976).

- (4) Betsy must have been being hassled by the police, and...
  - a. \* Peter must have been being hassled by the police, too.
  - b. Peter must have been being hassled by the police, too.
  - c. Peter must <u>have</u> <u>been</u> <del>being</del> hassled by the police, too.
  - d.\* Peter must have been being hassled by the police, too.







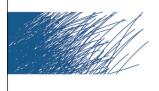
#### Introduction: the pattern (5)

Akmajian & Wasow (1975), Sag (1976):

- Lexical verb obligatorily elided under VPE
- Being obligatorily elided under VPE
- Have, modals and finite auxiliaries never elided under VPE
- Be/been optionally elided under VPE

	Modal/ finite aux	Have	Be	Been	Being	Lexical V
Elided	*	*	(✓)	(✓)	<b>√</b>	<b>√</b>

- Aim: explore and explain this observation
  - !!! Discussion on deletion of *have*: see later







### Introduction: the pattern (6)

#### Main claims of this talk:

- VP Ellipsis targets the progressive aspectual layer (when it is present in the derivation).
- Optional auxiliary ellipsis = optional raising of auxiliaries out of the ellipsis site + rescue by PF deletion of the non-raised auxiliaries
- VPE = predicate ellipsis







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#### Preliminaries: The verbal structure (1)

ProgP

vΡ

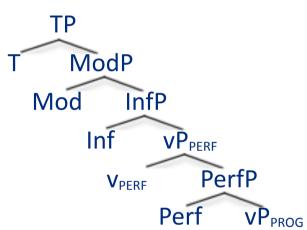
Voice

VoiceP

Prog

Bošković (2012), Cinque (1999), Harwood (2011):

 $V_{PROG}$ 



- ▶ Aspectual layer + vP shell with auxiliary
- ▶ WYSIWYG approach
- ▶ Split layers = necessary for auxiliary raising

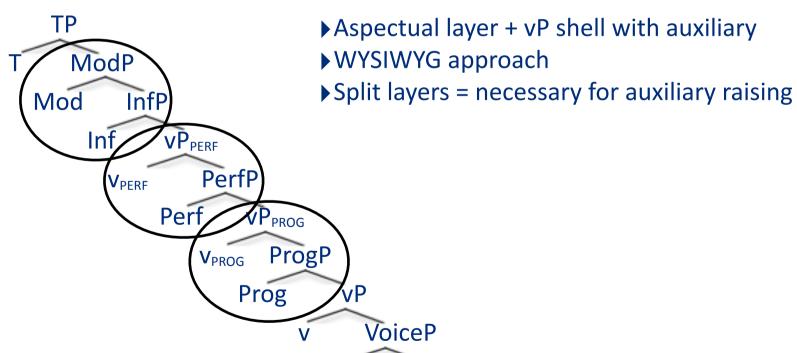






#### Preliminaries: The verbal structure (1)

Bošković (2012), Cinque (1999), Harwood (2011):



Voice

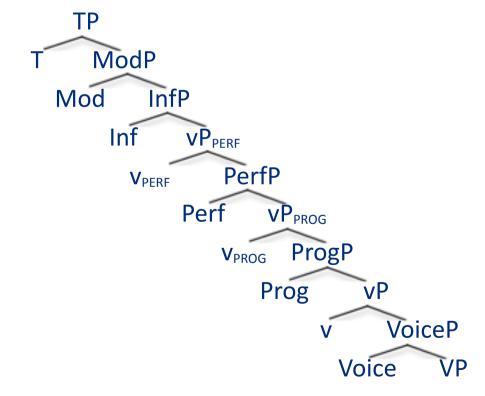






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## Preliminaries: The verbal structure (2)

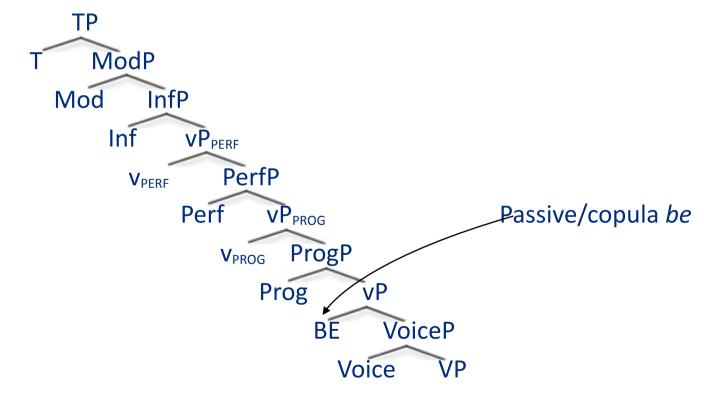








## Preliminaries: The verbal structure (2)

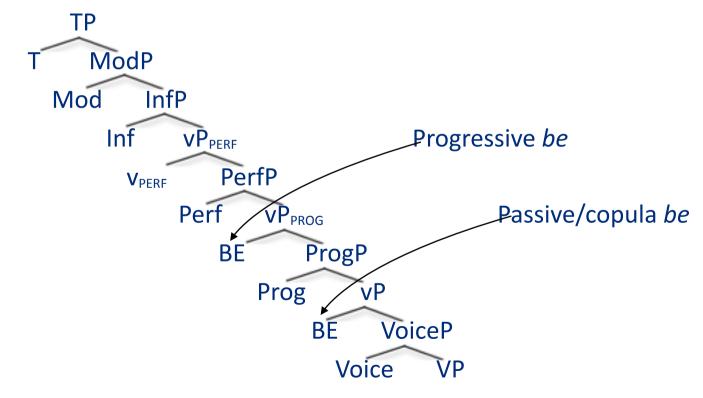








### Preliminaries: The verbal structure (2)

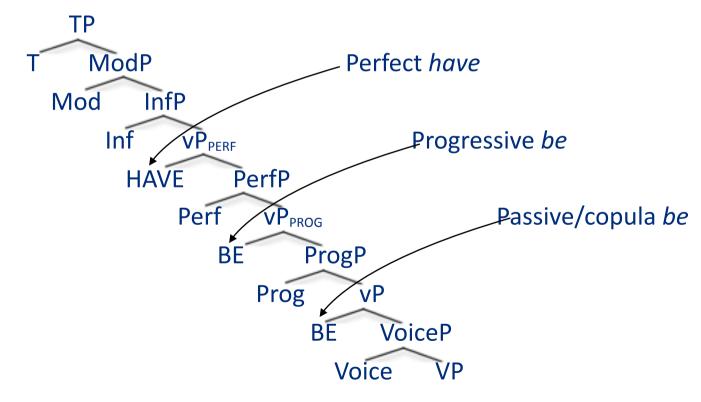








### Preliminaries: The verbal structure (2)

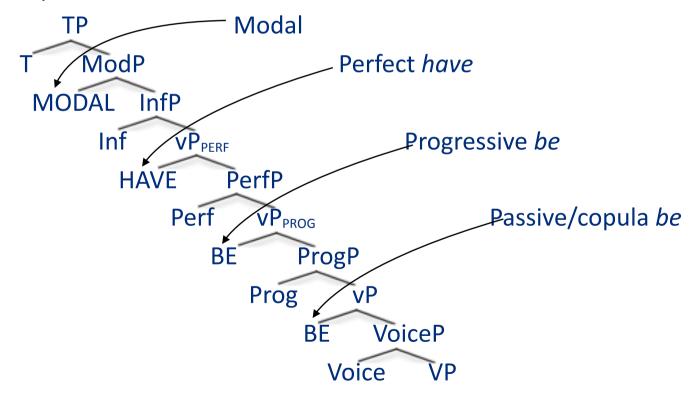








### Preliminaries: The verbal structure (2)



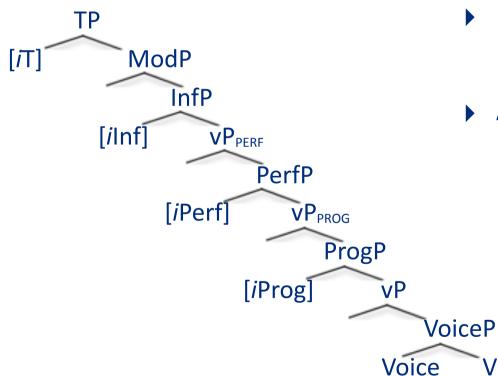






#### Preliminaries: The verbal structure (3)

Lasnik (1995): Auxiliary raising for feature checking



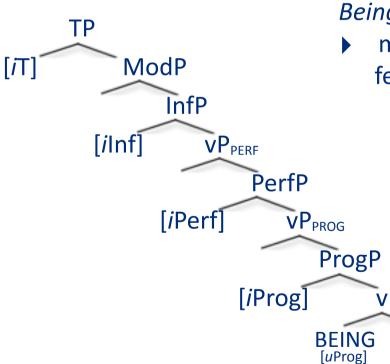
- ► Each aspectual head bears an interpretable inflectional feature (Bjorkman 2012, Lasnik 1995)
- Auxiliaries are merged inflected, but their morphological form has to be licensed by checking of a PF feature against the relevant aspectual head (Chomsky 1993, Lasnik 1995)







### Preliminaries: The verbal structure (3)

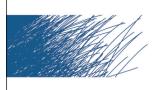


Being can only be copular or passive BE.

VoiceP

Voice

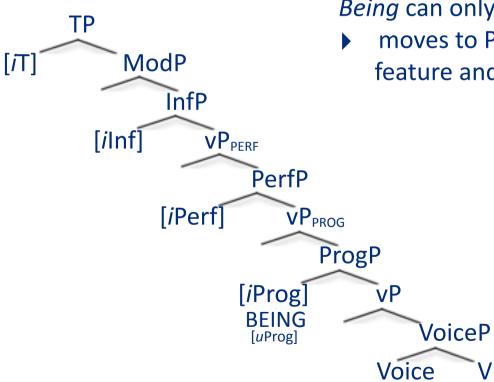
moves to Prog to check its inflectional feature and license its morphological form







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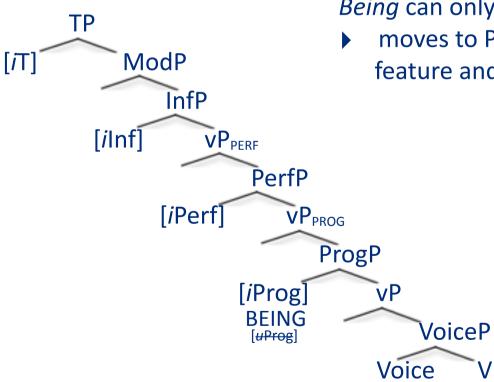
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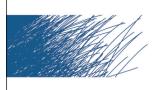


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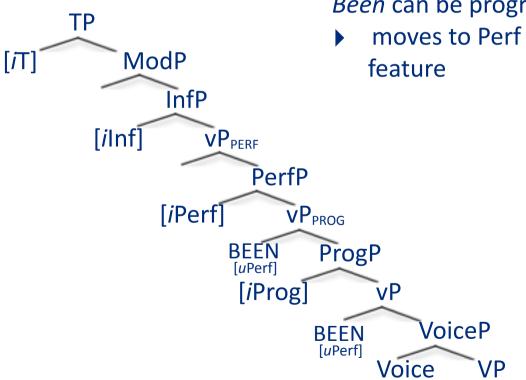
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## Preliminaries: The verbal structure (3)



Been can be progressive, passive or copular BE.

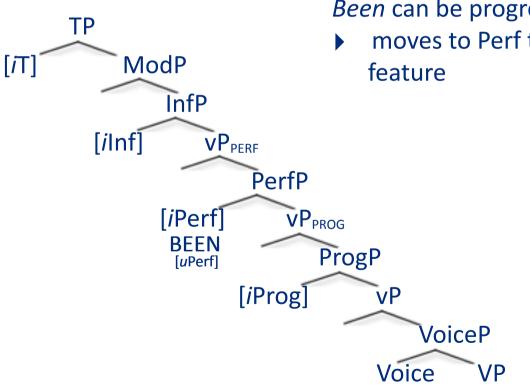
moves to Perf to check its inflectional feature







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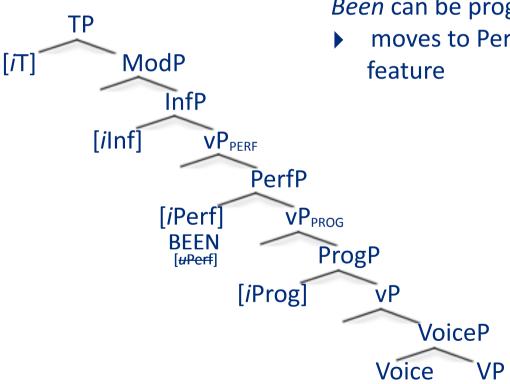
moves to Perf to check its inflectional feature





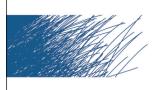


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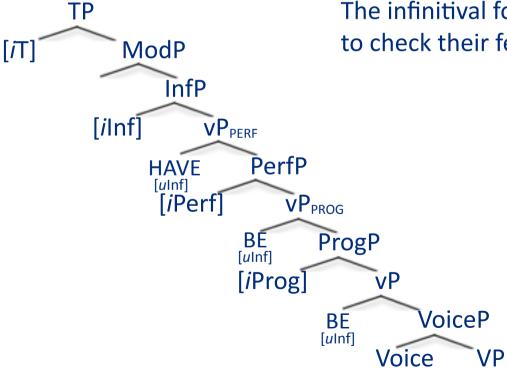
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## Preliminaries: The verbal structure (3)



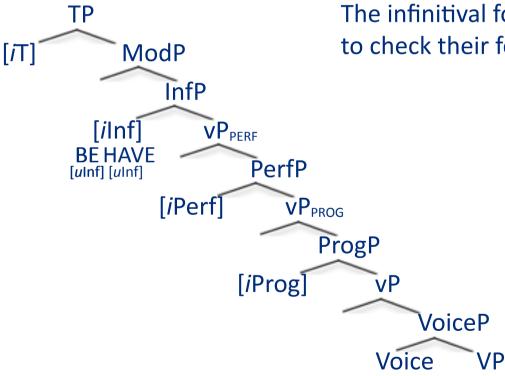
The infinitival forms *have* and *be* move to Inf to check their features.







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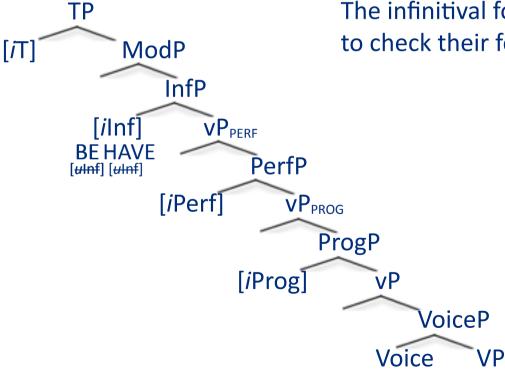
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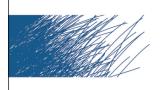




## Preliminaries: The verbal structure (3)



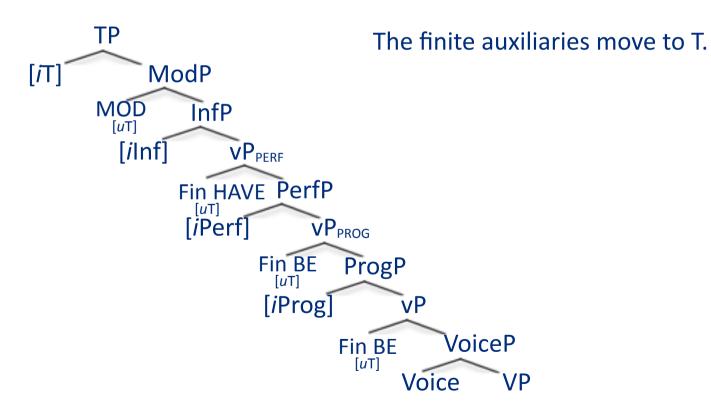
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## Preliminaries: The verbal structure (3)



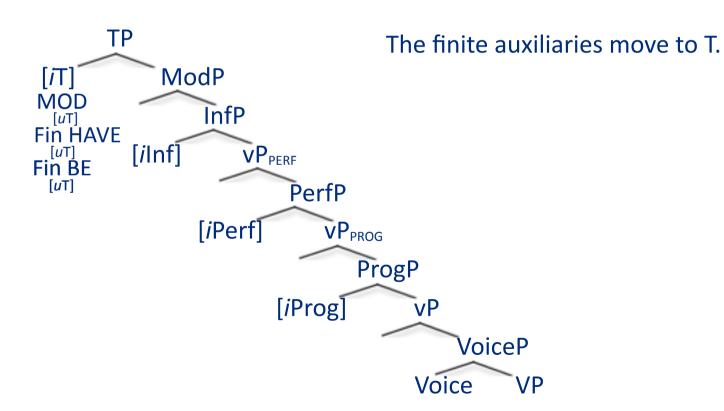






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Preliminaries: The verbal structure (3)

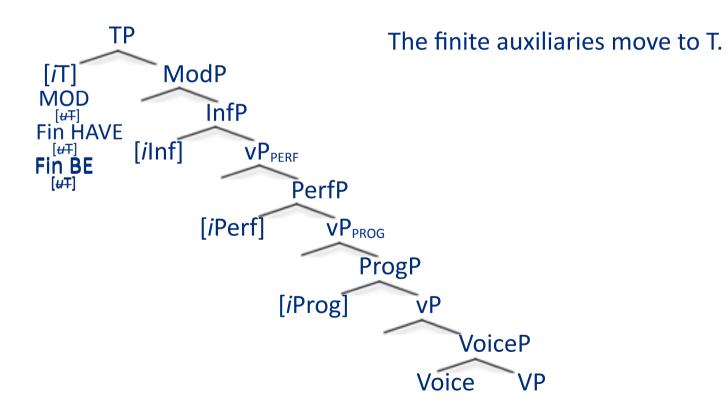








## Preliminaries: The verbal structure (3)



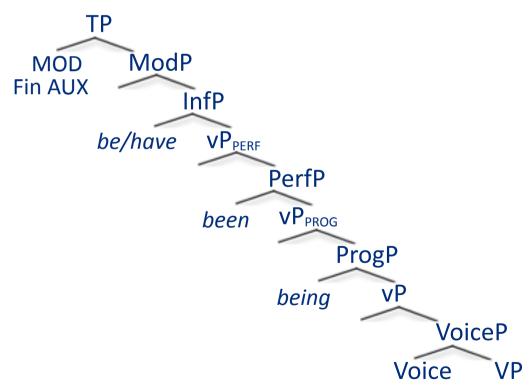


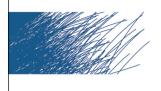




## Preliminaries: The verbal structure (4)

#### Surface positions:









### Preliminaries: The verbal structure (5)

IMPORTANT: The overt movement of auxiliaries is a concern for PF.

Auxiliaries could potentially move covertly to check inflectional features at LF, BUT...

No overt movement/checking = crash at PF

(See Chomsky 1993, 1995; Lasnik 1995; Roberts 1998)







## Overview

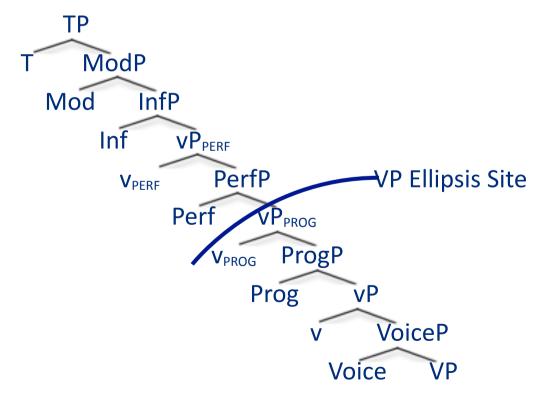
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## Analysis, part I: The ellipsis site (1)

**Our claim**: VPE elides as much as the progressive layer ( $vP_{prog}$ ), if present.









### Analysis, part I: The ellipsis site (2)

#### **Argumentation behind this claim:**

Only auxiliaries generated inside the ellipsis site can ever be elided.

- Two basic accounts for optional auxiliary ellipsis:
- 1. Optional extension of ellipsis site (Akmajian, Steele & Wasow 1979, Bošković 2012)
- 2. Optional raising of auxiliaries (Sailor 2012, Thoms 2012)





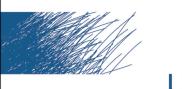


## Analysis, part I: The ellipsis site (3)

Consensus: auxiliaries can only be elided if they are at some point contained within the ellipsis site.

In other words: if an auxiliary can be elided, its base position needs to be included in the ellipsis site.

(The opposite does not necessarily hold: if an auxiliary is not elided, it can still be base-generated in the ellipsis site.)

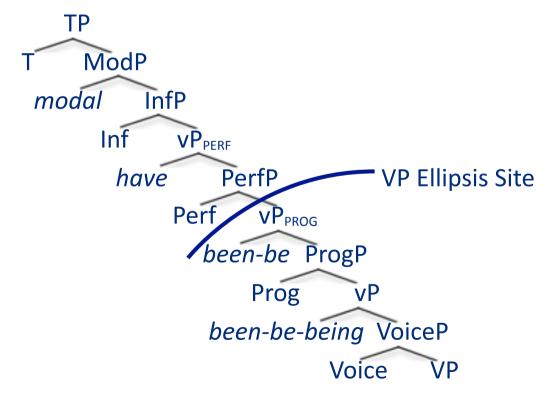






## Analysis, part I: The ellipsis site (4)

Base positions of the auxiliaries:







#### Analysis, part I: The ellipsis site (5)

We show that all auxiliaries generated within or below the progressive aspectual layer can be elided.

→ VPE targets vP<sub>prog</sub>

#### ▶ Copula *BE* can be elided:

- (5) a. John has been in the garden, and Mary has (**been**) in the garden, too.
  - b. John will be in the garden, and Mary will (be) in the garden, too.

#### ▶ Passive *BE* can be elided:

- (6) a. John has been arrested, and Mary has (been) arrested, too.
  - b. John might be arrested, and Mary might (be) arrested, too.





#### Analysis, part I: The ellipsis site (6)

#### Progressive *BE* can be elided:

- (7) a. John may be questioning our motives, but Peter won't (**be**) questioning our motives.
  - b. John may have been questioning our motives, but Peter hasn't (been) questioning our motives.
- !! There is a mismatch interpretation available without progressive BE:
- (8) a. ...Peter won't question our motives.
  - b. ...Peter hasn't questioned our motives.
- ▶ How can we be sure the progressive auxiliary is ever actually elided?







#### Analysis, part I: The ellipsis site (7)

Can we find contexts that show whether progressive *be* can genuinely be elided?

- ▶ Our answer: YES, and they show it can be elided.
- Ellipsis and existential constructions
- Ellipsis and idiomatic expressions





#### Analysis, part I: The ellipsis site (8)

#### Ellipsis and existential constructions

Unergative and transitive existentials depend on progressive aspect (Milsark 1974; Aissen 1975; Burzio 1986; Ward & Birner 1996; Deal 2009; Harwood 2011):

- (9) a. There was a clown dancing at my birthday party.
  - b. \* There has a clown danced at my birthday party.
  - c. \* There might a clown dance at my birthday party.
  - d. \* There danced a clown at my birthday party.







#### Analysis, part I: The ellipsis site (9)

If we apply ellipsis to these existentials, no mismatch interpretation without the progressive will be available.

Results: All our informants accepted deletion of progressive *be* in these existentials.

- (10) John said there had been a clown dancing at his birthday party, even though we all knew there hadn't (**been**) a clown dancing at his birthday party.
- (11) John said there would be a clown dancing at his birthday party, even though we all knew there wouldn't (**be**) a clown dancing at his birthday party.
- ▶ Progressive *be* is optionally elided.







#### Analysis, part I: The ellipsis site (12)

#### Recapitulating:

- Passive be/been can be elided.
- Copula be/been can be elided.
- Progressive be/been can be elided.
- Perfect have is never elided.
- Modals and other finite auxiliaries are never elided.
- → However, there is some discussion as to whether or not perfect have can be elided:
- Perfect have cannot be elided Sag (1976), Lobeck (1987), Johnson (2001),
   Bošković (2012), Sailor (2009, 2012), Wurmbrand (2012)
- Perfect have can be elided Akmajian, Steele & Wasow (1979), Thoms
   (2010)





#### Analysis, part I: The ellipsis site (13)

Akmajian, Steele & Wasow (1979), Thoms (2011): have can be elided!

(15) John couldn't have studied Spanish, but Bill could.

(Akmajian, Steele & Wasow 1979:15, example 48)

! Wurmbrand (2012): the acceptability of (5) is due to the available mismatch reading in which perfect aspect is altogether absent from the elided constituent:

(16) John couldn't have studied Spanish, but Bill could [study Spanish].





#### Analysis, part I: The ellipsis site (14)

Can we find contexts that show whether *have* can genuinely be elided or not?

- Ellipsis and fixed expressions
- Ellipsis and identity requirements





#### Analysis, part I: The ellipsis site (15)

#### Ellipsis and fixed expressions

Certain expressions are dependent on perfect aspect:

- (17) a. We have been to Rome.
  - b. \* We are being to Rome.
  - c. \* We will be to Rome.
  - d. \* We are to Rome.
- (18) a. Sarah has been around the block a few times.
  - b. \* Sarah is being around the block a few times.
  - c. \* Sarah will be around the block a few times.
  - d. \* Sarah was around the block a few times.





#### Analysis, part I: The ellipsis site (16)

If VPE is applied to these expressions, no mismatch interpretation without the perfect aspect will be available.

▶ This context shows whether perfect *have* can be elided.

Result: 80% of our (British English) informants rejected ellipsis of *have* in these cases.

- (19) \* This time next year Jon will have been to Rome, and I will have been to Rome, as well.
- (20) \* I thought Sarah might have been around the block a few times, and indeed she might have been around the block a few times.



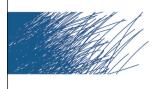




#### Analysis, part I: The ellipsis site (19)

#### Recapitulating:

- Passive *be/been* can be elided.
- Copula *be/been* can be elided.
- Progressive *be/been* can be elided.
- Perfect *have* is never elided.
- Modals and other finite auxiliaries are never elided.
- ▶ The ellipsis site must include at least the base position of progressive *BE*.
- → Claim: VPE elides vP<sub>prog</sub>.

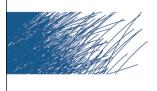






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#### Analysis, part II: Auxiliary ellipsis (1)

#### Reminder

	Modal/ finite aux	Have	Ве	Been	Being	Lexical V
Elided	*	*	(✓)	(✓)	<b>√</b>	<b>√</b>

- Ellipsis site =  $vP_{prog}$
- Auxiliaries raise to the relevant tense/aspectual head to license their morphological form (by checking a PF feature).

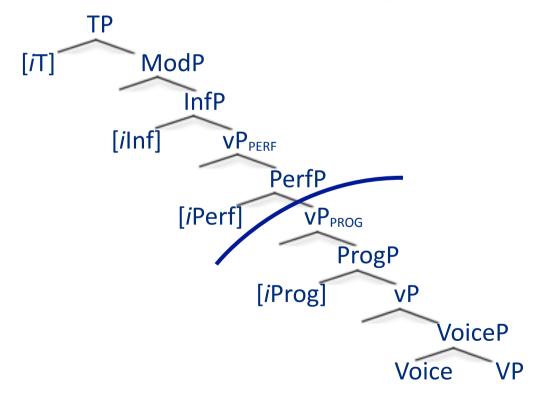




- A. Modals/have and being/lexical V
- B. Be and been

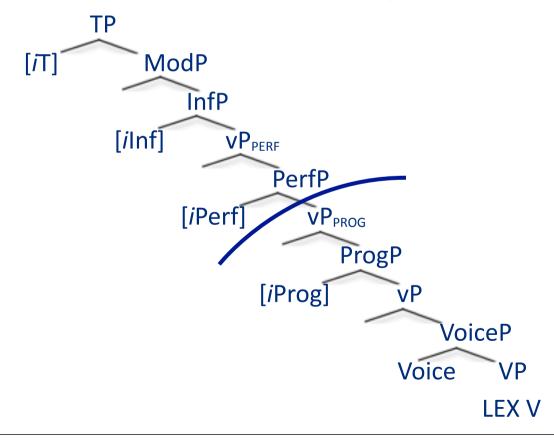






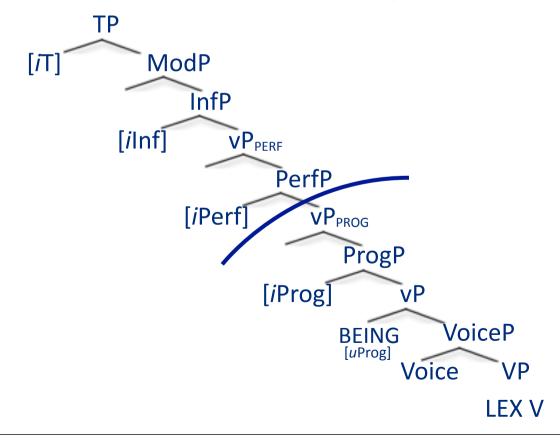






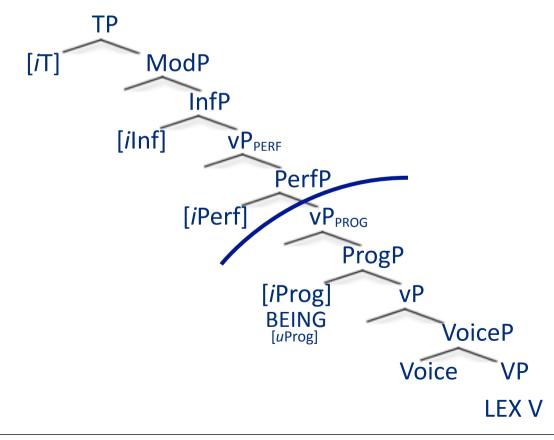






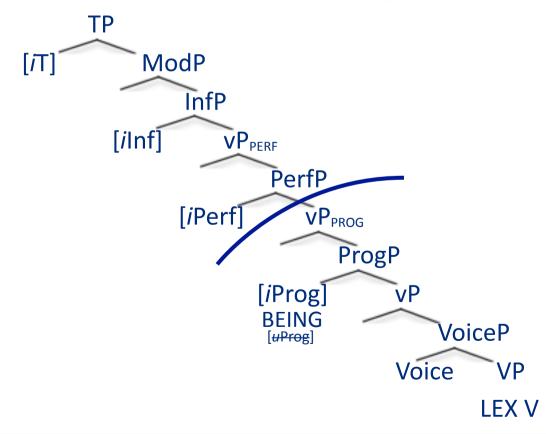






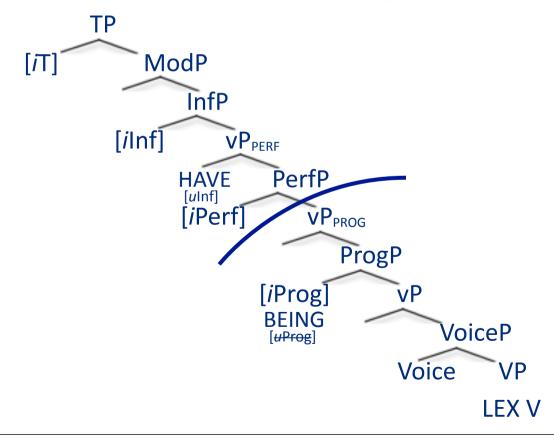






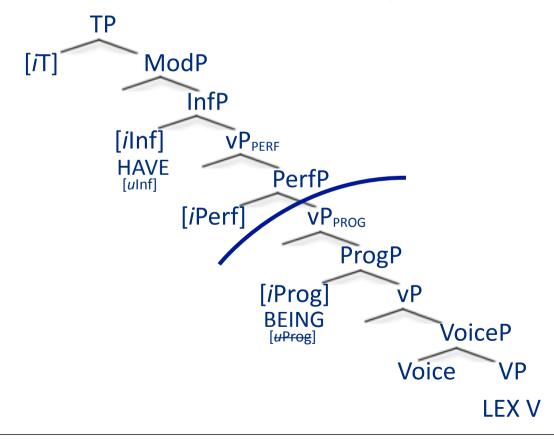






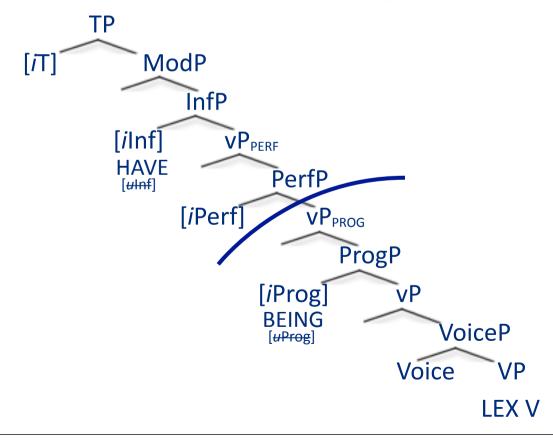






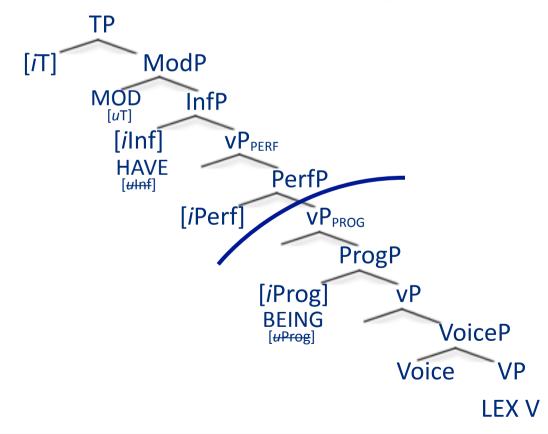






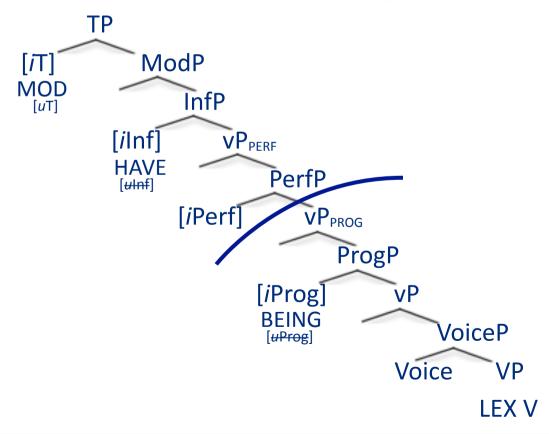






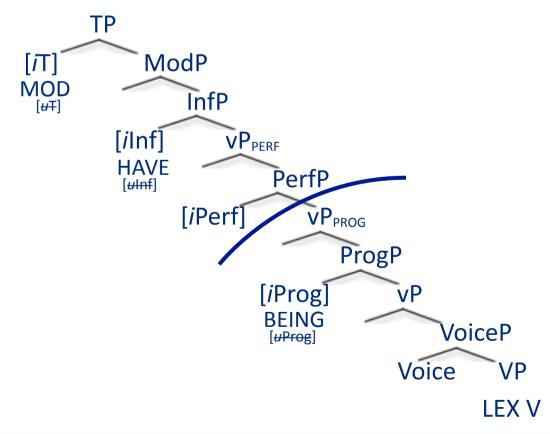






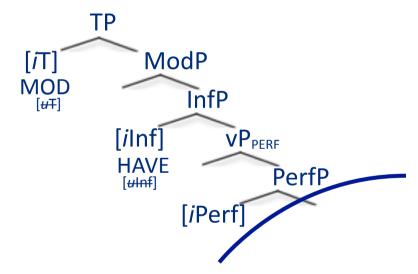


















#### Analysis, part II: Auxiliary ellipsis (4)

#### **Elided**

- Lexical verb: merged inside the ellipsis site and never raises out
- Being: merged inside the ellipsis site and only raises to Prog°, INSIDE the ellipsis site

#### Not elided

- Have: merged outside the ellipsis site
- Modals: merged outside the ellipsis site









#### Analysis, part II: Auxiliary ellipsis (5)

B. Be and been

Be/been are merged inside the ellipsis site. They raise out of the ellipsis site for checking.

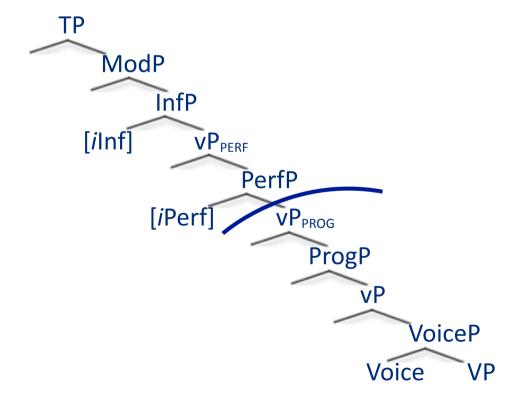
- Two options available:
- 1. Raise and check = survive ellipsis.
- 2. Remain within the ellipsis site and be deleted via ellipsis, thereby removing the problematic PF features from the derivation.







## Analysis, part II: Auxiliary ellipsis (6)

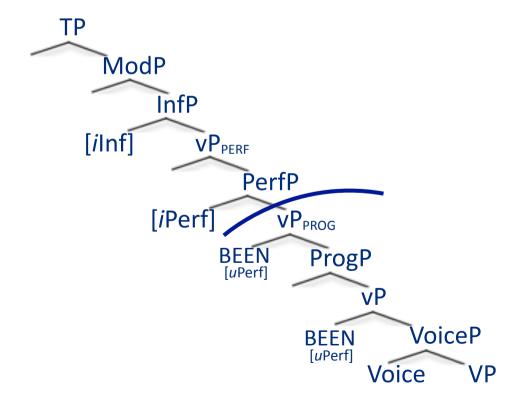








## Analysis, part II: Auxiliary ellipsis (6)

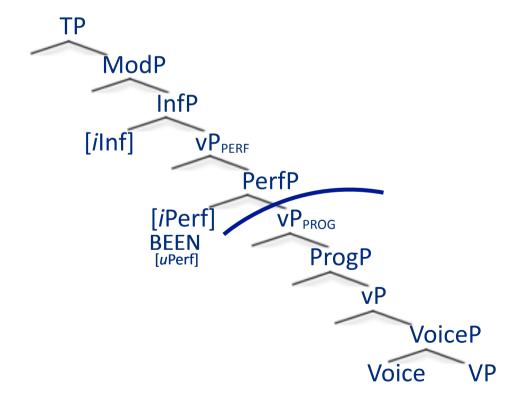








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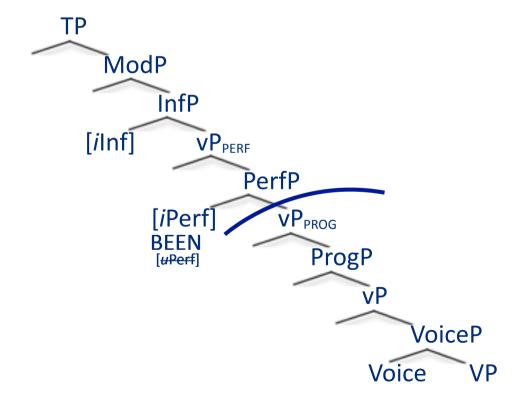








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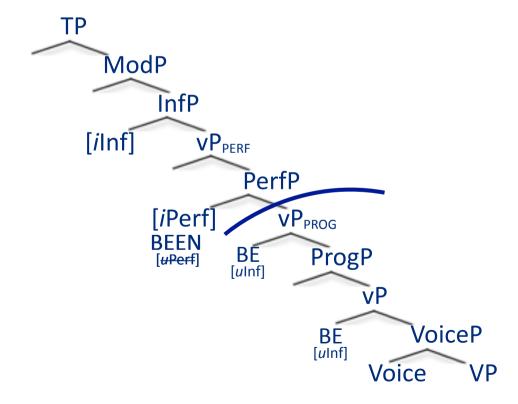








# Analysis, part II: Auxiliary ellipsis (6)

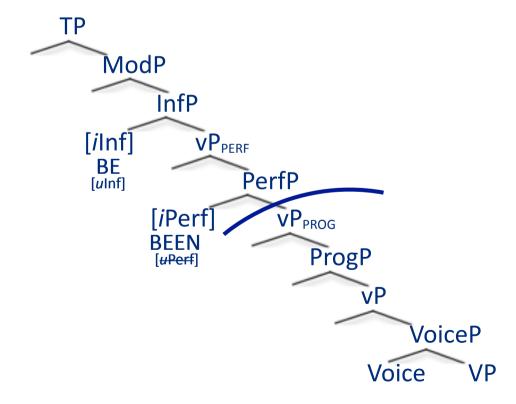








#### Analysis, part II: Auxiliary ellipsis (6)

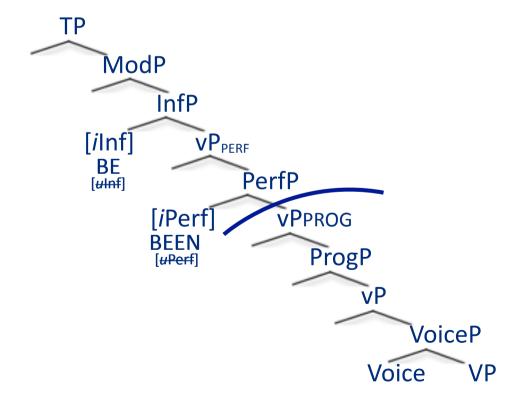








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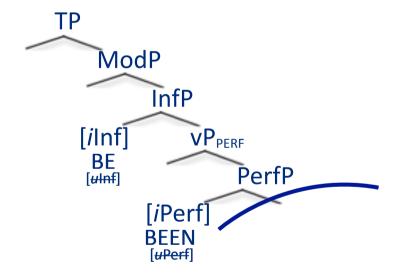








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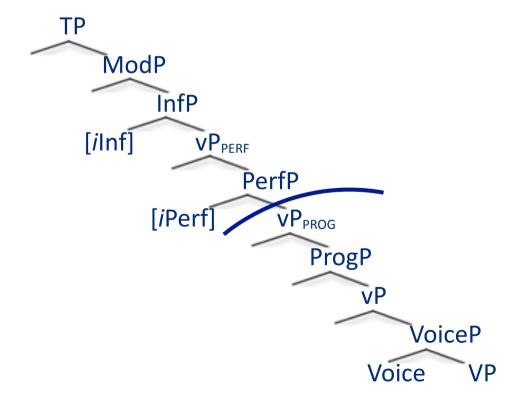


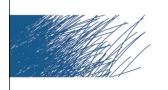






### Analysis, part II: Auxiliary ellipsis (7)



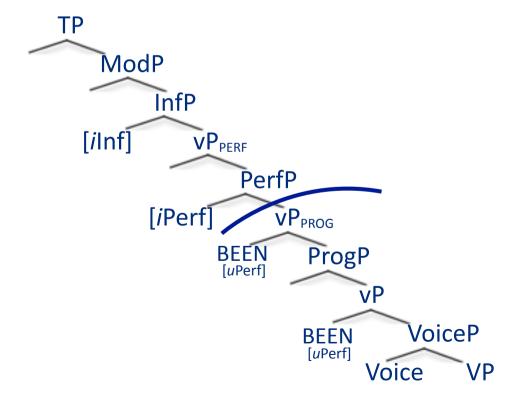


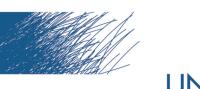




Generative Initiatives in Syntactic Theor

# Analysis, part II: Auxiliary ellipsis (7)

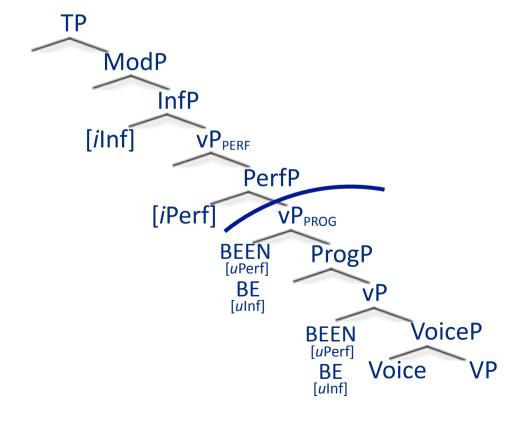








# Analysis, part II: Auxiliary ellipsis (7)



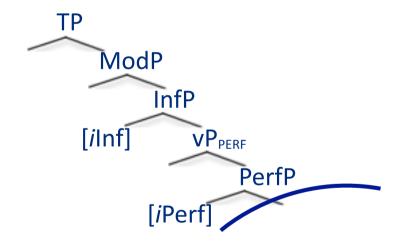






Generative Initiatives in Syntactic Theory

# Analysis, part II: Auxiliary ellipsis (7)









#### Analysis, part II: Auxiliary ellipsis (8)

If *be/been* raise out of the ellipsis site to check their features, they survive ellipsis.

If *be/been* do not raise and remain in the ellipsis site, their uninterpretable features are elided along with them, so the derivation does not crash at PF.

- Optional raising only made possible by rescue via ellipsis
- Prediction: auxiliary raising obligatory in all other contexts.

Relevant data: VP fronting.







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#### Extending the analysis: VP fronting (1)

VPF targets the same chunk of structure as VPE (Zagona 1982; Johnson 2001; Kim 2003; Aelbrecht & Haegeman 2012; Funakoshi 2012; Aelbrecht 2012)

- The lexical verb is fronted
- Being is fronted
- Have is never fronted
- Modals are never fronted



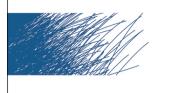




#### Extending the analysis: VP fronting (2)

Lexical verb and being: always fronted

- (23) \* If John says he has eaten fish, then [fish] he has eaten.
- (24) If John says he has eaten fish, then [eaten fish] he has.
- (25) \* If John says he was being seduced, then [seduced] he was being.
- (26) If John says he was being seduced, then [being seduced] he was.







#### Extending the analysis: VP fronting (3)

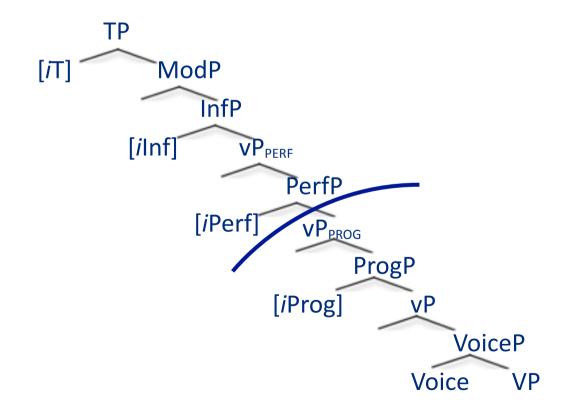
Modals and have: never fronted

- (27) If John says he may have eaten fish, then [eaten fish] he may have.
- (28) \* If John says he may have eaten fish, then [have eaten fish] he may.
- (29) If John says he will eat fish, then [eat fish] he will.
- (30) \* If John says he will eat fish, then [will eat fish] he.
- Explanation: VPF targets same constituent as VPE: vP<sub>PROG</sub>!



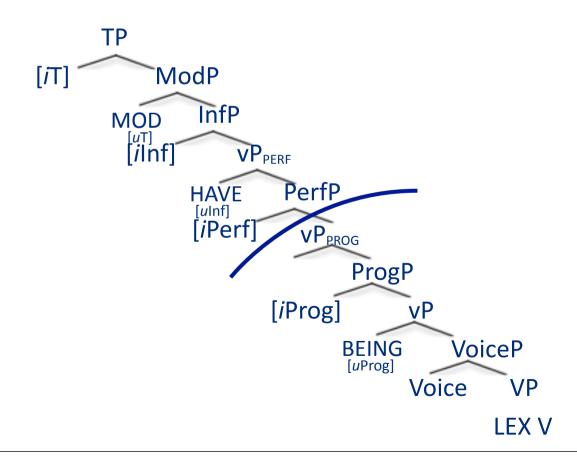








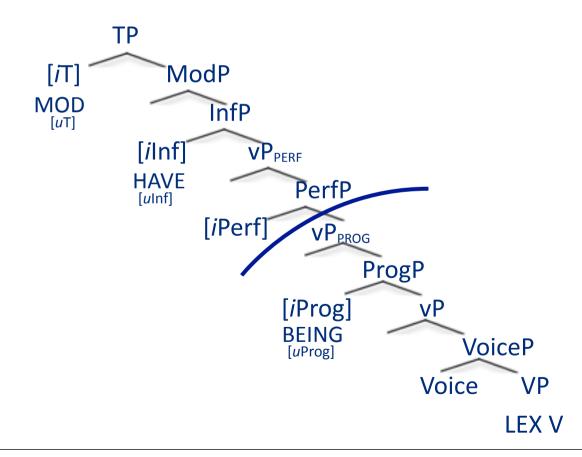






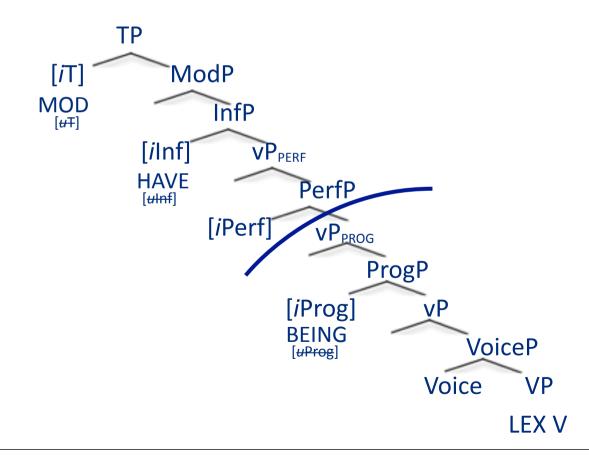






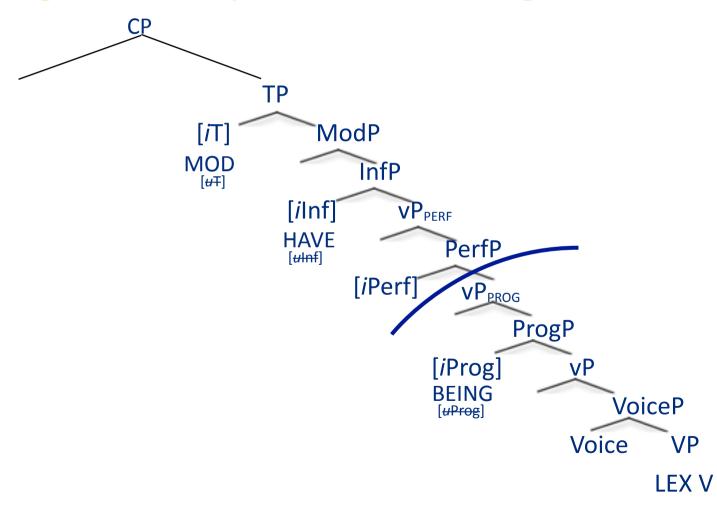






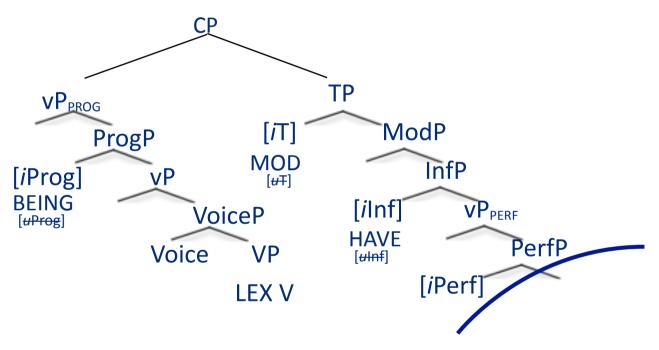


















#### Extending the analysis: VP fronting (5)

Akmajian, Steele & Wasow (1979) and Roberts (1998): be/been can never be fronted, not even optionally:

- (31) a. If John says he'll be working late, then [working late] he will be.
  - b.\* If John says he'll be working late, then [be working late] he will.
  - c. If John says he has been working late, then [working late] he has been.
  - d.\* If John says he has been working late, then [been working late] he has.
- = remarkable contrast with VP ellipsis.
- ▶ This can easily be explained by our analysis.







#### Extending the analysis: VP fronting (6)

Fronted constituent same as ellipsis site: vPprog

Be/been are generated inside fronted constituent

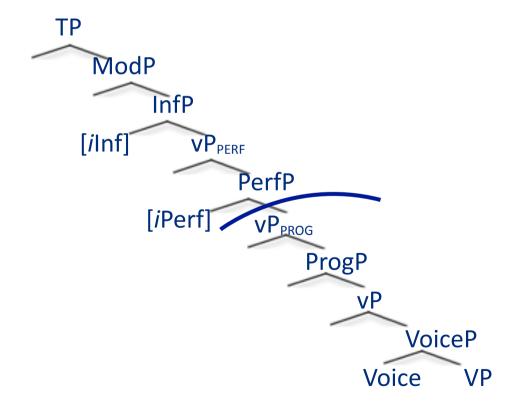
- Two options for be/been:
  - Be/been raise out of VPF site to Perf°/Inf° to check features.
    - Not fronted, derivation fine.
  - If *be/been* do not raise and remain in the VPF site, no ellipsis occurs to rescue the derivation.
    - The unchecked features remain and the derivation crashes.

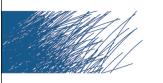








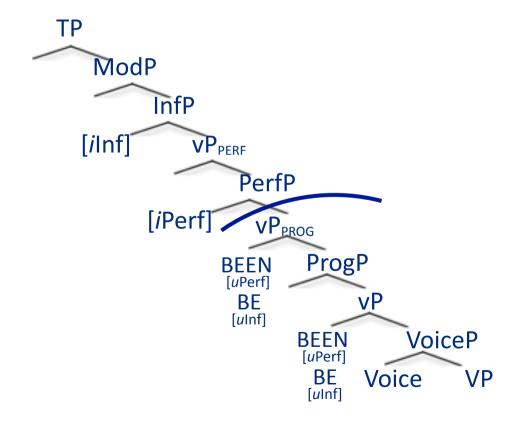








# Extending the analysis: VP fronting (7)

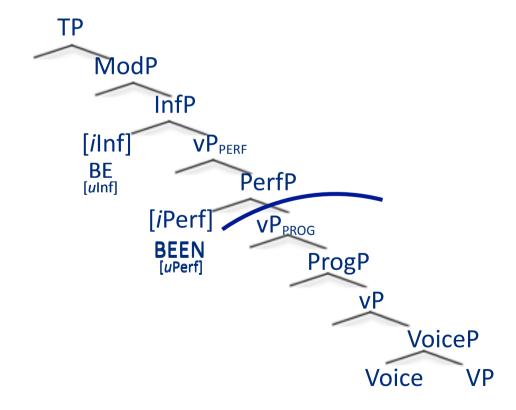










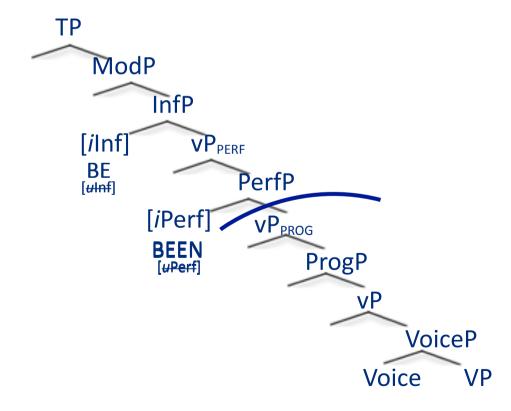








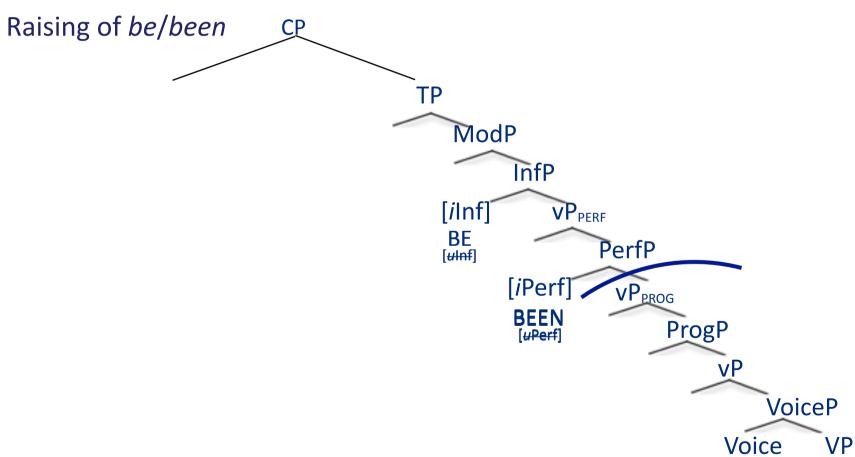






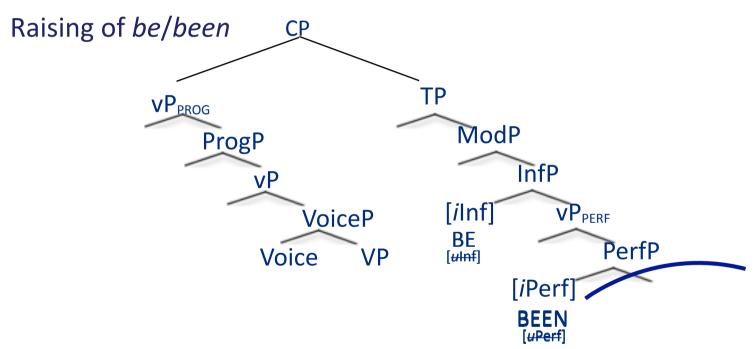


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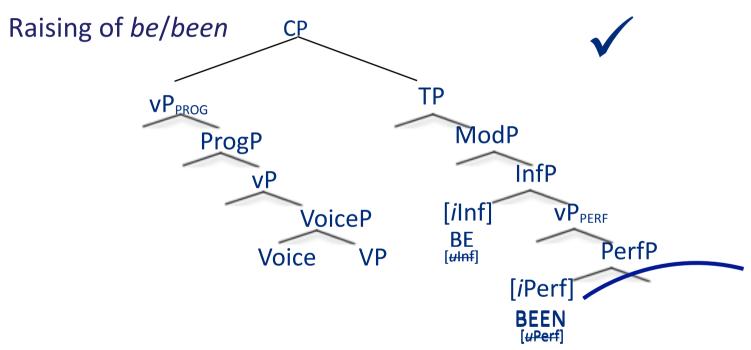


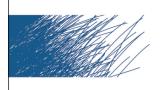












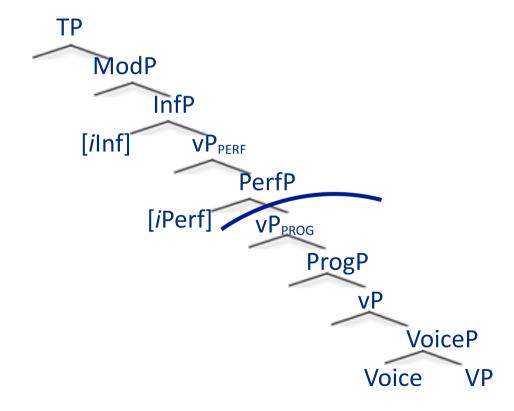




Generative Initiatives in Syntactic Theory

# Extending the analysis: VP fronting (8)

Non-raising of be/been



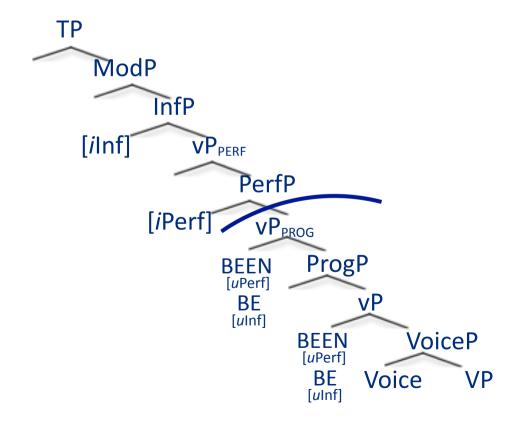






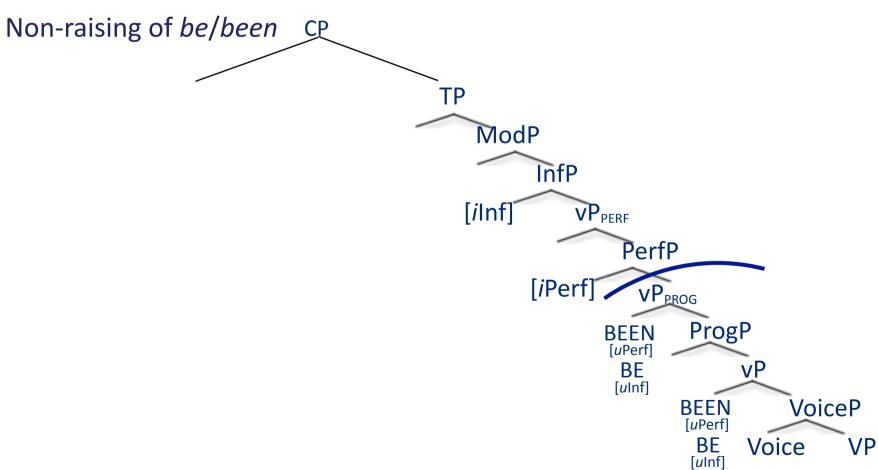
### Extending the analysis: VP fronting (8)

Non-raising of be/been



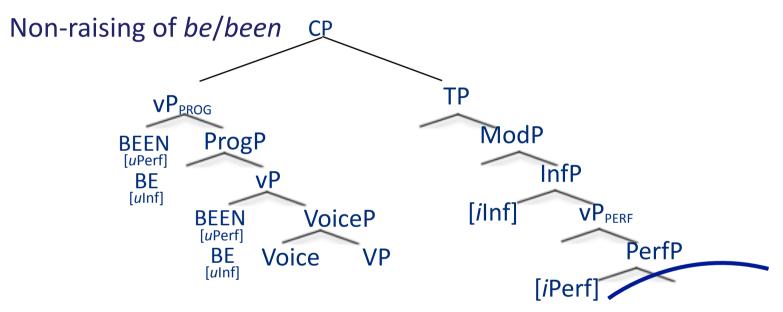






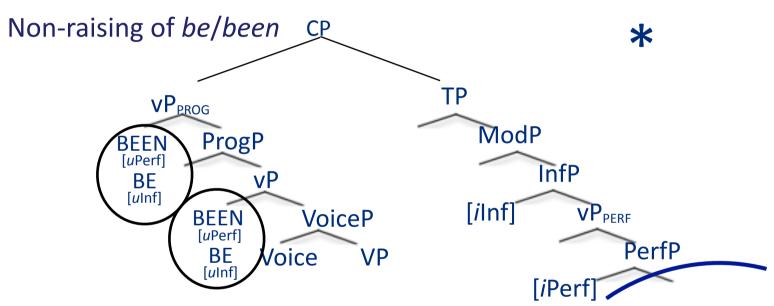


















#### Extending the analysis: VP fronting (9)

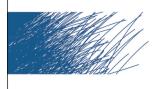
Extending the data set even more:

We expect other phenomena that make use of either VPE or movement of the verb phrase to exhibit the same pattern.

- → Phenomena involving VPE: optional deletion of *be/been*.
- → Phenomena involving movement: obligatory stranding of be/been.

This prediction is potentially borne out in:

- Tag questions in American English (involving VPE)
- Specificational pseudo-clefts (involving VPF)
- Predicate inversion (involving VPF)

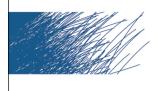






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### Digging deeper: Predicate ellipsis (1)

Our claim: VPE elides as much as vP<sub>prog</sub>.

! If progressive aspect is absent from the structure VPE elides vP.

= 'variable ellipsis site'

(Note: 'variable' depending on what is present in the structure, not in the sense of Akmajian, Steele & Wasow 1979 and Bošković 2012, for whom VPE can optionally elide more or less, and who explain the optional deletion of *be* and *been* in this way.)







# Digging deeper: Predicate ellipsis (2)

Problem: If the constituent being targetted by VPE varies, it is harder to formalise how ellipsis is licensed.

For instance, if the ellipsis site is recognised as 'the constituent bearing the E-feature' (Merchant 2001), does the E-feature sometimes occur on  $v_{prog}$  and sometimes on v?

How to formalise the licensing of ellipsis, and more specifically, how to determine the size of the ellipsis site formally?

Our (speculative) solution: VPE is predicate ellipsis.







# Digging deeper: Predicate ellipsis (3)

#### Our suggestion:

VPE targets the highest projection in the predicate layer of the clause.

What is included in this predicate?

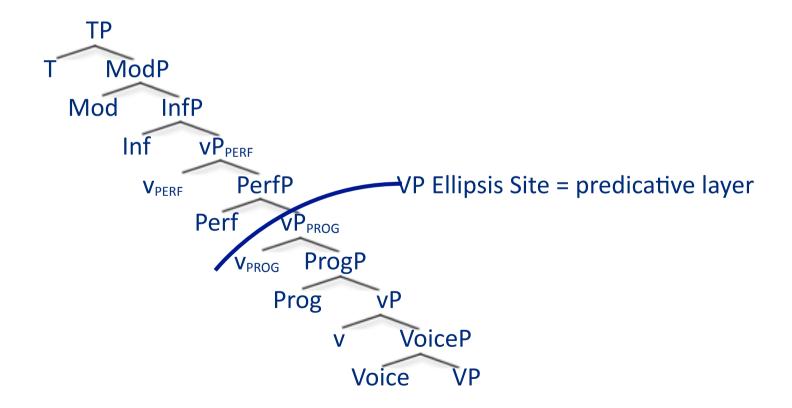
- ▶ Lexical VP/DP/PP/AP
- ▶ The internal and external arguments of this lexical predicate
- ▶ Little v projection: determines some lexical properties, such as agentivity, causality etc.
- Voice
- ▶ (According to us) the progressive projection







Digging deeper: Predicate ellipsis (4)









# Digging deeper: Predicate ellipsis (11)

#### Our tentative proposal:

- Divide between progressive and perfect aspect in English
- Predicative layer: up to vP<sub>prog</sub>
- Functional verbal layer: from PerfP up to TP/FinP

(Will's work: vP<sub>prog</sub> constitutes the clause-internal phase.)

VPE targets the predicative layer, but nothing higher:

- ▶ vP<sub>prog</sub> when it is present
- ▶ vP otherwise





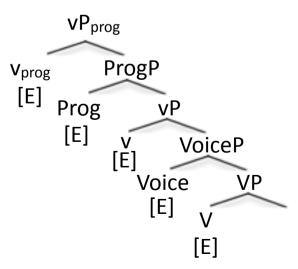


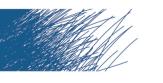
# Digging deeper: Predicate ellipsis (12)

#### How to formalise this?

Merchant (2001, 2004): E-feature

**Suppose**: E-feature starts out on V, and percolates up to every next head of the predicative layer (See Grimshaw's 2005 extended projections)



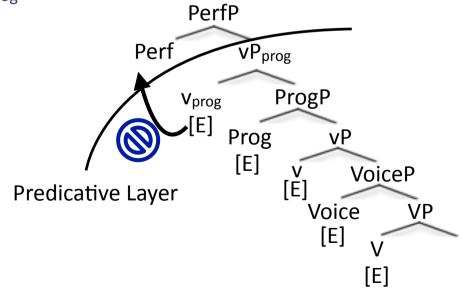






# Digging deeper: Predicate ellipsis (13)

It cannot be transferred to a projection higher than the predicative layer in Standard English: E for predicate ellipsis is only compatible with heads that are part of the predicative layer (see Grimshaw's 2005 Extended Domains). VPE elides as much as  $vP_{Prog}$  but not more.







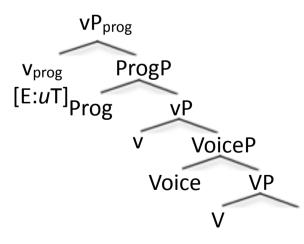


# Digging deeper: Predicate ellipsis (14)

Note: E-feature marks the ellipsis site; it is not on the licensing head of the ellipsis (contra Merchant)

This approach is compatible with Aelbrecht's (2010) account of ellipsis licensing.

E-feature with uninterpretable Tense







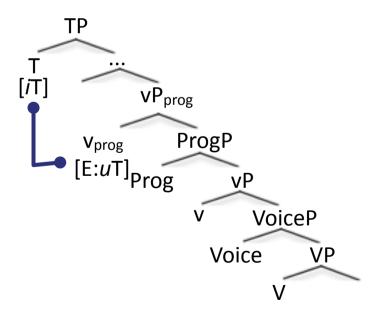


# Digging deeper: Predicate ellipsis (15)

Aelbrecht (2010): Ellipsis is licensed via an Agree relationship between the licensing head and the E-feature marking the ellipsis site lower down.

VPE is licensed by T head

T checks E and triggers ellipsis of vP<sub>Prog</sub>.



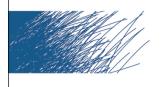






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# Conclusion and further issues (1)

- ▶ VPE and VPF target vP<sub>prog</sub>.
- ▶ Lexical verb never raises out of this site: never escapes ellipsis or fronting
- ▶ Being raises to Prog°, within the VPE/VPF site: never escapes ellipsis or fronting
- ▶ Have and modals are merged outside of the VPE/VPF site: never elided or fronted
- ▶ Be/been are merged inside of the VPE/VPF site but raise out to check inflectional features:
- ▶ If they raise in ellipsis contexts, they escape ellipsis.
- ▶ Alternatively, *be/been* may remain in the ellipsis site and be elided, having their unchecked features deleted at PF
- ▶ Be/been must raise in fronting contexts because there is no ellipsis operation to alternatively delete their features.







# Conclusion and further issues (2)

- VPE targets the predicative layer, which includes the progressive projections, but not the perfect.
- VPE targets as much of this predicate as possible.
- This can be formalized using the E-feature (Merchant 2001; Aelbrecht 2010) and Extended Projections (Grimshaw 2005).







### Thank You!



