Extending X-bar Theory

Functional Categories

Objectives

1. Identify and distinguish subjects from predicate phrases.

2. Identify various kinds of T and C nodes.

3. Distinguish finite from non-finite clauses, using tests.

4. Identify embedded and root clauses, and distinguish specifier, adjunct or complement clauses.

5. Correctly use X-bar format for DPs, TPs, and CPs in tree drawing.

6. Explain the arguments for DPs, TPs, and CPs.

7. Identify subjects in all types of clauses and correctly place them in the specifier position of TP.

A Tangent on Clause Types

Clause = subject +predicate phrase

- Subject: the NP being assigned a property

- Predicate phrase: the property being assigned to the subject

  - The man left

  - Susan is a linguistics student

  - Bill ate a beef waffle

Main vs. Embedded

- Main clause (also called Root) is the highest clauses.

- Embedded clauses (also called subordinate clauses) are inside other clauses.

  - The armadillo thinks that peanuts are for elephants.
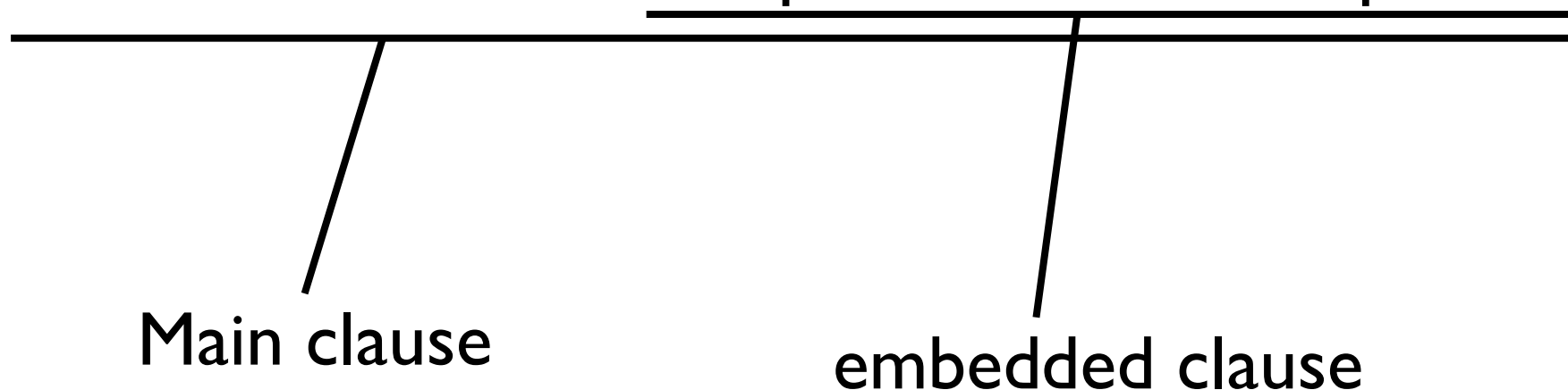
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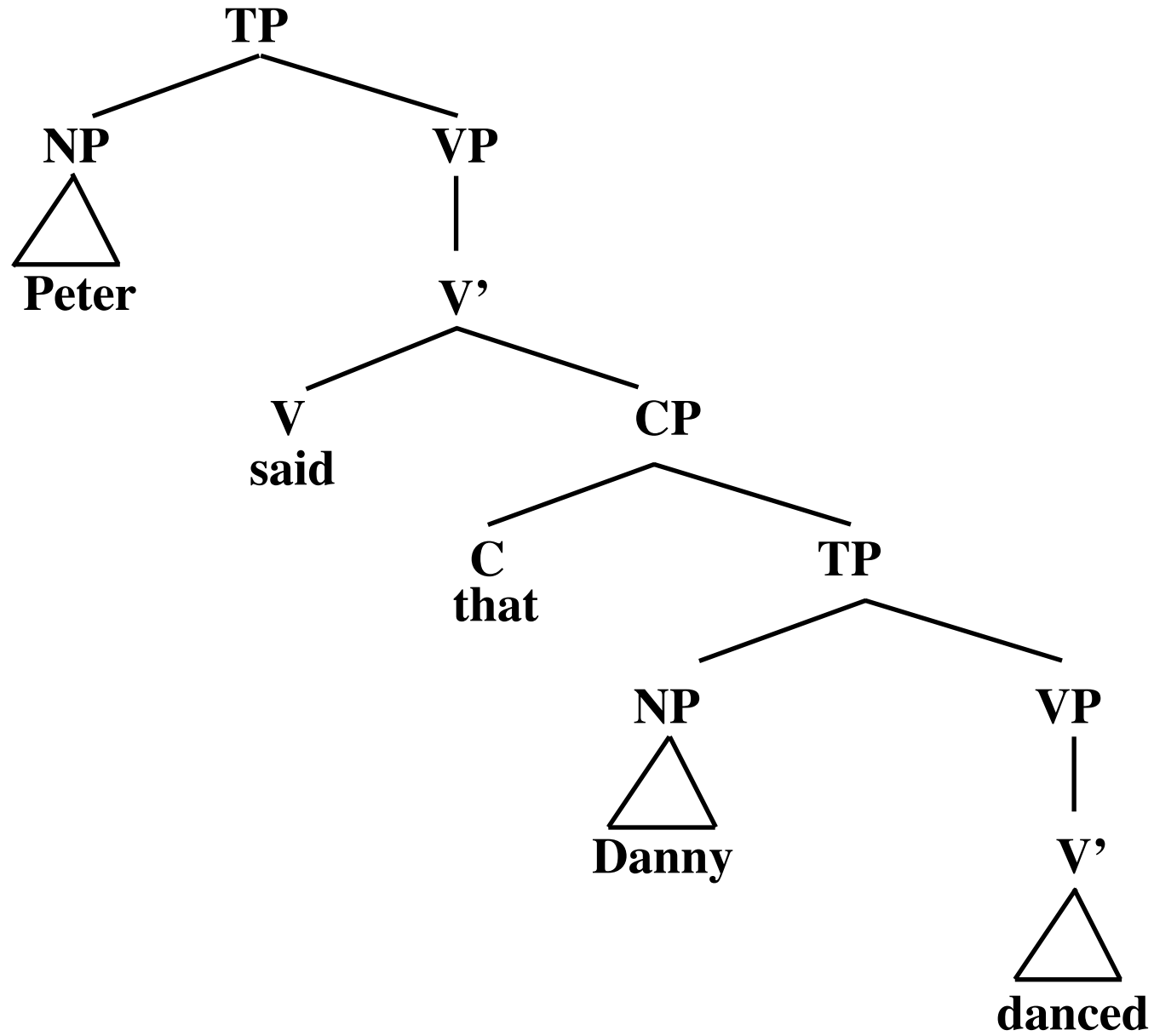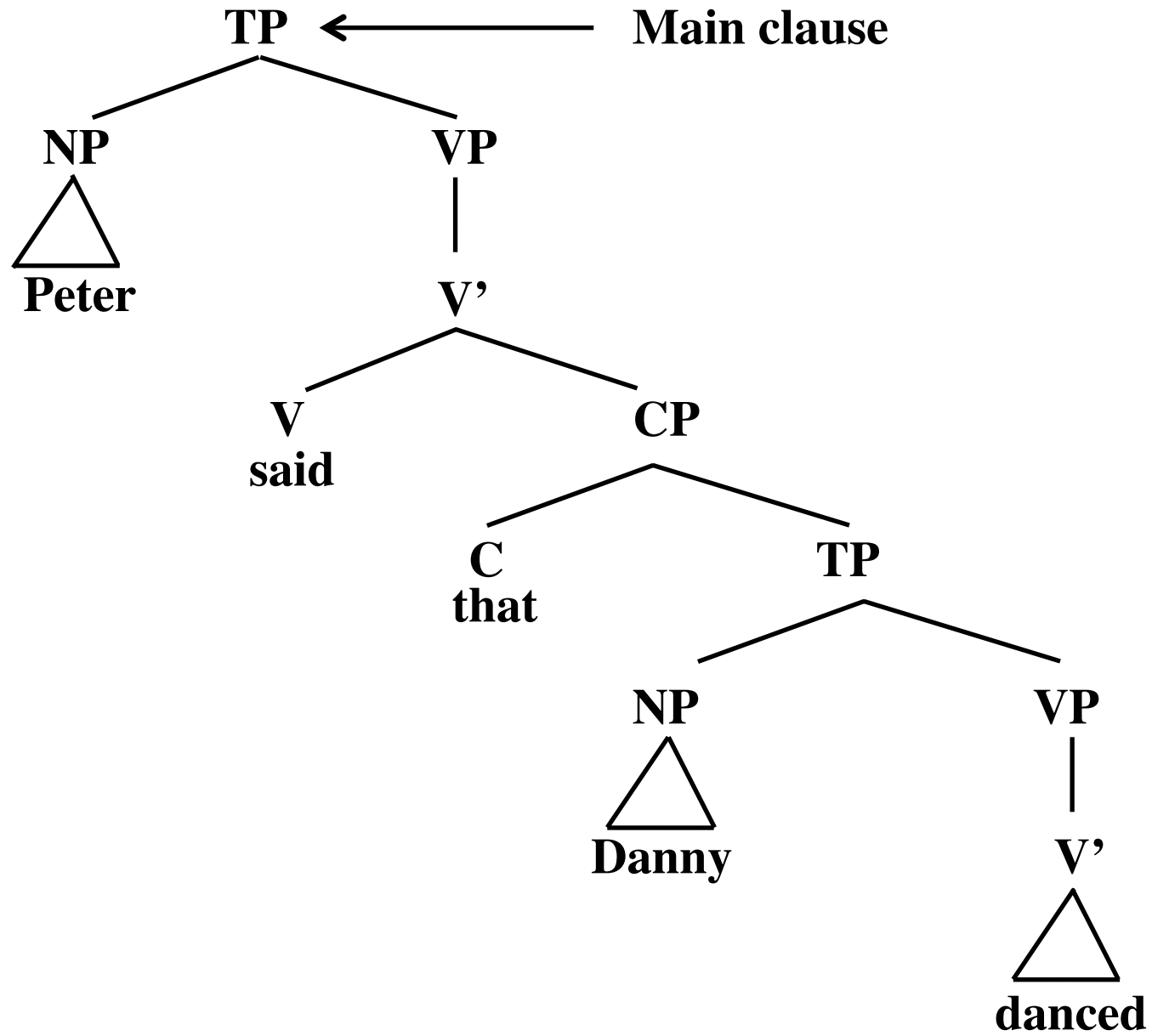   embedded clause
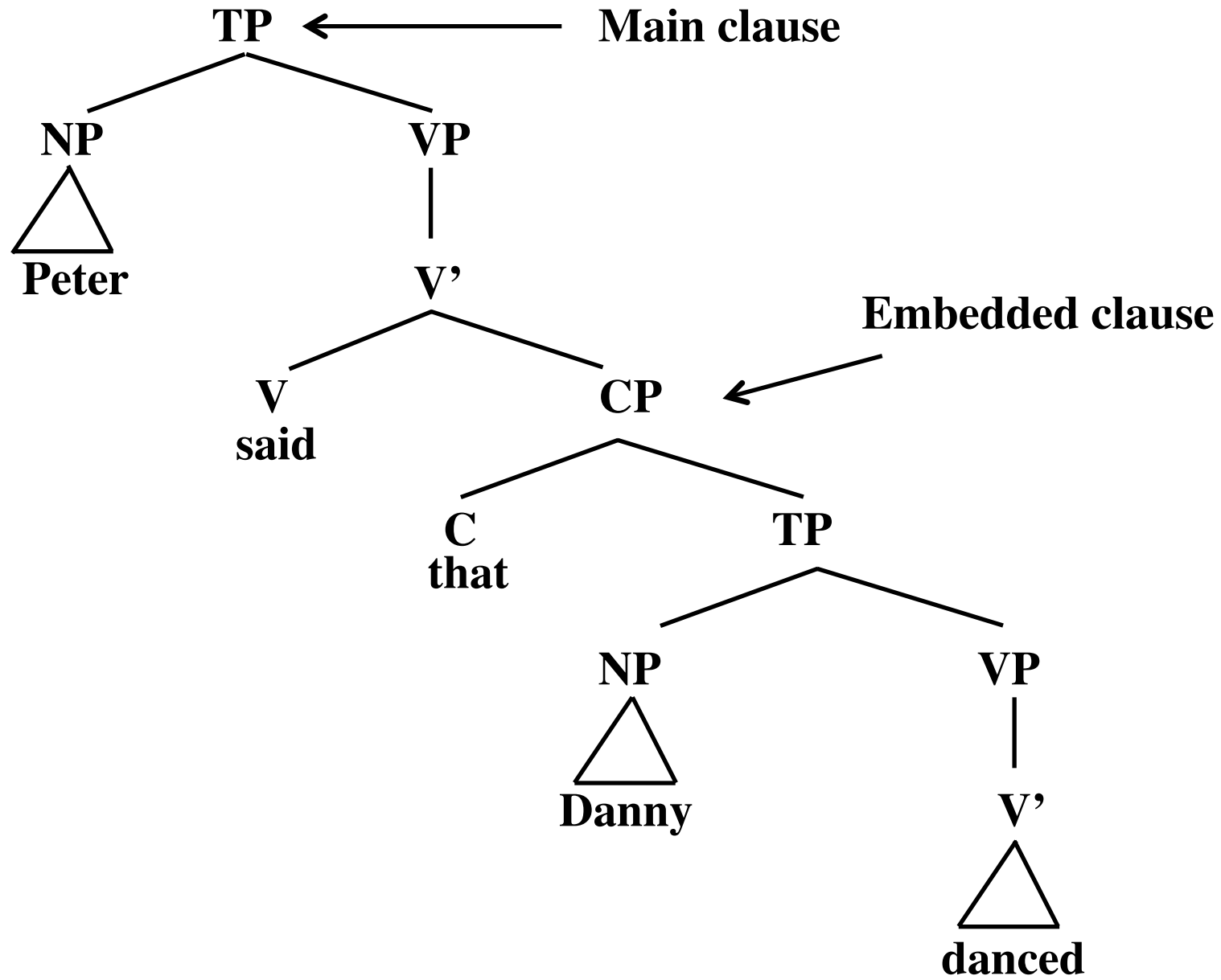
Main vs. Embedded

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Main clause   embedded clause

TP
- NP
  - Peter
- VP
  - V'
    - V
      - said
    - CP
      - C
        - that
      - TP
        - NP
          - Danny
        - VP
          - V'
            - danced

TP ← Main clause

NP

Peter

VP

V'

V
said

CP

C
that

TP

NP

Danny

VP

V'

danced

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TP ← **Main clause**

NP　　　VP

△
Peter

V'　　　　　　　**Embedded clause**

V　　　　CP ←
said

C　　　　　TP
that

NP　　　　　VP

△
Danny

V'

△
danced

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TP ← **Main clause**

NP

△
Peter

VP ← **Predicate Phrase**

V'

V
said

CP ← **Embedded clause**

C
that

TP

NP ← **subjects**

△
Danny

VP ← **Predicate Phrase**
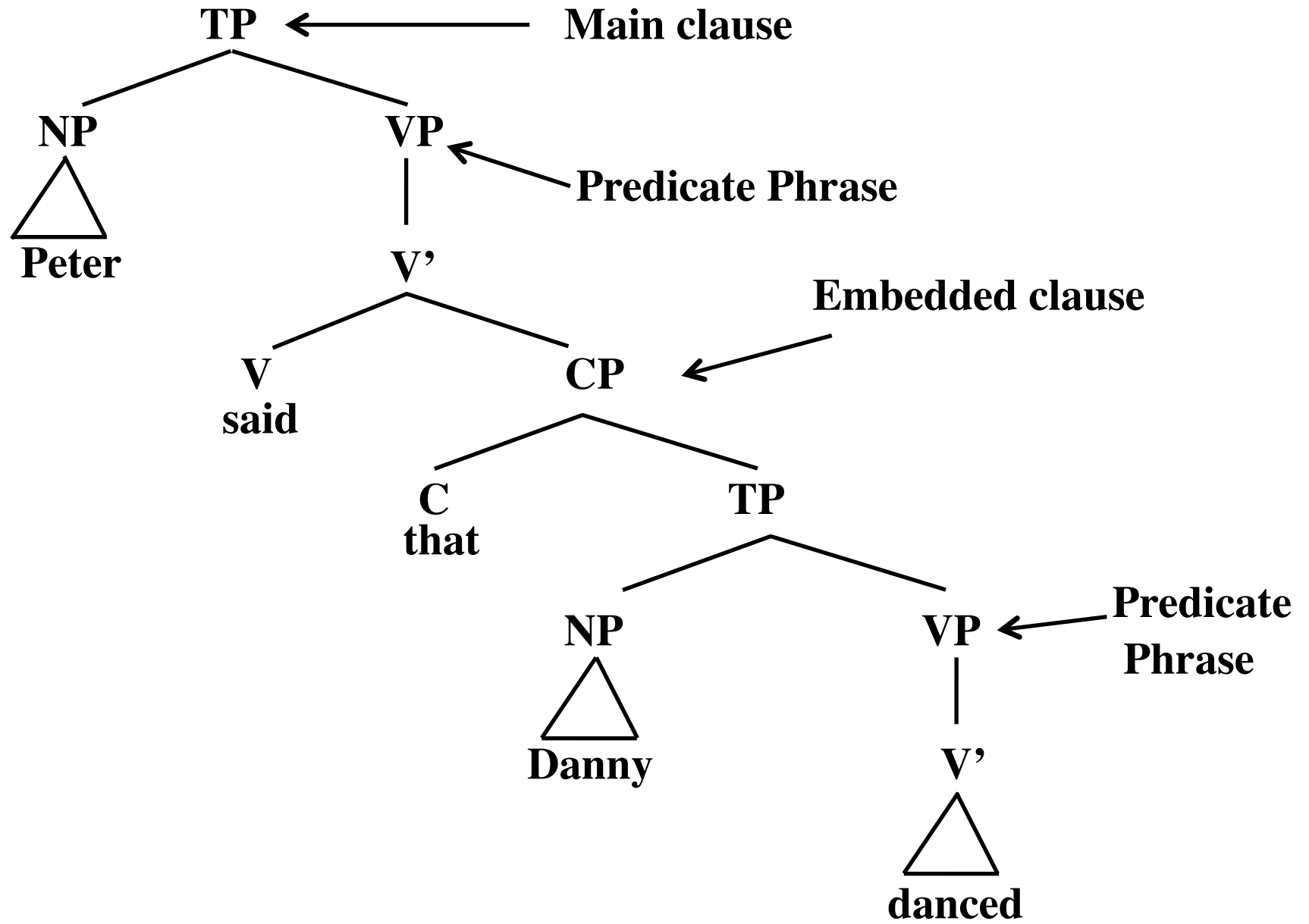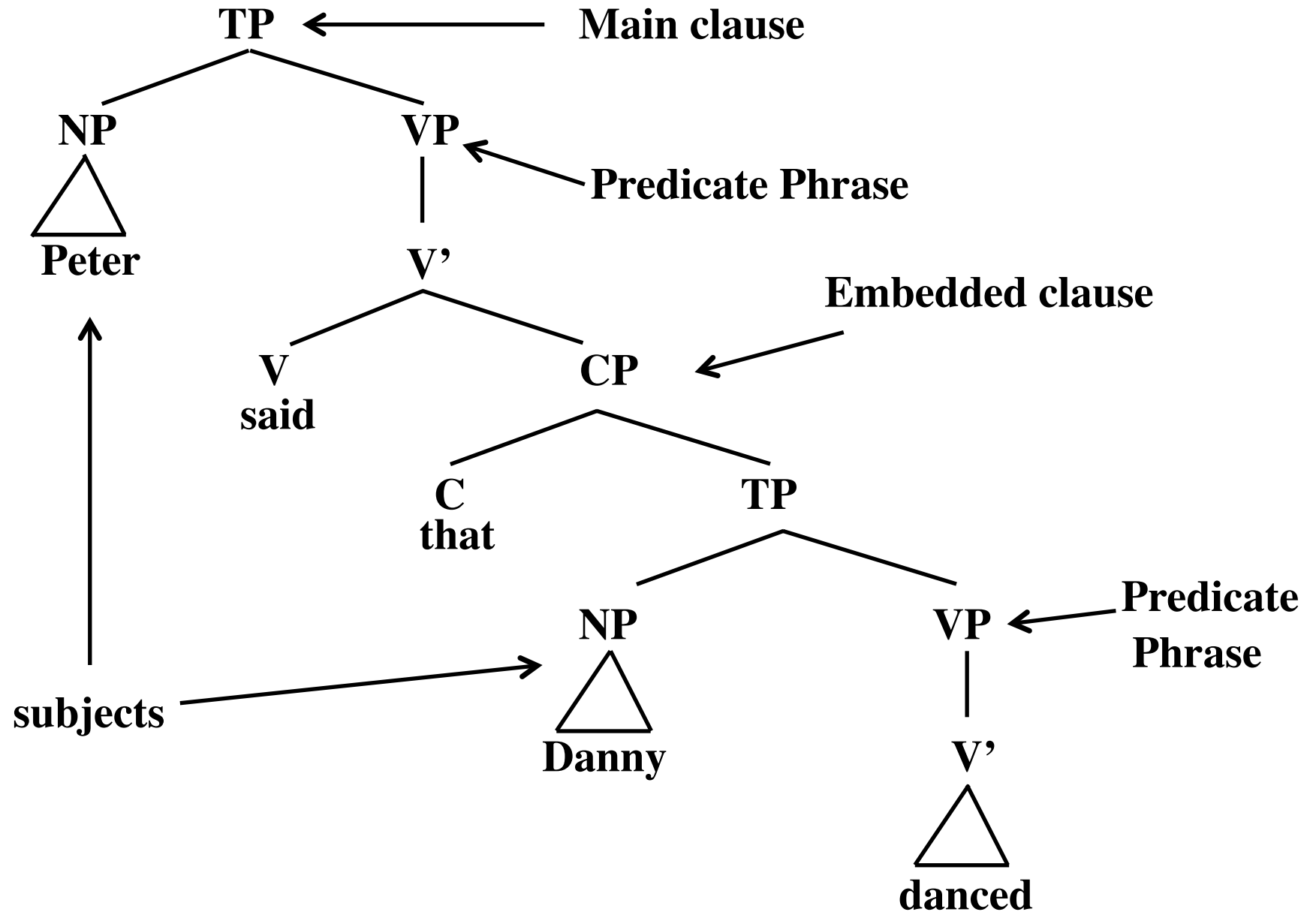
V'

△
danced

subjects

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Types of embedded clauses

- embedded clauses in specifier positions:

  - [[People selling their stocks] caused the crash of 29]
  - [[For Mary to love that boor] is a travesty]

- embedded clauses in complement positions

  - Heidi said [that Art loves peanut butter]
  - Colin asked [if they could get a mortgage]

- embedded clauses in adjuncts positions

  - [The man [I saw get into the cab]] robbed the bank

Finite vs. Non-finite

- Other terms: tensed/untensed, finite vs. infinitive (there actually are differences in what these mean, but we'll use the terms interchangeably here)

- Finite clauses have a tensed verb

    - I thought that [John left]   tensed/finite
    - I want [John to leave]   non-tensed/nonfinite

Distinguishing finite/nonfinite

- I know [you eat asparagus]   finite
- I've never seen [you eat asparagus] non-finite

- Finite show verbal agreement & tense morphology. Test: change the tense/person:

  - I know [you ate asparagus]
  - I know [he eats asparagus]
  - *I've never seen [him eats asparagus]
  - *I've never seen [you ate asparagus]

Distinguishing finite/nonfinite

- Subjects of finite show nominative case, subjects of nonfinite (and small) show accusative case.

  - I know [he ate asparagus]
  - I've never seen [him eat asparagus]

	Nominative		Accusative		Anaphoric	
	Singular	Plural	Singular	Plural	Singular	Plural
1st	I	we	me	us	myself	ourselves
2nd	you	you	you	you	yourself	yourselves
3rd masc	he		him		himself	
3rd fem	she	they	her	them	herself	themselves
3rd neut	it		it		itself	

Distinguishing Finite/ Non-Finite

- Types of T

  - Finite: tense suffixes, modals (could, should, would, might, can etc), auxiliaries (is, have)

    - I think [he should go]

  - Non-finite: to, Ø

    - I want [him to go]

Distinguishing Finite/Non-Finite

- Types of Comp

  - Finite: that, which, if, Ø

    - I think [that he should go]

  - Non-finite: for, Ø

    - I want [for him to leave]

Interim Summary

- Clause = subject + predicate

- Embedded vs. Root/Main

- Types of Embedded: specifier, adjunct, complement

- Types of verbal: tensed/finite vs. untensed/nonfinite

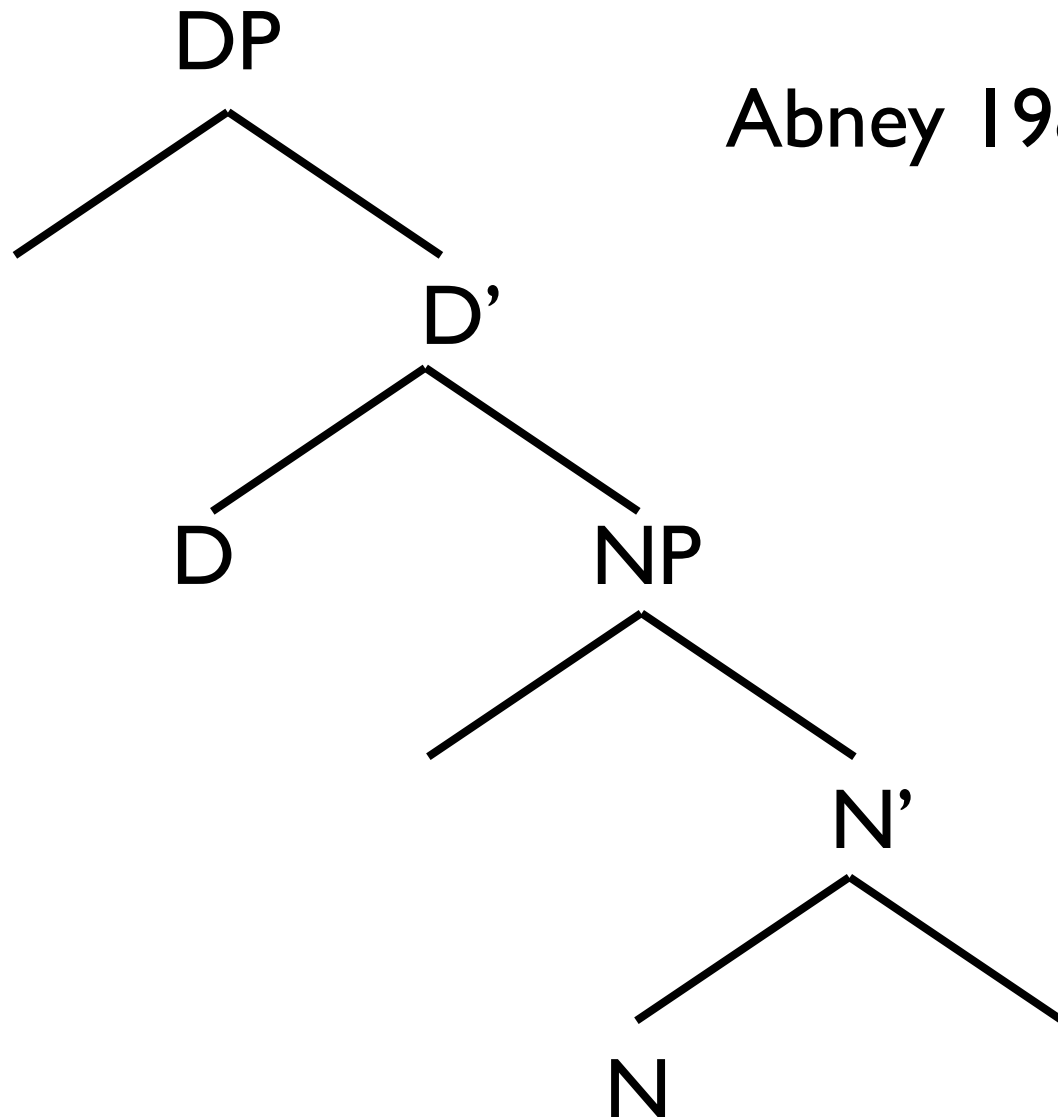- Tests of finiteness: inflection, case, C, T

Functional Categories

DPs, TPs, and CPs

The Puzzle of Determiners

- Specifier Rule XP→(YP) X'

    - requires the specifier to be phrasal

    - *That the book (however cf. Those two books)

- Only example of a specifier we've seen.

The DP proposal

DP

Abney 1987

D'

D   NP

N'

N

The DP hypothesis

- Explains why D isn't a phrase (it is a head of its own phrase!)

- (Notice we now have NO examples of specifiers!!)

- Evidence???????

's Genitives

- The man's coat

- Not a suffix:

    - [The man standing over there]'s coat
    - [The dancer from New York]'s shoes
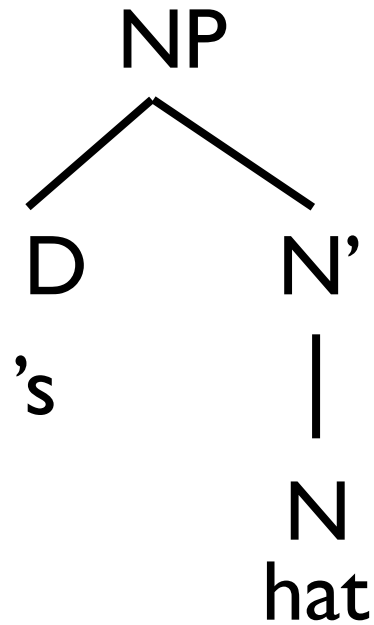
- 's attaches to phrases.

's Genitives

- The man's coat   's genitive
- The coat of the man   free genitive

- 's is in complementary distribution with determiners:

  - [The man standing over there]'s coat
  - *The man standing over there's the coat
  - *The the man standing over there's coat

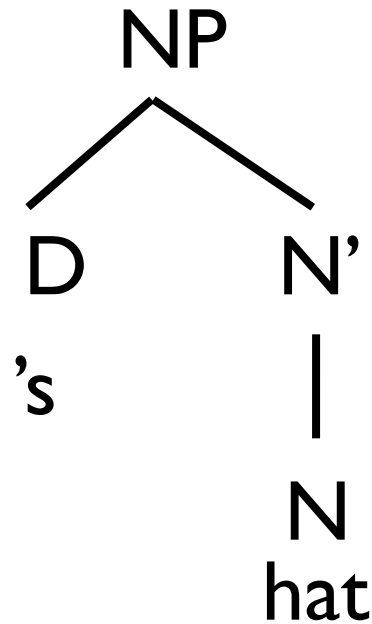- Complementary distribution means: two items are examples of the same thing!
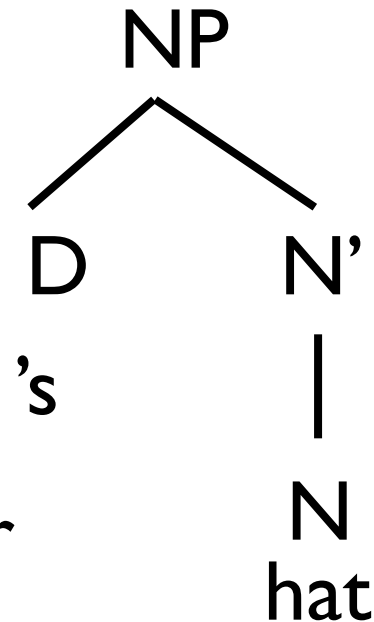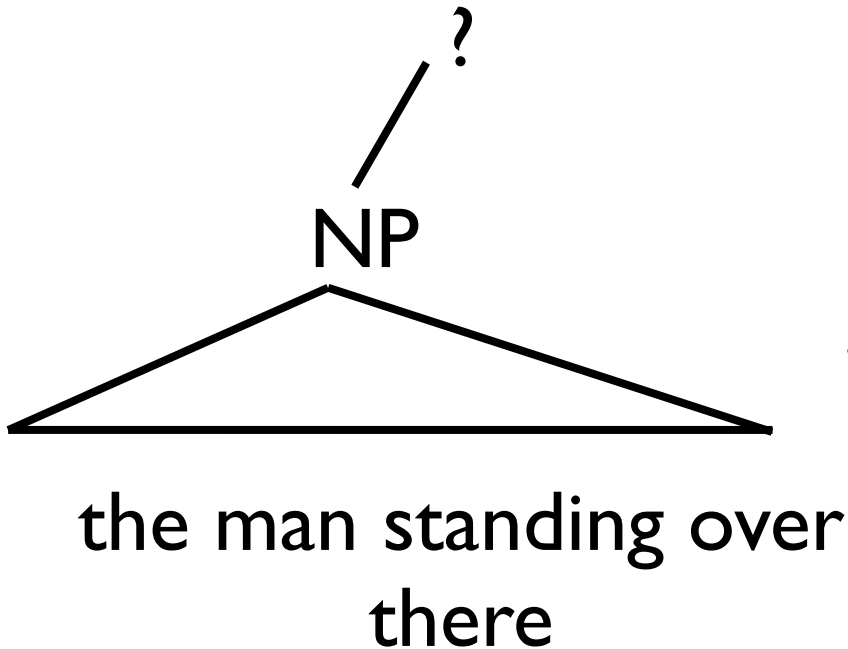
's Genitives

- 's is a determiner

NP

D   N'

's

N

hat

's Genitives

- 's is a determiner

NP
D   N'
's |
      N
      hat

If 's is a determiner, where does the possessor go?
(Remember the possessor modifies hat).

's Genitives

- 's is a determiner

?

NP

the man standing over there

NP

D
's

N'
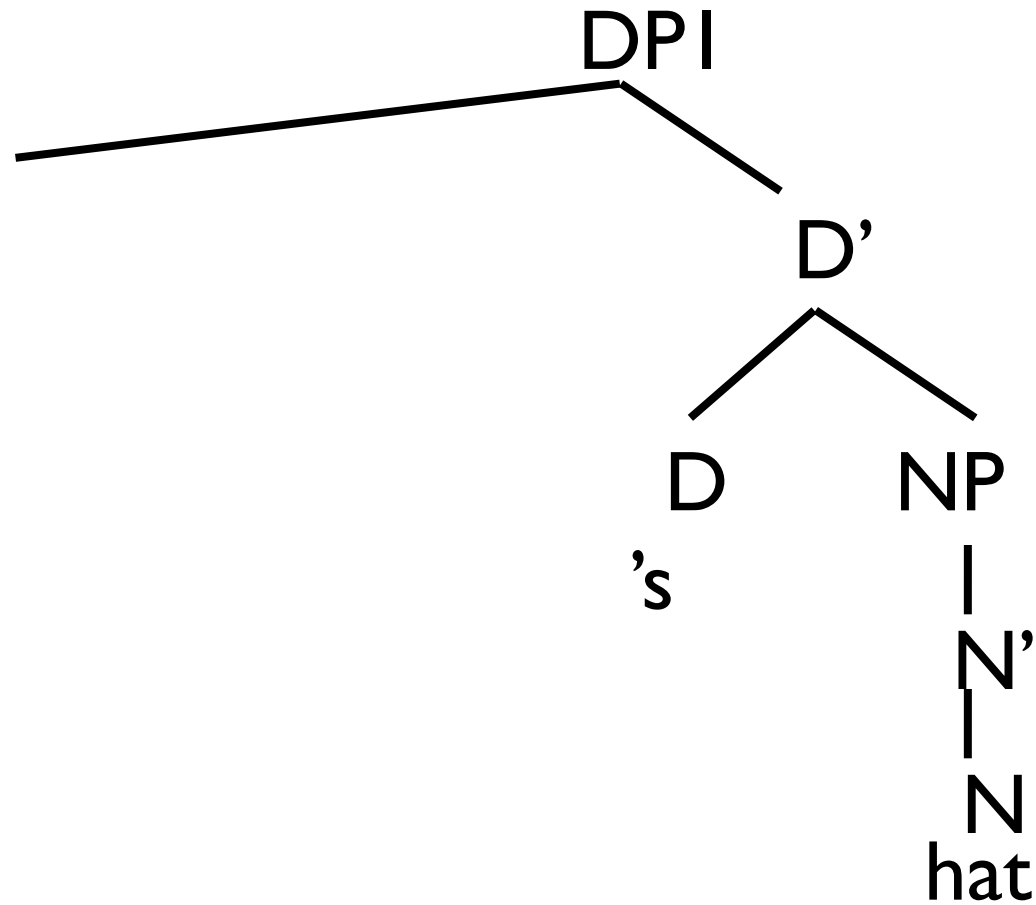
N
hat

If 's is a determiner, where does the possessor go? (Remember the possessor modifies hat).

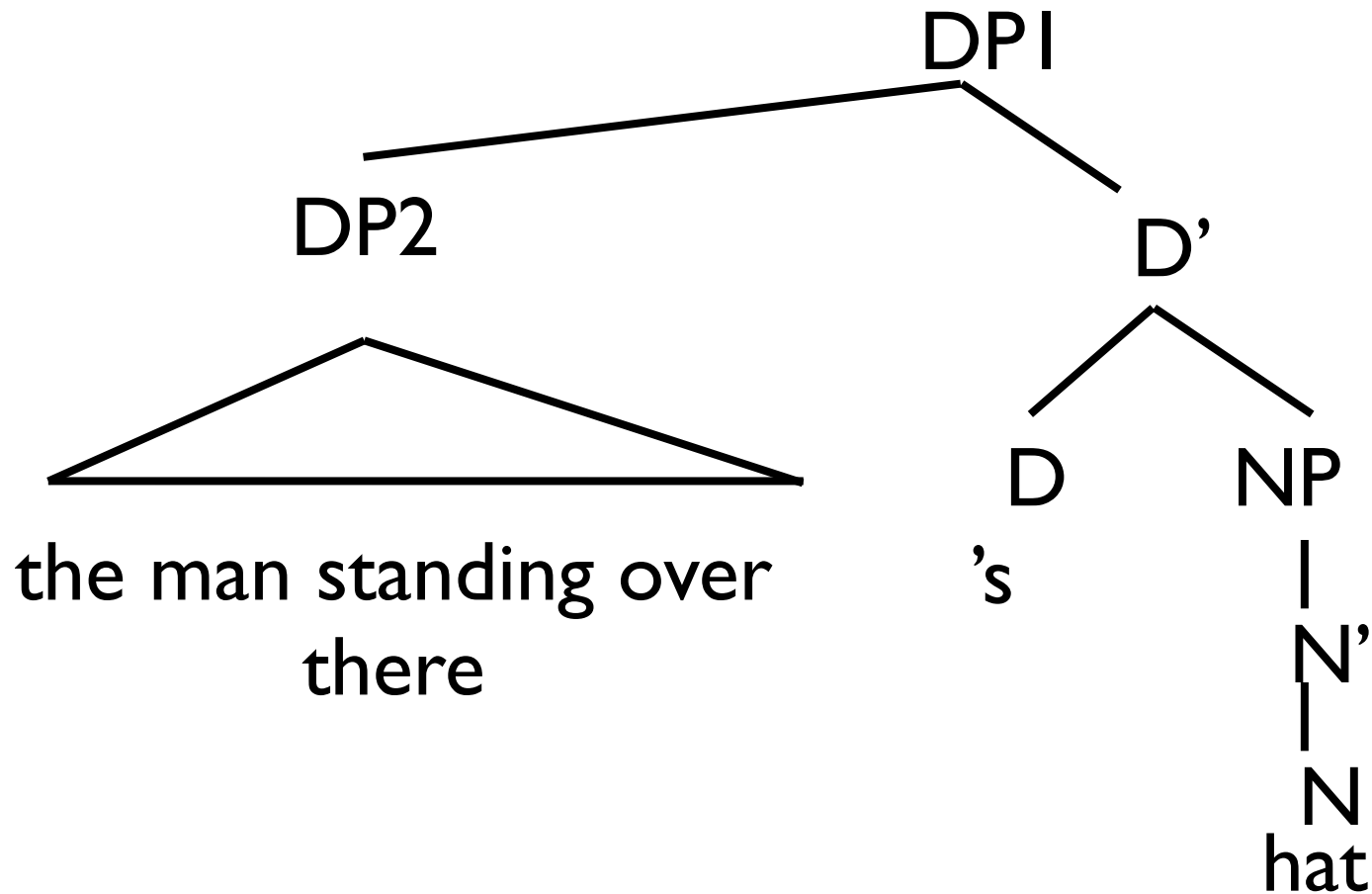# 's Genitives

- Problem solved by DP hypothesis

's Genitives

- Problem solved by DP hypothesis

's Genitives

- Problem solved by DP hypothesis

DP1
  DP2
    the man standing over there
  D'
    D
      's
    NP
      N'
        N
          hat
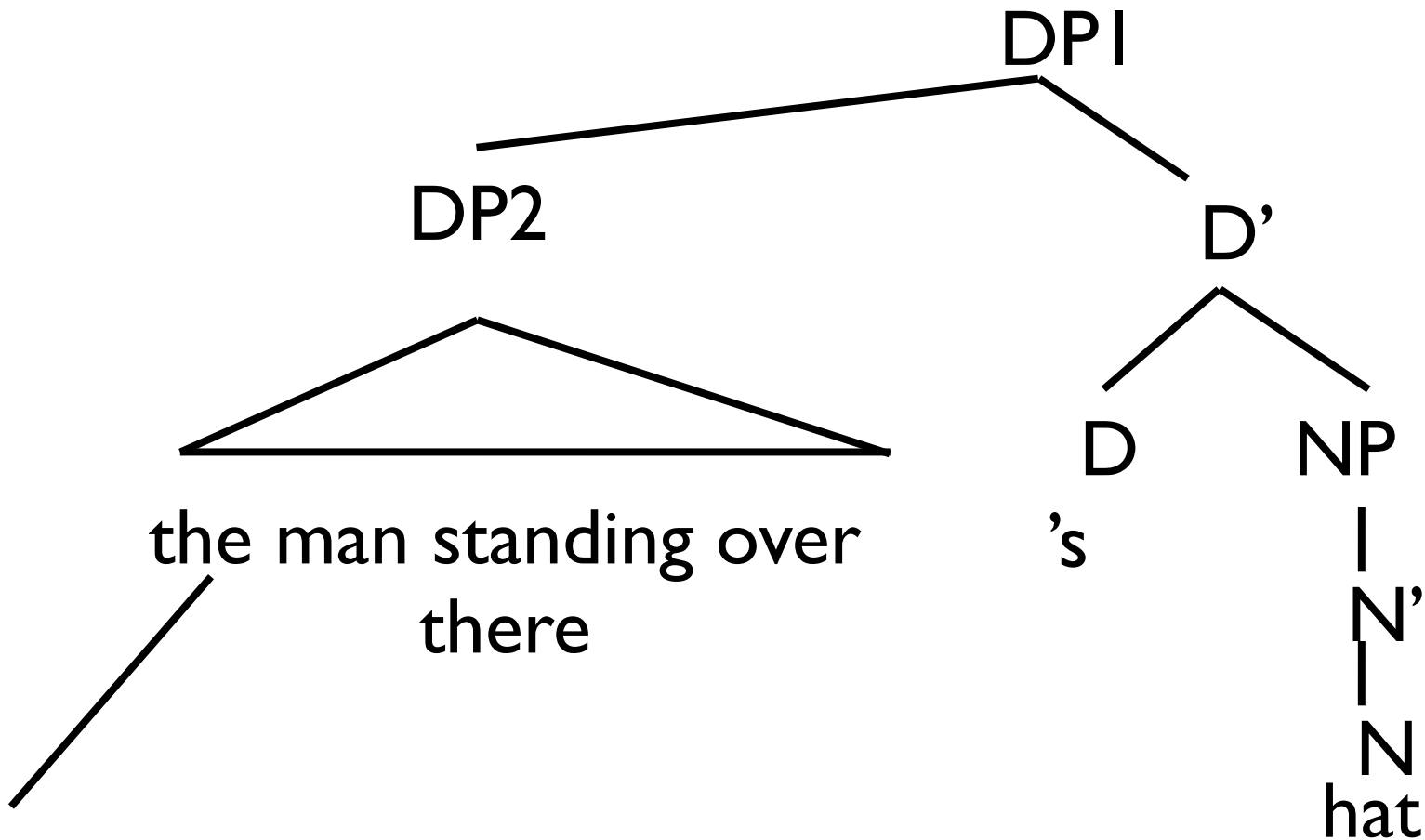
notice this is in the specifier of DP1. Is this the

What about NPs without determiners

- What about:

  - John
  - people

- Notice that in other languages these can have determiners

DP
D'
D NP
Ø N'
   N
   John
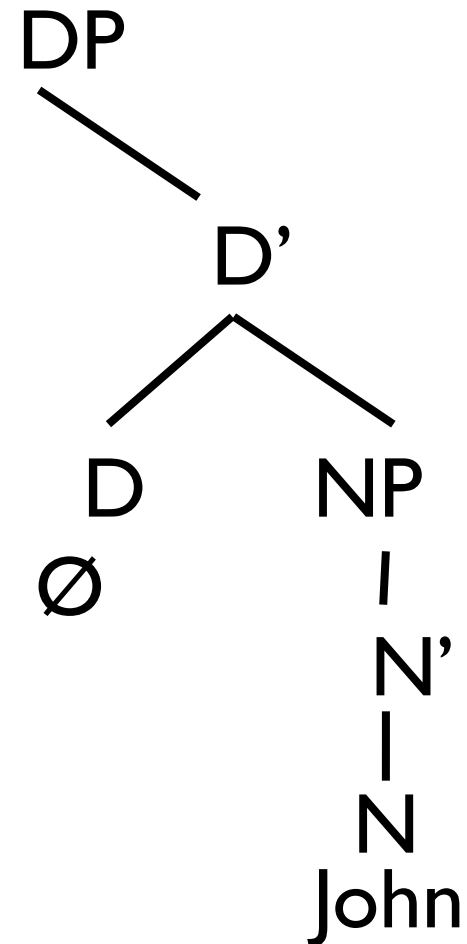
Two other rules that don't fit X-bar theory

- TP →NP (T) VP

- CP → (C) TP

- Problems:

  - Category Specific
  - No intermediate structure
  - What are the heads, complements, adjuncts?

The head of clauses
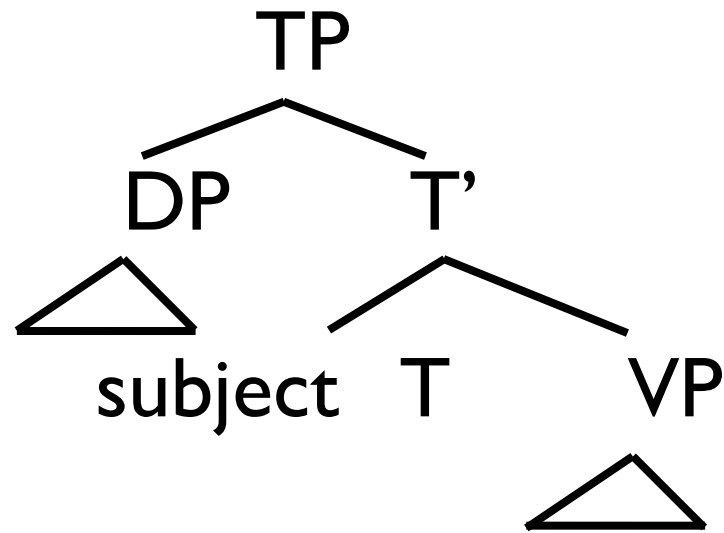
- T is the head of TP (no surprise), and we can put the TP in the X-bar format.

The head of clauses
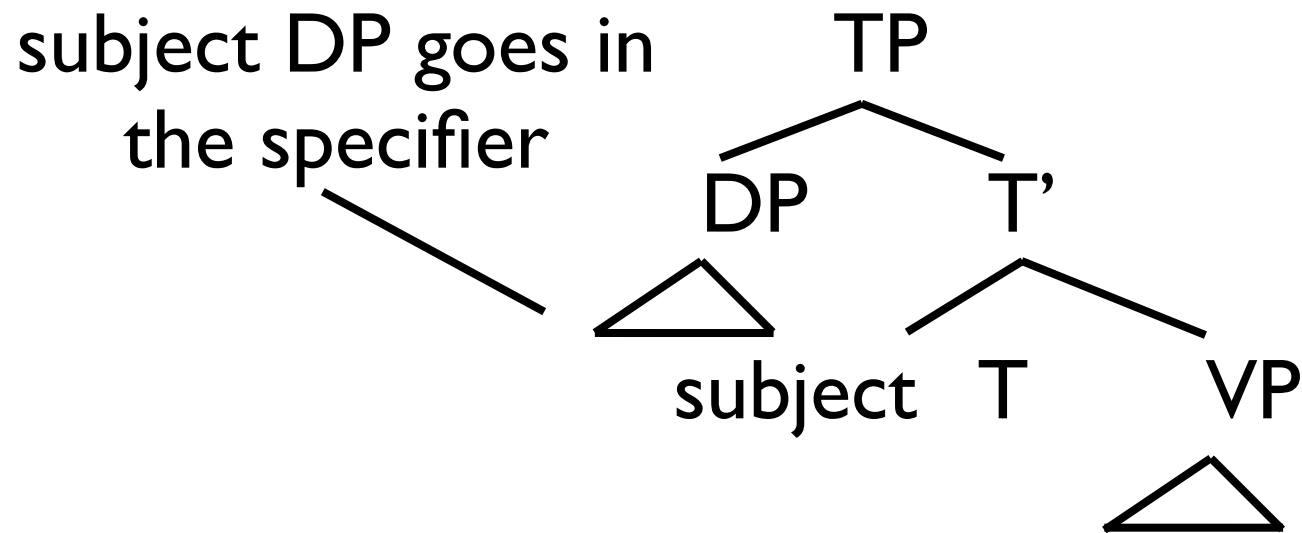
- T is the head of TP (no surprise), and we can put the TP in the X-bar format.

subject DP goes in
the specifier

TP
├── DP
│   └── subject
└── T'
    ├── T
    └── VP

The head of clauses

- T is the head of TP (no surprise), and we can put the TP in the X-bar format.

subject DP goes in the specifier

TP

DP   T'

subject   T   VP

VP is the complement
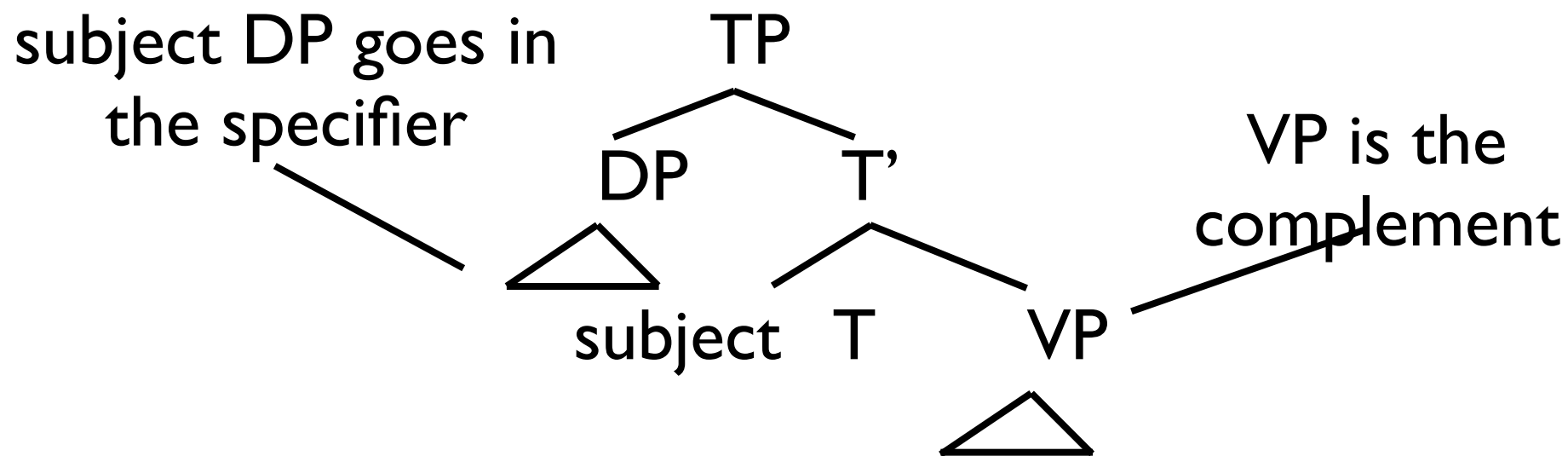
TP, IP, AgrP

- In the syntax literature you will see references to S, IP and AgrP. These are (essentially) the same thing as TP.

- Infl is another name for T.

HOLD ON!!!!

- We've only seen T in clauses with auxiliaries!!
  What about sentences without auxiliaries??

    - John loves peanut butter sandwiches

- If T is optional, how can it be the head?

T = Auxs, and suffixes

- Observation: auxiliaries and inflectional suffixes on verbs are in complementary distribution:

  - I will dance
  - I danced
  - *I will danced
  - I can dance
  - *I can danced

But: I have danced
-- we'll return to this soon

Proposal

- There is an auxiliary in every clause. Some are just null (c.f. the claim there are null determiners)

- We'll put some meat on the bones of this proposal in Unit 9
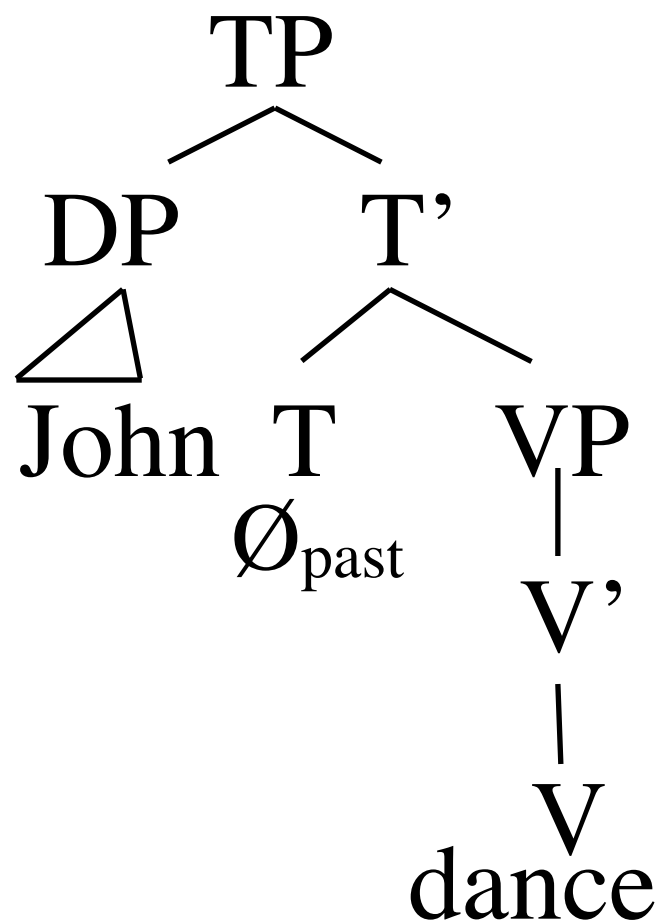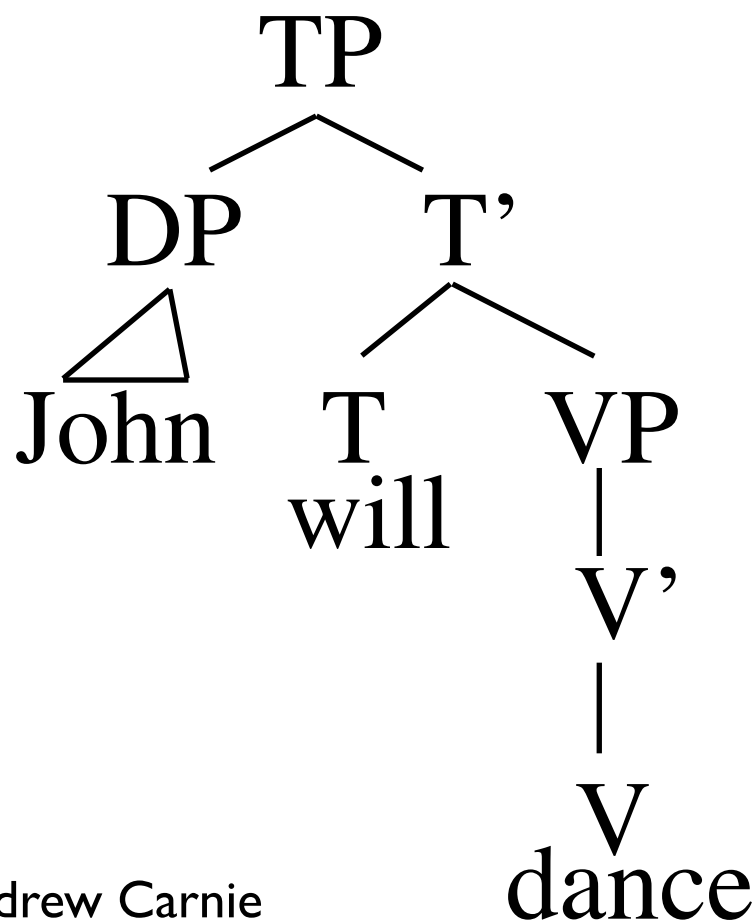
```
          TP                              TP
         /  \                            /  \
       DP    T'                        DP    T'
       /\   /  \                       /\   /  \
     John  T    VP                   John  T    VP
          will   |                        Ø_past  |
                 V'                              V'
                 |                               |
                 V                               V
               dance                           dance
```

CP→(C) TP???

- Again we can put CPs into X-bar format

```
        CP
       /  \
          C'
         /  \
        C    TP
```

CP→(C) TP???

- Again we can put CPs into X-bar format

```
        CP
        /\
          \
           C'
          /\
         C   TP
```
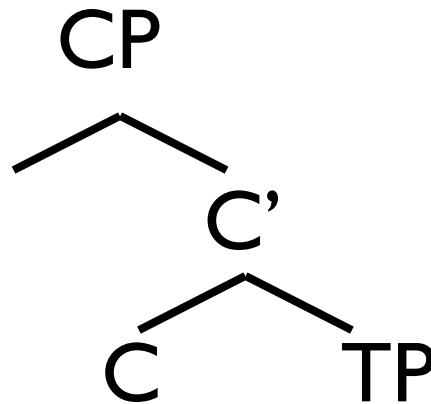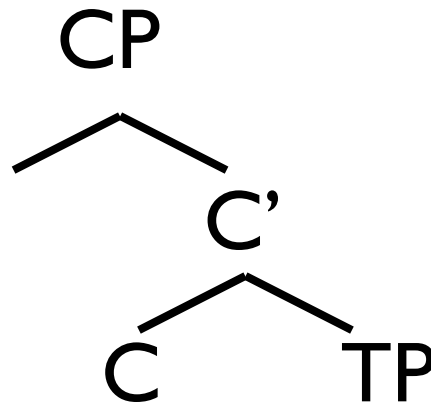
What is the specifier of CP for? We'll use it in chapter 12 when we look at *wh*-movement. It is where question words like "what" go.

Is there a CP in every clause?

- We've claimed there is an TP in every clause. Is there a CP in every clause?

- Embedded clauses without an overt complementizer?

  - I said [Louise loved rubber duckies]

- Main clauses

  - Louise loved rubber duckies?

Evidence from Yes/No questions

- You have seen the rubber ducky.

  - Have you seen the rubber ducky?

- Many languages don't do this. Instead they have special question Cs:

  - Ar fhag Seán
    Q leave John
    "Did John leave?"

- These are in complementary distribution with Cs

Evidence from Yes/No questions

CP
C'
C[+Q] TP
Ar
fhag Seán
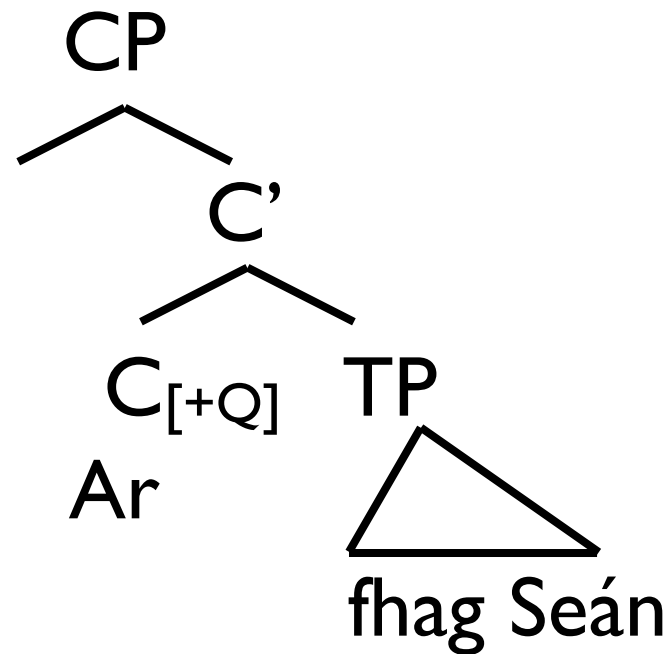
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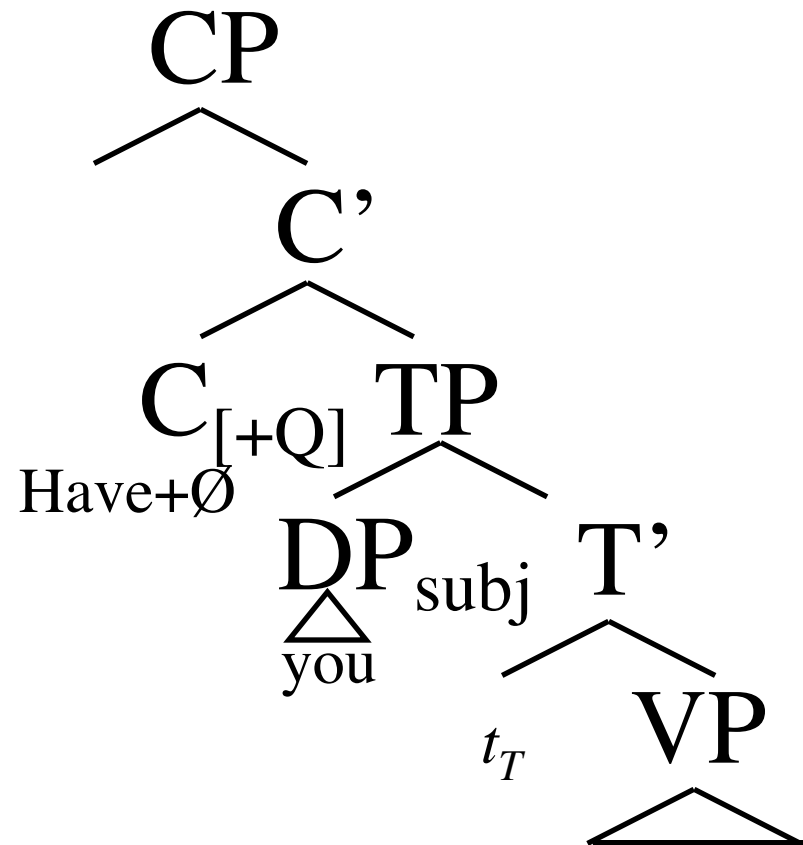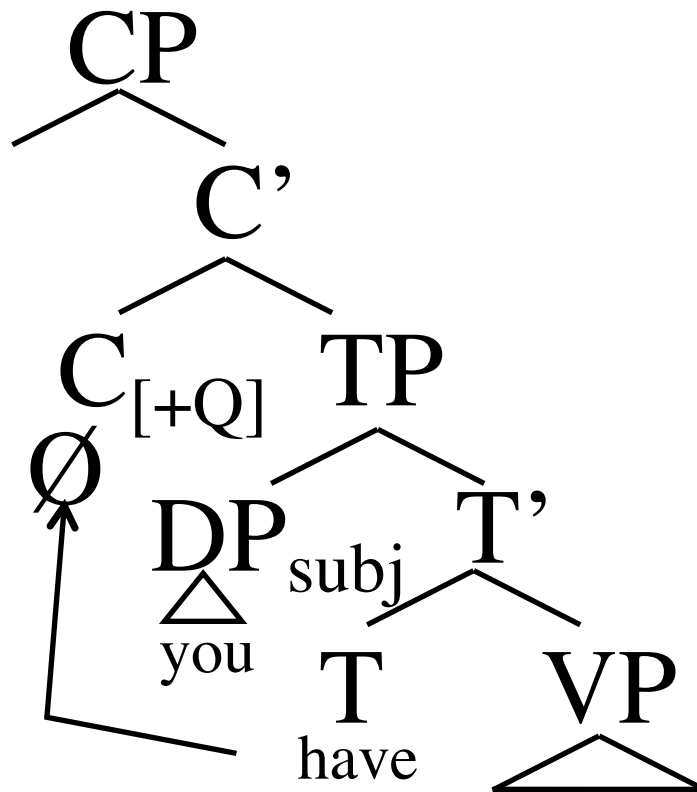
The Ø C$_{[+Q]}$ must be pronounced, so the T head moves to the position to fill it.

Evidence for [+Q] Cs in English

- English has a [+Q] C found in embedded clauses: (if)

  - I wonder if Louise likes rubber duckies

- SAI disallowed with if:

  - *I wonder if has Louise owned a rubber ducky.
  - I wonder if Louise has owned a rubber ducky.

- This means that SAI is a diagnostic for the presence of C in English!

Conclusion of discussion so far

- Root questions in English contain a phonologically null [+Q] complementizer.

- T raises to this [+Q] to give it phonological content.

Evidence that non-questions have null C?

- Recall that conjunction only links together items of the same category. If questions have a null C (indicated by subject/aux inversion), then anything they are conjoined with must ALSO have a C.

  - You can lead a horse to water but can you make him drink?

- Second clause has a null C (indicated by subject/aux inversion); therefore, first clause must also have a null C.

CP

CP   Conj   CP
but

C'   C'

C   TP   C   TP
$\emptyset_{[-Q]}$ $\emptyset_{[+Q]}$

DP   T'   DP   T'
you   you

T   VP   T   VP

can   can

lead a horse   make him
to water   drink
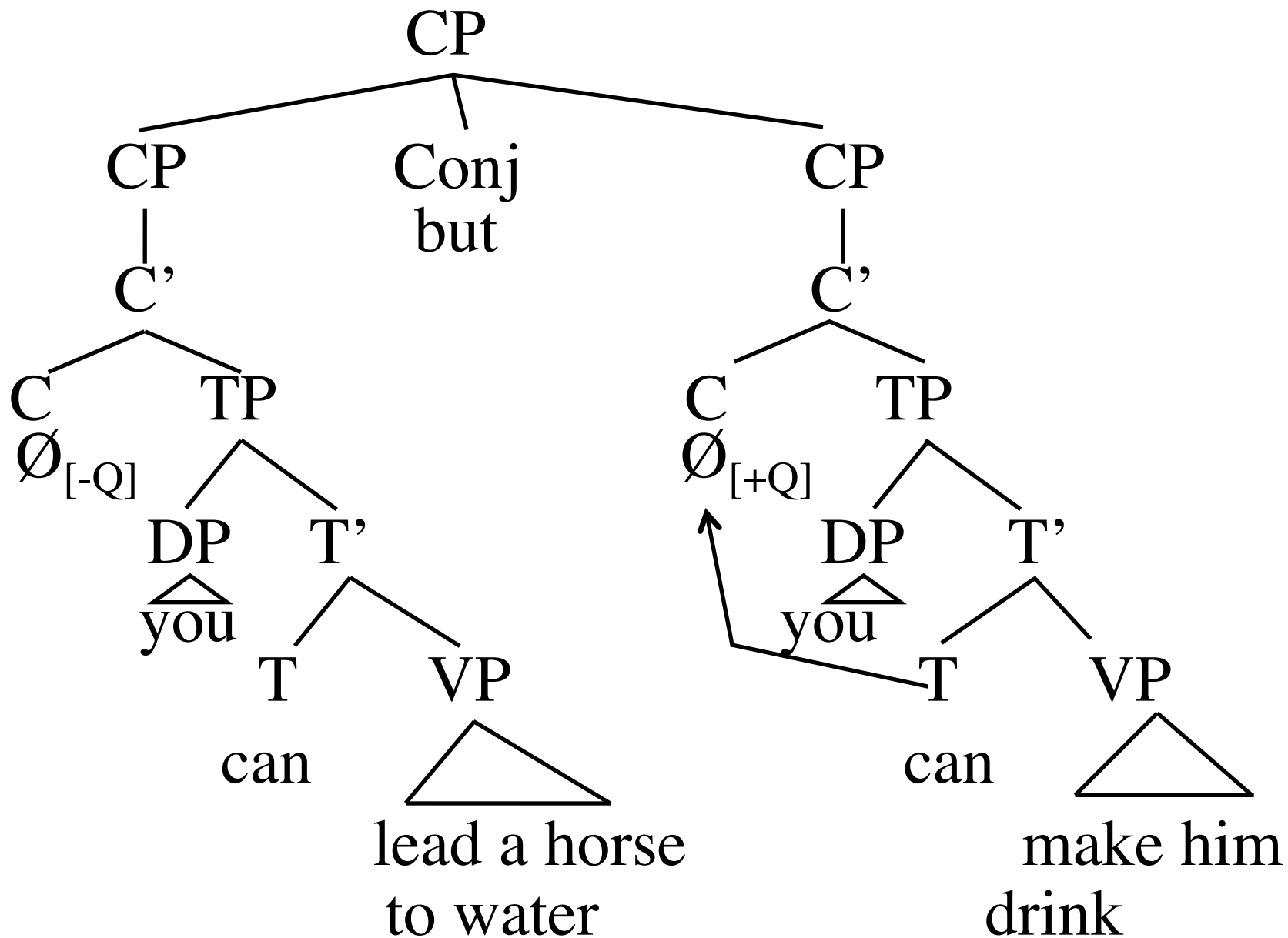
since there must be a CP in the second clause, for SAI, then there must
ALSO be a CP in the first clause. Therefore all clauses have a CP, even if the
C head is null.

Most trees have the following backbone
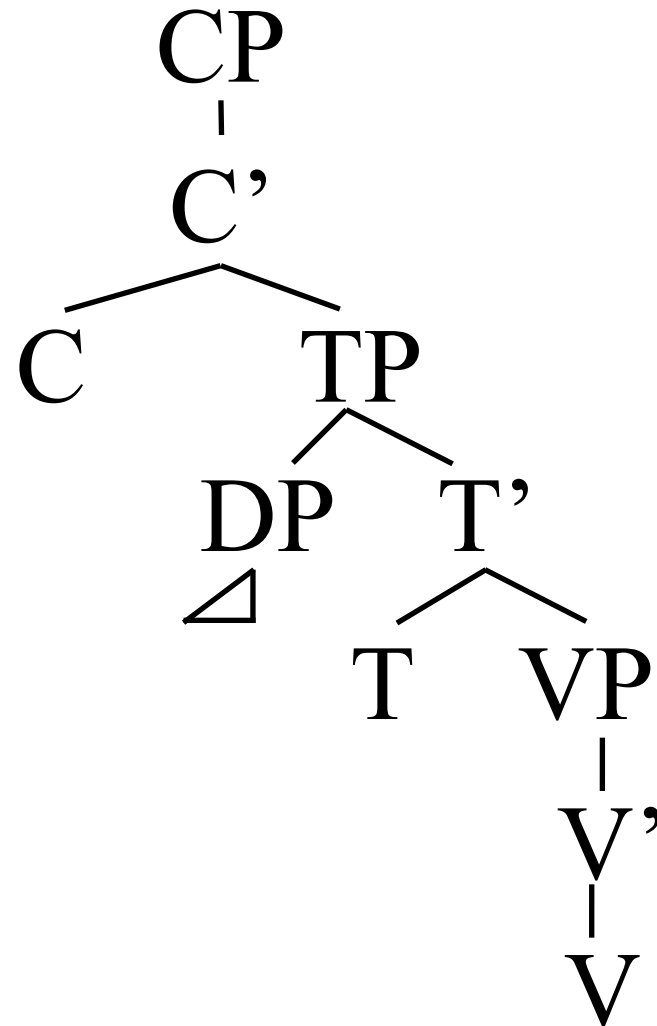
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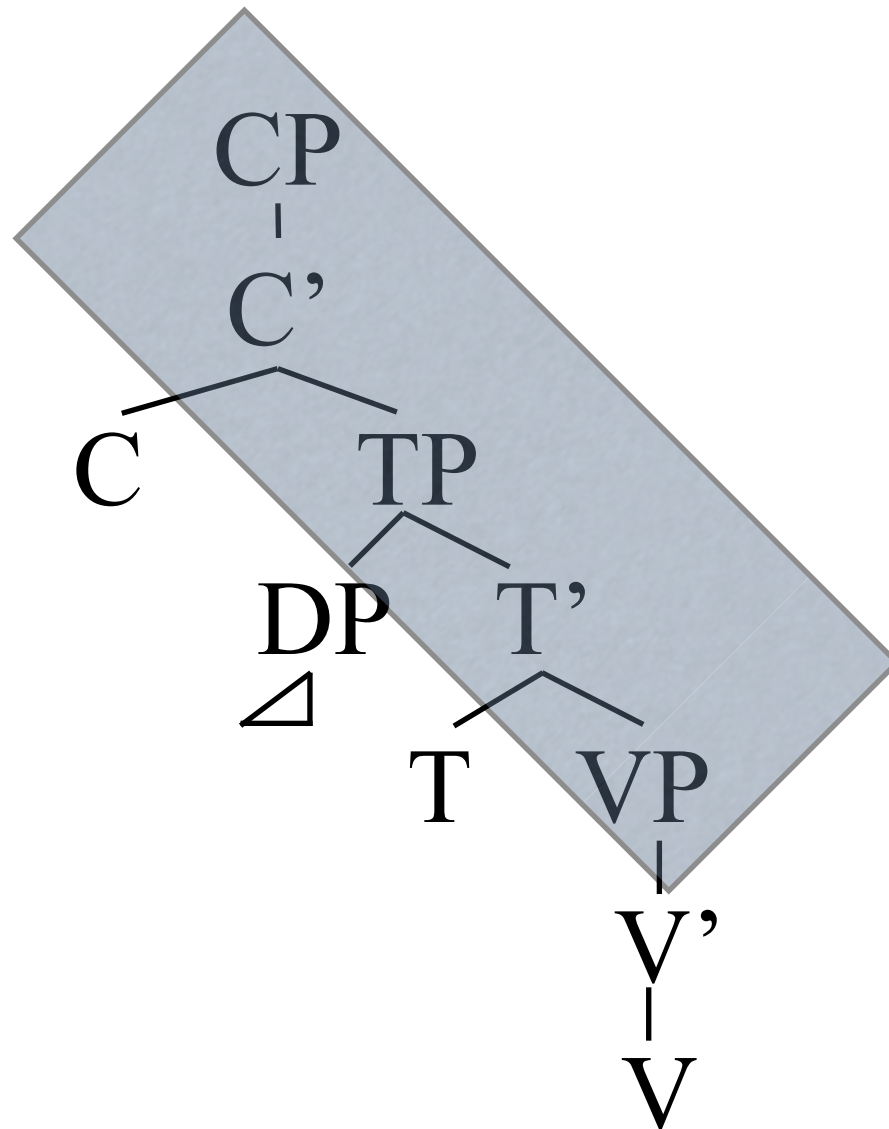
Specifiers

The notion of subject

Specifier = Subject

- By creating DP, we got rid of our previous only example of a specifier

- So do we need the notion specifier?

- Yes: we are going to use it for subjects

Specifier = Subject

- We've already seen two examples of subjects being in specifiers:

  - The subject of a clause is in the specifier of TP
  - The possessor of an 's genitive is in the spec of DP.

- Are there other examples?

Small Clauses

- I consider [Peter a fool]
- I consider [Peter foolish]
- I want [Peter in the play]

Small Clauses

- I consider [Peter a fool]
- I consider [Peter foolish]
- I want [Peter in the play]

Don't worry about identifying Small clauses
or drawing them

Small Clauses

- Small clauses are characterized by having no verbal inflection (in fact they don't have verbs), so they have no backbone TP or CP.

- If there is no TP, where does the subject of the small clause go? In the specifier of the predicate.

```
                    CP
                    |
                    C'
                   /  \
                  C    TP
                  |   /  \
                  Ø  DP   T'
                     /\   / \
                   Bill  T   VP
                        Ø[pres] |
                                V'
                               /  \
                              V    DP
                         considers  / \
                                  DP   D'
                                  /\   / \
                               Peter  D   NP
                                      |   /\
                                      a  fool
```

CP
C'
C
Ø
TP
DP
Bill
T'
T
Ø[pres]
VP
V'
V
considers
DP

Small Clause

DP
Peter
D'
D
a
NP
fool

Syntax tree diagram:

- CP
  - C'
    - C: Ø
    - TP
      - DP: Bill
      - T'
        - T: Ø [pres]
        - VP
          - V'
            - V: considers
            - DP (Small Clause)
              - DP: Peter (Small clause subject)
              - D'
                - D: a
                - NP: fool

```
                    CP
                    |
                    C'
                   /  \
                  C    TP
                  |   /  \
                  Ø  DP   T'
                     △   /  \
                    Bill  T    VP
                         Ø[pres] |
                                 V'
                                /  \
                               V    AP
                          considers /  \
                                   DP   A'
                                   △    |
                                 Peter  A
                                      foolish
```

```
                    CP
                    |
                    C'
                   /  \
                  C    TP
                  |    / \
                  Ø   DP   T'
                     /△\   / \
                   Bill   T    VP
                        Ø[pres]  |
                                 V'
                                / \
                               V   AP
                          considers / \
                                  DP   A'
                                 /△\   |
                               Peter   A
                                     foolish
```

Small Clause

CP
C'
C
Ø
TP
DP
Bill
T'
T
Ø[pres]
VP
V'
V
considers
AP
DP
Peter
A'
A
foolish

Small Clause

Small clause
subject

CP
C'
C
Ø
TP
DP
Bill
T'
T
Ø[pres]
VP
V'
V
wants
PP
DP
Peter
P'
P
in
DP
the play

CP

C'

C
Ø

TP

DP

Bill

T'

T
Ø[pres]

VP

V'

V
wants

PP

Small Clause

DP

Peter

P'

P
in

DP

the play

CP

C'

C
Ø

TP

DP
Bill

T'

T
Ø[pres]

VP

V'

V
wants

PP

DP
Peter

P'

P
in

DP
the play

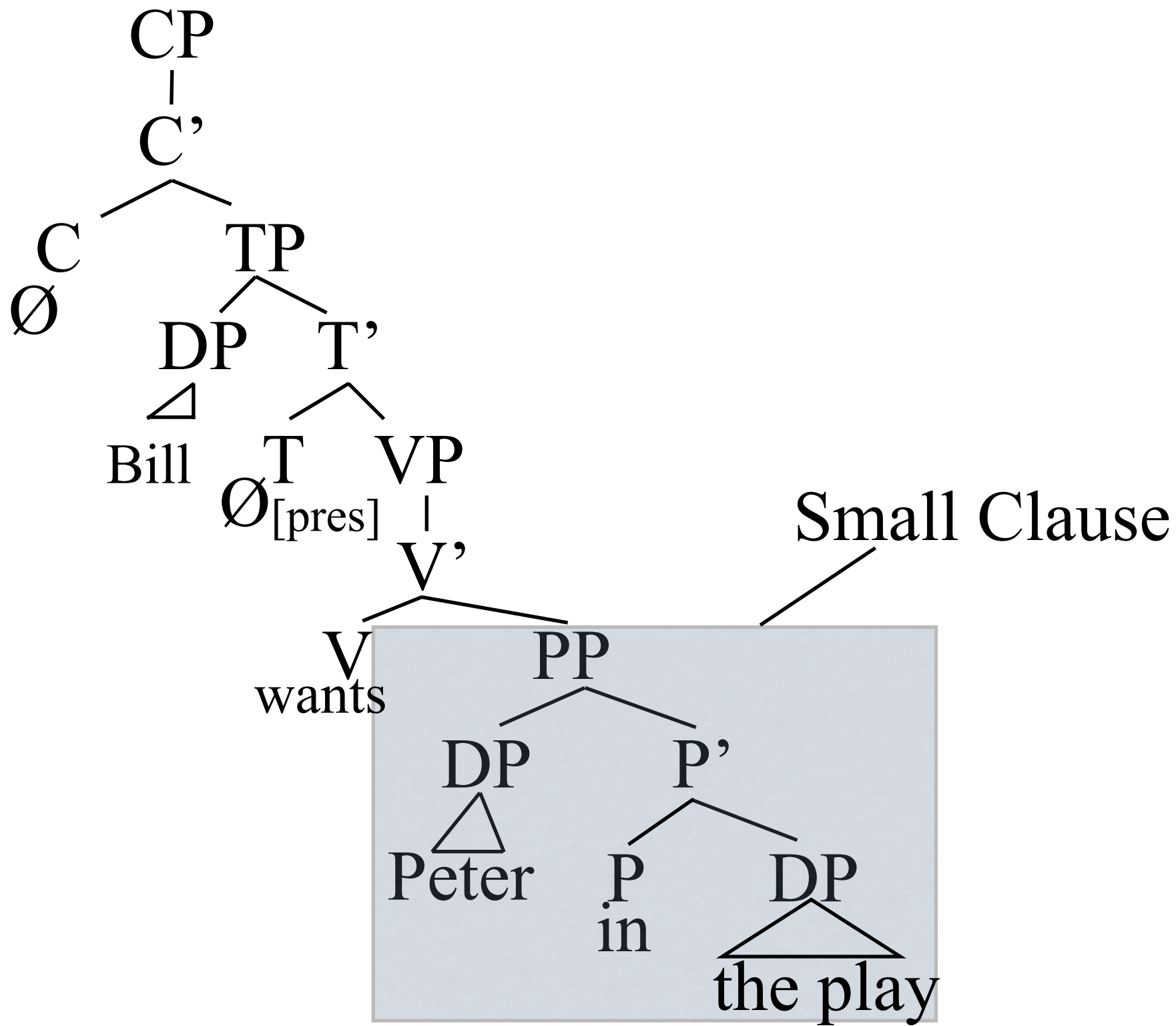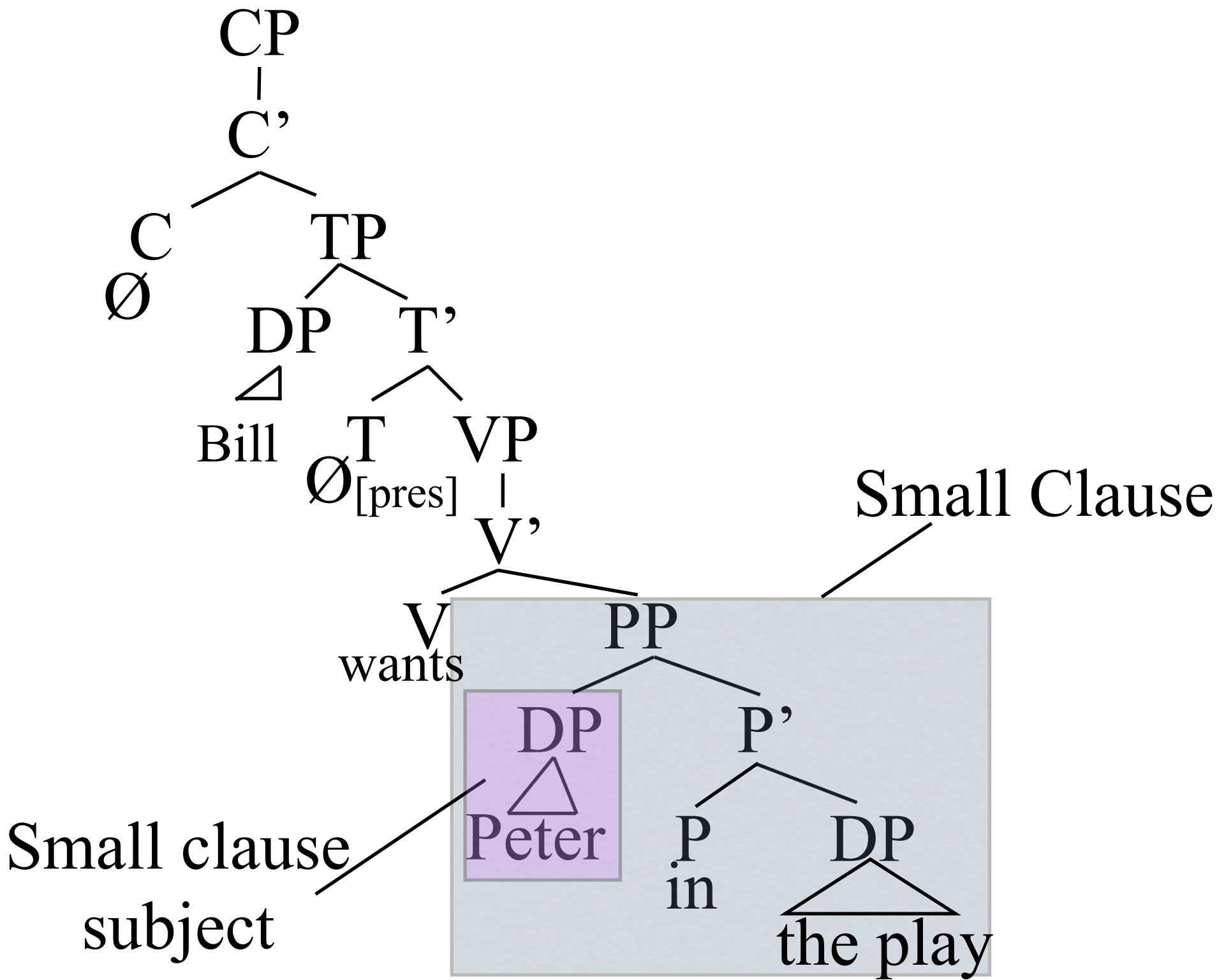Small Clause

Small clause subject

Summary

- D isn't a specifier -- it is a head. Evidence from 's genitives. DP hypothesis

- The head of the sentence is T. The sentence type is determined by the finiteness of T

- The subject is the the spec of TP

- All sentences have TP, when tense is marked on the verb, then we have a Ø T head.

Summary

- All clauses have a C head. It may be null. Evidence comes from subject/aux inversion in yes/no questions.

Summary

- Specifiers are now limited to subjects (of any category)

- Small clauses are clauses without inflection, and ones without a verbal predicate

- The subject of small clauses resides in the specifier of the predicate's phrase.