

Analysis: *do* is inserted in split head chains

Heads in the clausal spine form a head chain

- (1) [CP C [TP T [vP v [VP V ... (C is part of the head chain in V2 sentences)

A head chain is pronounced as an **inflected verb** in one of the positions (v in English, T in French, etc.) (The precise mechanism of head chain formation is orthogonal. Possibilities include agreement, Head Movement/Lowering, or a mirror-theoretic complementation line.)

Parameter: Some languages require integrity of head chains

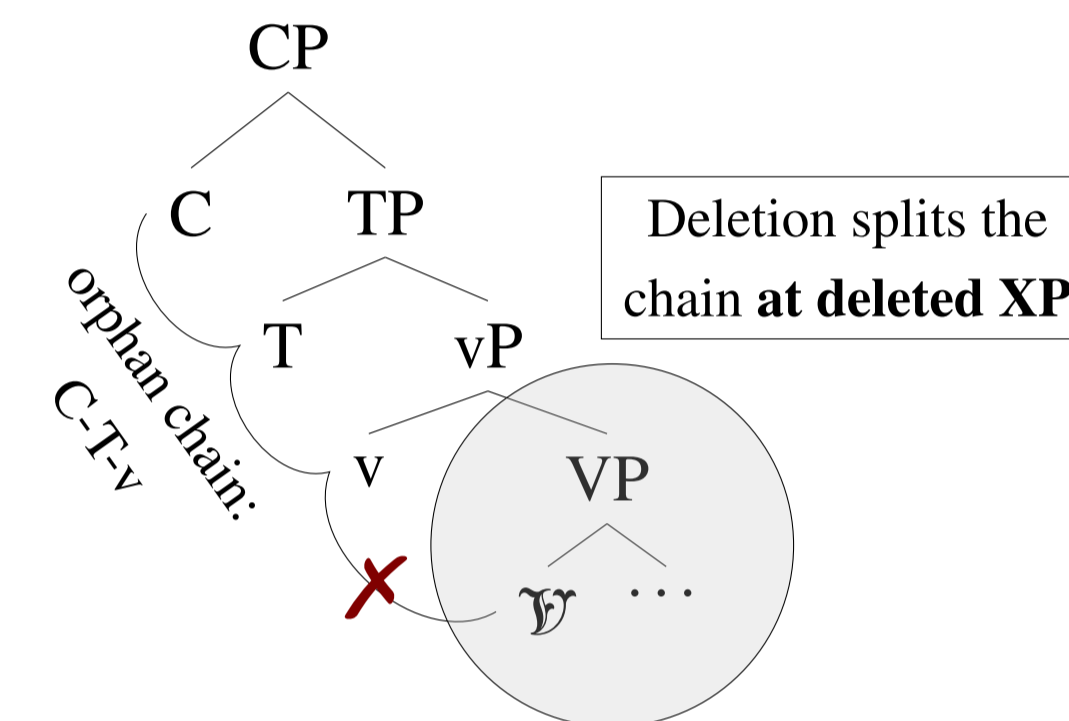
Proposal: In languages with special integrity conditions, head chains are built around a special V: \mathcal{V} .

Disrupting the integrity of a \mathcal{V} -chain causes *do*-support

Standard view: *Do*-support is due to **blocking** of head chain formation.

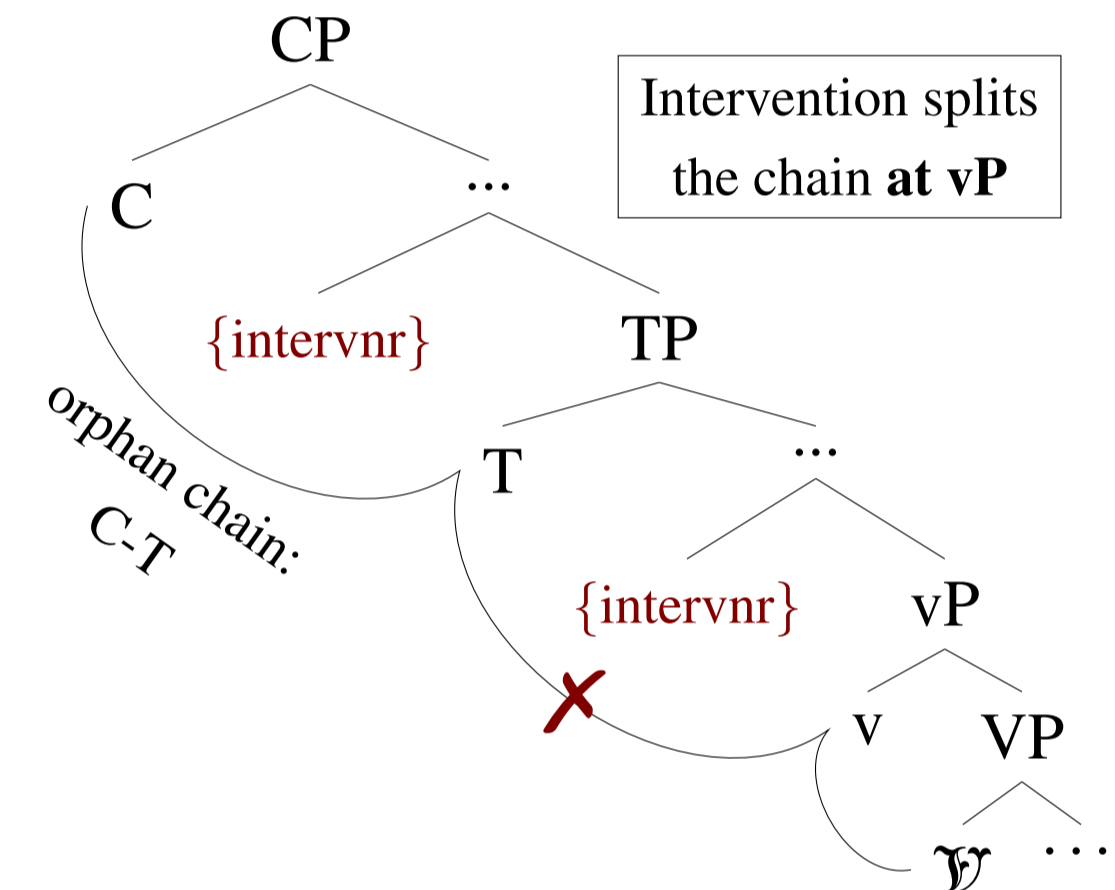
Our proposal: Head chains are **fully formed but later split**.

(2) Split-by-deletion



(3) Split-by-intervention

(by heads & specifiers, not adjuncts: Bobaljik 1995)



Orphan chain

A head chain that becomes dissociated from a lexical verb due to splitting

Do is inserted in orphan chain and surfaces where the lexical verb would

Claims

- Do*-support is not triggered by failure of some operation such as Head Movement or Lowering.
- Do*-support is not triggered by idiosyncratic requirements of particular heads.

- Do*-support is triggered by special integrity conditions on certain head chains.
- Variation in the surface position of *do* follows from independent parameters on verb position.

Do-support is not triggered by failure of Head Movement or Lowering

The traditional view

Chomsky 1957, Lasnik 1981, Halle & Marantz 1993, Bobaljik 1995, Embick & Noyer 2001:

- Do* is inserted in **stranded heads** (typically T) as a Last Resort.
 - A head is stranded if it's affixal yet cannot combine with V (via Head Movement or Lowering).
- WRONG PREDICTION: a language with V-to-T movement should not have *do*-support.

Monnese has both V-to-T movement and *do*-support (Benincà & Poletto 2004, Bjorkman 2011)

Both auxiliaries and lexical verbs move to T and precede adverbs:

- (4) I *à* *semper* tʃakolà
he *have.3SG* *always* spoken
- (5) I *tʃakola* *semper*
he *speak.3SG* *always* 'He always speaks.'
- [TP T+*have* *always* [AuxP <have> ...]]
- [TP T+*speak* *always* [vP <speak> ...]]

→ The affixal requirement of T is always satisfied by V-to-T.

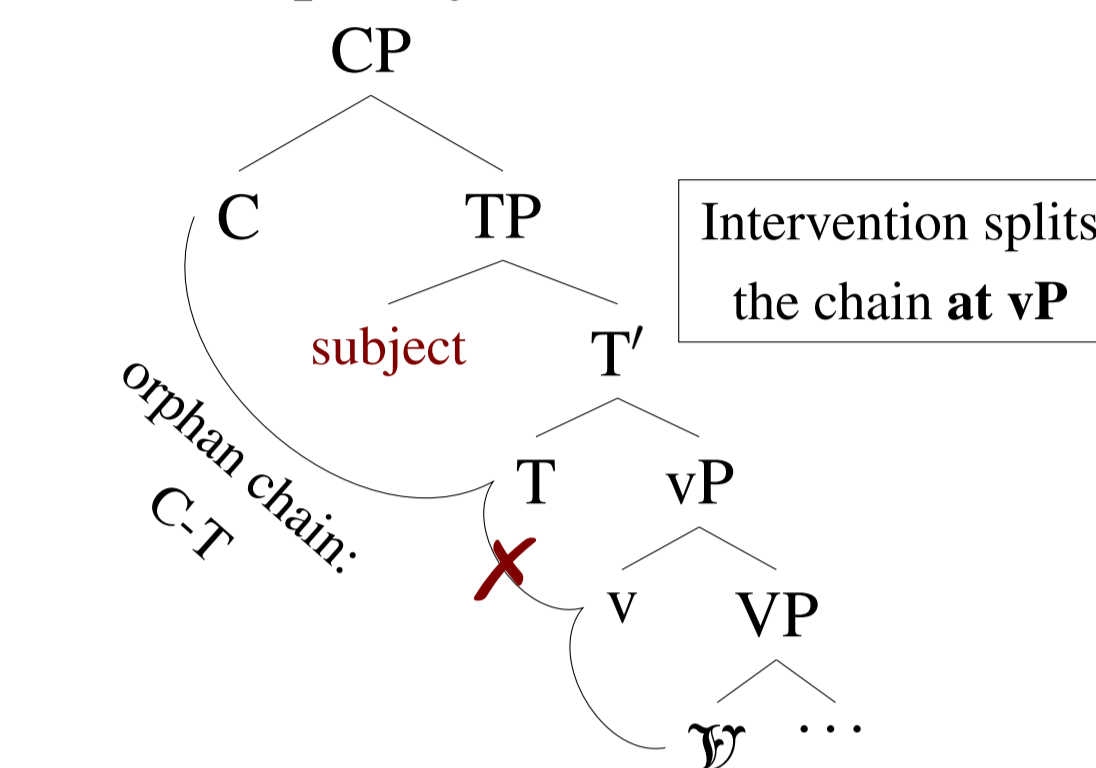
In further T-to-C movement, *do*-support emerges:

- (6) **Monnese has T-to-C**
kwal è *-t* tʃerkà fora?
which *have.2SG* *-you* searched out
'What have you chosen?'
- (7) **T-to-C with lexical V triggers *do*-support**
ke *fe* *-t* majá?
what *do.2SG* *-you* eat.INF
'What do you eat?'
- [CP C+T+*have* [TP *subject* <T+have> ...]]
- [CP C+T+*do* [TP *subject* <T+?> ...]]

⇒ A countercyclic effect: V-to-T seems to be precluded by T-to-C

Monnese *do*-support arises due to Split-by-intervention

(8) T-to-C: Split-by-intervention

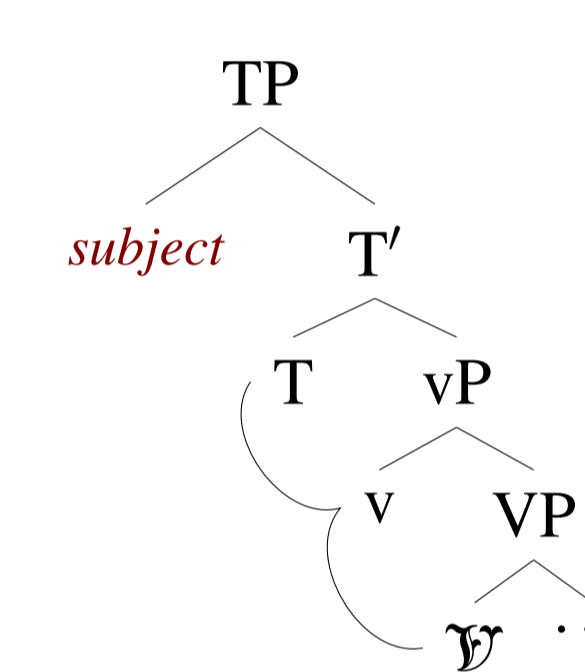


- The orphan chain is pronounced in C as *do*.
- CORRECT PREDICTION: The lexical verb is pronounced low, despite the normal V-to-T.

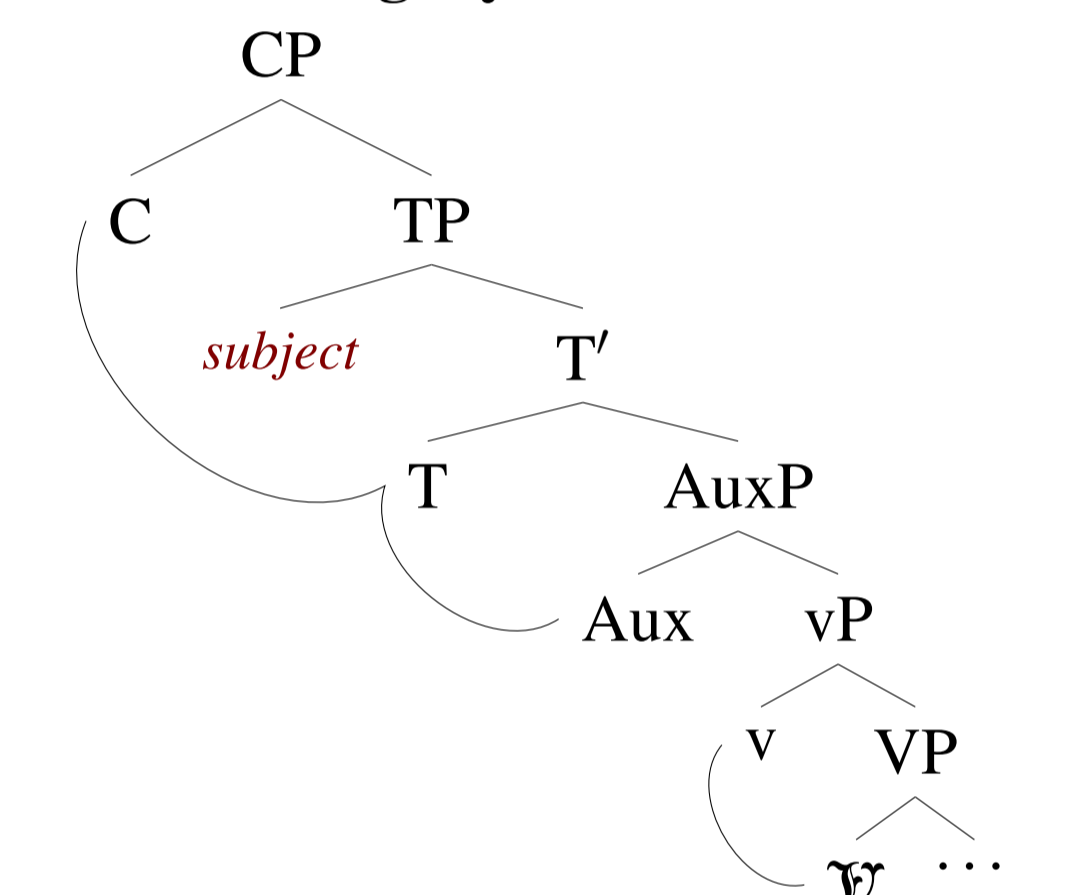
(9) I *tʃakola* *mia*.
he *speak.3SG* *not*
'He doesn't speak'

(10) *fe* *-t* *mia* *majal* 'I pom?
do.2SG *-you* *not* *eat.INF* the apple
'Do you not eat the apple?'

(11) V-to-T: no intervention



(12) Aux: no integrity constraints



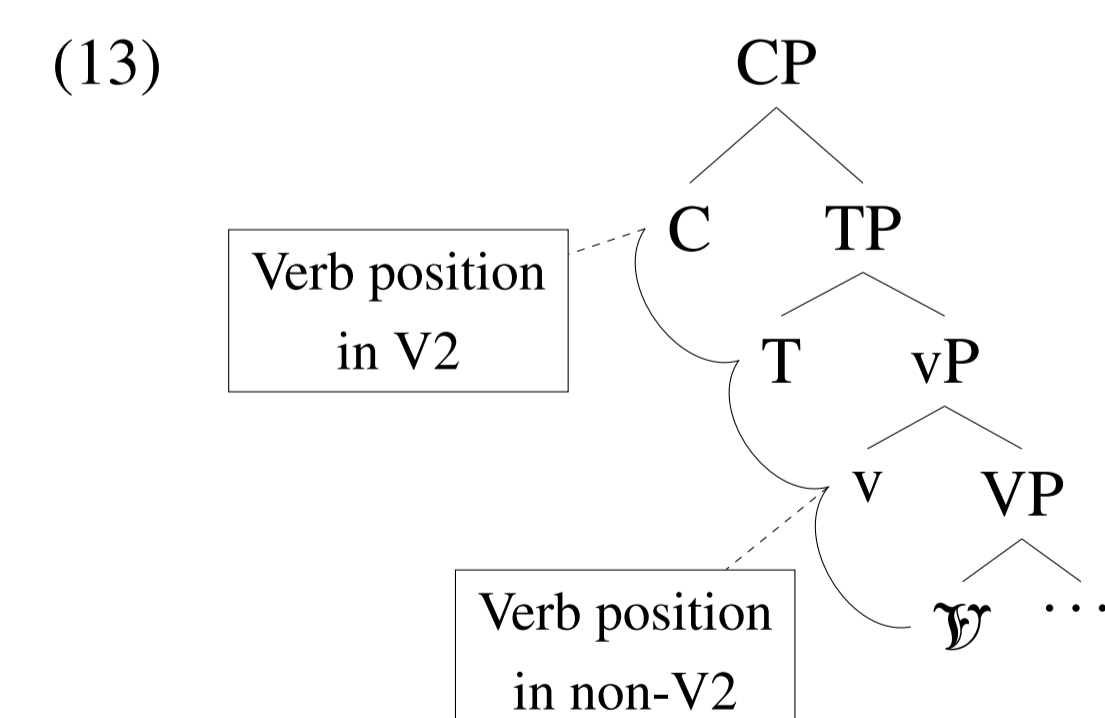
⇒ V-to-T movement does **not** preclude *do*-support (See also Bjorkman 2011)

Do-support is not triggered by idiosyncratic requirements of particular heads: *Do* can surface in C, T, v or in multiple positions, in a predictable way

Mainland Scandinavian (MSc): *Do* in C or v

Surface position of *do* follows from independent parameters determining surface position of verbs

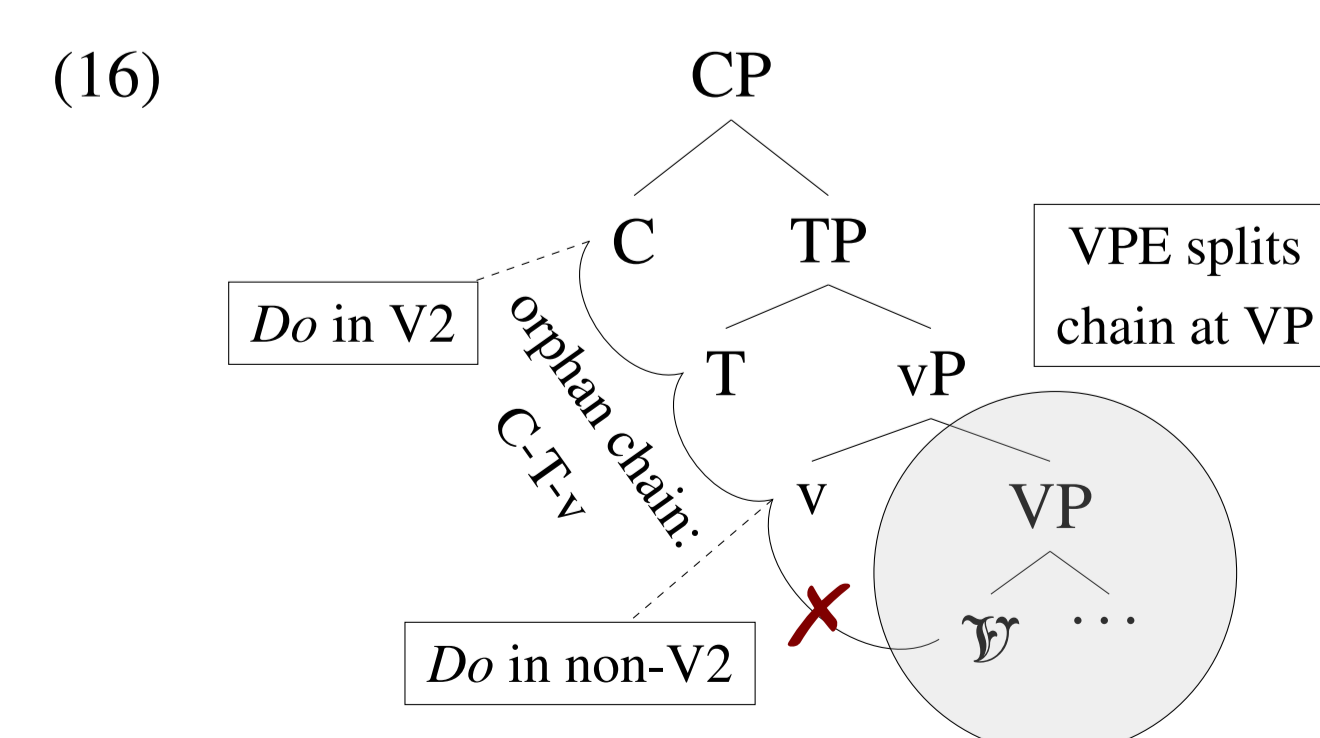
Finite verb positions:



- (14) Om morgenen **drikker** Peter ofte kafe.
in the.morning *driks* Peter often coffee
'Peter often drinks coffee in the morning.'
- (15) Vi ved at Peter ofte **drikker** kaffe om morgenen.
we know that Peter *often driks* coffee in the.morning
'We know that Peter often drinks coffee in the morning.'

(Danish examples; see den Besten 1983, Taraldsen 1985, Holmberg & Platzack 1995, Vikner 1995)

Do surfaces in those same positions under VP ellipsis & Split-by-deletion:



- (17) *Mona or Jasper washed the car, or rather ...*
... Mona **gjorde** Δ_{VP}
Mona **did** '... Mona did.'
- (18) *We are expected to go further. That said, it would be a great disappointment, not a catastrophe, ...*
... hvis vi **ikke gør** Δ_{VP}
if we **not do** '... if we don't.'

(Danish examples; see Sailor 2009, 2018, Houser et al. 2011, Platzack 2012, Thoms 2012, Bentzen et al. 2013)

English: *Do* in C or T

Surface position of *do* follows from site of split

Verb typically surfaces in v:

(19) Mary **often drinks** coffee.

With **vP ellipsis & Split-by-deletion**, *do* surfaces in C or T, since v is not in orphan chain:

- (20) *Do in V2* *Do in non-V2*
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- (21) Sue *washed the car*.
Did Mary Δ_{VP} ?
- (22) Sue *washed the car*, but ...
... Mary **did** not Δ_{VP}

With **Split-by-intervention**, *do* also surfaces in C or T:

- (23) *Do in V2* *Do in non-V2*
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- (24) **Did** Mary wash the car?
- (25) Mary **did** not wash the car.

VP ellipsis under auxiliaries: *Do* in v

VPE can result in *do* under auxiliaries:

- (26) *Orphan chain only contains v*
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- (27) *I'm not looking for a new partner.*
Men hvis jeg **havde gjort** Δ_{VP} , ...
but if I **had done**
'But if I had been ...'
- British English (BrE):
- (28) Kim isn't running for office now, ...
... but she **has done** Δ_{VP} in the past.

(BrE *do*: Chalcraft 2006, Haddican 2007, Aelbrecht 2010, Baltin 2012, Thoms 2011, Thoms & Sailor 2018)

Do in both T and v in the same sentence

Double *do* in BrE (Chalcraft 2006): Split-by-deletion plus Split-by-intervention.

- (29) *Orphan* *Orphan*
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- (30) John said he would **help**, ...
... but he **doesn't** usually **do** Δ_{VP} .

2 orphan chains → 2 instances of *do*-support: