

Remnant licensing and structural economy in VP ellipsis: Evidence from Czech

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What functional material can and what functional material cannot be pronounced in the remnant of VP ellipsis?

Existing generalization

(Akmajian & Wasow 1975, Sag 1976, Aelbrecht & Harwood 2015)

- functional material base-generated outside of the ellipsis site cannot be deleted
- functional material generated within the ellipsis site must raise out of it to become a remnant

Terminology note

- **VPE** = a cover term for a family of elliptical structures targeting vP-like maximal projection (AspP etc.)
- **v** = a cover term for the upper most phase head in this domain; i.e., the head that carries an E feature (Merchant 2001) and which complement gets deleted

Base-generated outside VPE: not deleted

English non-finite *have*

- (1) 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.

(Aelbrecht & Harwood, 2015)

Base-generated inside VPE (optional raising): optional English *be, been*

(2) Betsy must have **been** being hassled by the police, and. . .

a. Peter must have [~~been being hassled by the police~~], too.

a. Peter must have **been** [~~being hassled by the police~~], too.

(Aelbrecht & Harwood, 2015)

Base-generated inside VPE (no raising): deleted English *being*

- (3) 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.

(Aelbrecht & Harwood, 2015)

Czech as a counterexample?

Czech auxiliaries

Low and high auxiliaries

- all morphologically based on the root být ‘be’ but differ in their base-generated position and movement properties
- **low** auxiliaries (future tense/aspect): base-generated within vP
- **high** auxiliaries (past tense aux, conditional aux): base-generated outside of vP
- (Veselovská 1995, 2004, 2008: high aux in Agr above T, Gruet-Skrabalova 2012: lower C, Kučerová 2012 in T)

Czech auxiliaries in VPE

- low auxiliaries: optionally raising, optionally overt => English-like
- high auxiliaries: outside of vP, yet obligatory absent => not English-like

(Dočekal, 2007; Gruet-Skrabalova, 2012)

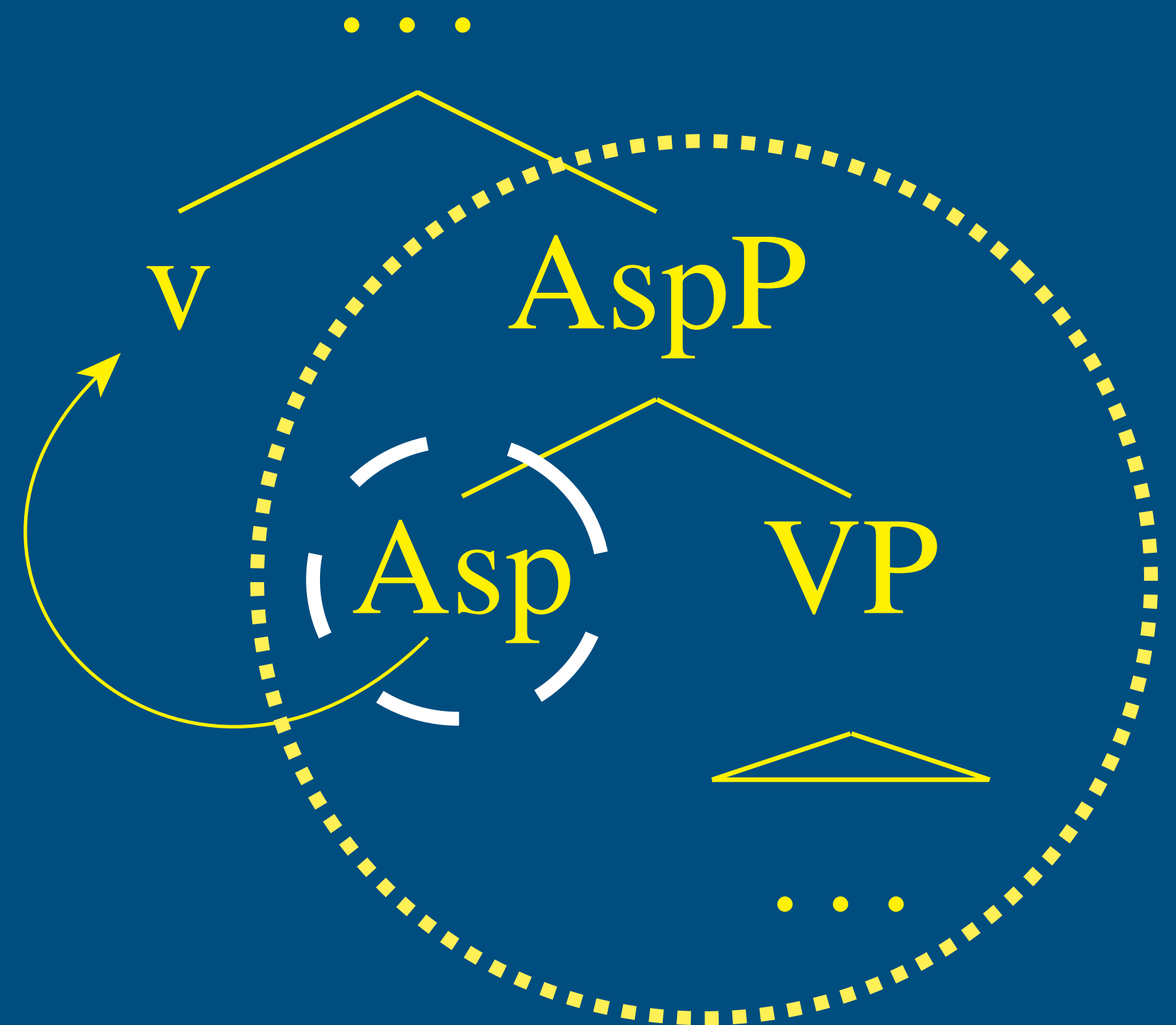
Czech low auxiliaries

Asp, below the v phase head: optionally raising, optionally overt

(4) Ty budeš jíst sýr a já (budu) taky.

you will.2sg eat.inf cheese and I will.1sg too

'You will eat cheese and so will I.'



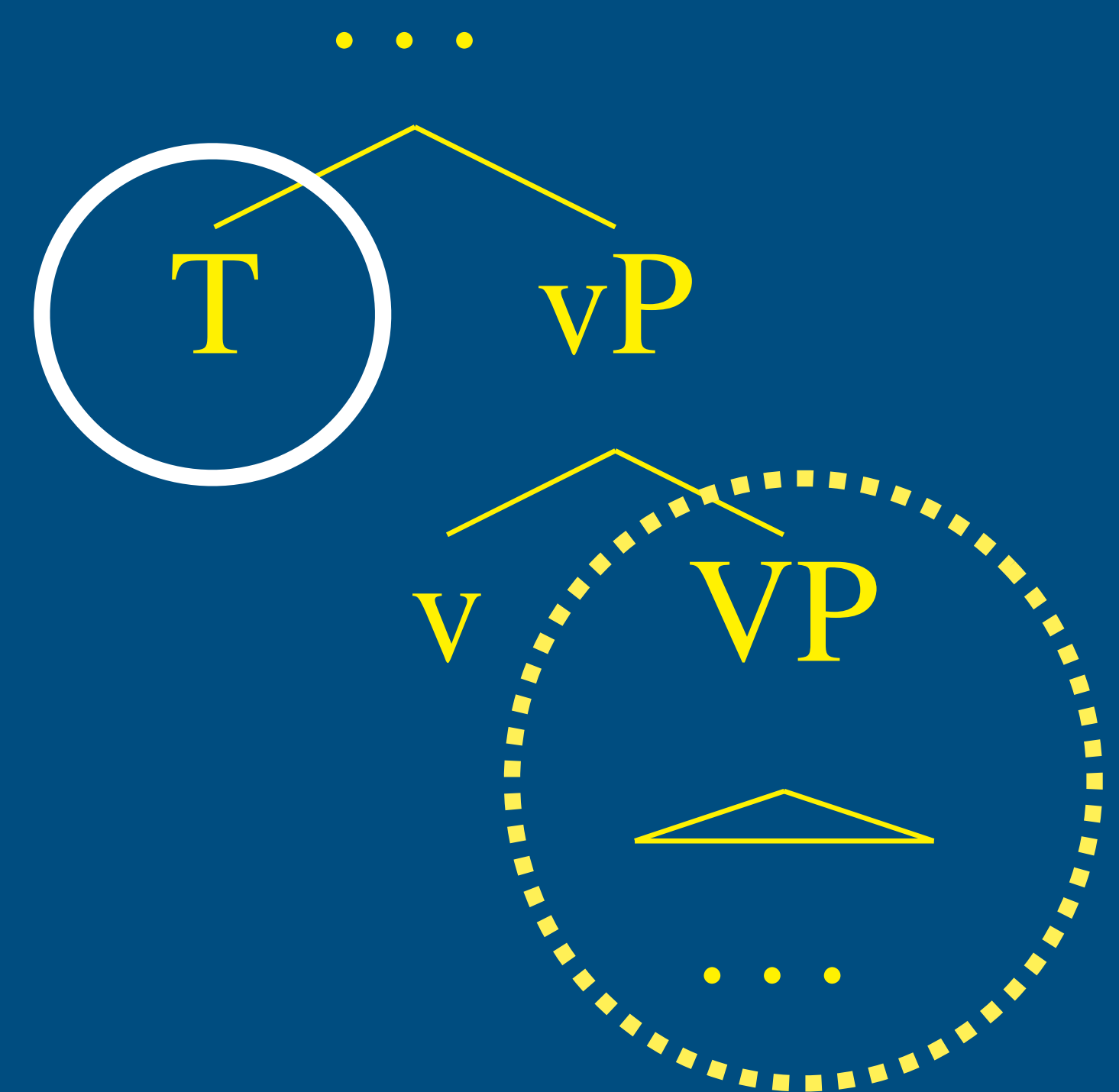
Czech high auxiliaries

Base-generated in T: expected to be overt, contrary to the facts

(5) Ty jsi jedl sýr a já (*jsem) taky.

you aux.2sg eaten cheese and I aux.1sg too

‘You ate cheese and so did I.’



Czech high auxiliaries

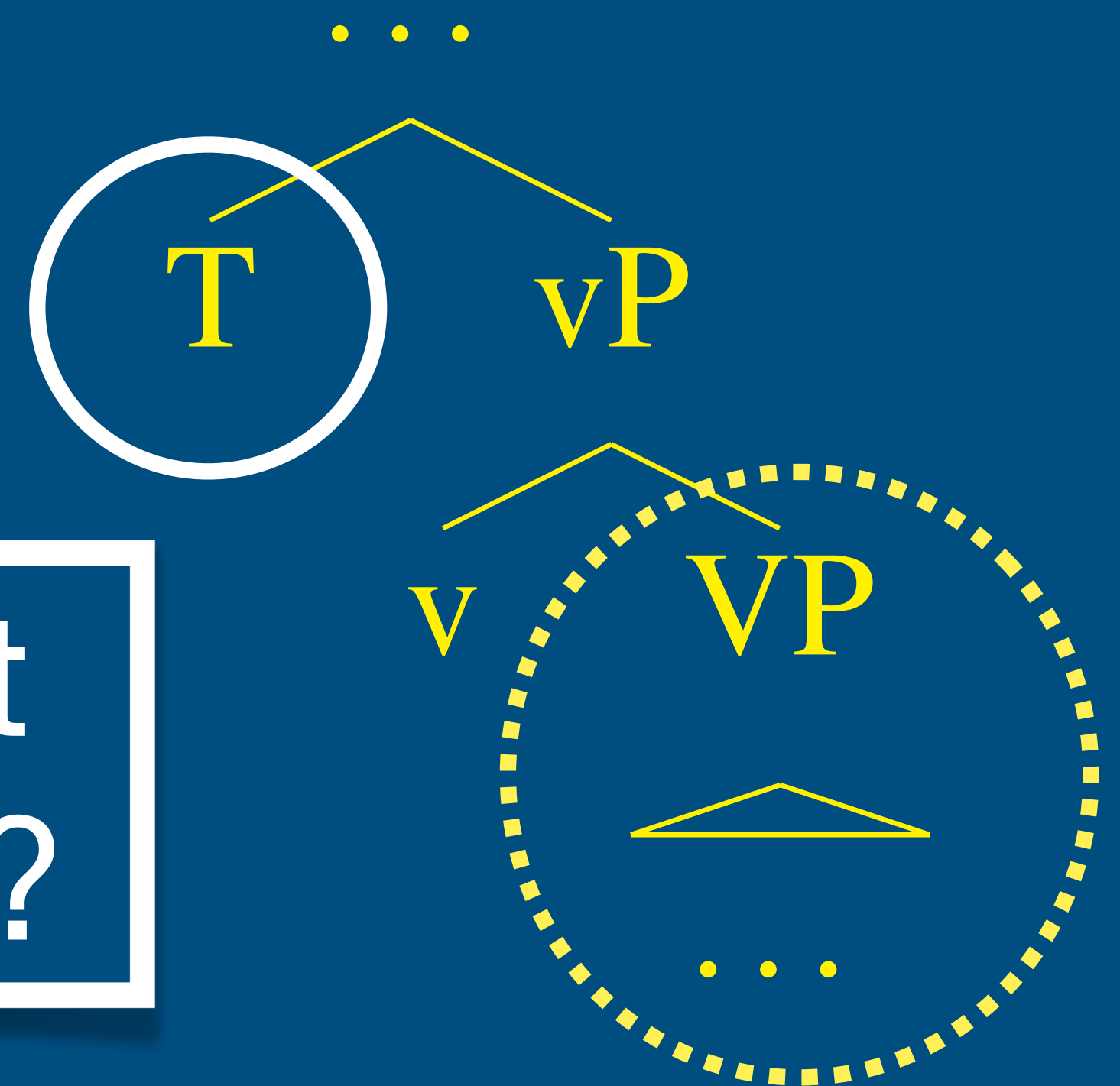
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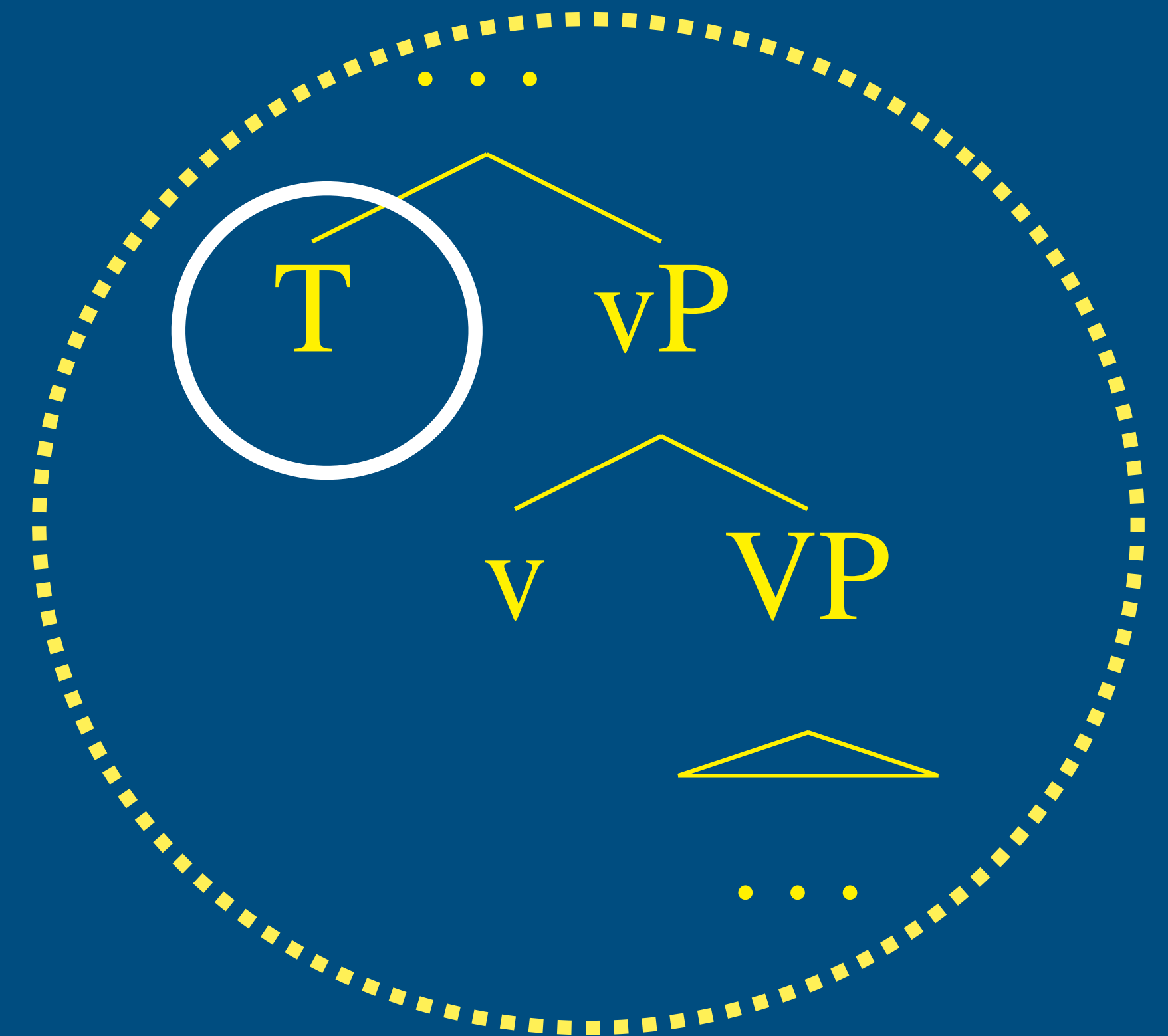
Why is the auxiliary in T not pronounced in the remnant?



Gruet-Skrabalova (2012)

TP ellipsis

- feature composition of v incompatible with E feature
- E feature must be on $C \Rightarrow$ TP ellipsis



Problem: syntactic distribution

no TP deletion properties

- if ellipsis with high auxiliaries targets TP, then its syntactic properties should match syntactic properties of TP ellipsis (sluicing, or, possibly, stripping), not that of VPE
- => however, we systematically see VPE-like behaviour with high and low auxiliaries

Syntactic distribution points to VPE

- [data and discussion in the appendix]
- not **sluicing**: no island insensitivity
- not **gapping**: VPE with transitive verbs okay, systematic ambiguity in embedded contexts
- not **stripping**: no island insensitivity
- not **MaxElide**: cannot be overridden by focus

Clitics?

- could high auxiliaries be banned from VP ellipsis remnants because of their reduced phonological status?
- not all phonologically reduced

(6) Ale ty budeš pracovat! Já s Marií (***bychom**) taky.

but you will.1. SG work I with Marie WOULD.1PL too

‘But you will work! Mary and I would too.’

- if reduced, then they lean on phonologically preceding material, i.e., the pronounced part of the remnant, not on the elided part

Interim summary

- we are looking at VPE, i.e., not sluicing, not stripping, or gapping
- yet, remnant availability and structural height do not correlate
- auxiliaries base-generated in T cannot be overt in a VPE remnant
- why?

Small Conjunction Hypothesis

Small Conjunction Hypothesis

- => T-generated auxiliaries not overt because **TP not projected at all**
- VPE based on a **conjunction of vPs**

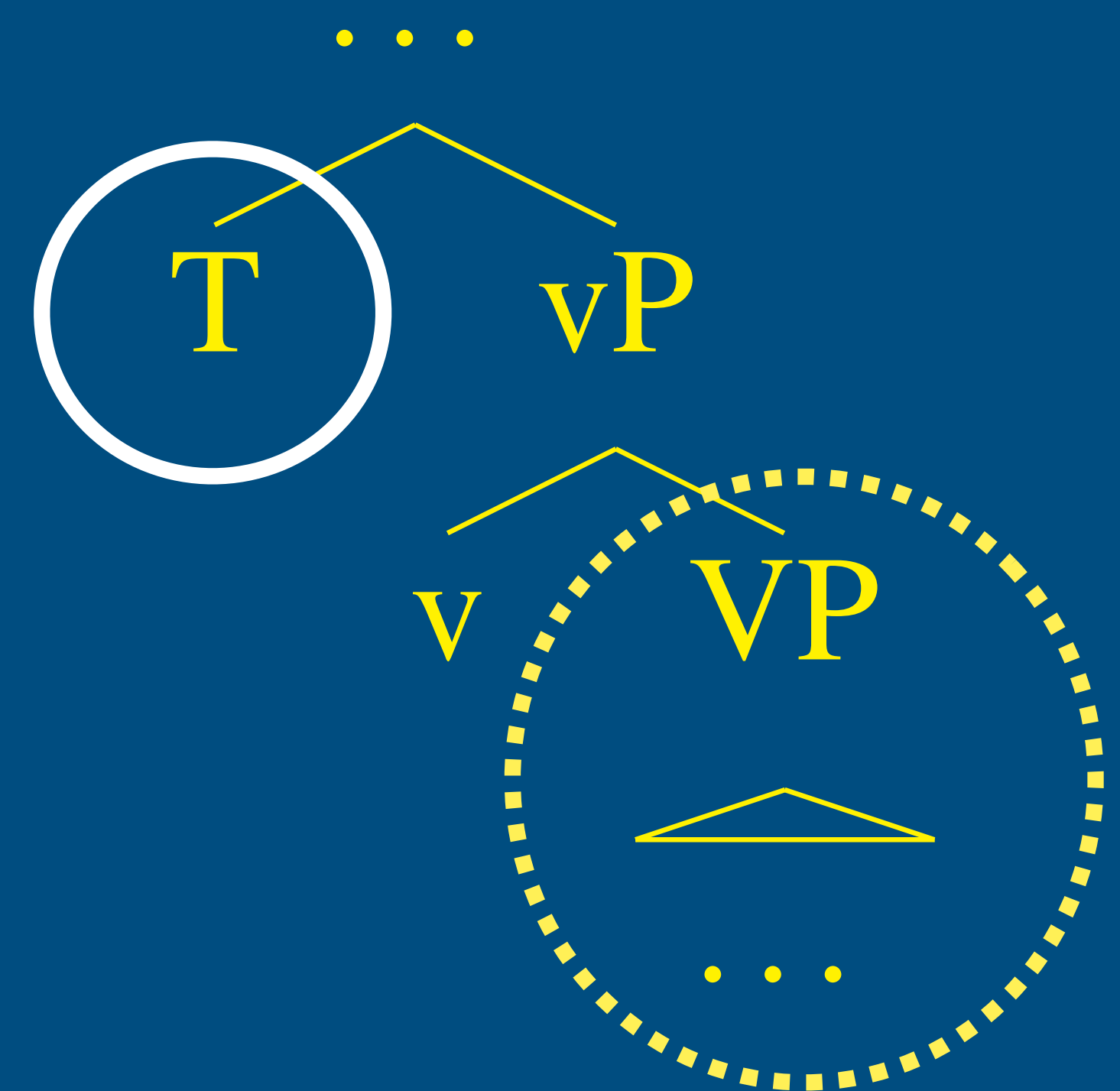
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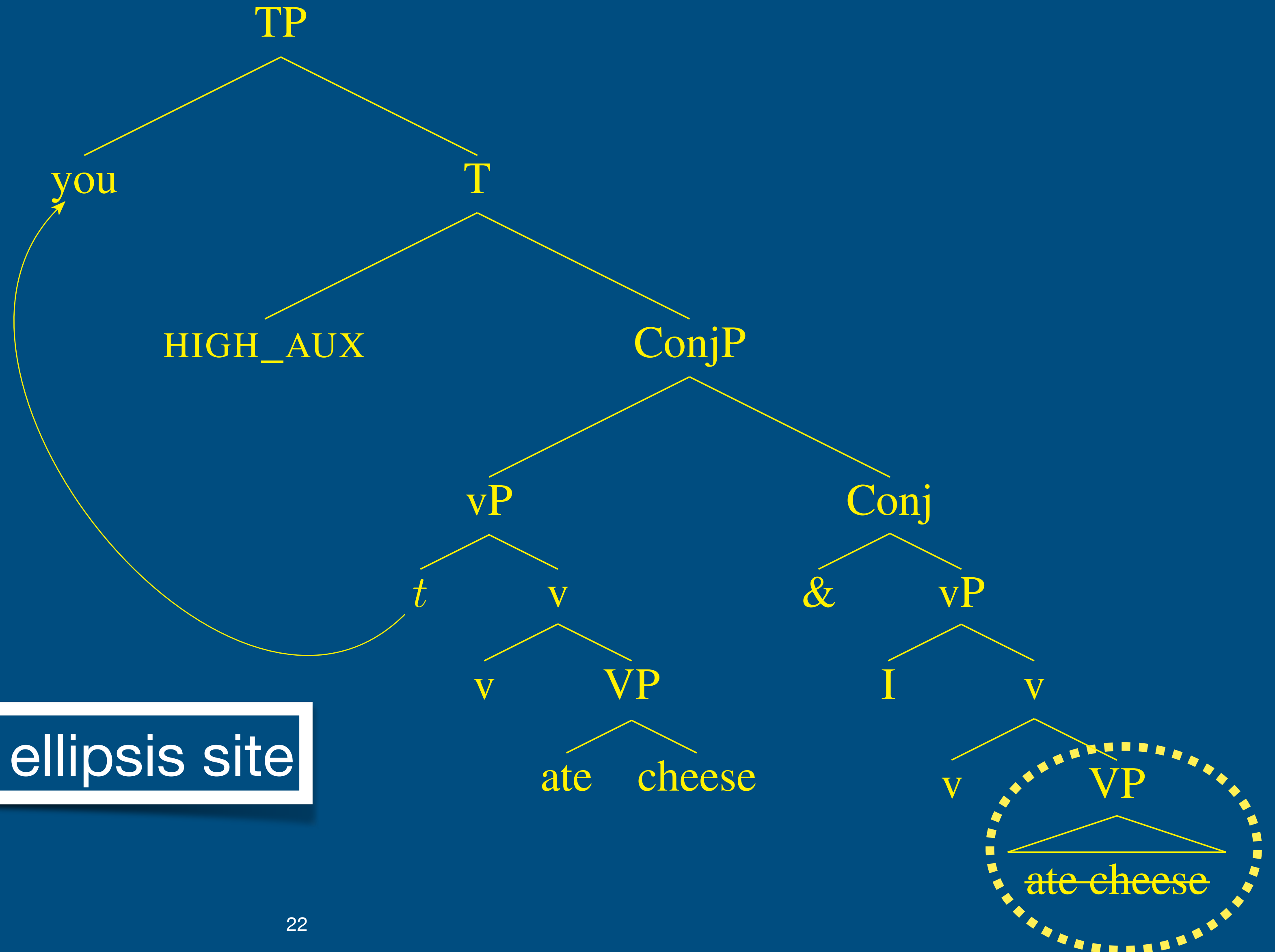
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‘You ate cheese and so did I.’



High (T-generated) auxiliary



no T (high auxiliary) in the ellipsis site

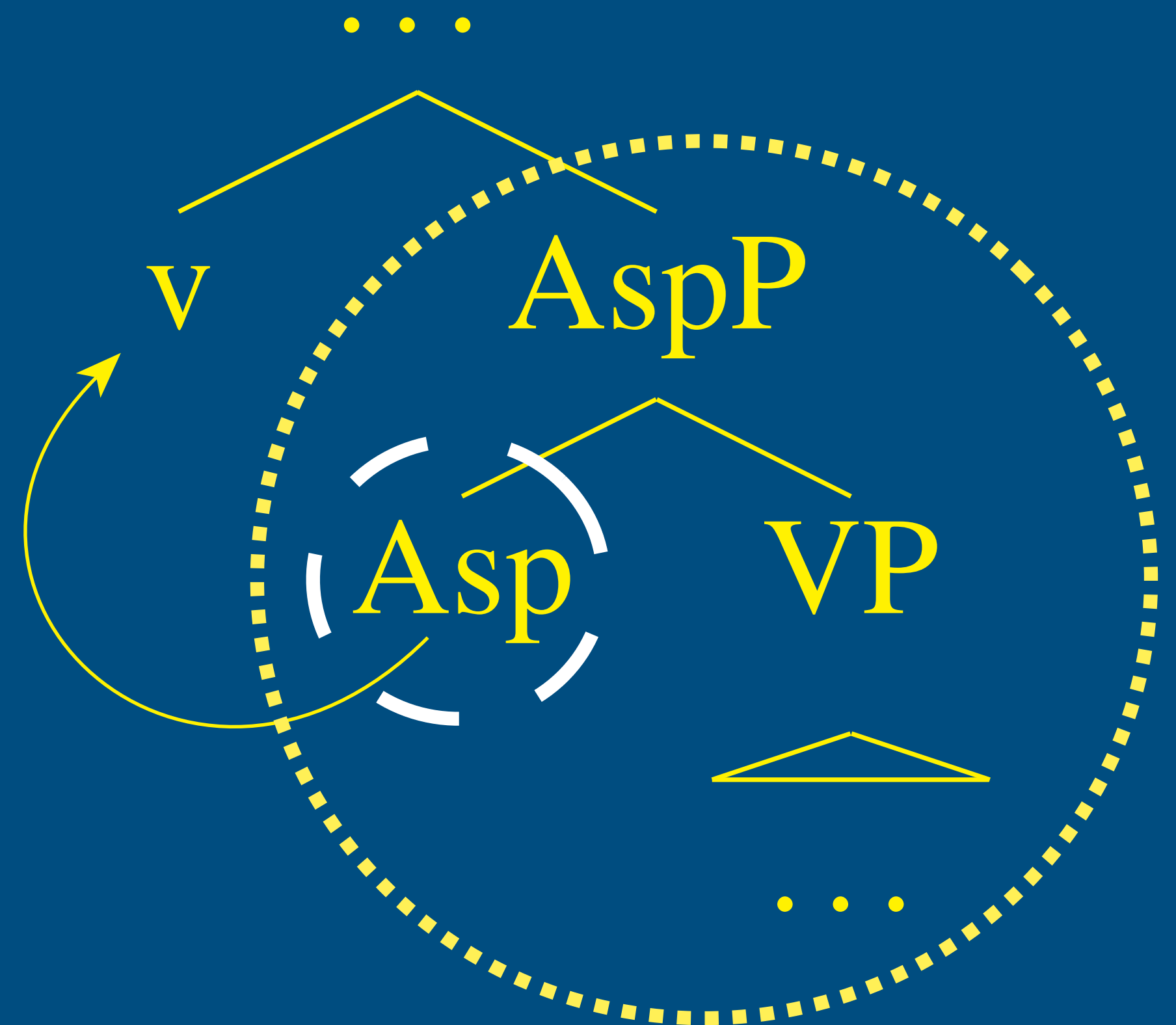
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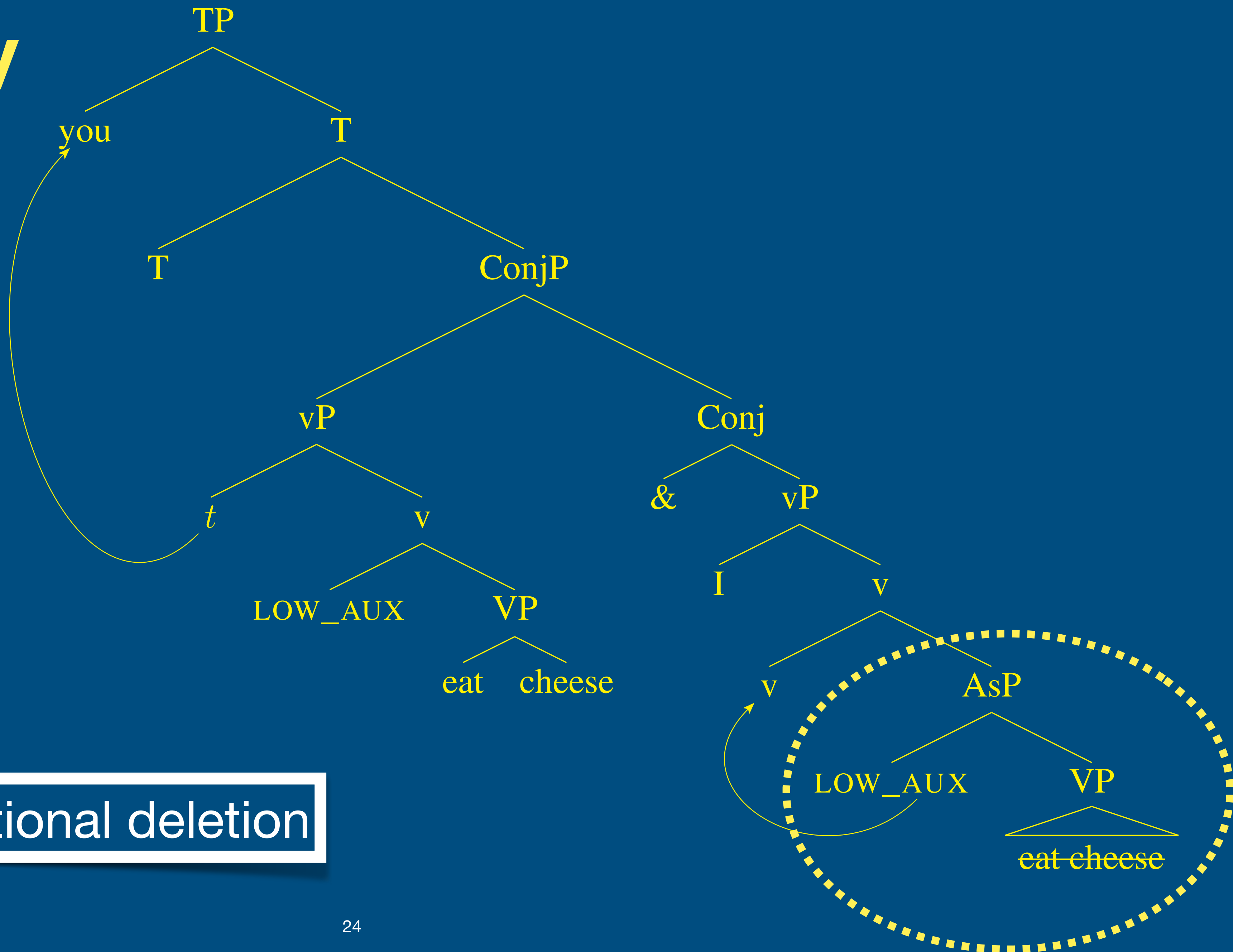
(4) Ty budeš jíst sýr a já (budu) taky.

you will.2sg eat.inf cheese and I will.1sg too

'You will eat cheese and so will I.'



Low auxiliary



optional raising = optional deletion

Components of the proposal

- VPE as a phase-based derivation (Gengel, 2007, 2009; Gallego, 2009; Rouveret, 2012; Bošković, 2014)
- restricted by structural economy

VPE without CP?

- Wurmbrand (2017): CP not needed for ellipsis, as long as TP is a phase (FOC phrase between TP and CP)
- our proposal: a step further
- no TP needed iff an economy condition on VPE satisfied

Delete what you can, merge what you must

- A phase head containing an E-feature cannot be selected by additional functional projections of its clausal domain provided:
 - (i) the phase forms a proposition that is in an entailment relationship with the antecedent clause for purposes of semantic licensing of parallelism necessary for ellipsis (Merchant, 2001)
 - (ii) this proposition is semantically anchored (constitutes actualized eventuality; Asher and Lascarides 1998; Hardt and Mikkelsen 2020)
 - (iii) the phase does not contain any unbound traces

(i) Entailment

- vP can constitute a proposition in a technical sense (e.g., Bale 2007)
- for purposes of givenness, a minimal structure building which yields a proposition is sufficient (Schwarzschild 1999)
- `left periphery' structure information (speech acts etc.) shared with the discourse structure/trees of the anaphor (Roberts 1996, among others)

(ii) Semantic anchoring

- *v* may contain interpretable tense feature (Rouveret, 2012; Aelbrecht, 2010; Aelbrecht and Harwood, 2015) that semantically anchors the proposition (actualized eventuality; Asher and Lascarides 1998; Hardt and Mikkelsen 2020)
- languages may differ in what features anchor propositions (Ritter & Wiltschko 2014)
- AspP in Czech yields actualization readings (Dočekal and Kučerová 2013)

How does the proposal account for the data?

- high aux always missing in the ellipsis site because there is no TP in the ellipsis site
- low aux behave like their English counterparts because they are either within VPE or they raise out to the nearest phase head licensing VPE (v)
- other properties (discussed in the appendix) follow from ellipsis being VPE, not stripping, sluicing or gapping

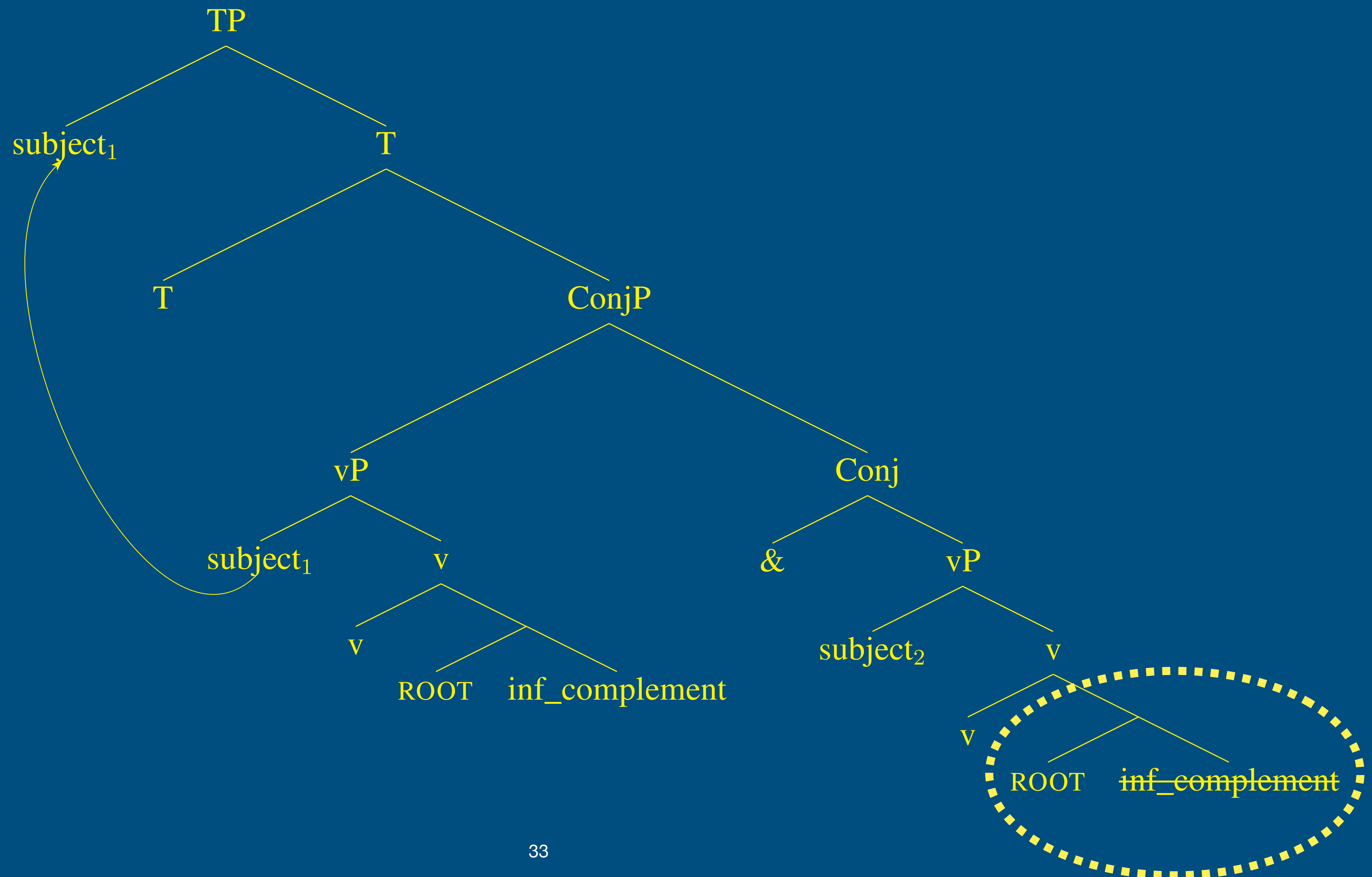
Predictions: Modals

- the Small Conjunction Hypothesis predicts that not only functional elements base generated in T but also **functional elements obligatorily moving above vP phase should be banned from a VPE remnant**
- modals provide an environment to test this hypothesis

Epistemic versus root modals

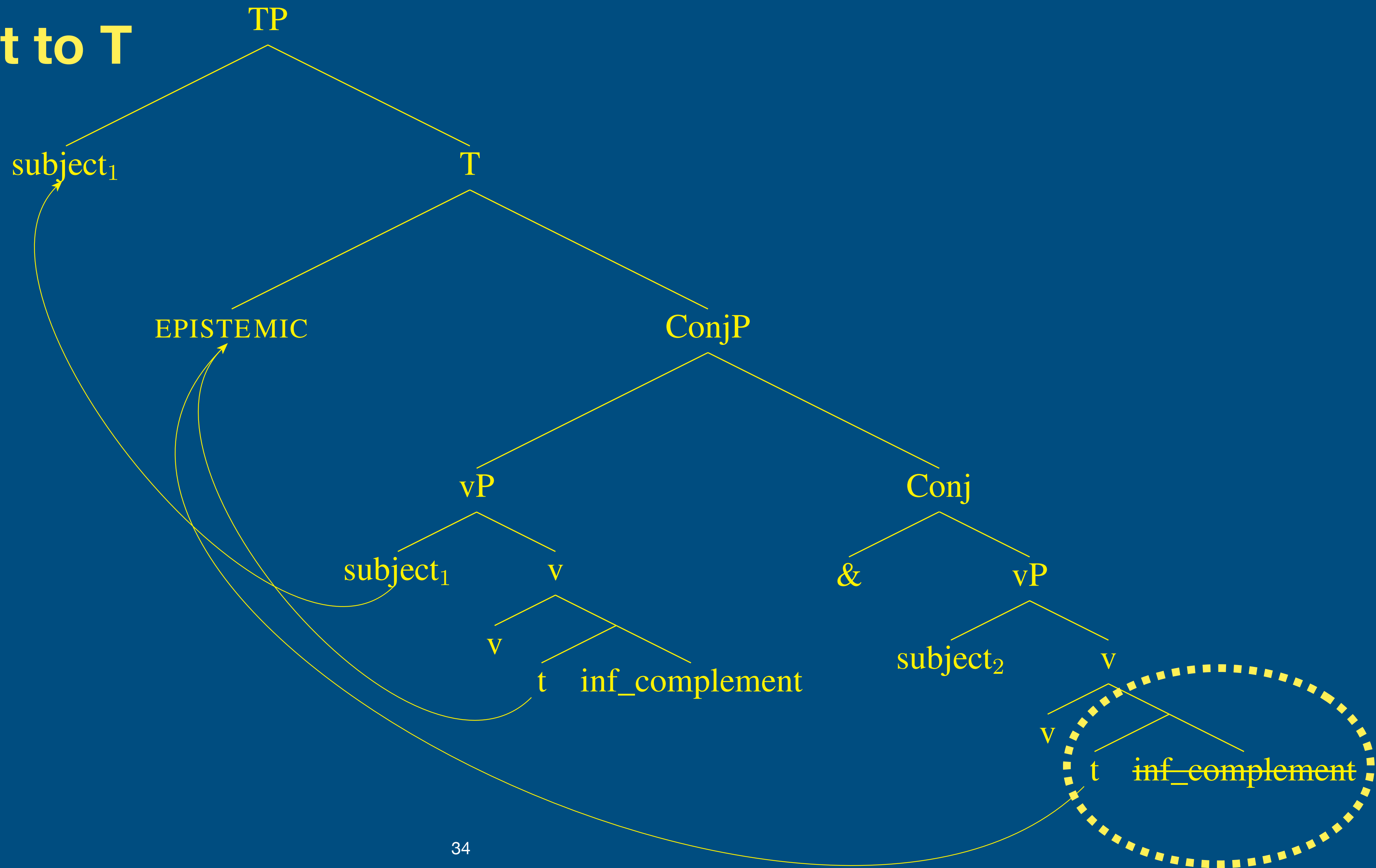
- different structural height (Butler, 2003; Cormack and Smith, 2002)
- root: below TP; Hacquard (2006): below AspP [within VP ellipsis site]
- epistemic: raise to T (or higher)

Root modals: expected to be elided



Epistemic modals: absent in remnant as well

ATB-movement to T



Modal absent in both epistemic and root readings

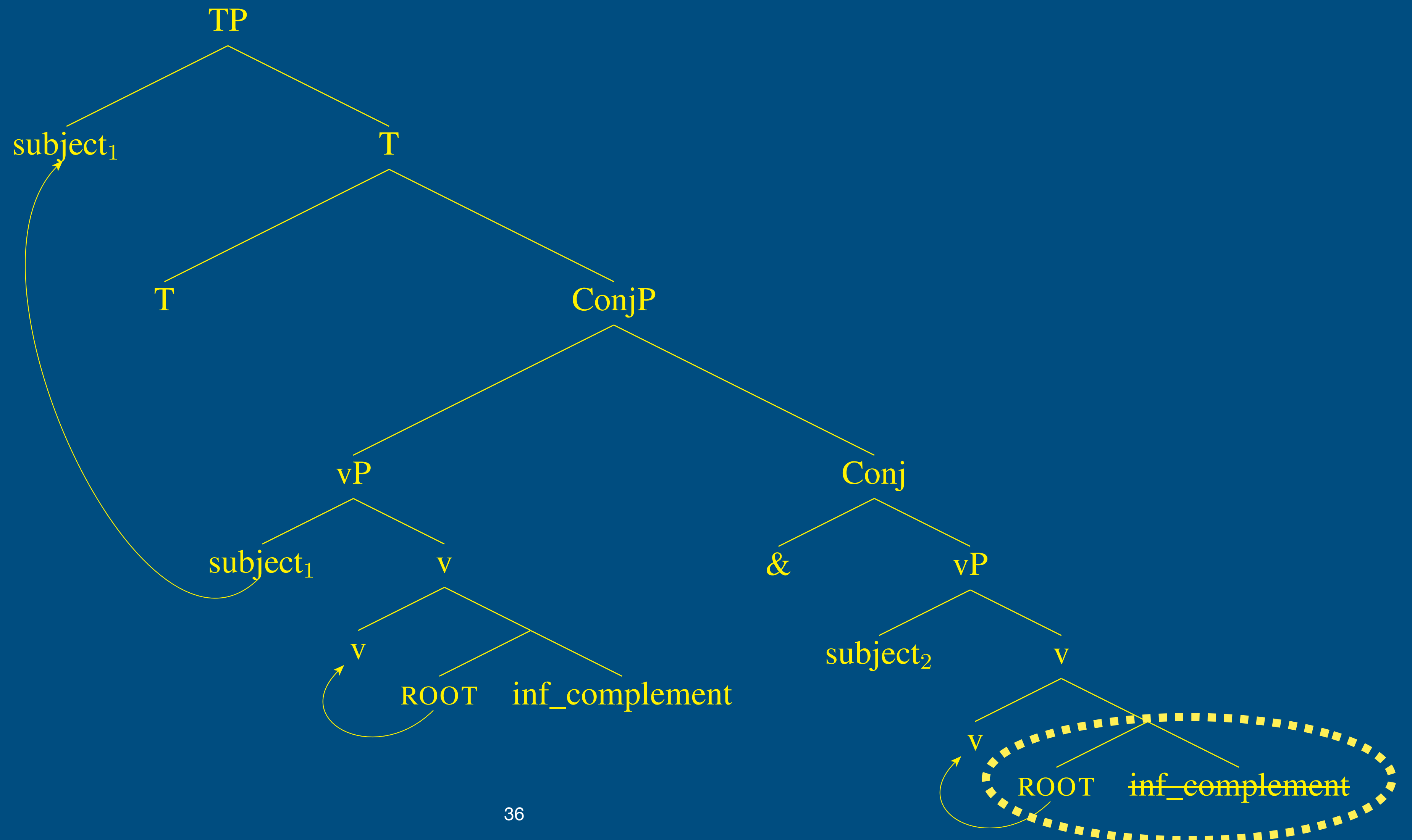
(7) Většina profesorů **může** mít grant, a většina studentů (??**může**) taky.

most professors may have grant and most students may too

‘Most professors may have a grant, and most students too.’

Past tense modals: VPE evacuation

Head movement to v (Veselovská 1995, 2004 a.o.)



Past tense => modals in the remnant

Both root and epistemic readings

(8) Většina profesorů **mohla** mít grant, a většina studentů

most professors may.PST have grant and most students

(mohla) taky.

may.PST too

‘Most professors might have had a grant, and most students too.’

Conclusions

- VPE does not have to be based on a syntactically fully built CP
- instead, a smaller structure can yield propositions that can enter entailment relationships for purposes of givenness licensing
- cross-linguistic variation in what languages allow vP-based VPE and what languages require more functional material

Sources of cross-linguistic variation in VPE

- what constitutes a phase (Rouveret 2012, Bošković 2014, Wurmbrand 2017, among many others)
- what features instantiate actualized eventualities (Ritter & Wiltschko 2014, Pancheva & Zubizarreta 2018, among others)

Thank you!

- Canada's Social Sciences and Humanities Research Council's Insight Grant #435-2016-1034 "Grammatical vs semantic features: the semantics-morphology mapping, and its consequences for syntax" (PI Kučerová)
- Pavel Caha and Lucie Taraldsen Medová for their help with Czech judgements
- Mojmír Dočekal for warning us against pitfalls of working with quantifiers
- Norvin Richards for bringing Czech ellipsis to our attention
- anonymous reviewers for raising questions about the status of VPE with high auxiliaries

Appendix

Evidence for VPE

Is this VPE at all?

- Sluicing?
- Stripping?
- Gapping?

TP ellipsis (sluicing) obviates islands

Sluicing with high auxiliary

(i) Petr bude tvrdit, že ty a nějaká dívka **jste** malovali obraz,

Petr will claim that you and some girl aux.2PL painted painting

ale já si nevzpomínám kdo.

but I REFL not-recall who

‘Petr will say that you and some girl will paint a painting but I don’t recall who.’

[Petr will say that you and some girl will paint a painting but I don’t recall who
~~Petr will claim that you and t painted a painting.~~]

TP ellipsis (sluicing) obviates islands

Sluicing with low auxiliary

(ii) Petr bude tvrdit, že ty a nějaká dívka **budete** malovat obraz,

Petr will claim that you and some girl will.2PL paint painting

ale já si nevzpomínám kdo.

but I REFL not-recall who

‘Petr will say that you and some girl will paint a painting but I don’t recall who.’

[Petr will say that you and some girl will paint a painting but I don’t recall who
~~Petr will claim that you and t will paint a painting.~~]

No island obviation with VPE

VPE with high auxiliaries

(iii) ??Petr tvrdil, že ty a nějaká dívka **jste** malovali obraz,

Petr claimed that you and some girl AUX.2PL painted painting

ale já si nevzpomínám, jestli Zuzana.

but I REFL not-recall whether Zuzana.

‘??Petr claimed that you and some girl painted a painting but I do not recall if Zuzana.’

[Peter claimed that you and some girl painted a painting but I do not recall whether ~~Peter claimed that you and Zuzana painted a painting.~~]

No island obviation with VPE

VPE with low auxiliaries

(iv) ??Petr bude tvrdit, že ty a nějaká dívka **budete** malovat obraz,

Petr will claim that you and some girl will.2 PL paint painting

ale já si nevzpomínám, jestli Zuzana.

but I REFL not-recall whether Zuzana.

‘??Petr will claim that you and some girl will paint a painting but I do not recall if Zuzana.’

[Peter will claim that you and some girl painted a painting but I do not recall whether ~~Peter will claim that you and Zuzana will paint a painting.~~]

Control without an island

(v) Petr bude tvrdit, že nějaká dívka **bude** malovat obraz,

Petr will claim that some girl will.3SG paint painting

ale já si nevzpomínám, jestli Zuzana.

but I REFL not-recall whether Zuzana.

‘Petr will claim that some girl will paint a painting but I do not recall if Zuzana.’

[Peter will claim that some girl painted a painting but I do not recall whether
~~Peter will claim that Zuzana will paint a painting.~~]

Stripping?

- Stripping is the coordination of two vP's (Johnson 2009)
 - Stripping appears to be Island insensitive Culicover and Jackendoff (2005), Potter (2017)
 - a. They persuaded Kennedy and some other senator to jointly sponsor the legislation.
 - b. Yeah, Hatch. [*Hatch, they persuaded Kennedy and t to jointly sponsor the legislation.]

They persuaded Kennedy and some other senator to jointly sponsor the legislation, maybe Hatch/probably Hatch, not sure if it was Hatch.

Czech VP not Stripping

- Czech examples with both high and low auxiliaries island insensitive
- this strongly suggests that we are dealing with E feature on v head => VP ellipsis

Embedded readings

Embedded VPE systematically ambiguous with high auxiliaries

(vi) Petr bude tvrdit, že (ty) jsi maloval obraz a já taky.

Petr will claim that you AUX.2SG painted painting and I too

‘Petr will claim that you painted a painting and me too.’

(i) Petr will claim that you painted a painting and I painted a painting too.

(ii) Petr will claim that you painted a painting and I will claim that you painted a painting.

(Dočekal, 2007)

Embedded readings

Embedded VPE systematically ambiguous with low auxiliaries

(vii) Petr bude tvrdit, že (ty) **budeš** malovat obraz a já (**budu**) taky.

Petr will claim that you will.2SG paint painting and I will.1SG too

‘Petr will say that you will paint a painting and I will too.’

(i) Petr will claim that you will paint a painting and that I will paint a painting too.

(ii) Petr will claim that you will paint a painting and I will claim that you will paint a painting too.

(Dočekal, 2007)

MaxElide?

Is it responsible for deletion of high auxiliaries

- MaxElide forces the deletion of as much as possible material in the parallel domains (Fox & Takahashi, 2005).
- MaxElide overridden by Focus, i.e., the reason why external arguments do not get deleted in English VPE although the antecedent has subject in SpecTP, meaning parallelism domain is extended to contain TP:
 - (i) John will go to the store and Mary will too
- Contrasting high aux does not improve Czech examples
- MaxElide not responsible for obligatory deletion of high aux

Contrastive Focus/Topic on high aux

Contrast does not alleviate - MaxElide not at play here

(viii) a. Ale ty budeš pracovat! Já (*jsem) taky.

but you will.1SG work I AUX.1SG too

‘But you will work! I did too.’

b. Ale ty budeš pracovat! Já s Marií (*bychom) taky.

but you will.1SG work I with Marie WOULD.1PL too

‘But you will work! Mary and I would too.’

CSC violation in the small conjunction?

CSC violation? Obligatory reconstruction

Modals

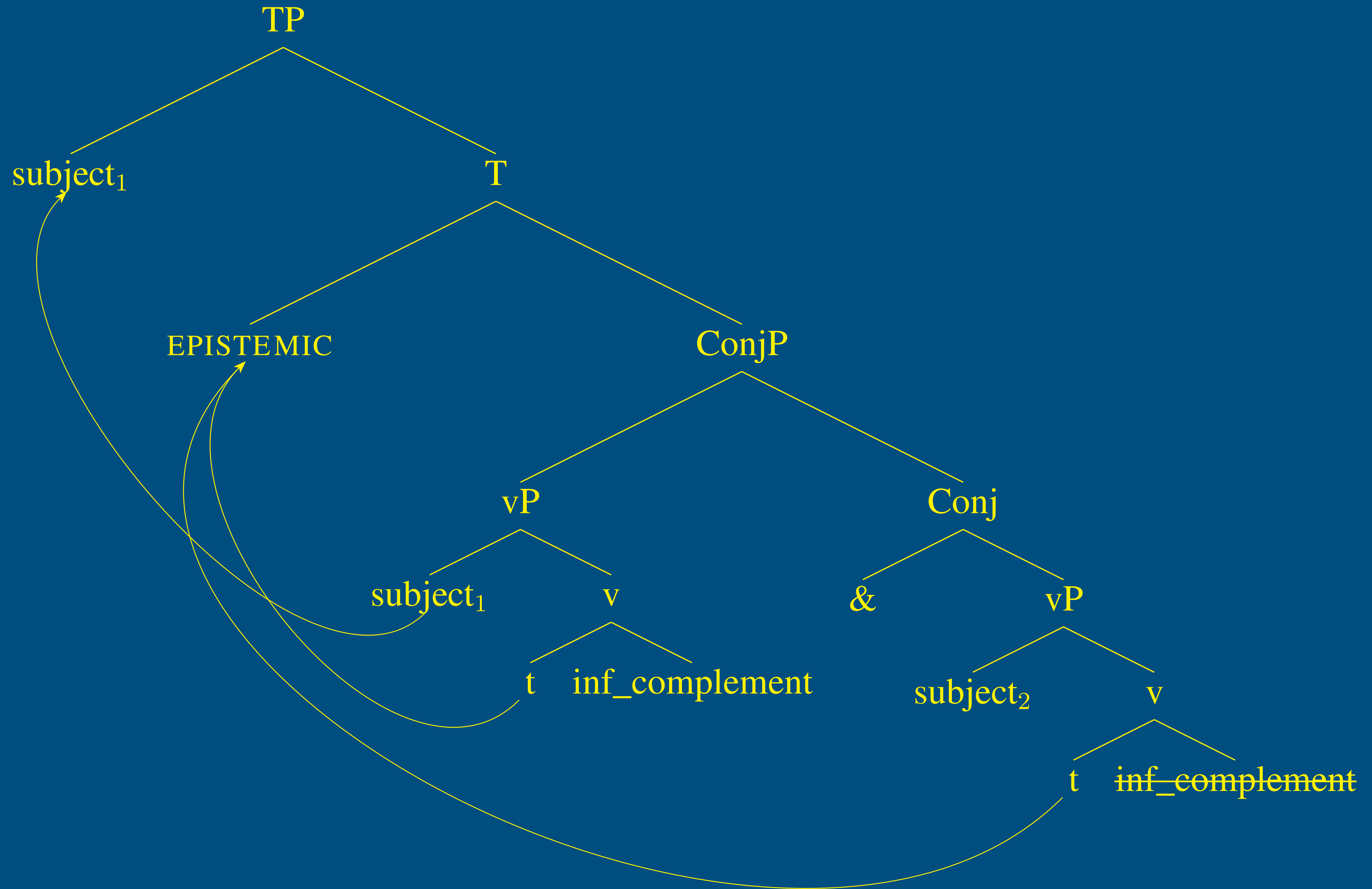
- A-movement of the subject only from the anaphor vP => Coordination Structure Constraint violation (Ross 1967)
- possible but the subject must reconstruct (Ruys 1992, Fox 2000, Lin 2001)
- prediction: subjects scope low in VPE contexts
- **modal environments** support this prediction

Epistemic versus root modals

- different structural height (Butler, 2003; Cormack and Smith, 2002)
- root: below TP
- epistemic: raise to T (or higher)

Quantificational subjects and modals

- a quantificational subject can scope either above, or below a root modal
- but it must scope below an epistemic modal
- => as predicted under the Small Conjunction Hypothesis



Root modality: ✓most > can/may

Context: The faculty has 10 professors and 8 of them holds a contract that allows them to do research financed from external grants. I.e., they will comply with their contract even when part of their work time goes toward externally funded research. Doctoral students are allowed to submit grant applications only when they do not receive a state contribution. This year only 10% of students receive a state contribution. (Na fakultě je 10 profesorů a 8 z nich má ve smlouvě, že můžou dělat výzkum, který je financovaný z externích grantů. Tj. podmínky své pracovní smlouvy splní i tehdy, když část jejich pracovní doby půjdou na výzkum externích grantů. Doktorští studenti se mohou hlásit o externí grant, jen pokud nedostávají státní příspěvek. Jen 10% studentů tento rok dostává státní příspěvek.)

(i) (V souladu s jejich individuální smlouvu,) většina profesorů **může** mít grant, a většina studentů (??**může**) taky.

in accord with their individual contract most professors may have grant and most students too

‘(In accord with their individual contract,) most professors may have a grant, and most students too.’

Root modality: ✓ can/may > most

Context: Doctoral scholarships are paid from a state contribution to the departmental budget. The state contribution becomes smaller when the department obtains its own financial contribution. Luckily, external grants do not count against the state contribution. (Stipendia pro doktorské studenty se platí ze státního příspěvku do katederního rozpočtu. Státní příspěvek je menší, pokud si katedra vydělá peníze. Naštěstí peníze z externích grantů pro profesory se proti studijním stipendiím nepočítají.)

(ii) Většina profesorů **může** mít grant, a většina studentů (??**může**) taky (aniž by ohrozili státní příspěvek na studentská stipendia).

most professors **may** have grant and most students too without would endangered state contribution on student scholarships

‘Most professors may have grants, and most students too (without negatively affecting the state contribution toward student scholarships).’

Epistemic modality: ✓can/may > most

Context: Colleagues from a nearby university discuss how it is possible that department X still pays doctoral scholarships even though the department didn't receive any state contribution this year. A colleague suggest as a possible explanation that. . . (Kolegové se sousední univerzity se baví o tom, jak je možné, že katedra X stále vyplácí doktorská stipendia, i když katedra letos nedostala žádný státní příspěvek. Jeden z kolegů navrhne jako možné řešení, že. . .)

(iii) (Vzhledem k tomu, že doktorská se můžou platit z stipendia i from grantů) většina profesorů může mít grant a většina studentů (??může) taky.

regards to that that doctoral scholarships may pay even refl grants most professor may have grant and most students too

‘(Since doctoral scholarships may be financed from grants), most professor may have a grant, and most students too.’

Epistemic modality: #most > can/may

Context: All professors and students do excellent research and all of them submitted a very good grant application last year. Neither professors nor students are obliged to report their grant results to their department. The department only knows that only 30% of professors and 20% of students currently hold a grant. (Všichni profesori a doktorští studenti dělají špičkový výzkum a všichni loni podali opravdu výborné grantové přihlášky. Profesori ani studenti nehlásí externí granty své katedře. Katedra pouze ví, že jenom 30% profesorů 20% studentů má grant.)

(iv) #(Podle toho, co katedra ví,) většina profesorů **může** mít grant a většina studentů (??**může**) taky.

according that what department knows most professors may have grant and most students too

‘(Based on what the department knows,) most professors may have a grant, and most students too.’

Loose ends? Syntax versus semantics?

Embedding under overt C?

- if the economy condition for VPE applies at the level of semantic licensing, even embedding under C should not override it
- if c-selection and the economy clash, we expect ungrammaticality
- (unless structure building can be rescued by movement that would create an unbound variable - trace [part (iii) of our economy condition])

No embedding with high auxiliary VPE

(i) Petr tvrdil, že **jsem** jedla sýr, a já **jsem** popírala, že

Petr claimed that aux.1sg ate cheese and I aux.1sg denied that

a. ty **jsi** jedl sýr taky.

you aux.2sg ate cheese too

b. * ty **jsi** taky

you aux.2sg too

c. ?? ty taky

you too

‘Petr claimed that I ate cheese, and I denied that you did too (eat cheese).’

Movement rescues embedding with low auxiliary VPE

(ii) Petr bude tvrdit, že já budu jíst sýr, a já budu popírat,

Petr will claim that I will.1sg eat cheese and I will.1sg deny

že ty *(budeš).

that you will.2sg

‘Petr will claim that I will eat cheese, and I will deny that you will (eat cheese).’

Embedding - overt matrix anaphor

- the data suggests that in cases of embedding we can force the construction of CP structure via movement of low auxiliary further than vP all the way to T.
- the high auxiliary is not raised but base generated and as such appears to be insufficient cause to build elided structure.