

XP- and X^0 -movement in the Latin Verb: Evidence from Mirroring and Anti-Mirroring*

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1 An apparent counterexample to the Mirror Principle

A great deal of crosslinguistic evidence (see especially Cinque 1999) suggests that something like (1) holds:

- (1) *Mirror Principle* (Baker 1985:375, (4))

Morphological derivations must directly reflect syntactic derivations (and vice versa).

(cf. Bybee 1985, Rice 2000, a.m.o.)

In practice, the Mirror Principle (MirP) has the following consequence:

- (2) If a Root and some functional heads in its extended projection are assembled into a single “morphological word,” then, all else being equal. . .

. . .the higher one of those functional heads is syntactically, the farther away from the Root it should be in the morphological word.

It is standardly held (correctly, we think) that the MirP should not be stipulated. Rather, its effects should be derived—e.g., from the mechanics of head movement (Pollock 1989, a.m.o.) and/or postsyntactic Lowering (Embick & Noyer 2001). (cf. Arregi & Pietraszko this session)

Suppose, following fairly standard assumptions, that the extended projection of V^1 is, in part, the following (cf. Cinque 1999:106; Tescari Neto 2013:30, (7)):²

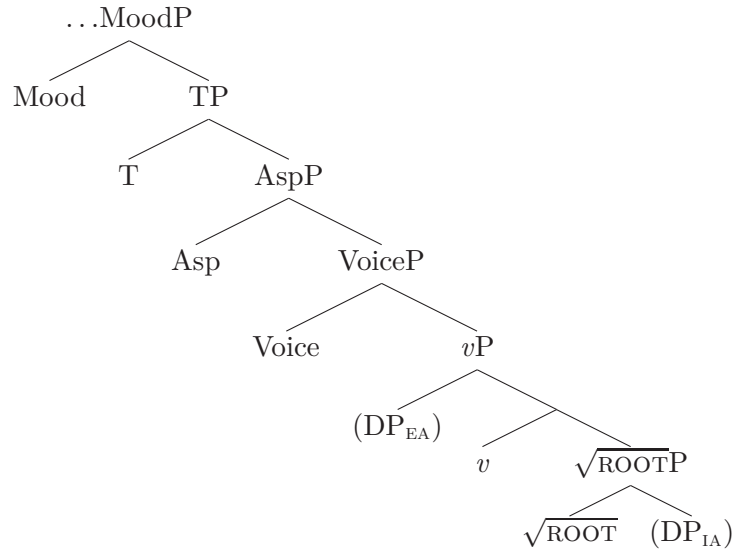
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¹The term *extended projection of V* is used here for convenience, and is not meant to imply a particular view on whether the complement of v is headed by a V in some substantive sense or by a categoryless root (cf. Marantz 1997).

²For other analyses of clause structure that are broadly compatible with this one, see Gribanova 2013 (for Russian); Tucker 2013 (for Maltese); Legate 2014 (for Acehnese); Hamilton 2015 (for Mi’gmaq); Kalivoda 2015 (for Teotitlán del Valle Zapotec); Ostrove 2016, 2017a,b (for San Martín Peras Mixtec); Adler, Foley, Pizarro-Guevara, Sasaki, and Toosarvandani 2017 (for Santiago Laxopa Zapotec); Baclawski 2017 (for Eastern Cham); Bruening 2017 (for Passamaquoddy-Maliseet); Clem 2017 (for Amahuaca); Desai 2017a,b (for Gujarati); McCloskey 2017 (for Irish); Zyman 2017a,b (for Janitzio P’urhepecha); Ostrove submitted (for Scottish Gaelic); Danckaert to appear (for Latin); Haugen to appear (for Classical Nahuatl); and Ostrove to appear (for Irish), a.m.o.

On the decomposition of the traditional verb phrase, see Larson 1988, 1990, 2017, Johnson 1991, Bowers 1993, 2002, Kratzer 1996, Diesing 1998, Phillips 2003, Takano 2003, Miyagawa and Tsujioka 2004, Harley 2008, Janke and Neeleman 2012, Marantz 2013, Bruening 2015, and Krejci and Tallman 2015, a.m.o.

(3)



In *Latin*, various heads in the extended projection of V do seem to be packaged into a single morphological word.

Therefore, the MirP applied to (3) leads us to expect that the Latin verb should display the following morpheme order:³

(4) $\sqrt{\text{ROOT}}$ — v — Voice — Aspect — Tense — Mood

But in fact, Latin verbs seem to *both* obey *and* disobey the MirP, in different parts of the paradigm (cf. Cinque 1999:197, n. 63, citing Calabrese 1985).

How can this be?

This question is of interest for at least two reasons:

- (5) a. Because the MirP has played a prominent role in enabling us to understand syntax/morphology relations, apparent exceptions to it must be scrutinized to determine whether the MirP can survive them.
- b. The development of Latin into Romance provides an excellent laboratory in which to learn how morphosyntactic change happens (Ledgeway 2012), but this requires an accurate understanding of the *synchronic* morphosyntax of the “start” and “end” states.

(6) *Roadmap*

- §2: Laying out the puzzle
- §3: Analysis
- §4: Extension: nonfinite forms
- §5: Syntactic predictions and consequences of the analysis
- §6: Conclusion

³Assuming successive head-raising with left-adjunction (cf. Pollock 1989) or lowering with right-adjunction (cf. Embick & Noyer 2001). A wider range of possible morpheme orders is predicted if there is Affix-Specific Linearization (Harley 2013). But even if there is, higher heads should always surface *outside* lower heads in the morphological word.

2 Laying out the puzzle

2.1 Mirroring orders

In the pluperfect (past perfect), Perfective Aspect (-*v*) occurs closer to the Root than does Past Tense (-*erā*),⁴ obeying the MirP:

(7) *Mirroring order in Pluperfect Active Indicative of laudāre ‘praise’*⁵

	SINGULAR	PLURAL
1	laud-ā- v-erā -m praise-TH-PFV-PAST-1.SG ‘I had praised’	laud-ā- v-erā -mus praise-TH-PFV-PAST-1.PL ‘we had praised’
2	laud-ā- v-erā -s praise-TH-PFV-PAST-2.SG ‘you.SG had praised’	laud-ā- v-erā -tis praise-TH-PFV-PAST-2.PL ‘you guys had praised’
3	laud-ā- v-erā -t praise-TH-PFV-PAST-3.SG ‘he/she/it had praised’	laud-ā- v-erā -nt praise-TH-PFV-PAST-3.PL ‘they had praised’

Likewise, in the future perfect, Perfective Aspect (-*v*) occurs closer to the Root than does Future Tense (-*eri*), also in conformity with the MirP:

(8) *Mirroring order in Future Perfect Active Indicative of laudāre ‘praise’*

	SINGULAR	PLURAL
1	laud-ā- v-erī -ō praise-TH-PFV-FUT-1.SG ‘I’ll have praised’	laud-ā- v-erī -mus praise-TH-PFV-FUT-1.PL ‘we’ll have praised’
2	laud-ā- v-erī -s praise-TH-PFV-FUT-2.SG ‘you.SG will have praised’	laud-ā- v-erī -tis praise-TH-PFV-FUT-2.PL ‘you guys will have praised’
3	laud-ā- v-erī -t praise-TH-PFV-FUT-3.SG ‘he/she/it will have praised’	laud-ā- v-erī -nt praise-TH-PFV-FUT-3.PL ‘they’ll have praised’

The forms in (7) and (8) follow the MirP-compliant template in (9):

(9) $\sqrt{\text{ROOT}}$ — Theme Vowel — **Aspect** — **Tense** — $\phi_{(\text{Person} + \text{Number})}$

⁴See Embick 2000:213-214, fn. 49, for convincing arguments that the Past Tense morpheme -*erā* is not an incorporated form of *esse* ‘be’ either synchronically or diachronically, even though it resembles some of its forms (e.g., imperfect *era-m* ‘I was’, *erā-s* ‘you.SG were’, etc.).

⁵**Abbreviations:** ABL = ablative, ACC = accusative, [C] = constructed example, EA = external argument, F(EM) = feminine, FUT = future, IA = internal argument, id. = idiomatic translation, IMPF = imperfect(ive aspect), INDIC = indicative, M(ASC) = masculine, N = neuter, NOM = nominative, PART = participle, PASS = passive, PAST = past, PERF = perfect, PFV = perfective aspect, PL = plural, PRES = present, PROSP = prospective aspect, semilit. = semiliteral translation, SG = singular, SJV = subjunctive, SUP = supine, TH = theme vowel, YNQ = yes/no question morpheme, 1/2/3 = first/second/third person.

2.2 Anti-mirroring orders

In Passive Subjunctives, on the other hand, Subjunctive Mood occurs much closer to the Root than does Passive Voice, apparently violating the MirP: (cf. Cinque 1999:197, n. 63, citing Calabrese 1985)

(10) *Anti-mirroring order in Present Passive Subjunctive of laudāre ‘praise’*⁶

	SINGULAR	PLURAL
1	laud- e-r praise-SJV-PASS.1.SG ‘(that) I may be praised’	laud- ē-m-ur praise-SJV-1.PL-PASS ‘(that) we may be praised’
2	laud- ē-ri-s praise-SJV-PASS-2.SG ‘(that) you.SG may be praised’	laud- ē-minī praise-SJV-PASS.2.PL ‘(that) you guys may be praised’
3	laud- ē-t-ur praise-SJV-3.SG-PASS ‘(that) he/she/it may be praised’	laud- e-nt-ur praise-SJV-3.PL-PASS ‘(that) they may be praised’

These forms follow the MirP-*noncompliant* template in (11):

(11) $\sqrt{\text{ROOT}} - \text{Mood} - \{\text{Voice}, \phi_{(\text{Person} + \text{Number})}\}$

How is this possible?

3 Analysis

3.1 Theoretical desiderata

An optimal solution to this mirroring/anti-mirroring puzzle should satisfy the following theoretical desiderata:

- (12) a. **Uniformity:** Ideally, all the finite verb forms (whether they seem to obey the MirP or not) should share a single syntactic derivation.
- b. **Generality:** Although the puzzle arose among the finite forms, the analysis should extend parsimoniously to nonfinite and even nonverbal forms.
- c. **Syntactic fit:** Although the puzzle is “morphological” (it’s about morpheme order), the solution’s major *syntactic* claims should be independently motivated. That is, the analysis should do right by both the “morphology” and the syntax.

This challenge can be met.

⁶The 2.SG form *laudēris* ‘(that) you.SG may be praised’ has an alternate form *laudēre*.

For convenience, every subjunctive verb is translated here as if it were the main predicate of a rationale clause (e.g., ‘(so that) I may be praised’), but the interpretation of Latin subjunctive verbs is context-dependent (Kelly 1972, a.m.o.).

3.2 Deriving the transparently mirroring verb forms

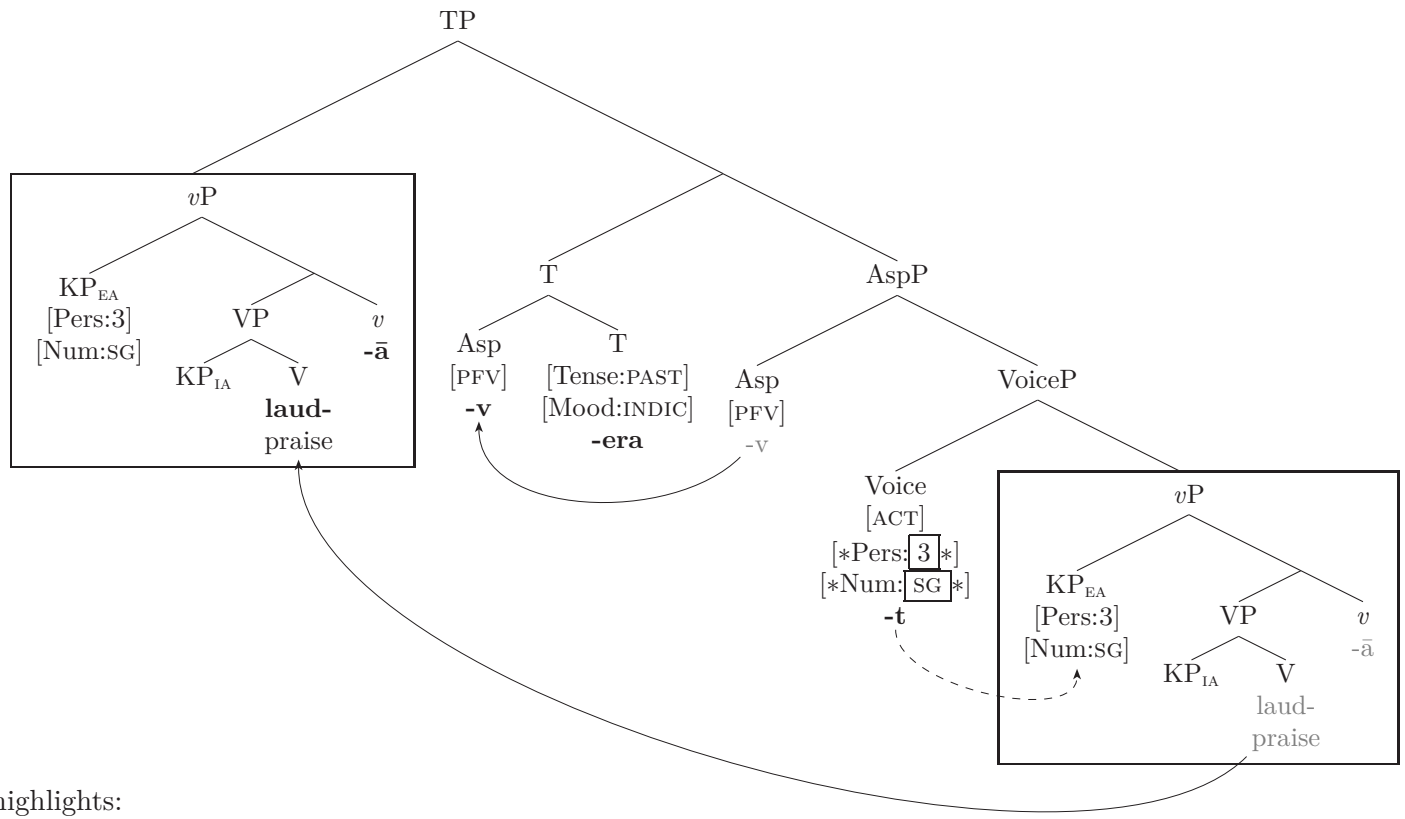
Consider the following:

(13) *Mirroring form: Perfective Aspect inside Past Tense*

laud-ā-v-era-t
 praise-TH-PFV-PAST-3.SG
 ‘he/she/it had praised’

This form is derived as follows:

(14) *Derivation of the mirroring form laudāverat ‘he/she/it had praised’*⁷



The highlights:

(15) *The derivation of Latin finite verb forms*

- a. Voice probes for Person and Number features (and gets them from the closest KP).
- b. Asp head-moves (and left-adjoints) to T.
- c. vP undergoes phrasal movement to Spec,TP.⁸
- d. T bears both Tense and Mood features.

On this analysis, then, Latin finite verb forms are derived by a combination of head movement and phrasal movement (among other operations).

⁷For concreteness, V is shown in situ within VP, and VP linearized to the left of its selector *v*. However, it could in principle be that the V-*v* surface order is instead derived by moving (and left-adjointing) V to *v*, or by moving VP to an inner Spec,*v*P.

Also for concreteness, Latin nominals are analyzed here as KPs. On case in Latin, see Lehmann 1982 and Cecchetto and Oniga 2004, a.m.o.

Following Heck and Müller 2007, the following feature notation is used here: **1**) Unvalued feature: [F:□]. **2**) Unvalued feature that probes for a value: [*F:□*]. **3**) Unvalued feature that has successfully probed for a value: [*F:□VAL*].

⁸See Bailey 2010, Gianollo 2016, and Danckaert to appear, a.o., for similar proposals made for independent reasons.

A somewhat surprising consequence: the single prosodic word *laudāverat* ‘he/she/it had praised’ is not a complex head (contra Embick 2000).

An even more surprising consequence: when one or more arguments (or adjuncts) remain within *vP*, *laudāverat* ‘he/she/it had praised’ is not even a constituent.

If this analysis is on the right track, then, it strongly supports the hypothesis that the prosody autonomously packages syntactic terminals into (phonological) “words”...

...which therefore need not correspond to syntactic constituents (Julien 2002, Kayne 2017, a.o.).

3.3 Deriving the apparently anti-mirroring verb forms

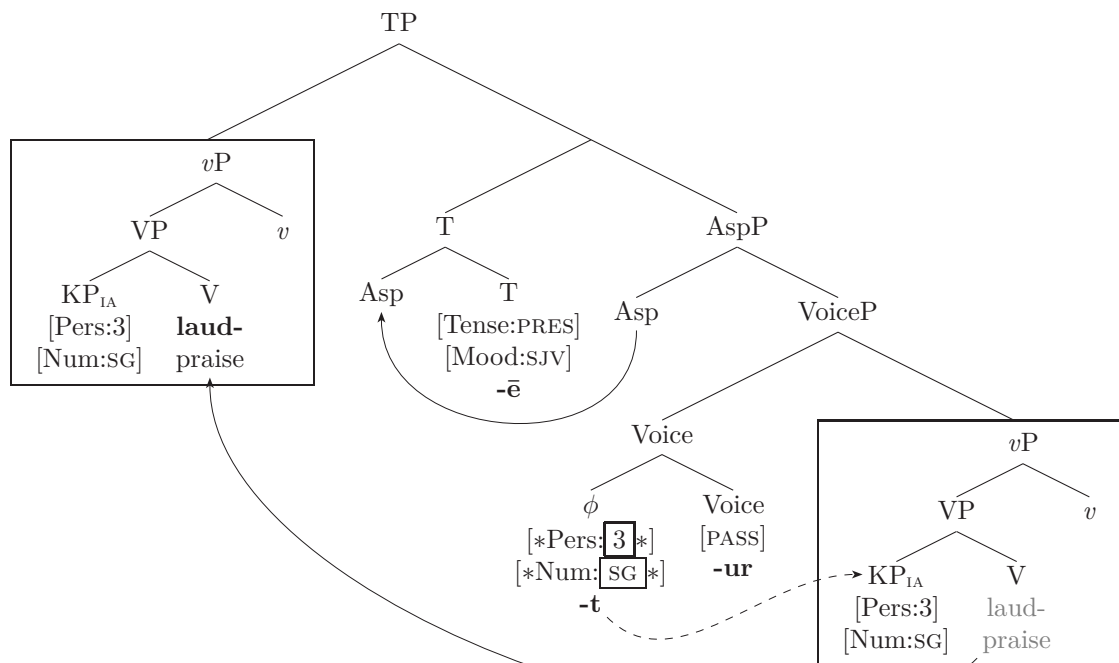
Now consider the following:

- (16) *Anti-mirroring form: Passive Voice outside Subjunctive Mood*

laud-ē-t-ur
 praise-SJV-3.SG-PASS
 ‘(that) he/she/it may be praised’

This form has the same syntactic derivation as the mirroring verb form in (13):

- (17) *Derivation of the anti-mirroring form laudētur ‘that he/she/it may be praised’*



The highlights:

- (18) a. Voice probes for Person and Number features (and gets them from the closest KP). (cf. (15))
 (In this form, the ϕ -features are Fissioned off from the exponent of Passive Voice proper, presumably postsyntactically.)
 b. Asp head-moves (and left-adjoins) to T.
 c. *vP* undergoes phrasal movement to Spec,TP.
 d. T bears both Tense and Mood features.

On this analysis, the two apparent anomalies in the morpheme order in Passive Subjunctives have the same source:

- (19) Subjunctive Mood (= **T**) surfaces surprisingly close to the Root, and Passive **Voice** surprisingly far from it, because *vP* moves to Spec,TP, stranding Voice.

4 Extension: nonfinite forms

Our analysis of the derivation of finite forms can be extended straightforwardly to account for nonfinite and even nonverbal forms.

This section examines two nonfinite forms: the Perfect Passive Participle (e.g., *laudātus* ‘having been praised’) and the Future Active Participle (e.g., *laudātūrus* ‘(that is) going to praise’). (See Appendix A for more.)

Once we’ve derived the Perfect Passive Participle, we’ll be in a position to see that that derivation can be extended to account for the Future Active Participle in a way that strongly supports our general approach.

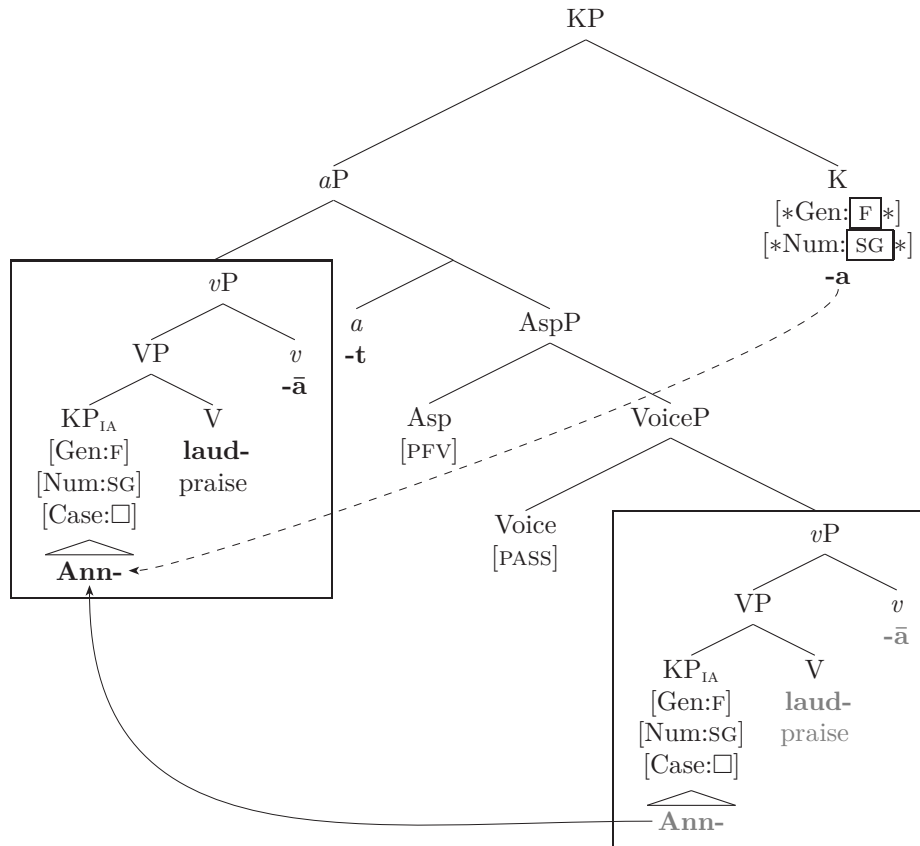
4.1 The Perfect Passive Participle

Consider the following:

- (20) ubi calx **coc-t-a** erit
when lime cook-PART-FEM.NOM.SG will.be
semilit. ‘when the lime will be having-been-cooked’
id. ‘when the lime is cooked’ (Cato, *De Agri Cultura* 38.4, via Devine & Stephens 2006:219, (184))
- (21) Anna **laud-ā-t-a** est. [C]
Anna praise-TH-PART-FEM.NOM.SG is
semilit. ‘Anna is having-been-praised.’
id. ‘Anna was praised.’

The derivation of (21) is, in part, the following:

(22) *Partial derivation of Anna laudāta est* ‘Anna was praised’



4.2 The Future Active Participle

Now consider the following:

- (23) Deditōs [ūlīmīs cruciātibus]
 surrendered.MASC.PL.ACC [extreme.MASC.ABL.PL torture.ABL.PL]
adfec-t-ūr-ī fuērunt.
 affect/inflict-PART-PROSP-MASC.NOM.PL (they.)were
 semilit. ‘They were going to affect the surrendered with extreme tortures.’
 id. ‘They would have subjected the surrendered to extreme tortures.’
 (Livy, *Ab Urbe Condita* XXI, 44.4, via Gildersleeve & Lodge 1895:164)

- (24) Mārcus Annam laud-ā-t-ūr-us est. [C]
 Mark Anna.ACC praise-TH-PART-PROSP-MASC.NOM.SG is
 ‘Mark is going to praise Anna.’

The Future Active Participle is built from the same “stem” as the Perfect Passive Participle (even though they differ in voice)—e.g., *laud-ā-t-* (Embick 2000:215-216 and refs. there).

Therefore, they must have similar derivations.

The Future Active Participle presents a problem, though. This has to do with the suffix *-ūr*, which we take to expone Prospective Aspect, accounting for the participle’s “future” orientation.

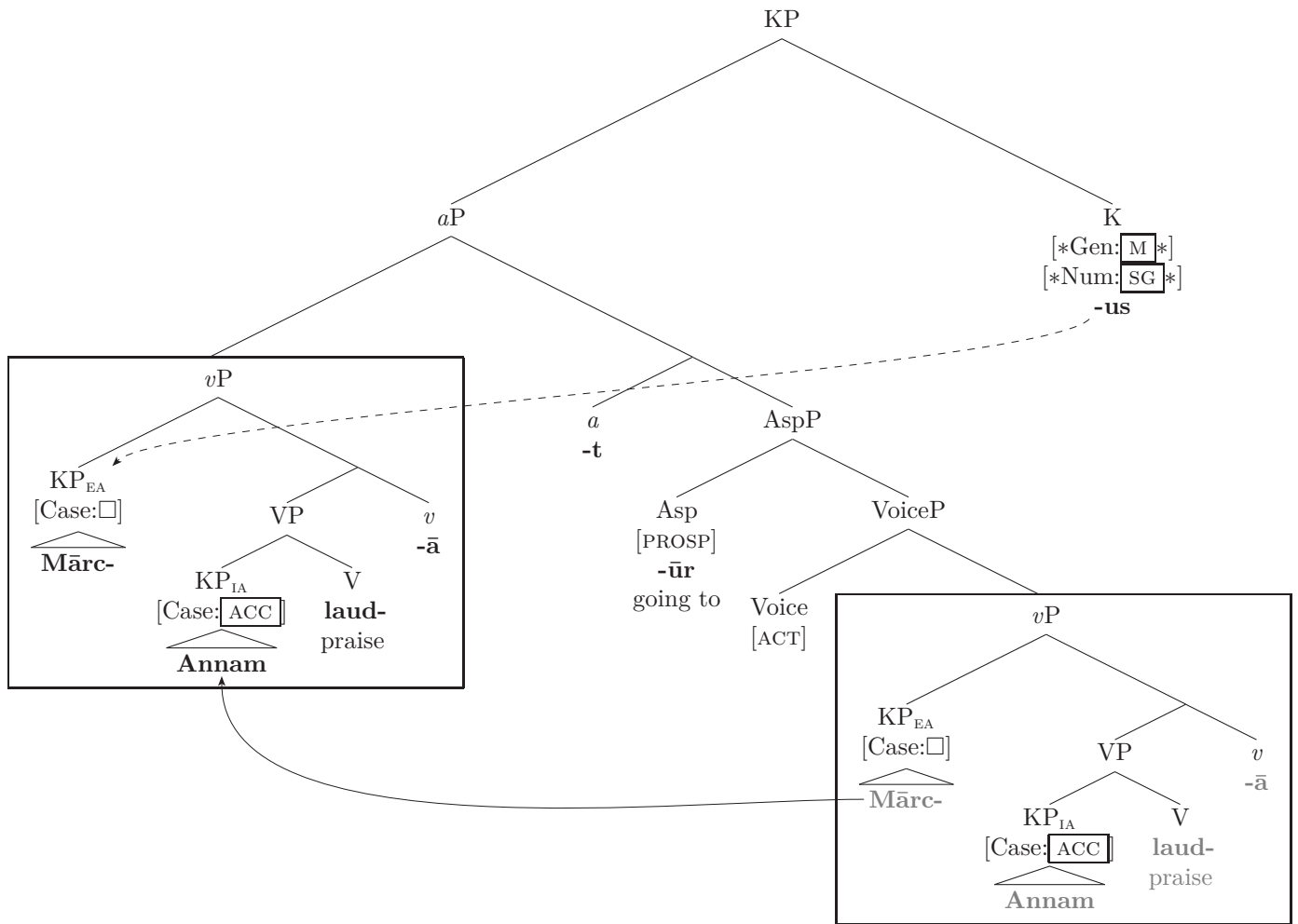
- (25) a. $-\bar{u}r$ occurs farther from the Root than does the participial suffix $-t$ (which we analyze as a a^0). This would seem to suggest that $-\bar{u}r$ is syntactically higher than $-t$.
- b. But that seems backwards. *Laud-ā-t-ūr-us* ‘(that is) going to praise’ is fundamentally a participle ($-t$), not an $\text{Asp}_{[\text{PROSP}]}\text{P}$ (a verbal category) ($-\bar{u}r$).

So its categorial identity seems to be determined by the participial $-t$, but Prospective Aspect $-\bar{u}r$ occurs outside of $-t$. This is another case of anti-mirroring.

Just as Mood/Voice anti-mirroring (which is really two problems: the unexpectedly “internal” position of Mood and the unexpectedly “external” position of Voice) was analyzed above as resulting from $v\text{P}$ -movement...

...so too, we propose, does this instance of anti-mirroring come about through $v\text{P}$ -movement:

- (26) *Partial derivation of Mārcus Annam laudātūrus est* ‘Mark is going to praise Anna’



That is, the participial a^0 $-t$ is higher than Prospective Aspect $-\bar{u}r$, as desired...

...but it occurs closer to the Root on the surface because the Root reaches its surface position not by head movement, but by (intermediate-head-skipping) $v\text{P}$ -movement.

See Appendix B for the full paradigm of (non-periphrastic) finite, nonfinite, and nonverbal forms of *laud-* ‘praise’, which shows how our analysis can derive them. (There are a couple of oddities in the imperative.)

5 Syntactic predictions and consequences of the analysis

We have developed an analysis of Latin verbal morphology that is highly syntactic.

The analysis claims that Latin verb forms are built largely by syntactic operations—including, notably, phrasal movement.

It is therefore crucial to determine what predictions our “morphological” analysis makes about Latin syntax, and whether these are borne out.

5.1 Prediction A: The verb word should move as a phrase

On our analysis, the Latin verb is not a complex head built by head movement and/or Lowering (contra Embick 2000).

Rather, it is the reflex of a large XP (specifically, TP).

Therefore, the verb word (TP) should be able to move as a phrase, skipping intervening heads. (That is, it should not be subject to the Head Movement Constraint (Travis 1984).⁹)

5.1.1 Test case A₁: Intervening head *ut* ‘so that’

This is correct. The finite verb can move to the left of the left-peripheral complementizer *ut* ‘so that’, which is plausibly a head. (We analyze it as a Fin(iteness) head (Rizzi 1997), because it introduces a finite (subjunctive) clause.)

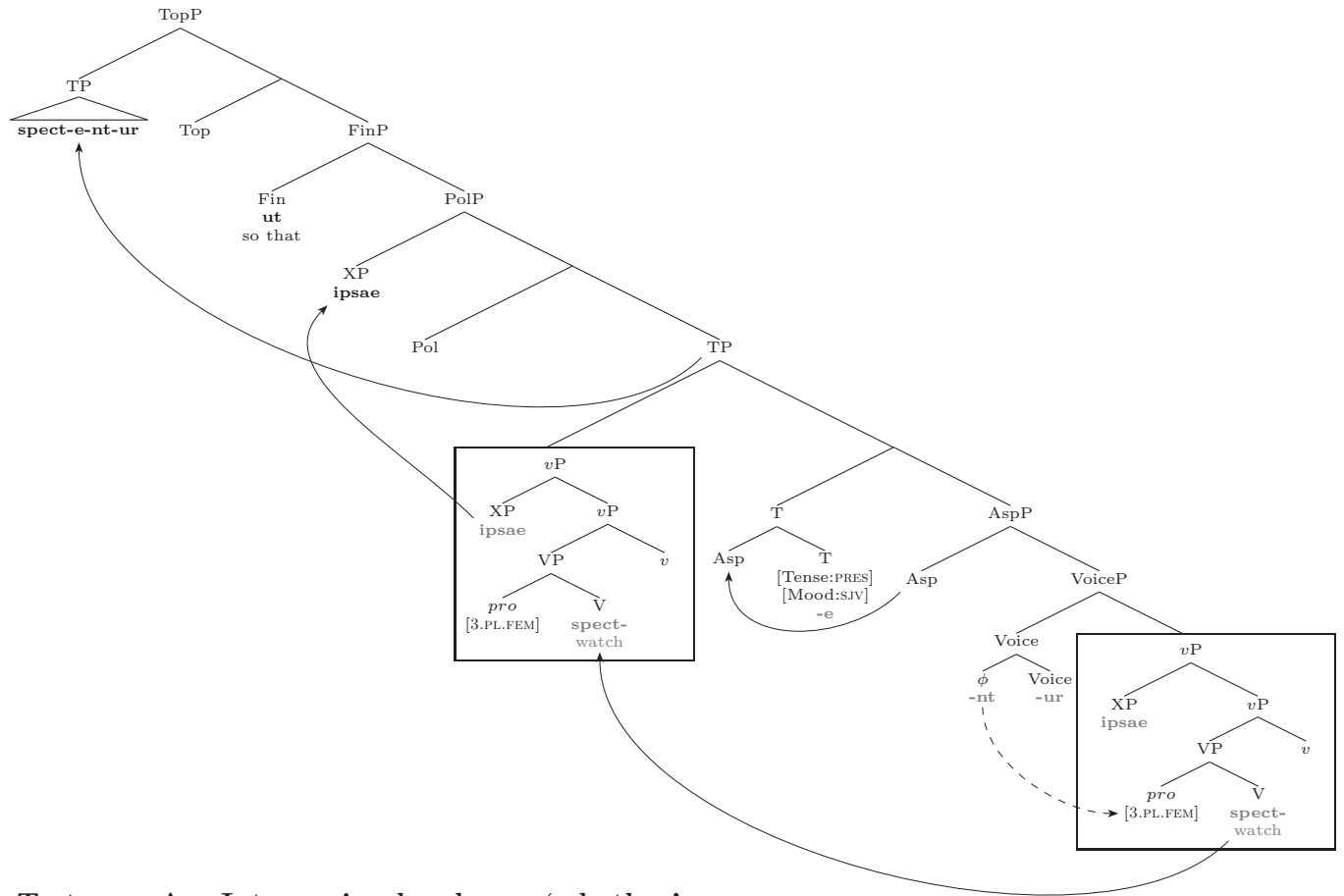
That the finite verb (TP) can move to the left of *ut* is shown by (27), in which it is apparently topicalized:

- (27) *Verb word (TP) in left periphery* (Ovid, *Ars Amatoria*, I. 99, via Gildersleeve & Lodge 1895:283-284)
- | | | | | | | | |
|------------------|------------|-----------|---|---------------------|---------|-----------------|---|
| Spect-ā-tu-m | veni-unt, | veni-unt | [| spect-e-nt-ur | ut | ips-ae |] |
| watch-TH-SUP-ACC | come-3.PL, | come-3.PL | [| watch-SJV-3.PL-PASS | so.that | self-FEM.NOM.PL |] |
- semilit. ‘They come to watch, they come so that they may themselves be watched.’
id. ‘They come to watch, they come to be watched themselves.’

The bracketed rationale clause in (27) is derived as follows:

⁹However, Gribanova and Harizanov (2016) argue (see also Angeles 2017, §4-5) that *syntactic* head movement is not subject to the Head Movement Constraint (whereas postsyntactic amalgamation, which can be either Raising or Lowering, *is* restricted to structurally adjacent heads). If this is so, then the Latin verb’s ability to raise over intervening heads does not show that it must be an XP rather than a complex head, but the XP analysis is nonetheless as empirically adequate as the complex-head analysis in this domain.

(28) Derivation of *spectentur ut ipsae* ‘so that they may themselves be watched’



5.1.2 Test case A₂: Intervening head =ne ‘whether’

The left-peripheral complementizer =ne (Devine & Stephens 2006:235ff., Angeles 2017:10), which heads yes/no questions...

...determines a left-peripheral XP position, which we analyze as Spec,neP. (Feel free to ask about the details.)

In (29), Spec,neP is occupied by a moved nominal (KP) *bell-um* ‘war-ACC’.

- (29) *KP-movement to Spec,neP*¹⁰ (Cicero, *In Verrem* 2.1.79, via Devine & Stephens 2006:235)
- Bell-um=ne populō Rōmānō Lampsacēna cīvītās fac-ere cōn-ā-bā-t-ur?
 war-ACC=YNQ people.DAT Roman.DAT Lampsacene.NOM state.NOM make-INF try-TH-IMPFF-3.SG-PASS
 ‘Was the state of Lampsacum trying to make war on the Roman people?’

That *bellum* ‘war’ undergoes XP-movement to Spec,neP in (29)—not X⁰-movement into =ne—is suggested by the fact that *bellum* not only is not a head immediately below =ne on the clausal spine, but in fact is not part of the clausal spine at all.

If the verb word is an XP (specifically, a TP), then we may expect it to undergo XP-movement to Spec,neP as well. This expectation is borne out:

¹⁰The verb *cōnābātur* ‘(it) was trying’ is deponent: it displays passive (or nonactive) morphology but has active syntax and an active interpretation (see Embick 2000, a.o.).

- (30) *Verb word (TP) in Spec,neP* (Cicero, *In Verrem* 2.4.150, via Devine & Stephens 2006:235)

aedific-ā-v-eri-nt =ne nāvem onerāriam maximam publicē...
 build-TH-PFV-SJV-3.PL=YNQ ship.ACC for.cargo.ACC very.large.ACC at.public.cost
 ‘whether they built a very large cargo ship at public cost...’

5.2 Prediction B: The putative *vP*-movement should be able to carry along *vP*-adverbials

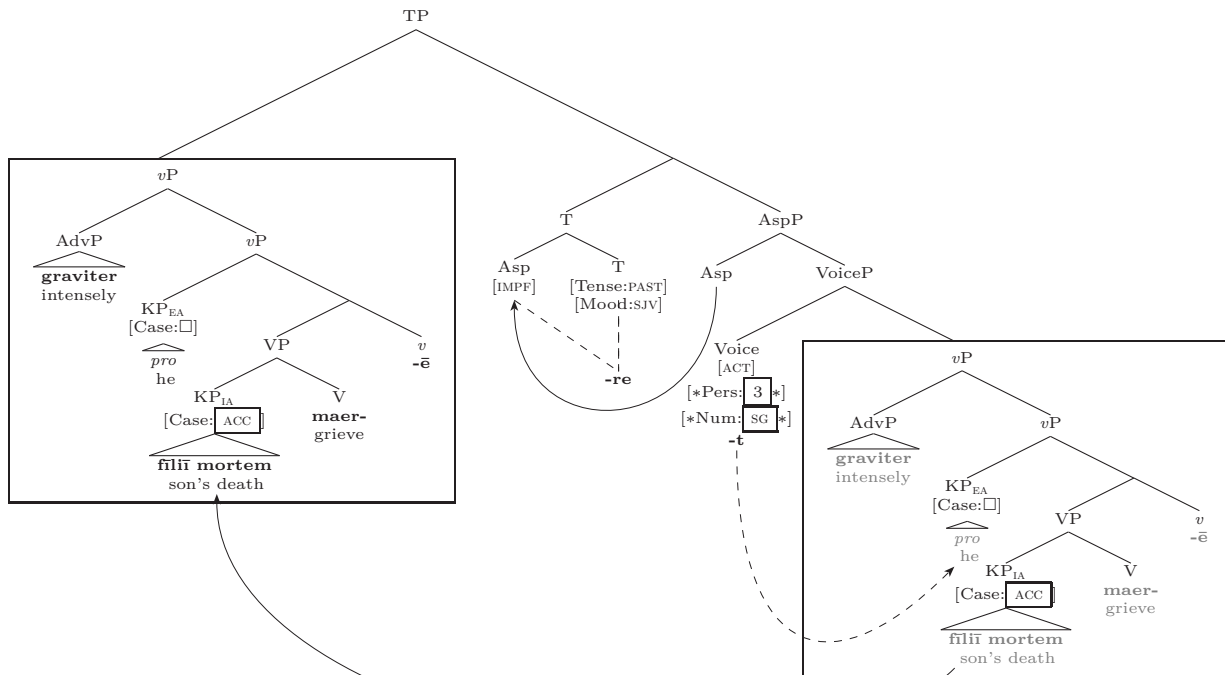
On our analysis, a central part of the derivation of Latin verb forms is *vP*-movement to Spec,TP.

This putative movement should be able to carry along an adverbial left-adjoined to *vP* (e.g., a manner adverbial). When this happens, the adverbial should immediately precede the core *vP* on the surface.

This prediction is borne out:

- (31) cum **graviter** filiū mortem maer-ē-re-t
 when intensely son.GEN death.ACC grieve-TH-IMPV.SJV-3.SG
 ‘when he was intensely grieving over the death of his son’
 (Cicero, *Tusculanae Disputationes* 1.115, via Devine & Stephens 2006:103)

- (32) *Partial derivation of cum graviter filiū mortem maerēret ‘when he was intensely grieving over the death of his son’*



Two more examples:

- (33) Nostrī **celeriter** arma cēp-ēru-nt...
 our.MASC.NOM.PL quickly arms.ACC seize-PERF-3.PL
 ‘Our men rapidly took up arms...’
 (Caesar, *De Bello Gallico* 3.28, via Devine & Stephens 2006:102)
- (34) Huius incolae ... **lātē** aurī et argentī metalla fodi-unt.
 this.GEN inhabitants ... widely/extensively gold.GEN and silver.GEN mines.ACC dig-3.PL
 ‘The inhabitants of this [mountain] extensively work gold and silver mines.’
 (Pliny, *Natural History* 6.74, via Devine & Stephens 2006:105)

5.3 Implications about scrambling

As we have seen, the manner adverbials in (31-34) immediately precede the core *vP*, and therefore precede all the verbal morphology.

We have claimed that this falls out from our analysis: each manner adverbial is initially left-adjoined to *vP* and then carried along when *vP* moves to Spec,TP.

But in (33-34), the subject, though presumably base-generated in Spec,*vP*, occurs to the left of the manner adverbial. Not only that, but other arguments can occur to the left of such a manner adverbial as well:

- (35) *Scrambling of direct object to the left of a manner adverbial*

quod **mortem hominis** **necessārī** graviter fer-ō
 because death.ACC person.GEN close.GEN grievously bear-1.SG
 ‘because I take the death of a close friend grievously’

(Cicero, *Epistulae ad Familiares* 11.28.2, via Devine & Stephens 2006:104)

- (36) *Scrambling of direct object to the left of a manner adverbial*

agrū ... lātē vast-ā-v-it
 country.ACC ... widely ravage-TH-PERF-3.SG
 ‘ravaged the country far and wide’

(Livy, *Ab Urbe Condita Libri* 44.10.5, via Devine & Stephens 2006:105)

- (37) *Scrambling of goal PP to the left of a manner adverbial*

amnis ... **in mare** lātē īn-flu-e-nt-is
 river.GEN ... into sea.ACC widely into-flow-TH-PART.PRES-GEN
 ‘of a river ... flowing widely into the sea’

(Cicero, *De Republica* 2.10, via Devine & Stephens 2006:105)

- (38) *Scrambling of direct object and source PP to the left of a manner adverbial*

ut **cohortēs** **ex** **castrīs** celeriter ē-dūc-e-re-t
 that cohorts.ACC out.of camp.ABL quickly out-lead-TH-IMPV.SJV-3.SG
 ‘that he should lead the cohorts out of the camp rapidly’

(Caesar, *De Bello Gallico* 7.49, via Devine & Stephens 2006:102; translation slightly adapted)

It seems, then, that we have to posit that *vP*-movement to Spec,TP can feed the scrambling out of *vP* not only of the subject, but of *vP*-internal phrasal material in general.

But there’s ample independent support for that conclusion. Arguments and adjuncts routinely surface to the left of negation, strongly suggesting pervasive leftward scrambling:¹¹

- (39) *Scrambling of subject, locative PP, adjunct purpose PP, and perfect passive participle to the left of negation*

...frūmentum **hīs** **in locīs** **in** **hiemem** **prōvīsum** nōn erat.
 grain these.ABL in places.ABL into/for winter.ACC having.been.provided not was
 ‘...grain had not been provided for the winter in these places.’

(Caesar, *De Bello Gallico* 4.29, via Devine & Stephens 2006:183)

Cf. Devine and Stephens (2006:88-89): “the syntactic scope (c-command domain) of the negative can be [...] narrow (excluding not just the subject, but all the arguments) [...] A low negative is typical of SOV languages and is cited as evidence for leftward object or VP-remnant movement.”

¹¹On Latin word order, see Walker 1918, Devine and Stephens 2006, Bailey 2010, Giusti and Iovino 2011, Gianollo 2016, and Danckaert to appear, a.m.o.

6 Conclusion

Our starting point was a puzzle in Latin morphosyntax:

- Some verbal paradigms seem to obey the MirP (e.g., Asp occurs closer to the Root than does T).
- Other verbal paradigms seem to disobey the MirP (e.g., Mood occurs closer to the Root than does Voice).
(cf. Cinque 1999:197, n. 63, citing Calabrese 1985)

We have argued that, despite initial appearances, the MirP can be maintained in the face of these data.

Both the mirroring and the anti-mirroring forms—in fact, all Latin finite verb forms—are surface reflexes of a single derivation...

...which involves both vP-movement (to Spec,TP) and autonomous head movement on the clausal spine.

Both of the anomalies in the anti-mirroring finite forms are explained by this analysis:

- Mood occurs close to the Root because vP-movement carries the Root into Spec,TP.
- Voice occurs far from the Root because vP-movement strands Voice.

The analysis satisfies the three theoretical desiderata laid out in §3:

- (40) a. **Uniformity:** All the finite forms, mirroring and anti-mirroring, share a single syntactic derivation. ✓
- b. **Generality:** Although the puzzle arose among the finite forms, the analysis extends parsimoniously to nonfinite and even nonverbal forms. ✓
- In fact, vP-movement—which is at the center of our solution to the Mood/Voice anti-mirroring puzzle—also solves the puzzle posed by the anti-mirroring behavior of a^0 and Prospective Aspect in Future Active Participles like *laud-ā-t-ūr-us* ‘(that is) going to praise’.
- c. **Syntactic fit:** The analysis correctly predicts that the verb word (TP) should move as a phrase, and that the putative vP-movement should be able to carry along vP-adjuncts. It requires positing that XPs can scramble out of vP, but that’s independently motivated. ✓

Despite the apparent challenges posed to the Mirror Principle by anti-mirror effects in Latin, then, the Principle is safe—at least for now.

The analysis also strongly supports the hypothesis that (morpho)phonological words need not correspond to syntactic constituents (Julien 2002, Kayne 2017, a.o.).

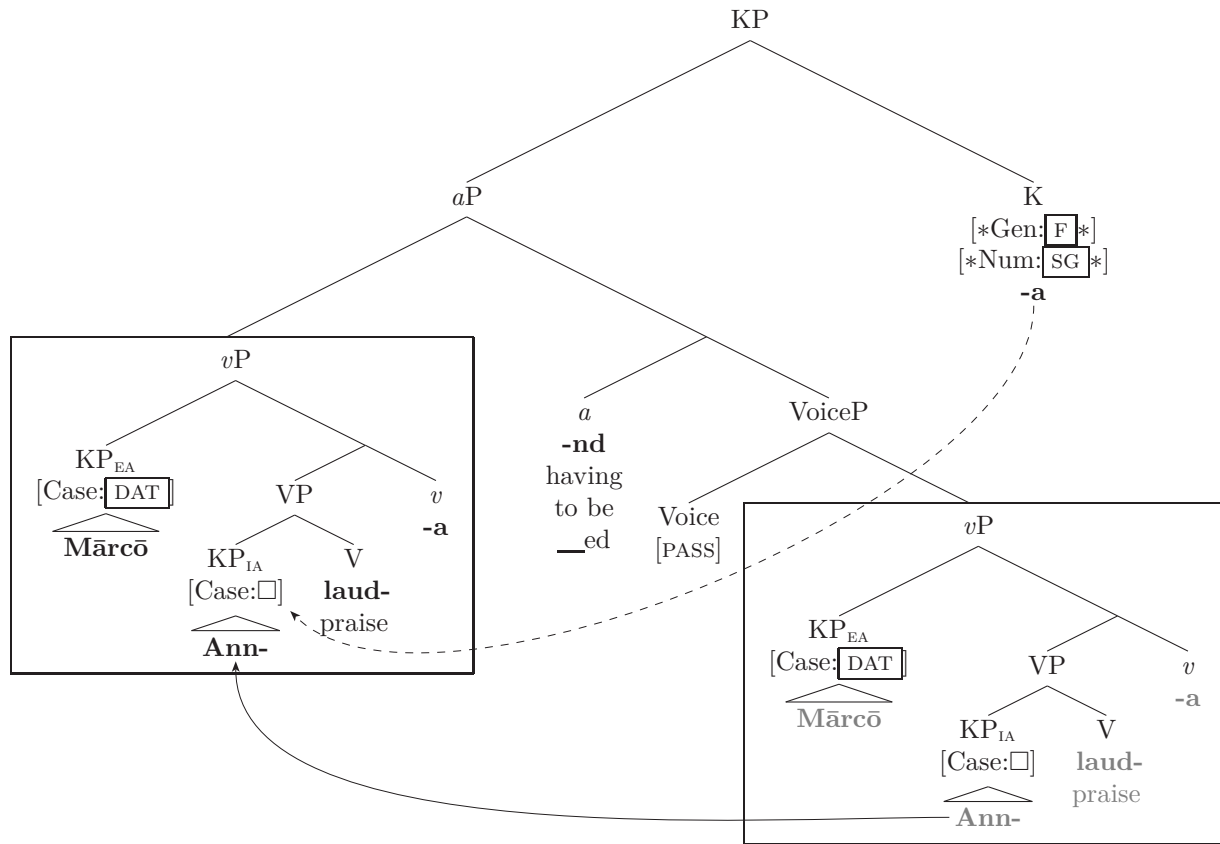
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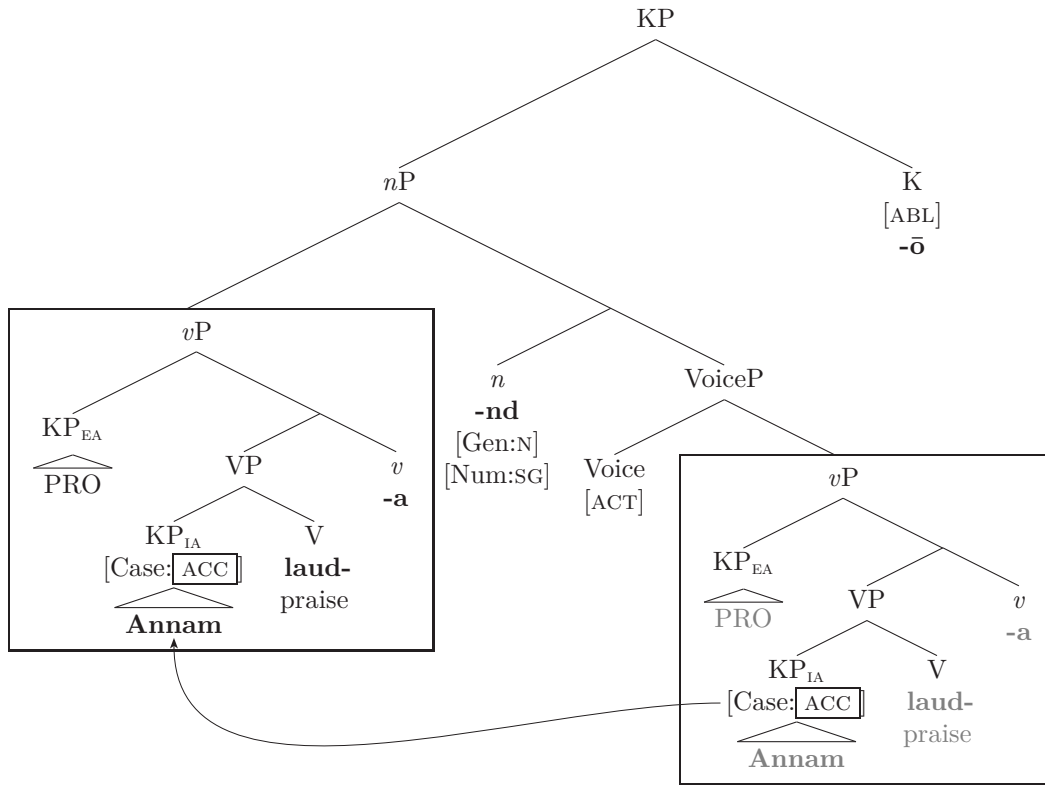
8 Appendix A: Derivations of other nonfinite and nonverbal forms

(41) *Anna Mārcō laudanda est* ^[C] ‘Anna has to be praised by Mark’ (form of interest: gerundive)¹²

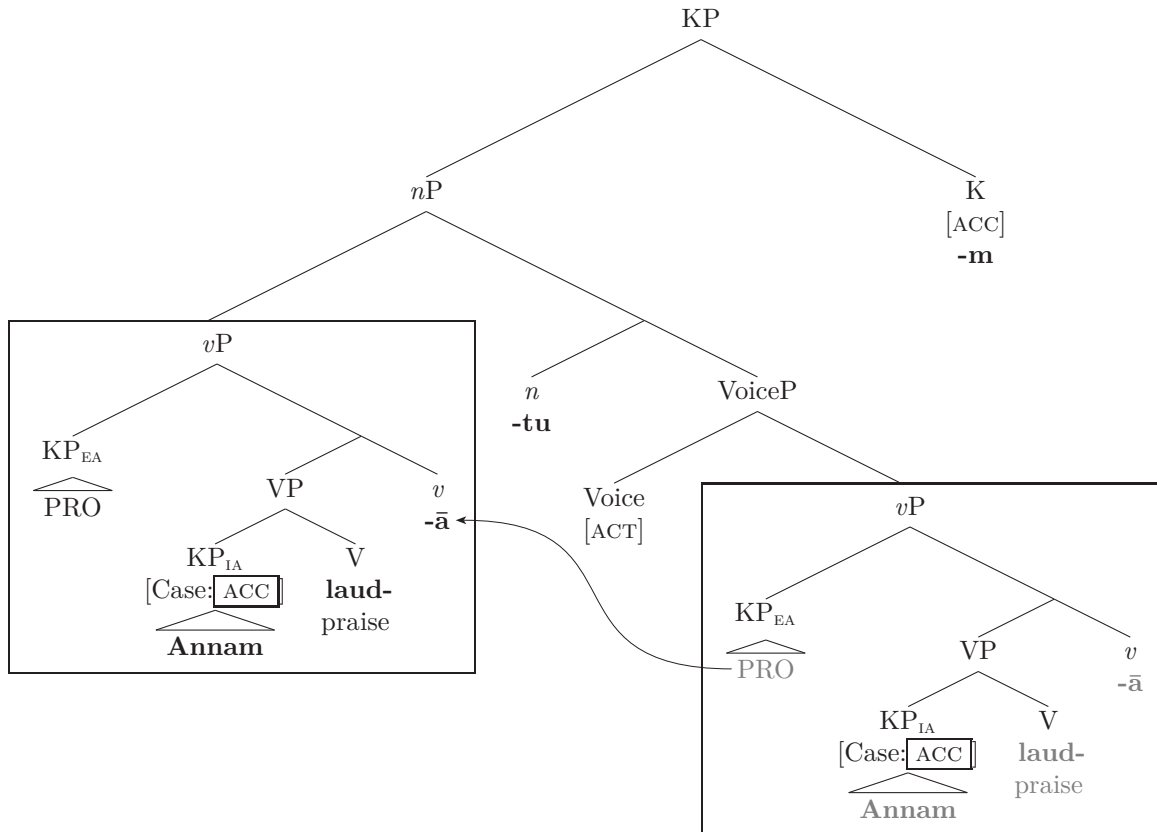


¹²On the Latin gerundive construction, see Bauer 1996, §3 (though we disagree with certain aspects of her analysis).

(42) *Mārcus [Annam laudandō] id ēgit* ^[C] ‘Mark did it [by praising Anna]’ (form of interest: gerund)



(43) *Mārcus [Annam laudātum] Rōmam īvit* ^[C] ‘Mark went to Rome [to praise Anna]’ (form of interest: supine)



Perfect Active Indicative

laud	-ā	-v	-ī		laud	-ā	-v	-i	-mus
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'I (have) praised'					'we (have) praised'				
laud	-ā	-v	-i	-stī	laud	-ā	-v	-i	-stis
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'you.SG (have) praised'					'you guys (have) praised'				
laud	-ā	-v	-i	-t	laud	-ā	-v	-ēru	-nt
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'he/she/it (has) praised'					'they (have) praised'				

Pluperfect Active Indicative

laud	-ā	-v	-era	-m	laud	-ā	-v	-erā	-mus
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'I had praised'					'we had praised'				
laud	-ā	-v	-erā	-s	laud	-ā	-v	-erā	-tis
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'you.SG had praised'					'you guys had praised'				
laud	-ā	-v	-era	-t	laud	-ā	-v	-era	-nt
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'he/she/it had praised'					'they had praised'				

Future Perfect Active Indicative

laud	-ā	-v	-er	-ō	laud	-ā	-v	-eri	-mus
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'I'll have praised'					'we'll have praised'				
laud	-ā	-v	-eri	-s	laud	-ā	-v	-eri	-tis
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'you.SG will have praised'					'you guys will have praised'				
laud	-ā	-v	-eri	-t	laud	-ā	-v	-eri	-nt
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'he/she/it will have praised'					'they'll have praised'				

Present Active Subjunctive

laud			-e	-m	laud			-ē	-mus
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'(that) I may praise'					'(that) we may praise'				
laud			-ē	-s	laud			-ē	-tis
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'(that) you.SG may praise'					'(that) you guys may praise'				
laud			-e	-t	laud			-e	-nt
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-Voice _φ
'(that) he/she/it may praise'					'(that) they may praise'				

Present Passive Subjunctive

laud			-e	-r	laud			-ē	-m	-ur
✓	-v	-Asp	-T	-Voice _φ	✓	-v	-Asp	-T	-φ	-Voice
'(that) I may be praised'					'(that) we may be praised'					
laud			-ē	-ri	-s	laud			-ē	-minī
✓	-v	-Asp	-T	-Voice	-φ	✓	-v	-Asp	-T	-Voice _φ
'(that) you.SG may be praised'					'(that) you guys may be praised'					
laud			-ē	-t	-ur	laud			-e	-nt
✓	-v	-Asp	-T	-φ	-Voice	✓	-v	-Asp	-T	-φ
'(that) he/she/it may be praised'					'(that) they may be praised'					

Imperfect Active Subjunctive

laud	-ā	-re	-m	laud	-ā	-rē	-mus
✓	-v	-Asp+T	-Voice _φ	✓	-v	-Asp+T	-Voice _φ
'(that) I might praise'				'(that) we might praise'			
laud	-ā	-rē	-s	laud	-ā	-rē	-tis
✓	-v	-Asp+T	-Voice _φ	✓	-v	-Asp+T	-Voice _φ
'(that) you.SG might praise'				'(that) you guys might praise'			
laud	-ā	-re	-t	laud	-ā	-re	-nt
✓	-v	-Asp+T	-Voice _φ	✓	-v	-Asp+T	-Voice _φ
'(that) he/she/it might praise'				'(that) they might praise'			

Imperfect Passive Subjunctive

<p>laud -ā -re -r ✓ <i>-v</i> <i>-Asp+T</i> <i>-Voice_φ</i> '(that) I might be praised'</p> <p>laud -ā -rē -ri -s ✓ <i>-v</i> <i>-Asp+T</i> <i>-Voice</i> <i>-φ</i> '(that) you.SG might be praised'</p> <p>laud -ā -rē -t -ur ✓ <i>-v</i> <i>-Asp+T</i> <i>-φ</i> <i>-Voice</i> '(that) he/she/it might be praised'</p>	<p>laud -ā -rē -m -ur ✓ <i>-v</i> <i>-Asp+T</i> <i>-φ</i> <i>-Voice</i> '(that) we might be praised'</p> <p>laud -ā -rē -minī ✓ <i>-v</i> <i>-Asp+T</i> <i>-Voice_φ</i> '(that) you guys might be praised'</p> <p>laud -ā -re -nt -ur ✓ <i>-v</i> <i>-Asp+T</i> <i>-φ</i> <i>-Voice</i> '(that) they might be praised'</p>
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Perfect Active Subjunctive

<p>laud -ā -v -eri -m ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'I (have) praised'</p> <p>laud -ā -v -erī -s ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'you.SG (have) praised'</p> <p>laud -ā -v -eri -t ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'he/she/it (has) praised'</p>	<p>laud -ā -v -erī -mus ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'we (have) praised'</p> <p>laud -ā -v -erī -tis ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'you guys (have) praised'</p> <p>laud -ā -v -eri -nt ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'they (have) praised'</p>
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Pluperfect Active Subjunctive

<p>laud -ā -v -isse -m ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) I had praised'</p> <p>laud -ā -v -issē -s ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) you.SG had praised'</p> <p>laud -ā -v -isse -t ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) he/she/it had praised'</p>	<p>laud -ā -v -issē -mus ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) we had praised'</p> <p>laud -ā -v -issē -tis ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) you guys had praised'</p> <p>laud -ā -v -isse -nt ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(if) they had praised'</p>
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Present Active Imperative

<p>laud -ā ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(you.SG) praise!'</p>	<p>laud -ā ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(you guys) praise!'</p>
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Present Passive Imperative

<p>laud -ā ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-re</i> <i>-Voice_φ</i> '(you.SG) be praised!'</p>	<p>laud -ā ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-minī</i> <i>-Voice_φ</i> '(you guys) be praised!'</p>
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Future Active Imperative

<p>laud -ā -tō ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(you.SG will) praise!'</p> <p>laud -ā -tō ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'let him/her/it praise!'</p>	<p>laud -ā -tō -te ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(you guys will) praise!'</p> <p>laud -ā -tō -nt ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'let them praise!' [Surface: <i>laudantō</i>. Metathesis for phonological reasons? (*$\bar{V}nt$)]</p>
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Future Passive Imperative

<p>laud -ā -to -r ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> '(you.SG will) be praised!'</p> <p>laud -ā -to -r ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-Voice_φ</i> 'let him/her/it be praised!'</p>	<p>laud -ā -tō -nt -r ✓ <i>-v</i> <i>-Asp</i> <i>-T</i> <i>-φ</i> <i>-Voice</i> 'let them be praised!' [Surface: <i>laudantor</i>. Metathesis for phonological reasons? (**$\bar{V}ntr$)]</p>
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*Present Active Infinitive*¹³

<p>laud -ā -r ✓ <i>-v</i> <i>-Asp+T</i> '(to) praise'</p>	<p>-e <i>-Voice</i></p>
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Present Passive Infinitive

<p>laud -ā -r ✓ <i>-v</i> <i>-Asp+T</i> '(to) be praised'</p>	<p>-ī/-ier <i>-Voice</i></p>
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¹³On the syntax of the well-known accusative-and-infinitive construction (*accusativus cum infinitivo*, AcI), see Pepicello 1977; Bolkestein 1979; Pillinger 1980; Comrie 1981; Wales 1982; and Haug, Jøhndal, and Solberg 2017, a.o.

Perfect Active Infinitive

laud -ā -v -isse
√ -v -Asp -T -Voice
'(to) have praised'

Present Active Participle

laud -ā -nt -s
√ -v -a -Asp -Voice -K
'praising' (→ *laudāns*)

Perfect Passive Participle

laud -ā -t -us
√ -v -a -Asp -Voice -K
'having been praised'

Future Active Participle

laud -ā -t -ūr -us
√ -v -a -Asp -Voice -K
'(that is) going to praise'

Gerundive

laud -a -nd -us
√ -v -a -Voice -K
'that must be praised'

Gerund

laud -a -nd -ī/-ō/-um
√ -v -n -Voice -K
'of praising / by praising / praising'

Supine

laud -ā -tu -m/-:
√ -v -n -Voice -K
'praising / in order to praise' [ACC] /
in (the) praising (of it) [ABL]