A Diachronic Study of the Pre- and Post-Verbal Distribution of Prepositional Phrases in Latin[*]

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ABSTRACT This paper investigates the change from pre- to post-verbal Prepositional Phrases (PPs) in Latin which, to my knowledge, has not been investigated before. I collect data from three texts: Caesar's *De Bello Gallico* (c.50 BCE), Suetonius's *Vitae Caesarum* (c.120 CE) and *Itinerarium Egeriae* (c.385 CE). In my sample, the proportion of post-verbal PPs increases from the earlier to the later texts. There is no evidence for the change in head-directionality in the earliest text (Caesar) but by Suetonius, VP is starting to allow head-initial structure. Significantly, contrary to what we might expect from typological studies of OV and VO languages, Latin does not seem to go through an OVX-like stage: the rate of PP-extraposition is still low in Suetonius although the change in head-directionality has started. Thus, there is no evidence that PP-extraposition is leading the change in head-directionality. Nevertheless, there are changes in PP-extraposition from the earlier to later texts: the rate of PP-extraposition increases as Latin becomes increasingly head-initial. Finally, in *Itinerarium Egeriae*, which is the latest text, certain PPs strongly prefer pre-verbal position. This may be because the pre- and post-verbal position are, to an extent, semantically differentiated and this may reflect the later stage of the change.

1 INTRODUCTION

This paper investigates the change from pre- to post-verbal Prepositional Phrases (PPs[1]) in Latin. We know that PPs are post-verbal in the Modern Romance languages but that in Latin PPs could surface pre-verbally (Ledgeway 2012: 2, 59). However, to my knowledge no study has investigated this change. I look at three texts from three different periods of Latin: Caesar's *De Bello Gallico* (c.50 BCE), Suetonius's *Vitae Caesarum* (c.120 CE) and *Itinerarium Egeriae* (henceforth *Itinerarium*) (c.385 CE).

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[1] Here and henceforth *PP* refers to pre- and postpositional phrases.

The change from pre- to post-verbal PPs is part of the change from OV to VO:[2] both reflect the change from head-final to head-initial structure (see a simplified representation in Figure 1[3]):

Figure 1   Change from head-final to head-initial structure in VP.

I know of no studies of the change from pre- to post-verbal PPs in languages that have changed from OV to VO. However, typological studies of OV and VO languages lead us to expect certain changes in the distribution of PPs. I outline these in section 2.1. Section 2.2 discusses what seems to determine the types of PPs that can extrapose cross-linguistically which we may expect to hold for Latin. Section 2.3 outlines my assumptions about Latin clause structure. Section 3 presents my methodology and section 4 my results and analysis. Section 5 summarizes my findings and section 6 concludes.

2 Background

2.1 Typological studies of OV and VO languages

Typological studies of OV and VO languages lead us to expect certain changes in the distribution of PPs both before and during the change in head-directionality.

OV languages range from rigid OV languages, such as Japanese, where all adjuncts and arguments precede the verb (Biberauer & Sheehan 2013: 32) to OVX languages where only direct objects are pre-verbal and adjuncts and non-direct object complements obligatorily surface post-verbally (Biberauer & Sheehan 2013: 29-30, Hawkins 2008: 169-70):

(1)   Japanese (rigid OV)[4]
       John-san-wa   **o-mise-kara**   **o-kome-o**   *katta*.
       John-HON-TOP   HON-shop-FROM   HON-rice-ACC   buy.PST

       'John bought rice from the shop.'

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(2) Kairiru (Oceanic, Papua New Guinea) (OVX)

> *ei*   ***porri tamiok***   <u>*a-pik*</u>   [***qeqe-i***   ***nat***   ***nai***].
> 3.SG   axe   3.SG-take [from-3.SG child that]

'He/She took the axe from that child.'   (Wivell 1981: 151)

Note that in (1) both the postpositional phrase *o-mise-kara* 'from the shop' and the direct object *o-kome-o* 'rice' precede the verb *katta* 'bought'. In contrast in (2), although the direct object is pre-verbal, the PP is post-verbal.

The pre-verbal object in OVX languages shows that VP is head-final so the post-verbal constituents, such as PPs, must have extraposed.[5] Crucially, OVX languages are more likely than rigid OV languages to show properties typical of VO languages (Hawkins 2008: 183). For example, OVX languages show a weaker tendency towards postpositions than rigid OV languages (Hawkins 2008: 183). This could suggest that OVX languages represent an intermediate stage in the change from OV to VO. Therefore, we might expect that Latin goes through an OVX-like stage where VP is head-final but PPs frequently or obligatorily extrapose.

Typological studies of OV and VO languages also predict certain changes in the distribution of PPs during the change in head-directionality. Whereas constituents being heavy encourages extraposition in head-initial languages this is not the case in head-final languages which pre-pose heavy constituents (Hawkins 2005: 225, Hawkins 1994: 297). (3) illustrates HEAVY-NP-SHIFT in English (head-initial) which involves extraposition of heavy N(oun)P(hrases). (4) reflects the order without extraposition.

(3)   I gave to Mary **the valuable book that was extremely difficult to find**.

(4)   I gave **the valuable book that was extremely difficult to find** to Mary.

(5) illustrates pre-posing of heavy constituents in Japanese, in this case a sentential complement (bolded). (6) illustrates the basic order.

(5) [CP1 [CP2 [TP ***kinoo***   ***John-ga***   ***kekkonsi-ta***   ] ***to***   ] [NP *Mary-ga*
>   yesterday John-NOM marriage.do.PST   that   Mary-NOM
>
>] [VP *it-ta*   ].]
>   say.PST

'Mary said that yesterday John got married.'[6]

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[5]   EXTRAPOSITION in this paper is used only in a descriptive sense: I am open to whether this involves rightwards movement (for example, Baltin 1978: 21) or base-generation, as required for example in Kayne's *Antisymmetry of Syntax* (Kayne 1994: 117).

[6]   Modified category labels and my translation and gloss (consulted with native speaker).

(6) [CP1 [NP *Mary-ga*] [VP [CP2 [TP **kinoo** **John-ga kekkonsi-ta**]
            Mary-NOM   yesterday John-NOM marriage.do.PST

    to] *it-ta*].]
    that say.PST

‘Mary said that yesterday John got married.’   (Hawkins 1994: 66)

This leads us to expect that heavy PPs will be increasingly likely to extrapose as Latin becomes increasingly head-initial.

2.2 PP-extraposition cross-linguistically

In this section I discuss PP-extraposition in OVX languages and OV West Germanic and outline what these languages lead us to expect about PP-extraposition in Latin. I choose these languages because they allow many types of PPs to extrapose and PP-extraposition is well-studied, especially in West Germanic. We will see that in both OVX and OV West Germanic extraposed constituents cannot be tightly integrated with the verb.

OV West Germanic languages allow both adjunct and complement PPs to extrapose. (7, 8) illustrate extraposition of PPs functioning as locative adjuncts:

(7) Afrikaans (locative adjunct)
    Ek het (in die bos) geloop (in die bos).
    I   have (in the bush) walked (in the bush)

    ‘I walked in the bush.’   (Biberauer 2017: 188,190)

(8) Dutch (locative adjunct)[7]
    dat Jan zijn vriend (in Amsterdam) ontmoette (in Amsterdam)
    that John his friend (in Amsterdam) met   (in Amsterdam)

    ‘that John met his friend in Amsterdam’   (Hoekstra 1999: 77)

(9 - 11) illustrate extraposed complement PPs:

(9) German (non-directional complement)
    dass er nicht mehr   gesprochen hat mit ihr
    that he not   any.longer spoken   has with her

    ‘that he didn’t talk to her anymore’   (Biberauer 2017: 183, Haider 2013: 80)

(10) Dutch (directional complement)
    dat Jan (naar Groningen) wandelde (naar Groningen)
    that John (to   Groningen) walked   (to   Groningen)

    ‘that John walked to Groningen’   (Hoekstra 1999)

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[7] I provide the translation for all examples from Hoekstra (1999) and Hoekstra & Mulder (1990).

(11)   Afrikaans (directional complement)
Hy het (na die swembad)   gehardloop (na die swembad).
He has (to the swimming.pool) run   (to the swimming.pool)

'He ran to the swimming pool.'   (Biberauer 2017: 202; format modified)

Importantly, however, complement PPs seem to behave like adjuncts when they extrapose. Hoekstra (1999: 78) shows that extraposed directional complement PPs in Dutch (for example with *naar* 'to' as in 10) must receive independent accentuation, as is typical for adjuncts. In contrast, non-extraposed directional complement PPs can either receive integrative accentuation, which is typical of complements, or independent accentuation. Adjuncts are less integrated with the verb than complements (for example adjuncts, in contrast to complements, are not selected by the verb and are not first to merge with the verb). This suggests that extraposed PPs in West Germanic must be loosely integrated with the verb.[8]

This also seems to be true in OVX languages. The post-verbal (extraposed) constituents in OVX languages are obliques (Hawkins 2008: 169-70). Obliques include adjuncts, which we have already seen are loosely integrated with the verb, and non-direct object complements, such as *on the table* in (12) (Hawkins 2008: 168-9).[9]

(12)   John put the book **on the table**.

These complements are thought to be less integrated with the verb than direct objects (for example, they are assumed to be introduced not by V but by applicative heads, McGinnis 2008: 1225, 1236, Marantz 1993: 116).

Therefore, it seems that in both OVX languages and OV West Germanic, extraposed constituents must be loosely integrated with the verb. Thus, in Latin we would expect that if only some PPs extrapose, it will be those which are least integrated with the verb.

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[8] There is further suggestion of this. Certain directional PPs cannot extrapose in OV West Germanic, for example:

(i)   *dat Jan (in de sloot) gesprongen is (*in de sloot)*   (Dutch)
that Jan (in the ditch) jumped is (in the ditch)

'that Jan has jumped into the ditch'   (Hoekstra & Mulder 1990: 8, 9)

(ii)   *Hulle het (die bos in) geloop (*die bos in).*   (Afrikaans)
They have (the bush in) walked (the bush in)

'They walked into the bush.'   (Biberauer 2017: 198-199)

Biberauer (2017: 202-2) argues that these PPs are more integrated with the verb (via incorporation of the adposition with the verb) than other directional PPs.

[9] I include indirect objects as obliques here, contrary to Hawkins (2008: 168-9), because they surface post-verbally in at least some OVX languages, such as Kairiru (Wivell 1981: 140). However, this may not be true of all OVX languages as whether indirect objects pattern with obliques or direct objects varies cross-linguistically (Dryer & Gensler 2013).

2.3 Assumptions about Latin clause structure

In Caesar and Suetonius, I assume finite verbs are in T(ense)P(hrase) following Danckaert (2017a: 121).[10] In *Itinerarium*, I assume, following Ledgeway (2017: 171, 172, 191-2, 204), that finite verbs in main clauses raise to C(omplementizer) position (verb second). When finite verbs do not undergo V-to-C movement (which is the case in most embedded clauses, Ledgeway 2017: 191), I assume they are in TP (again following Ledgeway 2017: 194, 198). See section 3.2 for discussion of the projections I assume between TP and VP (namely InfP and PerfP).

I take a neutral position on whether complement PPs in head-final VP are base-generated in pre-verbal position, as in the original conception of the head-directionality parameter, or derived via leftwards movement, as in Kayne (1994: 47-48).

3 METHODOLOGY

3.1 Texts

Table 1 shows the date, period and genre of the texts I investigated.

Text	Period	Date	Genre
Caesar *De Bello Gallico*	Classical Latin	c.50 BCE	Historical
Suetonius *Vitae Caesarum*	Late Latin	c.120 CE	Historical
Itinerarium Egeriae	Late Latin	c.385 CE	Letter

Table 1   Texts: period and genre.

The texts by Caesar and Suetonius are both historical in genre but Caesar's style is more literary (Schlicher 1936: 218, Hammond 1998: xxx) than Suetonius's (Hurley 2011: xxiv-xxv). This style difference was unavoidable because historical texts earlier than Suetonius are generally literary.

Itinerarium is a letter by a Christian about her pilgrimage in the Holy Land. Her language is generally colloquial, although it sometimes reflects literary traditions (Väänänen 1987: 213). Therefore, style becomes less literary as we go from the earlier to later texts. Thus, it remains unclear how far the patterns I find reflect the style rather than the period.

3.2 Corpora

I collected data from two versions of each text. The first version in each case is a corpus tagged for prepositions: The Ancient Greek and Latin Dependency Treebank

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[10] This may not conform to Minimalist accounts which do not assume V-to-T movement in OV languages unless there is clear evidence (for example, Fukui & Sakai 2003). However, whether finite verbs raise to TP does not affect my analysis (footnote 14 and 15).

(henceforth LDT)[11] (Celano 2019) for Caesar and Suetonius, and PROIEL[12] (Haug & Jøhndal 2008) for *Itinerarium*. The second version for all three texts was the data which Lieven Danckaert collected for his 2017 book (henceforth DLCS2) (Danckaert 2016).

I looked at DLCS2 because it contains only modal clauses (with *posse* 'can' and *debere* 'must') and *esse*-periphrases, which, as we will see, allows us to diagnose PP-position more accurately. However, I also looked at data from LDT and PROIEL because, since the type of environment is not controlled for, the frequencies of different environments are representative of the frequencies in the text. Thus, the LDT data gives insight into the overall frequency of surface pre- and post-verbal PPs in the language. Each corpus contained the following sections of the texts:

Text	Corpus	Sections
Caesar *De Bello Gallico*	The Greek and Latin Dependency Treebank	Parts of book two: 2.1-2.3; 2.5; 2.7; 2.9; 2.14-2.18; 2.32-2.33
Caesar *De Bello Gallico*	DLCS2	Books 1-7
Suetonius *Vitae Caesarum*	The Greek and Latin Dependency Treebank	Life of Augustus: 1-55
Suetonius *Vitae Caesarum*	DLCS2	All books
Itinerarium Egeriae	PROIEL	Full text
Itinerarium Egeriae	DLCS2	1.1-9.7; 17.1-24.6; 24.6-49.3

Table 2 Sections of texts within each corpus.

(13, 14) illustrate modal clauses and *esse*-periphrases in DLCS2 respectively:

(13) *ne   ex   hostium   castris   conspici* **possent**
      lest from enemy.GEN camp.ABL be.seen could

      'lest they could be seen from the camp of the enemy' (Caesar)

(14) *in   Illyricum   profectus* **esset**
      into Illyricum set.out   was.SBJV

      'he had set out for Illyricum' (Caesar)

Following Danckaert (2017a: 131, 136, 147-156), I assume that (13, 14) are mono-clausal. (I assume this also extends to passive *esse*-periphrases which Danckaert 2017a does not discuss since they are irrelevant for the position of nominal objects.) Following Harwood (2015), I assume that the infinitive in modal clauses

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[11] https://perseusdl.github.io/treebank_data/
[12] https://proiel.github.io

occurs in Inf(initive)P(hrase) and the perfect participle in *esse*-periphrases occurs in Perf(ective)P(hrase). The phrase markers in (15b) and (16b) illustrate the structure I assume for modal clauses and *esse*-periphrases respectively.

(15) a. *ne   ex   hostium   castris   conspici **possent***
          lest from enemy.GEN camp.ABL be.seen   could

'lest they could be seen from the camp of the enemy'

b.
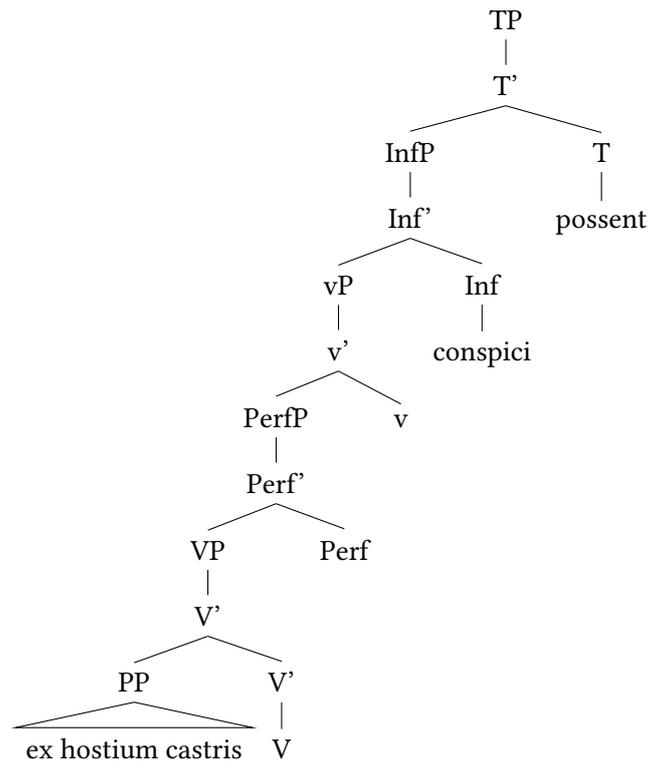
(16) a. *in   Illyricum profectus **esset***
          into Illyricum set.out   was.SBJV

'he had set out for Illyricum'

b.

```
                          TP
                          |
                          T'
                   _____/_____
                  InfP           T
                   |            esset
                  Inf'
              ___/\___
             vP       Inf
             |
             v'
          __/\__
        PerfP    v
          |
        Perf'
       __/\___
      VP      Perf
      |     profectus
      V'
    __/\__
   PP     V
   /\
in Illyricum
```
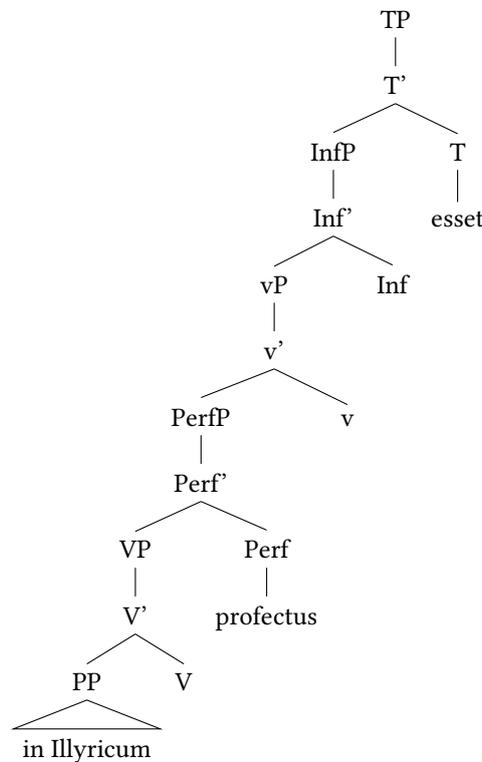
The pre-verbal PPs in (15a, 16a) suggest that InfP and PerfP respectively are head-final. Technically (15a, 16a) could involve the PP fronting above T meaning that PerfP and InfP could also be head-initial.[13] Nevertheless, as we will see, some modal clauses and *esse*-periphrases also allow us to diagnose whether the PP has moved.

In contrast, surface pre-verbal PPs in clauses with a single main verb, such as (17a), give no clue about the head-directionality of structure below T. It could be generated with a head-final TP whether the structure below TP is head-final (17b) or head-initial (17c).[14]

(17) a. ***ab   eo   loco   in   fines   Ambianorum   <u>peruenit</u>***
     from that.ABL place.ABL into territory Ambiani.GEN.PL arrived

     'he went from that place into the territories of the Ambiani'

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[13] Although head-initial InfP and PerfP under head-final TP violates the FINAL-OVER-FINAL CONDITION (FOFC), we will see that Suetonius and *Itinerarium* show surface violations of the FOFC (section 4.3.1 and section 4.5).

[14] If finite verbs do not raise to T (footnote 10), modal clauses and *esse*-periphrases still give a more accurate picture of PP-position than clauses with a single finite verb because in certain configurations, they can also reveal whether the PP has moved.

b.

```
                                    TP
                                    │
                                    T'
                              ┌─────┴─────┐
                            InfP          T
                              │           │
                            Inf'       peruenit
                        ┌─────┴─────┐
                       vP          Inf
                        │
                        v'
                  ┌─────┴─────┐
                PerfP         v
                  │
                Perf'
            ┌─────┴─────┐
           VP          Perf
            │
            V'
      ┌─────┴─────┐
     PP          V'
   ┌──┴──┐    ┌───┴───┐
  ab eo loco PP       V'
          ┌───┴───┐   │
       in fines    V
       Ambianorum
```

c.

```
                              TP
                              │
                              T'
                  ┌───────────┴───────────┐
                InfP                       T
                  │                        │
                Inf'                    peruenit
            ┌─────┴─────┐
          Inf          vP
                        │
                        v'
                  ┌─────┴─────┐
                 v          PerfP
                              │
                            Perf'
                        ┌─────┴─────┐
                      Perf         VP
                                    │
                                    V'
                              ┌─────┴─────┐
                             PP          V'
                           ┌──┴──┐    ┌───┴───┐
                          ab eo loco PP       V'
                                   ┌───┴───┐   │
                                in fines    V
                                Ambianorum
```
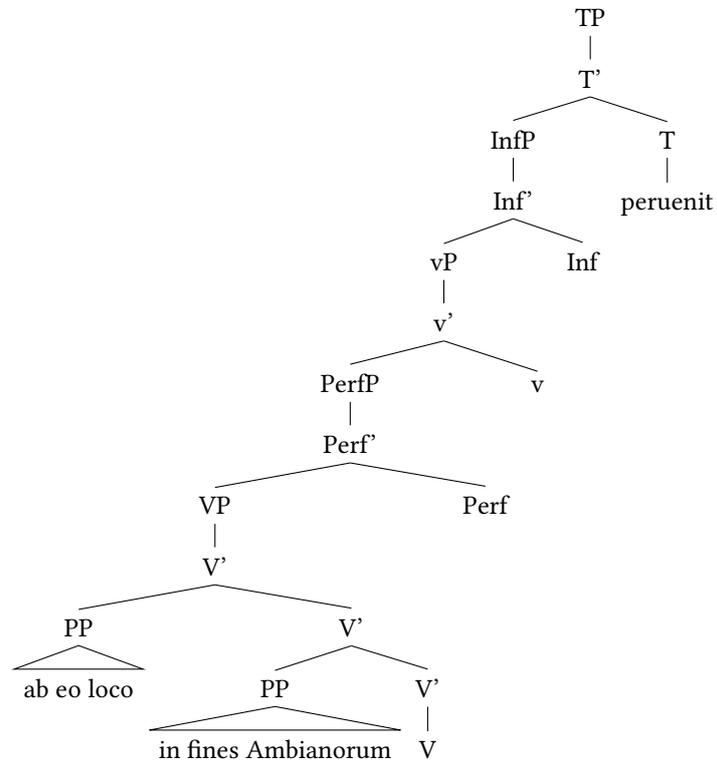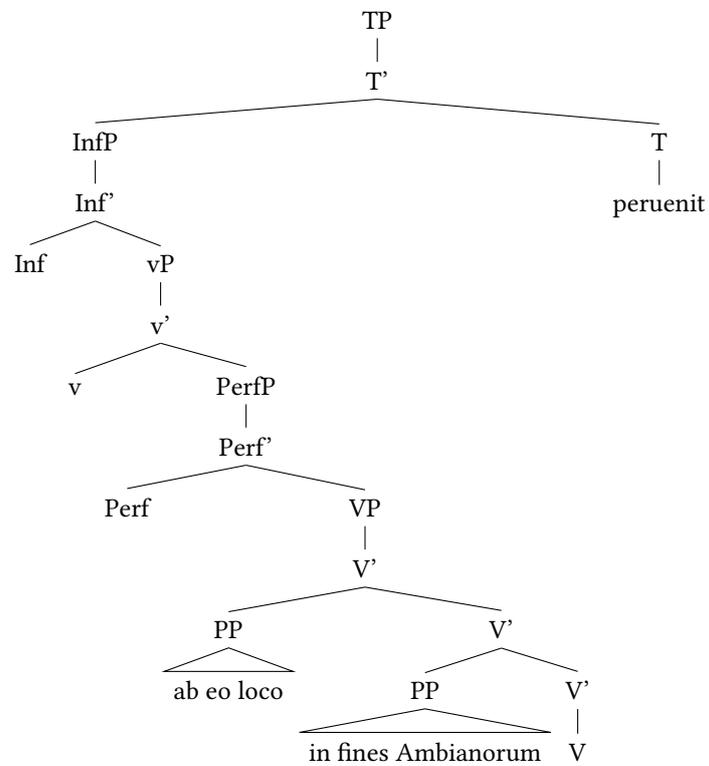
Further, TP is not necessarily head-final in (17a) (repeated as 18a) since, as in (15a, 16a), the PP could have fronted to a position higher than T, meaning that TP could also be head-initial:

(18) a. ***ab eo loco in fines Ambianorum*** <u>*peruenit*</u>
      from that.ABL place.ABL into territory Ambiani.GEN.PL arrived

     'he went from that place into the territories of the Ambiani'

   b.
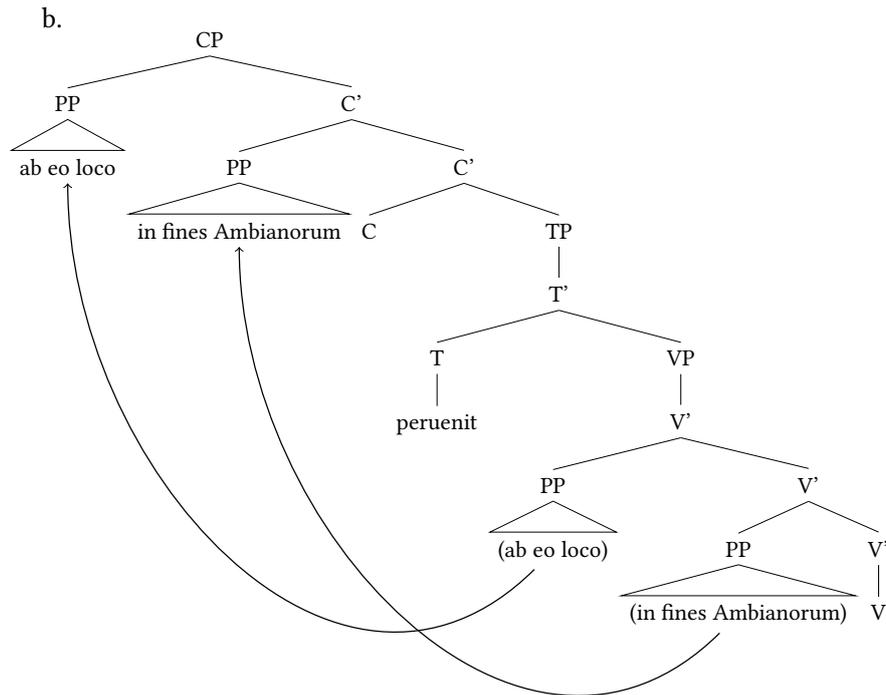
As noted above, some modal clauses and *esse*-periphrases reveal whether the PP has moved above T (either leftwards (fronting) or rightwards (extraposition)). Table 3 shows the four configurations where this is possible. VP-external refers to moved PPs and VP-internal to PPs which have not moved.

Configuration	PP position
PP > modal/auxiliary > infinitive/perfect participle	VP-external pre-verbal
Modal/auxiliary > PP > infinitive/perfect participle	VP-internal pre-verbal
Infinitive/perfect participle > modal/auxiliary > PP	VP-external post-verbal
Infinitive/perfect participle > PP > modal/auxiliary	VP-internal post-verbal

Table 3 Diagnostics for PP-movement.[15]

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[15] These diagnostics hold even if finite modals and auxiliaries are not in T (footnote 10). This is because the modal/auxiliary and the infinitive/perfect participle still constitute two reference points for the position of the PP. Note, however, that we would not know whether the PP has moved specifically above T.

Examples of each configuration are given below:

(19) VP-external pre-verbal (Caesar)

cohortes ***ex statione et praesidio*** <u>*essent*</u> <u>*emissae*</u>
cohorts from post.ABL and garrison.ABL had.been sent.away

'that the cohorts had been sent away from the outposts and garrison [duty]'

(20) VP-internal pre-verbal (Caesar)

qui <u>*erant*</u> ***in statione pro*** *castris* <u>*conlocati*</u>
who were in post.ABL before camp.ABL placed

'those who were placed on duty before the camp'

(21) VP-external post-verbal (Caesar)

rex <u>*appellatus*</u> <u>*esset*</u> ***a senatu***
king called was.SBJV by senate.ABL

'he was called king by the senate'

(22) VP-internal post-verbal (Suetonius)

quod saepe illis <u>*minatus*</u> ***inter iocum*** <u>*fuerat*</u>
which often them.DAT threatened during joke had.been.IND

'which he had often threatened them when joking'

I assume, following Danckaert (2017a: 121), that these diagnostics also hold when the modal or *esse* is non-finite. Even if non-finite modals and non-finite *esse* appear lower than T, for example in InfP, this is still VP-external and we can equally well diagnose PPs which have moved out of VP.

There is an important limitation to the diagnostics in Table 3. Danckaert (2017a: 137) shows that nominal objects rarely occur between *esse* and the participle. We will see that this is also sometimes true for PP-placement in some texts. As will be discussed in section 4.3.1 and section 4.5, this means that we cannot always diagnose extraposed PPs in *esse*-periphrases.

3.3 Data collection

I split both versions of each text into three equal sections and collected 33 PPs from each section, resulting in 99 PPs overall for each version of each text. Whereas for LDT and PROIEL, I collected the *first* 33 PPs in each section, the PPs I collected from DLCS2 are not necessarily consecutive. This was to ensure I collected as diverse structures as possible because in DLCS2 the data is not sequentially ordered and crucially, similar structures are often consecutive. However, as will be explained in section 3.3.3, the 99 target was impossible for two of the corpora.

3.3.1 The PPs included

I excluded the following PPs from my results:

i. PPs which are the modifier or complement of a noun or adjective, including when it is ambiguous whether the PP modifies the noun/adjective or verb. This is because my study focuses on PPs which are modifiers or complements of verbs. For example, I exclude *cum funditoribus sagittariisque* 'with slingers and archers' because it could modify either the noun *equites nostri* 'our cavalry' or *transgressi* 'having passed':

(23) <u>*equites*</u> <u>*nostri*</u> **cum funditoribus sagittariisque** *flumen* <u>*transgressi*</u>
cavalry our   with slingers.ABL   archers.ABL.and river   crossed

'Our horse, with the slingers and archers, having passed the river'   (Caesar)

Note that this may have been ambiguous for Latin speakers too.

ii. PPs when it is ambiguous which verb the PP goes with. For example, *ad eum locum* 'to that place' goes with either *reuertentes* 'returning' or *reuersi sunt* 'they returned' and thus could either be pre- or post-verbal:

(24) *filii* *etiam* *israhel* <u>*reuertentes*</u> *a*   *monte*   *dei*   *syna*
sons also   Israel   returning   from mountain.ABL God.GEN Sinai

  usque   **ad eum locum** <u>*reuersi*</u>   <u>*sunt*</u>   *per*   *iter*
  right.up.to to   that place   returned be.PRS.IND through journey

  quod   *ierant*
  which had.gone

'So also did the children of Israel return from Sinai, the mount of God, to this place by the way they had come'   (*Itinerarium*)

iii. Gerundives of purpose with the preposition *ad* as they are likely to behave differently from other PPs, for example:

(25) *usui*   **ad bellum gerendum**   *erant*
use.DAT to war.ACC wage.GERUNDIVE.ACC were.IND

'which were of great use to us in carrying on the war'   (Caesar)

iv. PPs containing a relative pronoun since, like all relative pronouns, these are clause-initial and thus pre-verbal by default. An example is:

(26) **ex qua** illi mox Iulia nata est
from whom him.DAT.SG soon Julia.NOM born is.IND.3SG

'by whom he afterwards had a daughter Julia' (Suetonius)

Certain verbs predominately take post-verbal PPs. For example, in Suetonius, *natus est*[16] 'was born' always takes post-verbal PPs. In *Itinerarium*, the following verbs nearly always take post-verbal PPs:

- *peruenire* 'arrive'+ post-verbal PP headed by *ad* 'to'

- *locutus est* 'he spoke' + post-verbal PP[17]

- *profectus est* 'he set out' + post-verbal PP

- *scriptus est* 'it is written' + post-verbal locative PP headed by *in* 'in'

- *reuersus est* 'he returned' + post-verbal *ad*-PP/directional PP headed by *in* 'into, to'

- *regressus est* 'he returned' + post-verbal PP

Since for the above verbs counting multiple occurrences of post-verbal PPs with the same verb would skew the results, I count only one post-verbal PP per verb (for each version of each text). Similarly, in *Itinerarium*, *in nomine dei* 'in the name of God' is always pre-verbal and thus I count it only once. I discuss these verbs and PPs in section 4.9.

Sometimes, two (or more) PPs modify or are the complement of the same verb and are in the same position ((VP-internal/external) pre-/post-verbal). For example, (27) involves two pre-verbal PPs:

(27) **ab eo loco in fines Ambianorum** peruenit
from that.ABL place.ABL into territories Ambiani.GEN.PL arrived

'he went from that place into the territories of the Ambiani' (Caesar)

When counting my results, I treat the PPs in such examples as one occurrence of a pre- or post-verbal PP rather than two separate occurrences. This is because one PP being pre- or post-verbal in these sentences is unlikely to be completely independent of the other PP being in the same position. Similarly, in examples such as (28) where two PPs are in the same position in parallel clauses, I treat these PPs as only one occurrence of a pre- or post-verbal PP:

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[16] Here and henceforth I cite a specific form of the verb rather than the infinitive when the point being made predominately applies to that form.

[17] When the type of PP is not specified, as here, multiple types of PPs occur post-verbally with these verbs.

(28)   *Belgas...*   **contra** **populum** **Romanum** *coniurare*   *obsides*
      Belgae.ACC against people.ACC Roman.ACC conspire.INF hostages.ACC

      -que **inter** **se**   *dare*
      and among each.other give.INF

      'that the Belgae were conspiring against the Roman people and giving hostages amongst each other'   (Caesar)

This is because, again, one of these PPs being pre-verbal in (28) is unlikely to be independent of the other PP being pre-verbal. (The structures are parallel because they are coordinated and both involve an infinitive.) The Appendix A.1 gives further details of when I count two PPs in the same position as only one occurrence of a pre- and post-verbal PP.

Finally, I exclude potential 'scene-setting' PPs. Scene-setting PPs denote location or temporality (Haegeman 2000: 143-4). Importantly, they have been suggested to be generated in the left periphery (Haegeman 2000: 143-4). Thus, they are necessarily pre-verbal and do not reflect the change from pre- to post-verbal PPs. I exclude temporal and locative adjunct PPs as potentially scene-setting if they are clause-initial or occur immediately after a clause-level adverb such as *dein* 'then'. I exclude PPs as potentially scene-setting in main and embedded clauses following Haegeman (p.c.). Examples of potentially scene-setting PPs which I exclude are the following bolded PPs:

(29)   **intra** **eas**   **siluas** *hostes* *in occulto*   *sese*   *continebant*
      within those woods enemy in concealment themselves kept.together

      'Within those woods the enemy kept themselves in concealment'   (Caesar)

(30)   *cum* **in consulatu** *suo rex*   *atque amicus*   *ab senatu*
      since in consulship his king.NOM and   friend.NOM by senate.ABL

      appellatus esset
      called   was.SBJV

      'as he had in his consulship been styled 'king and friend' by the senate'   (Caesar)

(31)   *nam* **in urbe** *quidem pertinacissime*   *abstinuit hoc honore*
      for   in city in.fact most.unyieldingly withheld this honour

      'for in the city itself he refused this honour most emphatically'   (Suetonius)

(32) *dein **post solis** **occasum** mulis e proximo pistrino*
    then after sun.GEN setting.ACC mules.ABL from very.near.ABL bakery.ABL

    ad uehiculum iunctis occultissimum iter modico comitatu
    to carriage harnessed very.secret journey small.ABL company.ABL

    ingressus est
    commenced is.IND.3SG

    'It was not until after sunset that he set out very privily with a small company, taking the mules from a bakeshop hard by and harnessing them to a carriage'
    (Suetonius)

However, in clauses just consisting of the verb and a clause-initial PP, I do not exclude the PP as we have no evidence that it is high in the clause, for example:

(33) *ibi cognoscit LX naues quae **in Meldis** factae erant*
    there discovers 60 ships which in Meldi made were.IND.3PL

    'There he discovers that sixty ships which had been built in the country of the Meldi'

Table 5 (section 4.1) will show that if I had not excluded any potentially scene-setting PPs, the main patterns in my results remain the same.

3.3.2 Extra exclusions for Itinerarium

In *Itinerarium*, since main clause finite verbs undergo V-to-C movement (see section 2.3), they reveal little about the PP-position. Therefore, I only look at PPs in embedded clauses,[18] modal clauses (since the infinitive complement of modals remains low in main and embedded clauses) and non-finite clauses with a participle or infinitive. I exclude main clause *esse*-periphrases because the perfect participle incorporates into the auxiliary in C (Ledgeway 2017: 180) and thus reveals little about the PP-position.

3.3.3 Consequences of the exclusions

Due to the exclusions, there was insufficient data to collect 99 PPs for two corpora: the LDT version of Caesar and the DLCS2 version of *Itinerarium*. I could collect only 88 PPs in the LDT version of Caesar and 59 PPs in the DLCS2 version of *Itinerarium*. 88 is not materially lower than 99 so comparisons of the rate of pre- and post-verbal

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[18] Although infrequent (Ledgeway 2017: 191), some embedded clauses show V-to-C movement (Ledgeway 2017: 199). For example, Ledgeway (2017: 201-2) suggests that the embedded finite verb in (i) *uiderent* 'saw' is in C because the weak pronoun *se* immediately follows it.

(i) *cum **uiderent** se nullo modo posse ingredi in ciuitatem*
    when saw they.ACC no.ABL way.ABL could enter into city.ACC

    'when they saw that they could by no means enter the city'

It was beyond the scope of this project to ascertain whether any embedded clauses in my sample involved V-to-C movement and thus should be excluded.

PPs between the LDT version of Caesar and the LDT/PROIEL versions of Suetonius and *Itinerarium* are probably still reliable. However, 59 is materially lower than 99 and so it may be unreliable to compare the proportion of pre- and post-verbal PPs in the DLCS2 version of *Itinerarium* to the DLCS2 versions of the other texts. However, we will see in section 4.1 that the main results for the LDT/PROIEL versions of the texts match those for the DLCS2 versions of the texts.

4 Results and Analysis

4.1 Overall picture

There is a clear increase in the proportion of post-verbal PPs from the earlier to later texts. Caesar shows the lowest proportion (12.5%[19] in LDT and 6.1% in DLCS2), Suetonius higher (25.3% in LDT and DLCS2) and *Itinerarium* shows the highest proportion (46.5% in PROIEL and 61.0% in DLCS2):

PP position[20][21]	Caesar (LDT)	Caesar (DLCS2)	Suetonius (LDT)	Suetonius (DLCS2)	*Itinerarium* (PROIEL)	*Itinerarium* (DLCS2)
Pre-verbal	77 (87.5%)	93 (93.9%)	74 (74.7%)	74 (74.7%)	53 (53.5%)	23 (39.0%)
Post-verbal	11 (12.5%)	6 (6.1%)	25 (25.3%)	25 (25.3%)	46 (46.5%)	36 (61.0%)
Total	88	99	99	99	99	59

Table 4 Distribution of pre- and post-verbal PPs in Caesar, Suetonius and *Itinerarium*.

The differences in PP-distribution between the texts are significant, both when comparing the LDT and PROIEL versions ($\chi^2(2)$ = 27.15, p < 0.001) and when comparing the DLCS2 versions ($\chi^2(2)$ = 57.99, p < 0.001).[22]

The increase in the proportion of post-verbal PPs holds even if no pre-verbal PPs are excluded as potentially scene-setting (see Table 5). Again, the increase in proportion is significant: for PROIEL/LDT, $\chi^2(2)$ = 29.00, p < 0.001 and for DLCS2 $\chi^2(2)$ = 50.48, p < 0.001. Further, as Table 11 in the Appendix A.2 shows, even if I had not treated some PPs in the same position as only one occurrence of a pre- or post-verbal PP (see section 3.3.1), the proportion of post-verbal PPs still significantly increases from the earlier to later texts.

Note that the difference in proportion of pre- and post-verbal PPs in *Itinerarium* is unlikely to be significant. Firstly, the PROIEL and DLCS2 versions disagree as to whether pre- or post-verbal PPs are more common (pre-verbal PPs in PROIEL

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[19] All percentages are calculated to 1 decimal place.

[20] I exclude cases where part of the PP is pre-verbal and part post-verbal because there are so few instances of this (only 2 tokens).

[21] In order to highlight the main pattern, this table ignores the VP-internal and external distinction.

[22] The significant difference in the proportion of pre- and post-verbal PPs in the LDT/PROIEL versions of the texts strongly suggests that the increase in proportion of post-verbal PPs is a robust pattern. This is because, in contrast to the DLCS2 versions, the sample size is comparable across the three texts (see section 3.3.3).

PP position	Caesar (LDT)	Caesar (DLCS2)	Suetonius (LDT)	Suetonius (DLCS2)	*Itinerarium* (PROIEL)	*Itinerarium* (DLCS2)
Pre-verbal	84 (88.4%)	95 (94.1%)	81 (76.4%)	85 (77.3%)	56 (54.9%)	31 (46.3%)
Post-verbal	11 (11.6%)	6 (5.9%)	25 (23.6%)	25 (22.7%)	46 (45.1%)	36 (53.7%)
Total	95	101	106	110	102	67

Table 5   Distribution of pre- and post-verbal PPs in Caesar, Suetonius and *Itinerarium* when no scene-setting PPs are excluded.

and post-verbal PPs in DLCS2). Moreover, the difference is non-significant in all versions. If due to chance, the probability of the proportion of pre-verbal PPs in PROIEL or higher is 0.27 when potentially scene-setting PPs are excluded and 0.19 when they are included. Similarly, the probability of the proportion of post-verbal PPs or higher in DLCS2 when no potentially scene-setting PPs are excluded is 0.31 if due to chance. The difference only approaches significance in DLCS2 when potentially scene-setting PPs are excluded: the probability of this proportion of post-verbal PPs or higher is 0.059 if due to chance. However, this is likely to be because I used a broad definition of scene-setting and so some pre-verbal PPs I excluded may not be scene-setting. Moreover, the low sample size in the DLCS2 version of *Itinerarium* makes any conclusions based on only the DLCS2 version less reliable.

I first discuss the distribution of post-verbal PPs in each text (section 4.2 - 4.6). I then discuss the changes in the rate of PP-extraposition across the three texts (section 4.7 - 4.8). Finally, I look at two patterns in *Itinerarium* which could shed light on the later stage of the change from pre- to post-verbal PPs (section 4.9).

4.2 Caesar post-verbal PPs

As Table 4 shows, post-verbal PPs are very rare in Caesar (only 12.5% of PPs were post-verbal in LDT and 6.1% in DLCS2). Moreover, most of the post-verbal PPs in Caesar (15 out of 20) are likely to involve the verb being early and thus reveal little about the structural position of the PP.[23]

First, the eight post-verbal PPs occurring with copula and existential *esse* 'be' are likely to reflect *esse* having raised:

(34) *cum   esset   Caesar **in citeriore Gallia in hibernis**   (copula)*
      when was.SBJV Caesar in nearer   Gaul   in winter.quarters

  'While Caesar was in winter quarters in Hither Gaul'[24]

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[23] I refer to 20 post-verbal PPs here although Table 4 showed only 17 post-verbal PPs in Caesar. This is because I excluded three post-verbal PPs in Table 4 because they occurred either with the same verb as another post-verbal PP or in a clause which was parallel to another clause with a post-verbal PP (see section 3.3.1). In this section I discuss all 20 post-verbal PPs because I look at individual PPs rather than overall patterns which could be skewed by including these PPs.

(35) *quod* <u>*erat*</u>   *ciuitas magna* **inter Belgas**   (copula)
because was.IND.3SG state   great.ABL among Belgae

    auctoritate
    influence.ABL.SG

'because the state was of great influence among the Belgae'

(36) *quod* <u>*est*</u> **in extremis Remorum finibus**   (copula)
which is.IND on outermost.ABL Remi.GEN territory.ABL

'which is on the outermost borders of the Remi'

(37) *quod* <u>*esse*</u>   **post nostra castra**   (copula)
which be.PRS.ACTIVE.INF behind our   camp

    demonstratum est
    stated   is.IND.3SG

'which it has been stated was behind our camp'

(38) *palus* <u>*erat*</u>   *non magna* **inter nostrum**   (existential)
marsh was.IND.3SG not great   between our.GEN.PL

    atque hostium exercitum.
    and   enemy.GEN.PL army.ACC

'There was a marsh of no great extent between our army and that of the enemy.'

(39) *nullum* <u>*esse*</u>   *aditum* **ad eos** *mercatoribus*   (existential)
no.ACC be.PRS.ACTIVE.INF access   to   them merchants.DAT.PL

'That there was no access for merchants to them'

(40) *expectari etiam ab iis Atuatucorum copias*   (copula)
be.expected also   by them Aduatuci.GEN forces.ACC

    atque <u>*esse*</u>   **in itinere**
    and   be.PRS.ACTIVE.INF on march.ABL.SG

'that the forces of the Aduatuci were also expected by them and were on their march'

This is because forms of *esse* are enclitic in Latin (Adams 1994a: 103) and often attach to the first member of the colon (a unit of rhythm, often corresponding

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[24] Note that (34) contains two PPs.

to CP) ([Ledgeway 2012](): 256, [Adams 1994b](): 44, 49). *Esse* in ([34 - 39]()) matches the characteristics of enclitic *esse*: it immediately follows relative pronouns ([36](), [37]()), clause-initial subordinating conjunctions ([34](), [35]()), the negative adjective *nullum* 'not any' ([39]()) and focused elements ([38]()) (*palus* 'marsh' is new information) ([Adams 1994a](): 112, [Adams 1994b](): 47, 49, [Devine & Stephens 2006](): 202, [Ledgeway 2012](): 256).[25] Therefore, the post-verbal PPs in ([34 - 39]()) are unlikely to reflect the structural position of the PP. ([40]()) may also involve raising of enclitic *esse*, although it is ambiguous since the clause contains only *esse* and the PP.

There are seven further post-verbal PPs which are likely to reflect the verb having raised rather than the structural position of the PP. Three occur with clause-initial verbs conveying given information which often triggers raising in Latin ([Devine & Stephens 2019](): 165):

(41) *pugnatum* <u>*est*</u>   ***ab utrisque*** *acriter.*
     fought   is.IND.3SG by both.ABL fiercely

'The battle was maintained vigorously on both sides.'

(42) *pugnatumque* ***ab hostibus***   *ita acriter* <u>*est*</u>…
     fought.and   by enemies.ABL as fiercely is.IND.3SG

'and the battle was fought by the enemy as vigorously as…'

(43) *agros*   *qui*   <u>*dari*</u>   *tantae*   *praesertim multitudini*   ***sine***
     land.ACC which be.given so.great.DAT especially   multitude.DAT without

   iniuria   <u>*possint*</u>
   wrong.ABL could

'land which could be given away, especially to so great a number of men, without doing wrong'

'Fighting' in ([41](), [42]()) and 'giving land' in ([43]()) are given information. Moreover, in ([43]()) the post-verbal phrases *tantae praesertim multitudini* 'to so great a number of men' and *sine iniuria* 'without wrong' are new information (and so probably focused) which supports the idea that the verb has raised over them (see [Devine & Stephens 2019](): 165).

The final four post-verbal PPs which are likely to reflect the verb having raised are the following:

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[25] No study has investigated whether existential *esse* (as distinguished from copula *esse*) is enclitic. However, since the examples with existential *esse* in ([38](), [39]()) match the properties of enclitic *esse*, they are very likely to be enclitic.

(44) *expectari*   *etiam*   **ab iis**   *Atuatucorum*   *copias*   *atque*
be.expected also by them Aduatuci.GEN forces.ACC and

     esse   *in itinere*
     be.PRS.ACTIVE.INF on march.ABL.SG

'**that the forces of the Aduatuci were also expected by them** and were on their march'

(45) *accessum*   *est*   **ad Britanniam** *omnibus* *nauibus* *meridiano* *fere*
approached is.IND to Britain   all.ABL ships.ABL midday.ABL about

     tempore
     time.ABL

'All the ships reached Britain nearly at mid-day'

(46) *cum* *neque* *ui*   *contendere* **propter**   **inopiam nauium**
since neither force.ABL march.INF on.account.of scarcity ships.GEN

     neque *clam*   *transire* **propter**   **custodias** **Menapiorum**
     nor secretly cross.INF on.account.of guards.ACC Menapii.GEN.PL

     possent
     could

'they could neither force their way on account of their deficiency in shipping nor cross by stealth on account of the guards of the Menapii'

In (44) the verb is passive (*expectari* 'be expected') and in (45) it is unaccusative (*accessum est* 'approached') and in both the verb is clause-initial. Since both passives and unaccusatives fairly often raise in Latin, (44, 45) are likely to involve verb-raising (Devine & Stephens 2006: 150-2, 154).

Finally in (46), *contendere* 'march' and *transire* 'cross' seem (implicitly) contrasted in the *neque…neque* 'neither…nor' clause and contrastive focus can trigger verb raising (Devine & Stephens 2006: 147).

Therefore, 15 of the 20 post-verbal PPs in Caesar are likely to reflect the verb having raised. Perhaps verb raising (since it creates surface post-verbal PPs) could have been one factor encouraging the development of post-verbal PPs. This is similar to Ledgeway's (2012: 256-7) suggestion that auxiliary *esse* raising in Latin could have encouraged speakers to postulate head-initial TP.

Thus, the proportion of post-verbal PPs which are likely to reflect the structural position of the PP rather than the verb being early is very low (5 out of 175, 2.9%).[26] Of these five post-verbal PPs, there are no unambiguous VP-internal post-verbal

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[26] The total 175 reflects the total number of PPs in my sample from Caesar minus those post-verbal PPs which are likely to reflect the verb having raised (187 minus 12 or 190 minus 15, depending on whether both post-verbal PPs in 34, 40 and 46 are treated as one occurrence of a post-verbal PP).

PPs. Thus, there is no evidence that Caesar allows head-initial structure in VP.[27] In contrast, there are two examples which seem to involve PP-extraposition:

(47) *rex* *appellatus* *esset* **a senatu**
     king called was.SBJV by senate.ABL

     'he was called king by the senate'

(48) *quem cum legione una* *miserat* **ad   Venetos, Venellos, Osismos,**
     whom with legion one had.sent against Veneti   Unelli   Osismii

       Coriosolitas, Esuuios, Aulercos, Redones, quae sunt maritimae
       Curiosolitae Sesuvii Aulerci   Rhedones which are   maritime

       ciuitates Oceanum -que attingunt
       states   Ocean   and touch

     'whom he had sent with one legion against the Veneti, the Unelli, the Osismii, the Curiosolitae, the Sesuvii, the Aulerci, and the Rhedones, which are maritime states, and touch upon the [Atlantic] ocean'

(47) unambiguously involves extraposition since the PP follows a finite auxiliary *esset* 'was' which is preceded by a non-finite verb *appellatus* 'called'. (48), although ambiguous, is very likely to involve extraposition: the post-verbal PP (bolded) is extremely long (it contains a list of seven nations and a relative clause). Moreover, since *miserat* 'had sent' also takes a pre-verbal PP (*cum legione una* 'with one legion'), one of the PPs must have moved (and it is likely to be the post-verbal PP since it is heavy).

Thus, extraposition is possible in Caesar but rare: only two examples provide strong evidence for PP-extraposition. Moreover, even if all five post-verbal PPs which reflect the structural position of the PP are extraposed, PP-extraposition would still be rare since this would only account for 2.9% of the PPs in Caesar (5 out of 175). Thus, Latin does not seem to (yet) be in an OVX-like stage because if it were, we would expect frequent or obligatory PP-extraposition.

A final point about post-verbal PPs in Caesar is that both adjunct and complement PPs can surface post-verbally. Examples of post-verbal adjunct PPs include (47) above. (49) shows a post-verbal non-directional complement:

(49) *ita populi   Romani   exercitum hiemare   atque*
     so people.GEN Roman.GEN army.ACC pass.the.winter and

     inueterascere   **in Gallia** *moleste   ferebant*
     become.established in Gaul   annoyingly bore.IND.3PL

     'they were dissatisfied that the army of the Roman people should pass the winter in Gaul, and settle there'

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[27] Here and henceforth when I refer to the head-directionality of VP this also includes the head-directionality of InfP even though technically InfP is vP-external (see section 3.2).

My original data contained no examples of post-verbal directional complement PPs, apart from the extremely long extraposed PP (48). Since this PP is extremely heavy, this may not reflect the usual pattern. However, I collected extra data from DLCS2[28] and found four post-verbal directional PPs of which one provides strong evidence that directional PPs can surface post-verbally. Since there were so few examples of post-verbal directional PPs, I also included data from Caesar's *De Bello Ciuili* (c.49 BCE). (Note, however, that the language of *De Bello Ciuili* may be less 'polished' than the language of *De Bello Gallico*, Hammond 1998: xxx-xxxi, Schlicher 1936: 218.) Two out of 20 directional *in*-PPs were post-verbal:

(50) *non* <u>*abscisum*</u> **in** **duas** **partes** *exercitum*
      not cut.off into two parts army

      'not that the army had been cut off into two parts' (*De Bello Ciuili*)

(51) *ac* *iam* <u>*conuersis*</u> **in** **eam** **partem** *nauibus* *quo…*
      and now turned.around.ABL into that part ships.ABL which.ABL

      'and their vessels now having been turned into that quarter in which…'
      (*De Bello Gallico*)

However, the perfect participles (*abscisum* 'cut off' and *conuersis* 'turned around') are likely to have fronted (and thus not reflect the PP-position) because they are effectively clause-initial (the perfect participle follows the negator in 50 and a clause-level adverb in 51). Moreover, both precede the passive subject of the perfect participle (*exercitum* 'army' and *nauibus* 'ships' respectively).

Out of 29 directional *ad*-PPs, the only post-verbal PP was with a perfect participle functioning as a noun (*dimissi* 'those which are sent away') and should not therefore be counted as a post-verbal PP:

(52) *ut* *pluribus* <u>*dimissi*</u> *itineribus* *a* *Caesare* **ad** **Domitium***…*
      that many.ABL sent.away roads.ABL by Caesar to Domitius

      iter *conficere* *possent*
      journey complete could

      'that the messengers dispatched by Caesar, by several different roads to Domitius…were not able to accomplish their journey' (*De Bello Gallico*)

Nevertheless, 1 out of 19 PPs headed by *ex* 'out of' was post-verbal:

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[28] I collected data from DLCS2 because I had exhausted the data in the LDT version of Caesar (section 3.3.3). However, this data collection is not limited to PPs in modal clauses and *esse*-periphrases. (Although each datapoint contains a modal or *esse*-periphrasis in DLCS2, it also contains surrounding clauses which do not necessarily contain modals or *esse*-periphrases.)

(53) *reperiebat T. Ampium   conatum   esse   pecunias <u>*tollere*</u>
      found   T. Ampius.ACC attempted be.PRS.ACTIVE.INF money   remove

      *Epheso   **ex   fano   Dianae***
      Ephesus.ABL from temple.ABL Diana.GEN

'he found that Titus Ampius had attempted to remove the money from the
temple of Diana at Ephesus'   (*De Bello Ciuili*)

This strongly suggests that directional PPs can be post-verbal because the direct
object is pre-verbal and thus the verb *tollere* 'remove' is unlikely to be especially
early. (The pre-verbal object also suggests that the post-verbal directional PP has
extraposed.)

To summarize, although post-verbal PPs are rare in Caesar, both complements and
adjuncts can surface post-verbally (probably including directional complements).
There is no evidence that the change in head-directionality of VP has started. PP-
extraposition, on the other hand, is possible but rare, suggesting that Latin is not
(yet) in an OVX-like stage.

4.3 Suetonius post-verbal PPs

As Table 4 shows, post-verbal PPs are more common in Suetonius than Caesar (25.3%
in Suetonius (LDT and DLCS2) versus 12.5% (LDT) and 6.1% (DLCS2) in Caesar).
The difference between Caesar and Suetonius is even greater considering that only
2.9% of PPs in Caesar seem to be underlyingly post-verbal (see section 4.2).

First, I discuss the presence of VP-internal post-verbal and extraposed PPs in
Suetonius (section 4.3.1). Then I look at the types of PPs which can surface in
these two positions (section 4.3.2). As we will see, both shed light on whether
PP-extraposition leads the change from pre- to post-verbal PPs.

4.3.1 VP-internal post-verbal and extraposed PPs

Significantly, there are examples of VP-internal post-verbal PPs in Suetonius, sug-
gesting that, in contrast to Caesar, VP is starting to allow head-initial structure. (54 -
57) show four VP-internal post-verbal PPs in Suetonius (out of eight in my sample):

(54) *quae   sub   exitu Neronis   <u>*translata*</u>   **ex   Syria in   Moesiam***
      which just.before death Nero.GEN transferred from Syria into Moesia

      <u>*fuerat*</u>
      had.been.IND.3SG

'which had been transferred from Syria to Moesia just before the death of
Nero'

(55) *quod* *saepe* *illis* *minatus* **inter** **iocum** *fuerat*
which often them.DAT threatened during joke   had.been.IND

‘which he had often threatened them when joking’

(56) *ne*   *aut*   *aetate*   *aut* *inopia*   *post* *missionem* *sollicitari* **ad**
that.not either age.ABL or poverty.ABL after discharge be.roused to

   res **nouas** *possent*
   things new   could

‘so that neither by age nor poverty after discharge they could be stirred to revolution’

(57) *neque* *ut* *repudiaret* *compelli*   **a** **dictatore** **Sulla**   *ullo*
nor   to divorce   be.compelled by dictator   Sulla.ABL.SG any.ABL

   modo   *potuit*
   means.ABL could

‘and he could not be compelled by the dictator Sulla to divorce by any means’

VP-internal post-verbal PPs occur in both *esse*-periphrases (54, 55) and modal clauses (56, 57), suggesting that both PerfP and InfP can be head-initial:

(58) a. *quod* *saepe* *illis* *minatus* **inter** **iocum** *fuerat*
      which often them.DAT threatened during joke   had.been.IND

      ‘which he had often threatened them when joking’

b.
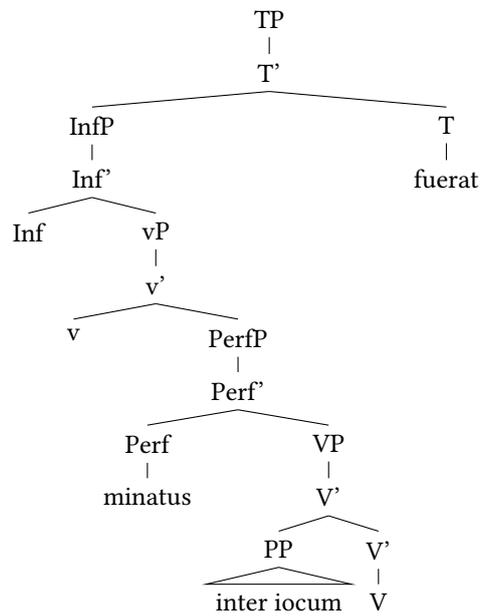
(59) a. *neque ut repudiaret* <u>*compelli*</u>   ***a   dictatore Sulla***   *ullo*
nor   to divorce   be.compelled by dictator   Sulla.ABL.SG any.ABL

modo   <u>*potuit*</u>
means.ABL could

'and he could not be compelled by the dictator Sulla to divorce by any means'

b.
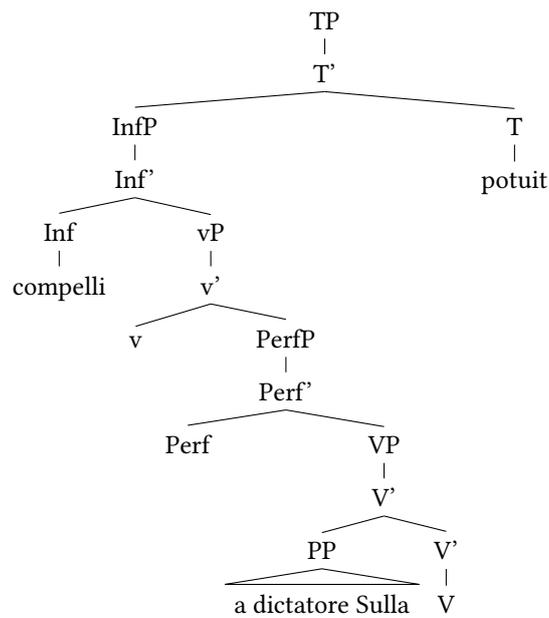
Interestingly, the VP-internal post-verbal PPs violate the Final-Over-Final-Condition (FOFC) (Biberauer, Holmberg & Roberts 2014, Holmberg 2000): they involve a head-final phrase (TP) dominating a head-initial phrase (InfP or PerfP). This is unexpected because the FOFC is proposed to be universal. VOAux orders in Latin also superficially violate the FOFC (Danckaert 2017a: 187). It is beyond the scope of this paper to investigate whether (58a, 59a), contrary to appearances, are FOFC-compliant (as Danckaert 2017a: 233-6 suggests for VOAux word orders).

Moving on to extraposed PPs, Suetonius, like Caesar, allows PP-extraposition, for example:

(60) *cum* *spectante* *eo* *ludos* <u>*pronuntiatum*</u> <u>*esset*</u> ***in mimo***
      when watching.ABL him.ABL games announced was.SBJV in farce

      'When he watched the games, when it was announced in a farce'

(61) *ut* <u>*subueniri*</u> <u>*posset*</u> ***a*** ***se***
      that be.saved could by him

      'that could be relieved by him'

As hinted in section 3.2, some superficially extraposed PPs in Suetonius may not involve extraposition. Specifically, this is the case in *esse*-periphrases when *esse* is in the present indicative, such as:

(62) <u>*collocutus*</u> <u>*sum*</u> ***cum Tiberio***
      talked am with Tiberius

      'I have talked with Tiberius'

(63) *Patricia* *gens* *Claudia…* <u>*orta*</u> <u>*est*</u> ***ex*** ***Regillis*** *oppido*
      patrician family Claudian descended is.IND from Regilli town
        Sabinorum
        Sabines.GEN.PL

      'The patrician branch of the Claudian family originated at Regilli, a town of the Sabines'

This is because, in my sample, present indicative *esse* is never separated from the perfect participle, suggesting that it is enclitic and attaches to the perfect participle. Thus, present indicative *esse* may not reflect the position of T so cannot be used to diagnose PP-extraposition.

Excluding surface extraposed PPs with present indicative *esse* leaves only eight unambiguous examples of extraposed PPs. Thus, strikingly, unambiguously extraposed PPs are still rare in Suetonius (8 out of 188, 4.3%)[29] even though the change

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[29] 188 represents the total number of PPs in my sample (198 minus the 10 surface extraposed PPs which involve *esse*-periphrases with present indicative *esse*).

in head-directionality has started. This strongly suggests that Latin has not passed through an OVX-like stage. This is because if it had, we would expect frequent or obligatory PP-extraposition before the change in head-directionality starts. Thus, contrary to what we might expect from typological studies of OV and VO languages, there is no evidence from Suetonius that PP-extraposition leads the change in head-directionality.

4.3.2 The types of PPs which can extrapose

In this section I provide further evidence from Suetonius that PP-extraposition is not leading the change in head-directionality: namely, the types of PPs which extrapose are more restricted than those which surface in head-initial structures.

Whereas both adjunct and complement PPs can be VP-internal post-verbal, it is predominately only adjunct PPs which extrapose. (64 - 67) illustrate VP-internal post-verbal complement PPs:

(64) *quae   sub   exitu Neronis translata **ex Syria in Moesiam***
      which just.before death Nero.GEN transferred from Syria into Moesia

      fuerat
      had.been.IND.3SG

      'which had been transferred from Syria to Moesia just before the death of Nero'

(65) *ne   aut   aetate   aut inopia   post missionem sollicitari **ad***
      that.not either age.ABL or poverty.ABL after discharge be.roused to

      ***res   nouas* *possent*
      things new   could

      'so that neither by age nor poverty after discharge they could be stirred to revolution'

(66) *ubi   iussu   Galbae   animaduersum **in   patronum suum***
      where order.ABL Galba.GEN punished   onto patron   his.ACC

      fuerat
      had.been.IND

      'where his patron had been executed by Galba's order'

(67) *quo   prope bimulus   demum   perductus **ab   urbe***
      to.which nearly two.years.old not.till brought   from city.ABL

      sit
      be.PRS.SBJ.3SG

      'to which he was first taken from Rome when he was nearly two years old'

Adjunct PPs can also be VP-internal post-verbal:

(68) quod   saepe illis   <u>minatus</u>   **inter iocum** <u>fuerat</u>
      which often them.DAT threatened during joke   had.been.IND

      'which he had often threatened them when joking'

(69) neque ut repudiaret <u>compelli</u>   **a   dictatore Sulla**   ullo
      nor   to divorce   be.compelled by dictator   Sulla.ABL.SG any.ABL

         modo   <u>potuit</u>
         means.ABL could

      'and he could not be compelled by the dictator Sulla to divorce by any means'

(70) quamuis <u>interdictum</u> **a   Claudio** <u>esset</u>
      although forbidden   by Claudius was.SBJV.3SG

      'although this had been forbidden by Claudius'

(71) quo   <u>nuntiatum</u> **de   Tiberio**   <u>erat</u>
      which.ABL reported   about Tiberius.ABL was.IND.3SG

      'on which it had been reported about Tiberius'

In contrast, all eight unambiguously extraposed PPs are adjuncts, for example:

(72) cum   spectante   eo   ludos <u>pronuntiatum</u> <u>esset</u>   **in mimo**
      when watching.ABL him.ABL games announced   was.SBJV in farce

      'When he watched the games, when it was announced in a farce'

(73) ut   <u>subueniri</u> <u>posset</u> **a   se**
      that be.saved could by him

      'that could be relieved by him'

(74) atque etiam manu   <u>pulsata</u> <u>sit</u>   **a   matre   Lepidae**
      and   even hand.ABL struck be.PRS.SBJV by mother.ABL Lepida.GEN

      'and she was even struck by the mother of Lepida'

(75) *ut <u>stare</u> per   totum diem iuberet **ante** **praetorium**
      that stand throughout whole day ordered before general's.tent

'such as ordering to stand all day long before the general's tent'[30]

(76) *ut   quidam   e   primoribus Galliarum   <u>confessus</u>*
      that certain.NOM.SG of nobles.ABL Gallic.provinces.GEN admitted

    *<u>sit</u>   **inter** **suos***
    be.PRS.SBJV.3SG among his.ACC.PL

'that one of the leading men of the Gallic provinces admitted in the company of his countrymen'

As we will see in section 4.7, there is a post-verbal complement PP which could have extraposed because it contains a relative clause (and thus is heavy):

(77) … *iurare coegerit <u>mansuros</u>   se   **in fide ac pace***
        swear forced   would.remain.PTCP themselves.ACC in faith and peace

    quam peterent
    which asked.for

'he forced … to swear that they would keep in faith and in peace which they asked for'

However, this is ambiguous because there is only one verb and only one PP appears with that verb so it could also be VP-internal post-verbal. Nevertheless, there is one example where a complement PP does seem to have extraposed:

(78) *ea   gens   a   Tarquinio   Prisco   rege   inter   minores gentis*
      that family by Tarquinius Priscus king among inferior clan.GEN

    *<u>adlecta</u>   **in**   **senatum***
    admitted into senate

'The family was admitted to the senate by king Tarquinius Priscus among the lesser clans'

The verb (*adlecta* 'admitted'), as well as taking the post-verbal complement PP *in senatum* 'into the senate', is also modified by two pre-verbal PPs (*a Tarquinio Prisco rege* 'by king Tarquinius Priscus' and *inter minores gentis* 'among the lesser clans'). The pre-verbal PPs do not seem to have fronted because they follow the subject *ea gens* 'the family' and thus it looks like VP is head-final and *in senatum* has extraposed. A possible reason why the complement *in senatum* can extrapose here is that *adlecta* is generally understood to refer to admission to the senate so *in senatum* is optional. It is therefore not a prototypical complement.

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[30] *Ante praetorium* 'before the general's tent' has extraposed because it modifies *stare* 'stand' but follows the main verb *iuberet* 'ordered' which is in a different clause.

Therefore, despite this exception, predominately only adjunct PPs extrapose in Suetonius. Since this is more restricted than the types of PPs which can be VP-internal post-verbal, this strongly suggests that PP-extraposition cannot be leading the change in head-directionality.

Moreover, the tolerance of a language towards PP-extraposition seems unconnected to whether the change from OV to VO occurs. For example, although PP-extraposition is more restricted in Suetonius than OV West Germanic, Suetonius, but not OV West Germanic, allows head-initial structure in VP.

These findings do not conform to early generative accounts, such as Lightfoot (1979) and van Kemenade (1987), which suggest that an increase in NP and PP extraposition is one trigger of the change in head-directionality (by causing children to fail to acquire the head-final grammar). However, my findings are in line with Santorini (1993: 279-80) who shows that extraposition of PPs and NPs does not lead the change in head-directionality in Yiddish and with Danckaert (2017b: 11) who suggests that NP-extraposition in Latin is unlikely to be connected 'in any crucial way' to the change from OV to VO.

Finally, it is important to note that PP-extraposition, although more restricted in Suetonius than in OV West Germanic and OVX languages, still conforms to the cross-linguistic pattern (see section 2.2): the PPs which extrapose (predominately adjuncts) are less integrated with the verb than those which do not (generally complements).

To summarize, contrary to what we might expect from early generative accounts and typological studies of OV and VO languages, PP-extraposition does not seem to lead the change in head-directionality. Latin does not seem to have gone through an OVX-like stage and further, the types of PPs which extrapose are more restricted than those which surface in head-initial structures.

4.4 Interim summary I

Table 6 summarizes my results from Caesar and Suetonius:

Text	VP-internal post-verbal	Extraposed PP
Caesar	None	• Adjuncts and complements (only one example each from *De Bello Gallico*)[31]
Suetonius	• In modal clauses and *esse*-periphrases > head-initial InfP and PerfP • Adjuncts and complements	• Predominately adjuncts (one directional complement)

Table 6   Summary of post-verbal PPs in Caesar and Suetonius.

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[31] Caesar contains too few extraposed PPs to determine whether, like in Suetonius, extraposed PPs are predominately adjuncts.

4.5 Itinerarium post-verbal PPs

As Table 4 shows, post-verbal PPs are much more common in *Itinerarium* than in Caesar or Suetonius (46.5% in PROIEL and 61.0% in DLCS2).

Like Suetonius, *Itinerarium* allows VP-internal post-verbal PPs. Both complement and adjunct PPs can be VP-internal post-verbal:

(79)   *qui tamen pro etate aut inbecillitate*   (complement)
      who however by.virtue.of age or weakness

     occurrere **in monte** **dei** *ad oblationem*
     meet in mountain.ABL God.GEN for oblation

     faciendam non poterant
     making not could

    'who, through age or infirmity, were unable to meet us in the mount of God for the making of the oblation'

(80)   *ideo*   *fallere uos* **super** **hanc rem**   (complement)
      therefore deceive you.PL concerning this matter

     non possum.
     not can

    'I cannot therefore deceive you in this.'

(81)   *in quo*   *confixum*   **a moyse** *est*   (adjunct)
      in which fastened.together by Moses is.IND.3SG

     primitus tabernaculum
     originally tabernacle

    'where the tabernacle was set up by Moses for the first time'

(79 - 81) involve both modal clauses and *esse*-periphrases, suggesting that InfP and PerfP can both be head-initial, as in Suetonius. Again, the VP-internal post-verbal PPs violate the FOFC (see section 4.3.1).

(79 - 81) are the only VP-internal post-verbal PPs in my sample. This is probably because *Itinerarium* provides very few opportunities for diagnosing VP-internal post-verbal PPs: not only are clause-final finite verbs infrequent in *Itinerarium* (Ledgeway 2017: 195) but head-initial VP rarely occurs with head-final TP in Late Latin (i.e VOAux and VPPAux orders are rare) (Danckaert 2017a: 213).

There are only four unambiguous examples of PP-extraposition. This is again probably due to the few opportunities for diagnosing PP-extraposition in *Itinerarium*: as well as clause-final finite verbs being infrequent, we are also limited to data from modal clauses. We cannot use *esse*-periphrases to diagnose PP-extraposition

because, as mentioned in section 3.3.2, the participle incorporates to attach to the left of *esse* in all but one example in my sample (81 above) (Ledgeway 2017: 180). This means we cannot know the head-directionality of TP which is crucial in diagnosing PP-extraposition: PPs following head-final but not head-initial TP must have extraposed.

Of the four unambiguously extraposed PPs, three are adjuncts (for example 82) and one a (metaphorical) directional complement (the first PP in 83):

(82) *quam aliqui hominum <u>ambulare</u> <u>potest</u> **in his   locis**,   ubi   uia*
      than   some   men.GEN   walk   can   in these places.ABL where road
         aperta est
         clear   is.IND.3SG

      'than other men can travel in places where there is a clear road'

(83) *qui <u>moueri</u>   non <u>possit</u> **in lacrimis** in ea   hora*
      who be.moved   not could   in tears   in that hour

      'who could not be moved to tears in that hour'

There is insufficient data from *Itinerarium* to determine whether complements extrapose more readily in *Itinerarium* than Suetonius. However, as we have seen, the distribution of VP-internal post-verbal PPs does not seem to have changed since Suetonius.

4.6 Interim summary II

Table 7 summarizes the distribution of VP-internal post-verbal and extraposed PPs in each text.

The following sections show that the rate of extraposition appears to increase from the earlier to later texts, at least from Caesar to Suetonius.

4.7 The effect of the heaviness of the PP

I investigated the effect of heaviness on PP-extraposition by looking at PPs containing relative clauses. As expected from typological studies (section 2.1), the rate of extraposition of PPs containing relative clauses seems to increase, at least from Caesar to Suetonius.

In Caesar it is very rare for PPs containing relative clauses to be post-verbal: out of 11 cases there is only one example. It is the example with the extremely long PP (48) discussed in section 4.2 (repeated as 84).

Text	VP-internal post-verbal	Extraposed PP
Caesar	None	• Adjuncts and complements (only one example each from *De Bello Gallico*)
Suetonius	• In modal clauses and *esse*-periphrases > head-initial InfP and PerfP • Adjuncts and complements	• Predominately adjuncts (one directional complement)
Itinerarium	• In modal clauses and *esse*-periphrases > head-initial InfP and PerfP • Adjuncts and complements	• Adjuncts and one directional complement

Table 7 Summary of post-verbal PPs in Caesar, Suetonius and *Itinerarium*.

(84) *quem   cum   legione una   miserat   ad   Venetos, Venellos, Osismos,*
whom with legion one had.sent against Veneti   Unelli   Osismii

   Coriosolitas, Esuuios, Aulercos, Redones, quae sunt maritimae
   Curiosolitae Sesuvii Aulerci   Rhedones which are maritime

   ciuitates Oceanum -que attingunt
   states   Ocean   and touch

'whom he had sent with one legion against the Veneti, the Unelli, the Osismii, the Curiosolitae, the Sesuvii, the Aulerci, and the Rhedones, which are maritime states, and touch upon the [Atlantic] ocean'

In most other cases (9 out of 11), the PP and relative clause are pre-verbal, for example:

(85) *ab iis   quos miserat exploratoribus et   ab   Remis cognouit*
by those.ABL who had.sent scouts.ABL   and from Remi learned

'learned from the scouts whom he had sent out, and from the Remi'

In 1 out of 11 cases, the relative clause is post-verbal but the PP pre-verbal:

(86)   *hostes*   *protinus*   *ex*   *eo*   *loco*   **ad flumen Axonam** <u>*contenderunt*</u>,
       enemies immediately from that place to river   Aisne   hurried

        quod esse   ***post***   ***nostra castra***   ***demonstratum***
        which be.PRS.INF.ACTIVE behind our   camp.ACC.PL stated

        est
        is.IND.3SG

        'the enemy immediately hastened from that place to the river Aisne which it has been stated was behind our camp'

Thus, PPs containing relative clauses are starting to extrapose but this is very rare. This is expected because although Caesar has some head-initial structure (such as TP, CP and PP[32]), VP does not yet seem to be head-initial.

In Suetonius it is more common than in Caesar for PPs containing relative clauses to be post-verbal. 5 out of 7 PPs containing a relative clause are post-verbal. However, two may not involve extraposition:

(87)   *Nero* <u>*natus*</u> <u>*est*</u>   *Anti*   ***post VIIII. mensem quam***
       Nero born is.IND.3SG Antium.LOC.SG after nine   month   which

        Tiberius excessit
        Tiberius died

        'Nero was born at Antium nine months after the death of Tiberius'

(88)   … *iurare coegerit* <u>*mansuros*</u>   *se*   ***in fide ac pace***
        swear forced   would.remain.PTCP themselves.ACC in faith and peace

        quam peterent
        which asked.for

        'he forced … to swear that they would keep in faith and in peace which they asked for'

The post-verbal placement of the PP in (87) may not be due to weight-induced extraposition because *natus est* 'he was born' always takes post-verbal PPs in Suetonius (see section 3.3.1). Moreover, we should be tentative in assuming (88) involves extraposition because this would go against the finding that Suetonius predominately allows only adjuncts to extrapose (section 4.3.2). Nevertheless, three post-verbal PPs containing relative clauses are more likely to involve extraposition:

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[32] Throughout Latin head-initial CP and PP are allowed (Ledgeway 2012: 239-40). Caesar allows head-initial TP (for example, 20 in section 3.2).

(89) *quod   nihil   dum   a   se   memorabile <u>actum</u> <u>esset</u>*
because nothing yet   by   him memorable done   was.sʙᴊᴠ.3sɢ

   in aetate, qua   iam   Alexander orbem   terrarum
   in age.ᴀʙʟ which.ᴀʙʟ already Alexander   ring   earth.ɢᴇɴ

   subegisset
   had.conquered.sʙᴊᴠ.3sɢ

   'because he had as yet done nothing noteworthy at a time of life when Alexander had already conquered the world'

(90) <u>*praeuentus*</u> <u>*est*</u>   ***ab Agrippina, quam*** … ***multorum***
   prevented   is.ᴘʀs.ɪɴᴅ.3sɢ by Agrippina   who   many.ɢᴇɴ

   criminum arguebant
   crimes.ɢᴇɴ accused

   'he was cut short by Agrippina, who was being accused of many crimes'

(91) <u>*cautum*</u> <u>*est*</u>   ***de   numero gladiatorum, quo   ne***
   decreed is.ᴘʀs.ɪɴᴅ.3sɢ about number gladiators.ɢᴇɴ which.ᴀʙʟ not

   maiorem   cuiquam   habere Romae   liceret
   greater.ᴀᴄᴄ anyone.ᴅᴀᴛ have   Rome.ʟᴏᴄ allowed.sʙᴊᴠ.3sɢ

   'a bill was passed limiting the number of gladiators which anyone was to be allowed to keep in the city'

Only (89) unambiguously involves extraposition since (90, 91), although superficially extraposed, involve *esse*-periphrases with present indicative *esse* (see section 4.3.1). However, in contrast to those in (87, 88), there is nothing to suggest (90, 91) do not involve extraposition.

Of the remaining two PPs with relative clauses in Suetonius, in one the PP and relative clause are pre-verbal (92) and in one the PP is pre-verbal and the relative clause post-verbal (93):

(92) *quod sane* ***ex   oratione eius, quam de   utraque re   habuit,***
   this indeed from speech   his   which about both   matter made

   <u>*colligi*</u>   <u>*potest*</u>
   be.gathered can

   'In fact, this may be gathered from the speech which he made regarding these two matters'

(93)   *quid* *est* *quod* *dubitemus,*   **quin** **per**   **eosdem articulos et**
      what is   which doubt.PRS.SBJV that through same   points   and

      gradus <u>**producendus**</u>   <u>**sit**</u>**,**   **per**   **quos frater eius**
      steps   ought.to.be.advanced be.PRS.SBJV through which brother his

      productus sit*?*
      advanced   be.PRS.SBJV.3SG

      'what reason have we for doubting that he ought to be advanced through the
      same grades and steps through which his brother has been advanced?'

Thus, extraposition of PPs containing relative clauses seems to be more common
in Suetonius than Caesar (3 out of 5 cases in Suetonius[33] versus 1 out of 11 cases in
Caesar). Moreover, extraposition of the relative clause (with or without the PP) is
more common in Suetonius than Caesar (4 out of 5 cases in Suetonius versus 2 out
of 11 cases in Caesar). It must wait for future research to determine whether these
finding hold with more data because neither LDT nor DLCS2 provide a quick way
of searching for PPs containing relative clauses.

In *Itinerarium*, like Suetonius, PPs containing relative clauses are frequently
post-verbal (6 out of 9 cases, 66.7%). Consider, for example:

(94)   <u>*rediremus*</u> *ad* *iter*   **cum hominibus Dei**   **qui nobis**
      returned to journey.ACC.SG with men   God.GEN who us.DAT

      singula loca   **quae scripta sunt**   **per**   **ipsam**
      each.ACC places.ACC which written are.IND.3PL through that

      uallem ostendebant
      valley   showed

      'to return to the journey with the men of God who showed us all the places
      throughout/all over this valley which are written'

(95)   *stat*   *episcopus* <u>*incumbens*</u> **in cancello**   **interiore qui**   **est**
      stands bishop   leaning   on railing.ABL inner.ABL which is.IND.3SG

      in spelunca Anastasis
      in cave   Anastasis.GEN

      'the bishop stands up, leaning on the inner railing, which is in the grotto of
      the Anastasis'

Of the remaining three, in two the PP and relative clause are pre-verbal (for
example, 96) and in one the PP is pre-verbal and the relative clause post-verbal (97):

(96)   **per**   **mediam uallem ipsam qua**   **iacet in longo**   <u>*rediremus*</u>
      through middle   valley   that   where lies   in long.ABL returned

      'to return through the middle of that valley where it lies in length'

---

[33] This excludes (87) and (88) which may not involve weight-induced extraposition.

(97) *quae* **in Golgotha** <u>*est*</u> *quam Martyrium uocant*
  which in Golgotha is.ɪɴᴅ.3sɢ which Martyrium call

  'which is on Golgotha which they call the Martyrium'

However, although PPs containing relative clauses are frequently post-verbal in *Itinerarium*, this may not reflect extraposition due to the relative clause since overall, PPs are frequently post-verbal in *Itinerarium* (46.5% in PROIEL and 61.0% in DLCS2).

Nevertheless, the rate of heavy PP-extraposition does seem to increase from Caesar to Suetonius. On the basis of typological studies (section 2.1), this is likely to reflect the increase in head-initial structure (especially the rise of head-initial InfP and PerfP) from Caesar to Suetonius.

4.8 An increase in extraposition?

The increase in the rate of PP-extraposition from Caesar to Suetonius is not limited to extraposition of heavy PPs. Table 8 shows that Suetonius contains more unambiguously extraposed PPs than Caesar:

Text	Extraposed PPs
Caesar	1/175 (0.6%)
Suetonius	8/188 (4.3%)
Itinerarium	3/128 (2.3%)

Table 8 Proportion of unambiguously extraposed PPs out of the total number of (pre- and post-verbal) PPs in the LDT/PROIEL and DLCS2 data.[34]

The increase in the proportion of unambiguous PP-extraposition from Caesar to Suetonius approaches significance (Z = 1.92, P-value = 0.055). As noted in section 4.5, the low proportion of unambiguous PP-extraposition in *Itinerarium* is most likely due to the few opportunities for diagnosing PP-extraposition.

A more accurate picture of PP-extraposition might emerge from including not only unambiguously extraposed PPs but also post-verbal PPs in clauses where both a pre- and post-verbal PP occurs with the same verb. Examples include:

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[34] This table excludes:

- Post-verbal PPs which are likely to reflect the verb having raised in Caesar (section 4.2)
- Surface extraposed PPs in *esse*-periphrases with present indicative *esse* in Suetonius (section 4.3.1)
- Surface extraposed PPs with all *esse*-periphrases in *Itinerarium* (section 4.5).

(98)   ***in equestri   ordine*** <u>*constiterunt*</u> *usque* ***ad Augusti   patrem***
        in equestrian order   remained   until   to Augustus.ɢᴇɴ father.ᴀᴄᴄ

        'remained in the equestrian order down to the father of Augustus'

                                                                   (Suetonius)

(99)   ***in   forum*** <u>*tractus*</u>   <u>*est*</u>   ***inter   magna   rerum***
        into forum   dragged   is.ɪɴᴅ.3 sɢ amidst great.ᴀᴄᴄ things.ɢᴇɴ

           uerborumque ludibria   per   totum   uiae   Sacrae
           words.ɢᴇɴ.ᴀɴᴅ mockery.ᴀᴄᴄ. through whole.ᴀᴄᴄ way.ɢᴇɴ Sacred.ɢᴇɴ

           spatium
           extent.ᴀᴄᴄ

        'he was dragged into the Forum, amidst mockery and abuse, all along the Sacred Way'   (Suetonius)

(100)   *qui   non se   eadem   die*   ***in Ierusolima*** <u>*tendat*</u> ***ad***
        who not themselves same.ᴀʙʟ day.ᴀʙʟ in Jerusalem   go   to

           tantam laetitiam et   tam honorabiles dies
           so.great happiness and so   honourable days

        'who would not go to Jerusalem on this day for such solemn liturgy and for such a splendid feast'   (*Itinerarium*)

(101)   *ut* ***de   extremis porro   terris*** <u>*uenires*</u> ***ad haec loca***
        that from utmost   a.long.way.off lands came.2 sɢ to   these places

        'in coming to these places from far-distant lands'   (*Itinerarium*)

The one example from Caesar is with the extremely long PP (84 above).

One of the PPs in such clauses must have moved and thus these may involve extraposition of the post-verbal PP. Table 9 shows the rate of PP-extraposition in the three texts if, as well as unambiguous PP-extraposition, we include post-verbal PPs when a pre-verbal PP also occurs with the same verb, such as (98 - 101). Again, Table 9 suggests that the rate of PP-extraposition has increased from Caesar to Suetonius and importantly, this is now significant (Z = 2.12, P-value = 0.034).

Although post-verbal PPs with verbs which also take a pre-verbal PP could instead involve the pre-verbal PP fronting, I controlled for this, when possible, by excluding cases where the pre-verbal PP is likely to have fronted. For example, *per mediam uallem ipsam* 'through the middle of that valley' in (102) is likely to have fronted because it is clause-initial.

Text	Extraposed PPs
Caesar	2/175 (1.1%)
Suetonius	11/189 (5.8%)
Itinerarium	8/131 (6.1%)

Table 9 Proportion of PP-extraposition including unambiguous and ambiguous cases of PP-extraposition.[35]

(102)   *itaque ergo   hoc placitum est   ut… **per mediam***
          and.so therefore this decided is.IND.3SG that through middle

          uallem ipsam** qua   iacet in longo <u>rediremus</u> **ad iter**   **cum
          valley that   where lies in long.ABL returned to journey with

          hominibus Dei
          men.ABL   God.GEN

          'So we determined…to return to the journey through the middle of that valley where it lies in length with the men of God'   (*Itinerarium*)

Therefore, the increase between Caesar and Suetonius shown in Table 9 is likely to reflect the increase in the rate of PP-extraposition from Caesar to Suetonius.

There is also a slight suggestion that PP-extraposition may have increased from Suetonius to *Itinerarium*. (This is despite the fact that Table 9 does not show a significant increase in the rate of PP-extraposition from Suetonius to *Itinerarium* – Z = -0.13, P-value = 0.89.) Table 10 shows that when a verb takes more than one PP, the chance that this involves PPs in different positions increases from Suetonius to *Itinerarium*:

Text	Verb with pre- and post-verbal PP
Caesar	1/22 (4.5%)
Suetonius	5/34 (14.7%)
Itinerarium	5/11 (45.5%)

Table 10 Proportion of pre- and post-verbal PPs with verbs taking more than one PP.[36]

To the extent that verbs taking pre- and post-verbal PPs reflects extraposition of the post-verbal PP, this suggests that the rate of PP-extraposition increases from Suetonius to *Itinerarium*. However, this is not definitive for several reasons. Firstly, the difference between Suetonius and *Itinerarium* is non-significant (Z = 1.72, p-value

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[35] I make the same exclusions as in Table 8 (see footnote 34). However, when a post-verbal PP occurs with a verb which also takes a pre-verbal PP in one of the 'excluded' environments, such as (99) which involves an *esse*-periphrasis with present indicative *esse*, I of course include it.

[36] Again I exclude examples such as (102) where the pre-verbal PP is likely to have fronted.

= 0.086). Secondly, the lower sample size in *Itinerarium* may mean that we cannot reliably compare the proportion in *Itinerarium* to that in Suetonius. Therefore, more data is necessary to determine whether verbs are significantly more likely to occur with PPs in different positions in *Itinerarium* than Suetonius.[37]

Thus, it is unclear whether the rate of PP-extraposition increases from Suetonius to *Itinerarium* but it does seem to increase from Caesar to Suetonius. Future research will hopefully reveal whether an increase in extraposition is typical in languages changing from OV to VO.

Before concluding, I discuss two patterns in *Itinerarium* which could provide insight into the later stage of the change from pre- to post-verbal PPs.

4.9 Further patterns in Itinerarium

There are two patterns in *Itinerarium* involving lexical-specificity which are mostly absent from the earlier texts:

   i. Several verbs predominately take post-verbal PPs.

   ii. Certain PPs show a preference to be pre-verbal.

As we will see, ii, but not i, is likely to provide insight into the later stage of the change from pre- to post-verbal PPs.

Starting with pattern i, examples of verbs predominately occurring with post-verbal PPs include *peruenire* 'arrive', *scriptus est* 'it is written' and *locutus est* 'he spoke' (for more examples see section 3.3.1):

(103)   *peruenientes* **ad monasteria quaedam**
       arriving   at cells.ACC   some.ACC

       'arriving at some monastic cells'

(104)   *cum   ergo   peruentum fuerit   in gessamani*
       when therefore arrived   be.PRF.SBJV in Gethsemane

       'When they arrived at Gethsemane'

(105)   *sicut scriptum est   in libris   regnorum*
       as   written is.IND.3SG in books.ABL kings.GEN

       'as it is written in the books of the kings'

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[37] The difference between Caesar and Suetonius in Table 10 is also non-significant (Z = 0.76, p-value = 0.45) but we have already seen other evidence suggesting that PP-extraposition significantly increases from Caesar to Suetonius (Table 9).

(106) sicut *scriptum* *est* **in libris sancti moysi**
as written is.IND.SG in books.ABL holy.GEN Moses.GEN

'as it is written in the books of holy Moses'

(107) *ubi* *locutus* *est* *moyses* **in aures totius**
where spoke.PRF.PTCP is.IND.3SG Moses.NOM in ears.ACC all.GEN

ecclesiae israhel
congregation.GEN Israel

'where Moses spoke in the ears of all the congregation of Israel'[38]

(108) *de quo locutus est deus sancto moysi*
from which spoke.PRF.PTCP is.IND.3SG God.NOM holy.DAT Moses.DAT.SG

in igne
in fire.ABL

'out of which God spoke in the fire to holy Moses'

The only example of this in the earlier texts is *natus est* 'was born' in Suetonius:

(109) *natus est* *Romae* **in Palatio**
born is.IND.3SG Rome.LOC in palace.ABL

'he was born at Rome, on the Palatine'

(110) *Ser. Galba imperator M. Valerio Messala Cn.*
Servius Galba emperor Marcus Valerius.ABL Messala.ABL Gnaeus

Lentulo cons. natus est VIIII. Kal. Ian. in
Lentulus.ABL consulship born is.IND.3SG 9 Kalends January in

uilla
villa

'The emperor Servius Galba was born in the consulship of Marcus Valerius Messala and Gnaeus Lentulus, on the ninth day before the Kalends of January, in a country house'

The fact that this is more common in *Itinerarium* initially seems to reflect the later stage of the change from pre- to post-verbal PPs: post-verbal PPs are the norm with more verbs. This suggests that lexical diffusion has taken place, as suggested in usage-based approaches (see Tottie 1991: 440 for a syntactic example). (Generative models could also account for this via nano-parametric change whereby individual

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[38] Note that post-verbal subjects do not imply V-to-C movement in *Itinerarium* because subjects remain in vP (Ledgeway 2017: 186).

lexical items change their parameter-setting separately from the main system – Biberauer & Roberts 2012: 272-3, 268.)

However lexical diffusion predicts infrequent items to be affected by changes before frequent items (when not involving phonological reduction) (Tottie 1991, Bybee 2010). But the above verbs are frequent in these texts. This is especially true for *scriptus est* and *peruenire* which occur 36 times and 46 times respectively in the PROIEL corpus which contains 18,356 words. Thus, this does not look like lexical diffusion.

Instead, these verbs predominately taking post-verbal PPs may just reflect that these involve repeated phrases. For example, in my sample, *scribere* 'write' is mostly used in the passive (*scriptus est*) in *sicut* 'just as'-phrases and relative clauses to describe what is written in the Scriptures. Also, in my sample most instances of *loqui* 'speak' are in the perfect passive (*locutus est*) and occur with a post-verbal subject. Further, Suetonius uses *natus est* 'was born' with post-verbal modifiers when writing about 11 out of 12 emperors.

Itinerarium involves many repetitions (Väänänen 1987: 208) and this could be why there are more verbs which predominately take post-verbal PPs in *Itinerarium* than in the earlier texts. Thus, this may not reflect *Itinerarium* being at a later stage of the change.

In contrast, the second pattern (certain PPs preferring to be pre-verbal) may reflect *Itinerarium* being at a later stage of the change. The following PPs are always pre-verbal in my sample: PPs headed by *de* when meaning '(made) out of' (3 tokens), PPs headed by *post* when meaning '(coming) after' (2 tokens) and *in nomine dei* 'in the name of God' (3 tokens):

(111)   *nitoris ac si **de   margarita** <u>esset</u>*
         sheen as if from pearl   was.SBJV.3SG

         'having a sheen as if made of pearl'

(112)   ***de tali   marmore** <u>facta</u>*
         of such marble   made

         'made of the same marble'

(113)   *in medio ibi   quasi   altarium **de   lapidibus** <u>factum</u> habet*
         in middle there as.it.were altar.ACC from stones   made   has

         'there is also in the midst of it a kind of altar made of stones'

(114)   *episcopus retulit,   eo   quod farao   … et inde   **post***
        bishop   reported that.ABL that Pharaoh   and from.there after

        filios israhel *fuisset*   *profectus*
        sons   Israel had.been.SBJV set.out

        'The bishop told us how Pharaoh…and then set out thence in pursuit of the children of Israel'

(115)   *ubi   filii Israel cum   uidissent Egyptios   **post se***
        where sons Israel when had.seen Egyptians.ACC after them.ACC

        uenientes exclamauerunt
        coming   shouted

        'where the children of Israel cried out when they saw the Egyptians coming after them'

(116)   *cum **in nomine Dei***   *baptidiati fueritis*
        when in name.ABL God.GEN baptized   be.PRF.SBJV.2PL

        'once you have been baptized in the name of God'

(117)   *ubi   … **in nomine dei***   *profecta sum*   *inde*
        where   in name.ABL God.GEN.SG set.out am.PRS.IND then

        iter   meum
        journey.ACC my.ACC

        'where I then set out on my journey in the Name of God'

(114) is particularly striking because *proficisci* 'set out' takes a post-verbal goal PP in all other examples in my sample. Further (115) is striking because present participles predominately occur with post-verbal PPs in *Itinerarium*. In my original data, all 12 PPs with present participles were post-verbal. Moreover, I collected 15 more PPs with present participles from PROIEL which confirmed that present participles show a significant preference for post-verbal PPs: in my original and extra data, there are 24 post-verbal and 3 pre-verbal PPs with present participles (the probability of finding this proportion of post-verbal PPs or higher is extremely low, 0.000025, if due to chance).

Thus, in *Itinerarium*, in contrast to Caesar and Suetonius, certain PPs tend to be pre-verbal. This could be related to the fact that both pre- and post-verbal PPs are productive in the language which may have encouraged speakers to (partially) semantically differentiate the pre- and post-verbal position. Indeed, Kroch (1994: 17) suggests that semantic differentiation allows competing variants to co-exist for longer than they would otherwise. Moreover, Sundquist (2006) suggests that the pre- and post-verbal position are semantically differentiated in Middle Norwegian:

he proposes that at least some objects and PPs undergo semantically-motivated leftwards movement for semantic effects such as specificity (Sundquist 2006: 121, 124, 126). Further research will hopefully reveal whether languages where pre- and post-verbal PPs are both productive often semantically differentiate both positions.

5 Summary

The proportion of post-verbal PPs increases from the earlier to later texts in my sample. There is no evidence that the change in head-directionality of VP has started in Caesar but by Suetonius and *Itinerarium*, both InfP and PerfP seem able to be head-initial.

Strikingly, the rate of PP-extraposition is still low in Suetonius although the change in head-directionality has started. Thus, Latin does not seem to have gone through an OVX-like stage, contrary to what we might expect from typological studies.

Further, in Suetonius whereas both adjunct and complement PPs surface in head-initial structures, predominately only adjunct PPs extrapose. Although more restricted than in OV West Germanic and OVX languages, this conforms to the cross-linguistic pattern (section 2.2): PPs which extrapose are less integrated with the verb than those which do not.

The data from Suetonius suggests that PP-extraposition cannot be driving the change in head-directionality (contrary to the predictions of early generative accounts). Nevertheless, there are changes in PP-extraposition from the earlier to later texts. The rate of PP-extraposition seems to increase, at least from Caesar to Suetonius. Moreover, as predicted by typological studies of OV and VO languages, the rate of extraposition of specifically heavy PPs also increases from Caesar to Suetonius, which is likely to reflect Latin becoming increasingly head-initial. Future research will hopefully reveal whether these changes in PP-extraposition are typical of languages changing from OV to VO.

Finally, the fact that in *Itinerarium* certain PPs tend to be pre-verbal may suggest that speakers have to an extent semantically differentiated the pre- and post-verbal position. This may reflect the change from pre- to post-verbal PPs being more advanced by *Itinerarium* than in the earlier texts. More detailed research on Latin texts and other languages is necessary to determine how typical this is in later stages of the change from pre- to post-verbal PPs.

6 Conclusion

I have looked at the change from pre- to post-verbal PPs in Latin. To my knowledge, this part of the change from OV to VO has not been investigated in languages. Typological studies of OV and VO languages could lead us to expect that Latin passed through an OVX-like stage when changing from OV to VO, where VP is still head-final but PPs frequently or obligatorily extrapose. I showed this not to be the case in Latin. Instead, the rate of PP-extraposition seems low when the change in head-directionality starts. Further, the types of PPs which extrapose in Suetonius

seem to lag behind those which occur in head-initial structures, further suggesting that PP-extraposition cannot be leading the change in head-directionality. There are, however, changes in PP-extraposition as the change in head-directionality progresses: notably, the rate of PP-extraposition increases as Latin becomes increasingly head-initial. Future research will hopefully reveal how typical this is of languages changing from OV to VO.

This paper also highlights the importance of controlling for verb-movement when determining the structural position of PPs: verb-movement creates both surface post-verbal PPs which may not be underlyingly post-verbal and surface extraposed PPs which may not have extraposed.

Finally, it is important to note that the neat diachronic trend I have shown for Caesar, Suetonius and *Itinerarium*, namely the increase in post-verbal PPs, is unlikely to hold with more texts. This is because Danckaert (2017a: 109, 112, 117, 118) shows that there is no major diachronic trend in the change from OV to VO in Latin texts from 200BCE to 600CE and instead the rate of VO in texts of similar periods varies considerably. The reason I have found a neat trend in the texts I investigated is likely to be because these three texts also happen to show an increasing rate of VO (Danckaert 2017a: 117-118). Thus, it is important to investigate the change from pre- to post-verbal PPs in more texts to obtain a more accurate diachronic picture. Nevertheless, this paper has demonstrated the changes in the distribution of PPs in Latin as the change in head-directionality progresses.

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Appendix: PPs I treat as one occurrence of a pre- or post-verbal PP

A.1 provides further information about when I treat two PPs as only one occurrence of a pre- or post-verbal PP in my results (see discussion of example (27) and (28) in section 3.3.1). A.2 shows that the main patterns in my results would be the same if I had instead treated all these PPs as separate occurrences of pre- or post-verbal PPs.

A.1

As discussed in section 3.3.1, if two PPs with the same verb are in the same position, I treat them as one occurrence of a pre- or post-verbal PP. Importantly, however, I do <u>not</u> treat two PPs as one occurrence if they are separated from each other by intervening material (even if they are both on the same side of the verb). Examples include the bolded pre-verbal PPs in (118, 119):

(118) *cum* **propter** **longitudinem agminis** *minus facile*
since on.account.of length.ACC procession.GEN less easily

omnia **per se** <u>obire</u> *et* … <u>possent</u>
everything.ACC by themselves perform and could

'Since they could less easily perform everything by themselves, and … by reason of the length of the line of march' (Caesar)

(119) *si quid* **de** **tribunis** **plebis** *intercedentibus pro*
if anything about tribunes.ABL plebeians.GEN vetoing.ABL on.behalf.of

se *grauius* **a senatu** <u>constitutum</u> <u>esset</u>
them more.severe by senate resolved was.SBJV

'if anything more severe was resolved by the senate against the tribunes of the plebeians who interposed vetoes in his behalf' (Suetonius)

This is because the fact that the PPs are separated from each other may indicate that they are in different structural positions and thus the position of one PP is

unlikely to significantly influence the position of the other. The only exception is where the PPs are coordinated (with or without overt conjunctions):

(120) *bis*   *ouans*   *ingressus* <u>*est*</u>   *urbem,* **post Philippense**
twice celebrating.a.triumph entered is.IND city   after of.the.Philippi

       et   **rursus post Siculum**   **bellum**
       and again   after Sicilian.ACC.SG war

'he twice entered the city in an ovation, after the war of Philippi, again after that in Sicily'   (Suetonius)

(121) *ut* *paene* *uno*   *tempore* *et* **ad siluas** *et* **in flumine** *et*
that almost one.ABL time.ABL and at woods and in river   and

      iam   **in manibus nostris** *hostes*   <u>*uiderentur*</u>
      already in corps   our   enemy.NOM seemed

'that the enemy seemed to be in the woods, the river, and close upon us almost at the same time'   (Caesar)

(122) **ab iis**   *quos miserat exploratoribus* *et* **ab** **Remis** <u>*cognouit*</u>
by those.ABL who had.sent scouts.ABL   and from Remi learned

'learned from the scouts whom he had sent out, and from the Remi'
                                   (Caesar)

(123) *quibus*   *primum ac* *nouissimum* **aduersus M.**   **Antonium,**
these.ABL.PL first   and last   against Marcus Antonius

    secundum **aduersus Brutum et**   **Cassium,** *tertium* **aduersus**
    second   against Brutus and Cassius third against

    L.   **Antonium triumuiri** **fratrem,** *quartum* **aduersus**
    Lucius Antonius triumvir.GEN brother fourth against

    Sextum Pompeium Cn. **f.** <u>*gessit*</u>
    Sextus Pompeius Gnaeus son waged

'the first and last of these were against Marcus Antonius, the second against Brutus and Cassius, the third against Lucius Antonius, brother of the triumvir, and the fourth against Sextus Pompeius, son of Gnaeus'
                                   (Suetonius)

I treat these PPs as one occurrence of a pre- or post-verbal PP because the fact that they can be separated by intervening material is likely to reflect them being in separate (coordinated) phrases rather than them being in different structural positions in the clause.

As mentioned in section 3.3.1, I also counted PPs which are in the same position in parallel clauses as one occurrence of a pre- or post-verbal PP. There are a number of types of clauses I count as parallel. The first type is when two clauses are coordinated and involve the same type of verb (such as infinitive or present participle). For example, in (28) in section 3.3.1 (repeated as 124), the coordinated clauses both involve infinitives:

(124) *Belgas*   *...* ***contra populum Romanum*** <u>*coniurare*</u>   *obsides*
       Belgae.ACC   against people.ACC Roman.ACC conspire.INF hostages.ACC

       -que ***inter se***   <u>*dare*</u>
       and   among each.other give.INF

       'that the Belgae were conspiring against the Roman people and giving hostages amongst each other'   (Caesar)

Again, the coordinated phrases may not involve an overt conjunction:

(125) *ea   gens*   ***a Tarquinio Prisco rege inter   minores gentis***
       that family   by Tarquinius Priscus king among inferior clan.GEN

       <u>*adlecta*</u>   *in   senatum, mox* ***a Seruio Tullio in   patricias***
       admitted into senate   soon by Servius Tullius into patricians

       <u>*traducta*</u>
       delivered

       'The family was admitted to the senate by king Tarquinius Priscus among the lesser clans, it was later enrolled by Servius Tullius among the patricians'
                                                                         (Suetonius)

The two coordinated phrases in (125) describe *ea gens* 'that family' and both involve a perfect participle (*adlecta* 'admitted' and *traducta* 'delivered'). I treat both pre-verbal PPs in the first clause (*a Tarquinio Prisco rege* 'by king Tarquinius Priscus' and *inter minores gentis* 'among the lesser clans') as the same occurrence of a pre-verbal PP as the pre-verbal PPs in the second clause *a Seruio Tullio* 'by Servius Tullius' and *in patricias* 'among the patricians'.

Note that the two relevant verbs in coordinated clauses must be at the same level of structure as each other. For example, the following bolded PPs are not in parallel clauses:

(126) *uti*   *ea*   *quae* ***apud eos*** <u>*gerantur*</u>   *cognoscant*
       in.order.to those.ACC which among them were.conducted learn

       se   *-que* ***de   his   rebus*** <u>*certiorem*</u>   <u>*faciant*</u>
       him.ACC and about these matters more.certain.ACC.SG make

       'in order to learn what things were going on among them and inform him of these matters'   (Caesar)

Whereas *de his rebus* 'of these matters' (which modifies *certiorem faciant* 'inform') is part of the purpose clause, *apud eos* 'among them' is part of the relative clause with *gerantur* 'were conducted' which is subordinate to the purpose clause.

The second type of clauses I treat as parallel is when nearby (non-coordinated) clauses involve similar PPs with the same type of verb (such as infinitive or present participle). There are two examples of this. The first example is:

(127) *nobis*   *ergo*   <u>*euntibus*</u> **ab** **eo** **loco**, *ubi* <u>*uenientes*</u>
       we.ABL therefore go.PRS.PTCP.ABL from that place where come.PRS.PTCP

       a   **Faran**
       from Pharan

'So, as we went from that place where, on coming from Pharan'

(*Itinerarium*)

([127](#)) involves two present participles with PPs headed by *a(b)* 'from' in adjacent clauses. In the second example, two nearby relative clauses involve identical PPs *in anastase* 'in the Anastasis' and identical forms of the same verb *factae sunt* 'were done':

(128) *quae* <u>*in*</u> <u>*illis*</u> <u>*sex*</u> <u>*septimanis*</u> **in anastase factae** <u>**sunt**</u>,   *septima*
       which in those six weeks   in Anastasis done   are.IND.3PL seventh

         autem *septimana,* *id*   *est* *sexta* *feria,* *in* *syon* *fiunt*   *uigiliae*
         indeed week   that is sixth day   in Sion are.done vigils

         iuxta   *consuetudinem* *eam,* <u>*qua*</u>   <u>**in**</u> <u>**anastase**</u> <u>**factae**</u>
         according.to custom   that which.ABL in Anastasis done

       <u>**sunt**</u>   <u>*per*</u>   <u>*sex*</u> *septimanas*
       are.IND.3PL during six weeks

'**which was done** in those six weeks **in the Anastasis**, in the seventh week, that is, on the sixth day of the week, the vigils are done in Sion according to the same custom with **which it was done in the Anastasis** during the six weeks'   (*Itinerarium*)

I count these clauses as parallel because they are almost repeated phrases and thus the PP being pre-verbal in one is very likely to influence the PP being pre-verbal in the other.

The final type of clauses I treat as parallel only applies to one example. In ([129](#)), I treat the two bolded clauses as parallel:

(129)   ***a***   ***quo***   ***ascendit*** ***Dominus*** <u>***in***</u> <u>***caelis***</u> <u>***post***</u> ***passionem*** *intra*
       from which ascended Lord.ɴᴏᴍ in skies after passion   inside

       qua   *ecclesia*   *est* *spelunca* *illa* ***in*** ***qua***   ***docebat*** ***Dominus***
       which.ᴀʙʟ church.ᴀʙʟ is grotto   that in which taught   Lord.ɴᴏᴍ

       apostolos <u>***in***</u> <u>***monte***</u>   ***Oliueti***
       apostles   in   mountain olive.grove.ɢᴇɴ

       'from which the Lord ascended into heaven after his passion, inside of which church there is a grotto in which the Lord taught the apostles on the Mount of Olives'   (*Itinerarium*)

This is because they are both relative clauses and have verb first order and involve the same subject *Dominus* 'Lord' in immediately post-verbal position (see footnote 38 for why the subject-verb inversion is unlikely to signal V-to-C movement). Therefore, the word order in the two clauses, including the PP being post-verbal (underlined), are unlikely to be independent from each other.

A.2

Treating the above PPs as one occurrence of a pre- or post-verbal PP has not changed the main patterns in my results. Table 11 shows that if I had instead treated all PPs as separate occurrences of pre- or post-verbal PPs, my results would still show an increase in the proportion of post-verbal PPs from the earlier to the later texts:

PP position	Caesar (LDT)	Caesar (DLCS2)	Suetonius (LDT)	Suetonius (DLCS2)	*Itinerarium* (PROIEL)	*Itinerarium* (DLCS2)
Pre-verbal	91 (87.5%)	101 (93.5%)	91 (76.5%)	85 (75.9%)	55 (52.4%)	24 (38.1%)
Post-verbal	13 (12.5%)	7 (6.5%)	28 (23.5%)	27 (24.1%)	50 (47.6%)	39 (61.9%)
Total	104	108	119	112	105	63

Table 11   Distribution of pre- and post-verbal PPs in Caesar, Suetonius and *Itinerarium* when two PPs in the same position with the same verb or in parallel clauses are not counted as one occurrence of a pre- or post-verbal PP.

As in Table 4 (section 4.1), the increase in the proportion of post-verbal PPs is significant ($\chi^2(2) = 33.80$, p $<$ 0.001 for LDT/PROIEL and $\chi^2(2) = 64.13$, p $<$ 0.001 for DLCS2).

Again, we cannot draw any conclusions about pre- or post-verbal PPs being more common in *Itinerarium*. In PROIEL pre-verbal PPs being more common than post-verbal PPs is non-significant (the probability of this proportion of pre-verbal PPs or higher is 0.35 if due to chance). In DLCS2, although post-verbal PPs being more common than pre-verbal PPs is significant (the probability of this proportion of post-verbal PPs or higher is 0.038), this is again likely to be due to the low sample

size and the fact that some pre-verbal PPs which were excluded as potentially scene-setting may turn out not to be scene-setting.

Therefore, the increase in proportion of post-verbal PPs from the earlier to later texts in my sample is a robust finding.

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