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**The derivation of Classical Latin Aux-final clauses:
implications for the internal structure of the verb phrase.**

Lieven Danckaert (Ghent University)

Abstract

The focus of this paper is the syntax of Latin clauses in which a finite auxiliary occurs in clause-final position, which in Classical Latin (ca. 100 BC - 200 AD) is the most frequently attested word order pattern. I argue that these structures are derived through VP-movement, which is analysed as an instance of EPP-driven A-movement rather than as phrasal roll-up (as in Ledgeway 2012). Evidence comes from the interaction between sentential negation and verb movement, as well as from the availability of the order VOAux. The present proposal supports the claim that in some languages, the EPP-feature on T° attracts a VP rather than a DP (Travis 2005; Biberauer and Roberts 2005).

1. Introduction: The Latin data

1.1 Two directionality alternations in the Latin clause

In Classical Latin (defined as the period from ca. 100 BC - 200 AD), the predominant word order in a transitive clause with an analytic verb form is OVAux, as in (1):¹

- (1) *legati urbem ingressi sunt.* SOVAux
 ambassadors.NOM city.ACC entered.NOM be.PR.3.PL
 'The ambassadors entered the city.' (= LIV. 45.2.3)²

A sentence like (1) contains two so-called 'head-final sequences', viz. (i) OV (*urbem - ingressi*) and (ii) VPAux (*[urbem ingressi] - sunt*). Superficially, Latin seems to be very similar to for instance German (2), Dutch (3) and Old English (4), all of which exhibit the same surface order:

- (2) *dass der Mann das Buch gelesen hat* (CS)OVAux
 that the.NOM man the.ACC book read has
 'that the man has read the book'

- (3) *dat Rumpelsteeltje Sinterklaas gezien heeft* (CS)OVAux
 that Rumpelstiltkin Saint-Nicolas seen has
 'that Rumpelstiltkin has seen Saint Nicolas'

- (4) *gif heo þæt bysmor forberan wolde* (CS)OVAux
 if she that disgrace tolerate would
 'if she would tolerate that disgrace' (from Taylor and Pintzuk 2011, 74, their (2c))

Despite some similarities, there are many differences between (1) on the one hand, and (2)-(4) on the other, as well as between the three examples in (2)-(4). First of all, differently from German but similarly to Old English (and to some extent Dutch), Latin also allows for the order AuxVP (with the VP-constituent in (5) corresponding to the string OV), all other things remaining equal:

- (5) *Sed istae artes non sunt magnitudinem* SAuxOV
 but these.NOM arts.NOM not be.PR.3.PL greatness.ACC
animi professae.
 mind.GEN confessed.NOM
 'But these arts have not of greatness of mind.' (= SEN. *Ep.* 87.16)

Second, differently from German and Dutch, but on a par with Old English, Latin also allowed for the order VO (with a non-clausal object):

- (6) *Pater accepit beneficium.* (S)VO
 father.NOM receive.PF.3.SG benefit.ACC
 'The father received the benefit.' (= SEN. *Ben.* 5.19.8)

Third and finally, differently from German, Dutch and Old English, in Classical Latin the two directionality alternations are independent from each other, witness the availability of the cross-linguistically rare order VOAux (on which, see section 3.3 below):

- (7) *Theoxena multis petentibus aspernata* (S...)VOAux
 Theoxena.NOM many.ABL asking.ABL scorned.NOM
nuptias est.
 marriage.ACC be.PR.3.SG
 'Theoxena disdained marriage, although she had many suitors.' (= LIV. 40.4.3)

In general, we can say that there simply is much more word order variation in (Classical) Latin than in for instance the Germanic languages mentioned: all 6 logically possible permutations of the elements O, V and Aux are in fact attested. Apart from OVAux (1), AuxOV (5) and VOAux (7) we also find the other 4 orders (all with preverbal subject):

- (8) *Nec tam insolita laus esset* (S)AuxVO
 nor so unusual.NOM praise.NOM be.SUBJ.IMPF.3.SG
prosecuta dicentem, [...].
 accompanied.NOM say.PART.PR.ACC.M.SG
 'And no such unusual praise would have been the part of the speaker.' (= QUINT.
Inst. 8.3.4)
- (9) *Tot uadibus accusator* (S)VAuxO
 so.many sureties.ABL accuser.NOM
uadatus est reum.
 accepted.sureties.from.NOM be.PR.3.SG accused.ACC
 'With so many sureties the accuser admitted the accused to bail.' (= LIV. 3.13.8)
- (10) *Baebius Phacium est adgressus.* (S)OAuxV
 Baebius.NOM Phacium.ACC be.PR.3.SG attacked.NOM
 'Babius attacked Phacium.' (= LIV. 36.13.3)

The main aim of this paper is to offer an analysis of the syntax of Classical Latin Aux-final clauses, with special attention paid to the interaction between verb placement and the syntax of

negation. Before embarking upon the main discussion, I will first give a brief overview of some relevant quantitative facts.

1.2 Background: word order variation in Classical Latin

The material discussed in this paper is restricted to the period from ca. 85 BC (Cicero) until the late 2nd century AD (*Gaius iurisconsultus*). I only focus on the synchronic grammar of Latin, leaving aside the diachronic picture. Although the empirical focus of this paper concerns Classical Latin Aux-final clauses only, it is perhaps worthwhile to provide some additional information on (the relative frequency of) other available patterns. At this stage, the discussion will remain fairly descriptive, but the quantitative data presented here will be revisited in section 4, where an argument in favour of my central claim (namely that the derivation of Classical Latin Aux-final clauses involves EPP-driven movement of the verb phrase) is based on them.

As we will see below, the rough generalization is that the Aux-final pattern is the statistically predominant one, but in almost every author, all the other patterns are attested as well. In a sample of prose texts (see Tables 1-4 below for a full list of texts/authors investigated)³, I collected all clauses (i) with a BE-auxiliary and a deponent past participle and (ii) with the modal auxiliary *possum* 'be able' and an infinitival complement. Texts marked with an asterisk were taken from the morphosyntactically annotated database 'Hyperbase Latin', developed at the universities of Liège (research unit LASLA) and Nice Sophia-Antipolis (Bases, Corpus et Langage) (cf. Brunet and Mellet n.d.). For all other texts, I used the online text editions available at www.brepolis.net. In the present context, I only take into account clauses where the dependent non-finite verb is transitive and appearing alongside an overtly expressed internal argument.

My first set of data is concerned with word order in clauses with a BE-auxiliary, a deponent past participle and a non-clausal direct object (a full noun phrase or a pronoun, marked for either accusative, dative, genitive or ablative case). In order to avoid 'noise' in the data stemming from small samples (which are prone to yield unreliable figures), I only included data for texts which contain at least 20 {O, V, Aux}-combinations. We can see that the order OVAux is by far the most frequently attested one. Together with the much rarer VOAux pattern, the two Aux-final orders represent over two thirds of the entire dataset:

Author	Date	% AuxVO	% AuxOV	% VAuxO	% OAuxV	% VOAux	% OVAux	N =
Cicero*	55 BC	2,21	5,51	10,29	19,49	1,47	61,03	272
Vitruvius	0 BC	4,76	9,52	9,52	57,14	0	19,05	21
Livius	10 AD	0,23	0,23	8,97	21,15	8,05	61,38	435
Seneca*	60 AD	0	2,2	14,29	1,1	2,2	80,22	91
Q. Curtius*	70 AD(?)	0	0	10,53	7,89	5,26	76,32	38
Frontinus	90 AD	0	0	22,58	6,45	0	70,97	31
Quintilianus	95 AD	6,82	5,68	12,5	31,82	0	43,18	88
Plinius(*) ⁴	100 AD	4,26	4,26	31,91	8,51	0	51,06	47
Tacitus*	110 AD	0	0	5,88	1,47	2,94	89,71	68
Suetonius	120 AD	0	0	12,61	2,7	0,9	83,78	111
Gaius	170 AD	3,03	0	9,09	3,03	0	84,85	33
Total:		1,94	2,49	13,47	14,61	1,89	65,60	1235

Table 1: word order in clauses with an analytic form of a transitive deponent verb:

percentages + total number of clauses.

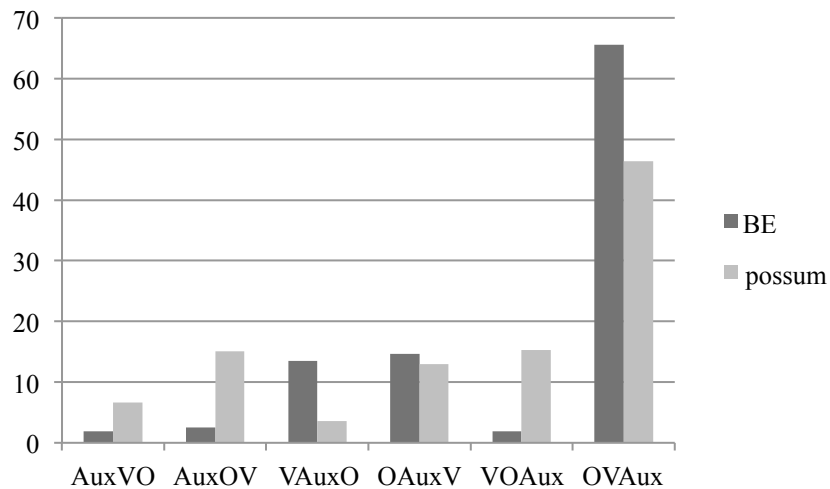
A very similar pattern arises when we look at clauses with the modal auxiliary *possum* 'be able', an active transitive infinitive, and the direct object of the latter:

Author	Date	% AuxVO	% AuxOV	% VAuxO	% OAuxV	% VOAux	% OVAux	N =
Cicero*	55 BC	2,95	17,88	1,18	14,54	7,86	55,6	509
Caesar*	50 BC	0,91	2,73	0	2,73	3,64	90	110
Varro	45 BC	11,11	6,94	19,44	5,56	5,56	51,39	72
Sallustius*	20 BC	5	20	0	10	20	45	20
Hyginus	15 BC	0	16,67	8,33	37,5	4,17	33,33	24
Vitruvius	0 BC	18,87	23,58	6,6	31,13	2,83	16,98	106
Livius	10 AD	3,09	2,58	3,09	4,12	28,87	58,25	388
Seneca*	50 AD	13,02	22,71	0,55	11,91	20,78	31,02	361
Petronius*	60 AD	5,41	35,14	0	29,73	8,11	21,62	37
Q. Curtius*	70 AD(?)	0	2,33	4,65	12,79	16,28	63,95	86
Frontinus	90 AD	0	0	0	14,29	19,05	66,67	21
Quintilianus	95 AD	7,77	14,56	5,83	10,68	19,42	41,75	103
Plinius(*)	100 AD	12,5	26,25	2,5	8,75	23,75	26,25	80

Tacitus*	110 AD	0	18,92	0	0	40,54	40,54	37
Suetonius	120 AD	19,05	0	4,76	9,52	19,05	47,62	21
Gaius	170 AD	7	31	1	4	4	53	100
(Average) total:		6,67	15,08	3,62	12,95	15,24	46,44	2075

Table 2: word order in clauses with *possum* complemented by a(n active or deponent) transitive infinitive and an overt object: percentages + total number of clauses.

Again, we see that the OVAux pattern is the statistically predominant one, be it in a less pronounced fashion. However, the second Aux-final order, namely VOAux, occurs more frequently than in clauses with a BE-auxiliary. In total these two orders still add up to over 60% of all the data. Graph 1 summarizes all of the above data:



Graph 1: word order variation in Classical Latin clauses with an auxiliary (BE, modal (*possum*)), a transitive non-finite verb and a direct object (Y-axis: percentages).

In the remainder of this paper, I will only be concerned with the syntax of Aux-final clauses: only in section 4 will I briefly come back to word order in other types of clauses. The discussion is structured as follows. First, in section 2 I discuss a number of derivations which in theory can all generate the surface order VPAux. Next, in section 3 I go on to discard a number of these options, one of which has recently been proposed in the literature (viz. phrasal roll-up movement, cf. Ledgeway 2012). I conclude that only one theoretically possible approach is able to generate the order 'VPAux', namely (by hypothesis EPP-driven) A-movement. In section 4 I present some independent evidence in favour of this conclusion.

2. Possible derivations for complement-head sequences

2.1 Against base-generation

In principle, it would be possible to claim that VPAux-clauses are only minimally different from AuxVP-clauses, in that the c-command relations between the different constituents in the two types of clauses are identical. The only difference would simply be the 'headedness' of the functional category in which the auxiliary is hosted (say T), and this difference would be specified in the base (essentially the lexicon of a given language). This line of reasoning was especially popular in the heydays of the Principles and Parameters paradigm (roughly the 1980's, see for instance Stowell 1981; Koopman 1984).

However, in more recent work concerns have been raised about such an approach. For instance, if not principally constrained, parameterized headedness seems to overgenerate

typologically (Biberauer, Holmberg and Roberts 2010), in that it has difficulties dealing with non-accidental 'gaps' in paradigms of logically possible word orders. In addition, it has been pointed out that apparently free directionality alternations are not each other's mirror image (see especially Kayne 2004). Finally, whereas head-complement sequences tend to be subject to fairly strict adjacency requirements, this is less often the case for complement-head orders. As we will see below, this final argument is particularly relevant in the case of the Latin VPAux-AuxVP alternation.

Therefore, I will assume that head-final sequences are never base-generated (cf. Kayne (1994) for conceptual, and Kayne (1994, 2004, 2011) for empirical and/or typological arguments). The alternative is to derive complement-head orders from underlying head-initial structures by means of syntactic movement. The question then arises through which type of movement the Latin VPAux order is derived. Logically speaking, all of the following types of movement can give rise to head-final patterns, possibly yielding identical surface strings:

- (11) Different types of syntactic movement:
- | | | |
|---|---|-------------------------|
| 1. Head movement (with incorporation) | | X ^o movement |
| 2. L(inearization)-movement (see below) | } | |
| 3. Scrambling | | |
| 4. A-movement | | XP movement |
| 5. (Types of) A'-movement | } | |

The last of these five options can immediately be discarded: as discussed at length in Danckaert (2012), A'-movement in Latin embedded clauses targets a position to the left of subordinating

conjunctions like *wh*-words and adverbial subordinators (in boldface), as in (12a) (with a fronted past participle) and (12b) (with a fronted infinitival VP), both underscored, whereas VPs in VPAux-clauses canonically appear to the right of such C-elements (13).

- (12) a. [soluti **[cum** essent]]
 freed.NOM although be.IMPF.SUBJ.3.PL
 'although they had been freed' (= Cic. *Att.* 3.23.4)
- b. [[innumerabilem pecuniam facere] **[cum**
 immense.ACC money.ACC make.INF when
 posset]], [...]
 be.able.SUBJ.IMPF.3.SG
 'As he could make a large amount of money,...' (= Cic. *Ver.* 3.211)
- (13) a. **si** uir consularis [aurum et
 if man.NOM consular.NOM gold.ACC and
 margaritas osculatus] est.
 pearls.ACC kissed.NOM be.PR.3.SG
 'if the consular has kissed gold and pearls.' (= Sen. *Ben.* 2.12.1)
- b. Non est dubium **quin** seruus
 not be.PR.3.SG doubt.NOM that slave.NOM
 [beneficium dare] possit [...].
 favour.ACC give.INF be.able.SUBJ.3.SG
 'There is no doubt that a slave can do a favour.' (= Sen. *Ben.* 3.19.1)

In the next section, I briefly outline the properties of the other four types of movement.

2.2 Local movement and opacity effects

One can say that the remaining movement types can be divided into 2 subclasses, depending on whether or not they involve very local displacement of a given category, and thus the creation of what one could call 'opacity effects', to be understood as the possibility for syntactic material to intervene between a displaced leftward complement and its selecting head.

First, there is a broad consensus that head movement is subject to strict locality constraints: this generalization is known as the Head Movement Constraint (Travis 1984), which implies that head movement gives rise to a structure where strict adjacency holds between a displaced head X° and the head it is adjoined to (say Y°). A second, apparently very similar operation equally involves very local movement, but operates on syntactic phrases rather than heads. Following Biberauer, Holmberg and Roberts (2010), I will refer to this process as L(inearization)-movement, and I will define it (somewhat informally) as local displacement of a phrase XP to an outer specifier of YP, the projection that immediately dominates XP. When iterated, L-movement gives rise to a 'roll-up' effect, whereby the surface order of a series of categories mirrors the basic order of merge.⁵ Furthermore, along with Biberauer, Holmberg and Roberts (2010) I assume that L-movement always starts at the bottom of an extended projection (EP), and that application of this type of movement can never skip a projection inside one and the same EP. Crucially, both of these local movement operations have been claimed to play a role in the derivation of various types of verb clusters, and thus in (among other things) the derivation of the orders 'past participle - auxiliary' and 'infinitive - auxiliary'.⁶

In contrast, the other two types of movement are not generally considered to take place in such a strictly local fashion. According to standard assumptions, both scrambling and A movement displace a phrasal category from a VP-internal position to (the specifier of) a functional category in the T-domain. It follows that the presence or absence of adjacency effects between non-finite lexical verbs or their phrasal projections on the one hand and auxiliaries on the other can be used as a diagnostic to determine which type of movement the Latin Aux-final clauses are derived by. In the following section, I will show that no such adjacency effects can be detected, and thus that no case can be made for head movement or L-movement (cf. Ledgeway 2012) in the derivation of Latin Aux-final clauses.

3. Non-adjacency between V and Aux, and what this teaches us

In this section, I will discuss two types of environments in which a non-finite lexical verb is not adjacent to a clause-final auxiliary. Among possible intervening elements are *non*, the marker of sentential negation (sections 3.1 and 3.2), and internal arguments (section 3.3).

3.1 The surface position of sentential negation

A first element that can and typically does occur in between a non-finite verb and an auxiliary is the negator *non*. Let us first have a closer look at the rules governing the placement of this element. Throughout the documented history of the Latin language, the following very robust

descriptive generalization can be formulated, concerning the interaction between placement of the propositional negator *non* 'not' and different types of verbs:⁷

(14) *V_{highest} *non*

This generalization should be read as follows: *non*, the canonical marker of sentential negation, cannot appear to the right of the hierarchically highest verb in the clause it negates. Most often, *non* is left adjacent to the hierarchically highest verb, yielding for instance the order OVNegAux, as in (15) (where it occurs to the left of a BE-auxiliary):

(15) *Romanus equitatus [ipsum quidem regem]*
 Roman.NOM cavalry.NOM self.ACC PRT king.ACC
Elatiae adsecutus non est.
 Elatia.LOC reached.NOM not be.PR.3.SG

'The roman cavalry did not manage to find the king himself in Elatia.' (= LIV. 36.19.10)

However, *non* can also occur farther to the left, as in the ONegVAux and NegOVAux clauses in (16) and (17) respectively:

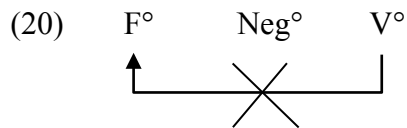
(16) *qui uicinos suos non cohortatus est [...]*
 who.NOM neighbours.ACC his.ACC not incited.NOM be.PR.3.SG
 'who did not encourage his neighbours.' (= CIC. *Phil.* 7.24)

- (17) *Cur non Habiti exemplo usus es [...]?*
 why not Habitus.GEN example.ABL used.NOM be.PR.2.SG
 'Why didn't you follow the example of Habitus?' (= Cic. *Clu.* 172)

Note first of all that the generalization in (14) cannot be reformulated as *V_{fin} non. Importantly, the same restriction also holds in non-finite clauses, like ablative absolutes (18) and *accusatiui cum infinitiuo*, as in (19):

- (18) a. *interiore parte humorem non requirente*
 inner.ABL part.ABL moist.ACC not require.PART.PR.ABL.F.SG
 'while the inside part does not require fluid.' (= CELS. 3.4.5)
- b. * <non> *interiore parte <non> humorem*
 not inner.ABL part.ABL not moist.ACC
requirente
 require.PART.PR.ABL.F.SG
- (19) a. *credo igitur [hunc me non amare].*
 believe.PR.1.SG PRT that.ACC.M.SG I.ACC not like.PR.INF
 'So I believe that he doesn't like my performance.' (= Cic. *Att.* 9.18.1)
- b. * *credo igitur <non> [hunc <non>*
 believe.PR.1.SG PRT not that.ACC.M.SG not
me amare].
 I.ACC like.PR.INF

In order to account for (14), it would be natural to call upon the abovementioned Head Movement Constraint (HMC, cf. Travis 1984) or any of its Relativized Minimality (Rizzi 1990) based successors. If we assume that both verbs and preverbal negators are syntactic heads (on the X° -status of the latter, see Zanuttini 1997), it follows that verbal heads can never move across negation, given the HMC:



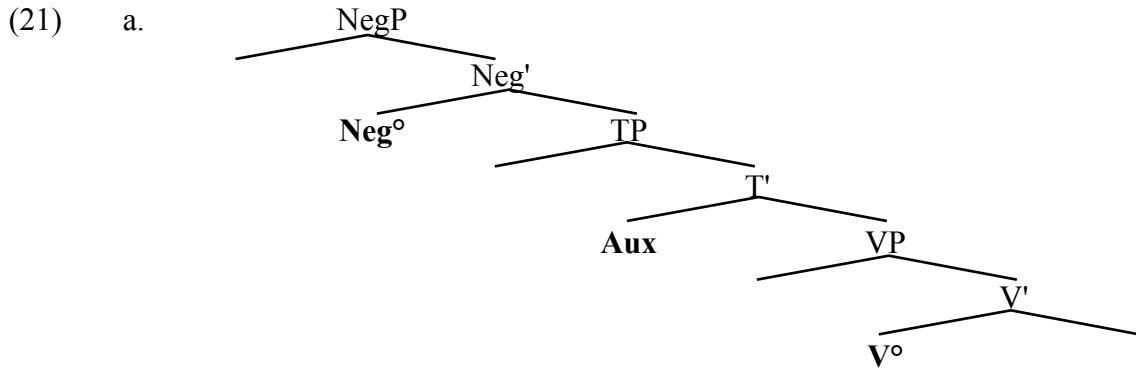
But then how come participles and infinitives (arguable also X° s) can freely occur to the left of *non*? This could only be the case if the leftward position of such non-finite verbs is the result of phrasal movement across *non*, which does not give rise to any HMC-type intervention effect.⁸

I therefore conclude that in Classical Latin, the order 'non-finite verb - auxiliary' is not derived by means of head movement.⁹ One of the two 'opacity creating' types of leftward movement is thus eliminated, but what about L-movement?

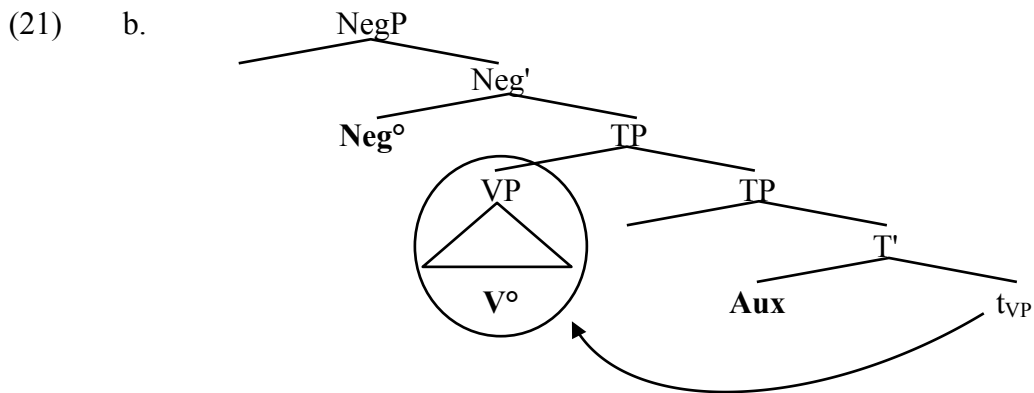
3.2 Latin VPAux is not derived through 'roll-up' L-movement

A type of reasoning similar to the one in the previous section can be developed to rule out the possibility that the order V-(Neg-)Aux is derived through L-movement, as for instance proposed in Ledgeway (2012, chapter 5). Assuming the characterization of L-movement formulated in Biberauer, Holmberg and Roberts (2010), according to which L-movement always starts at the

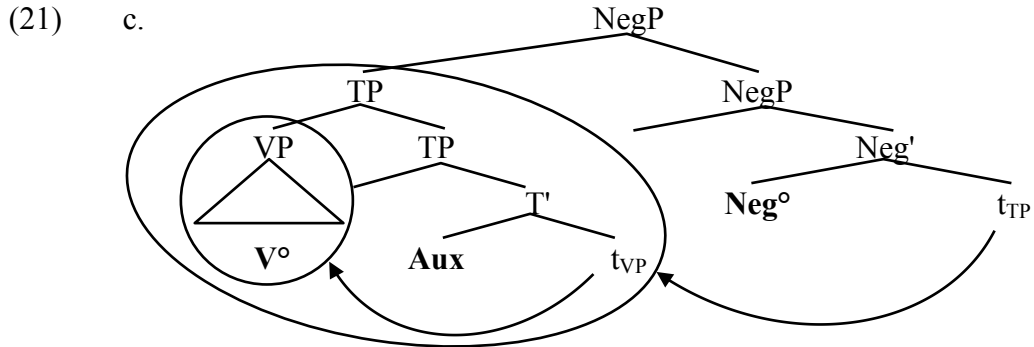
bottom of an EP, let us try to derive the target order VP-Neg-Aux from the a base structure Neg > Aux > VP (as in (21a) (terminals in boldface), with no L-movement at all).



First, partial roll-up, involving only one application of L-movement yields the order Neg-VP-Aux, i.e. not the desired outcome:¹⁰



Next, full roll-up yields the order VP-Aux-Neg (a violation of (14)), which is again different from the targeted VP-Neg-Aux order (21c). We can therefore safely conclude that the orders VP(Neg)Aux are not derived by means of L-movement.



This conclusion is supported by a set of facts concerning the internal structure of the verb phrase. As we saw earlier, pre-Aux VPs themselves can be both head-initial and head-final. As we will see in the following section, the former option is not compatible with a roll-up derivation involving L-movement.

3.3 Additional evidence against head movement and roll-up: *VOAux*

There is additional evidence against head movement and roll-up derivations of Latin Aux-final clauses. Apart from sentential negation, internal arguments can also linearly intervene between lexical verbs and auxiliaries, as for instance in (22):

- (22) *ne ante conspici posset a*
 so.that.not before notice.PASS.INF.PR be.able.SUBJ.IMPF.3.SG by
uulgo quam rex [adlocutus milites]
 people.ABL than king.NOM addressed.NOM soldiers.ACC
esset.
 be.SUBJ.IMPF.3.SG

'so that he could not be noticed by the people before the king had spoken to the soldiers.' (= CURT. 6.8.24)

Under a scenario in which all Aux-final clauses are derived by means of (repeated) L-movement, the existence of the pattern in (22) is mysterious, as L-movement would have to apply inside the verb phrase prior to VP-displacement (viz. by virtue of the requirement that L-movement start at the bottom of an EP), which would yield the 'harmonically head-final' order OVAux, rather than the 'mixed' order VOAux. On the other hand, if we assume that Classical Latin VP-displacement is not L-movement, the availability of the order VOAux is not unexpected, but actually predicted to be available.

To sum up, there is good evidence that Classical Latin Aux-final are derived through VP movement rather than head movement. In addition, we can be confident that the landing site of this operation is fairly high (viz. at least higher than negation, which itself is higher than T° , or the functional projection in which (finite) modal auxiliaries are hosted), which rules out an analysis in terms of phrasal roll-up (L-movement). However, at this point the question as to which type of movement this operation of VP-displacement instantiates still remains to be answered. Two candidates remain, viz. scrambling and A-movement. Given the lack of plausible parallels for VP-scrambling in the languages of the world, I will pursue the hypothesis that we are dealing with EPP-driven A-movement of the entire VP, which targets a high functional projection in the middle field. Similar analyses have in fact already been proposed in the literature (see for instance Biberauer and Roberts 2005; Travis 2005). But is there any independent evidence that supports this hypothesis?

4. VP-movement as EPP-driven A-movement

4.1 Internal arguments in passive clauses: the VSAux pattern

All the Latin data discussed up to now involve an active or deponent dependent non-finite verb. However, an interesting counterpart of the VOAux-order discussed in section 3.3 also exists in passive clauses featuring the order 'non-finite verb - subject - auxiliary' (VSAux).¹¹ This order is available both in clauses with an analytic passive tense with a BE-auxiliary (23) and in clauses with a modal auxiliary (24):

- (23) *Quoniam ergo explicata ratio est, [...].* PaPa-S-BE
since PRT explained.NOM reason.NOM be.PR.3.SG
'Since the reason has been explained.' (= VITR. 2.8.18)

- (24) *Sapienti ergo donari aliquid potest.* Inf-S-Mod
wise.DAT PRT give.PASS.INF.PR something.NOM be.able.PR.3.SG
'It is therefore possible to give a wise man something.' (= SEN. *Ben.* 7.12.1)

The similarity between the patterns VOAux and the VSAux is obvious: both can be said to instantiate the abstract order 'verb - internal argument (henceforth IA) - auxiliary' (VIAAux). The crucial observation is that despite the fact that the internal argument in the passive clauses is marked for nominative case, this elements seems to remain in situ (presumably in a VP-internal position), without undergoing A-movement to a high position in the middle field.¹²

4.2 The uniform behaviour of internal arguments across voice distinctions

At this point, we predict that if preverbal subjects (external arguments in active clauses, and internal arguments in passives, abstracting away from unaccusatives) are involved in EPP-checking via A-movement, derived subjects in passive clauses should appear more frequently in leftward positions than internal arguments in active clauses. A closer look at the empirical facts reveals that this prediction is not borne out: not only is the order VSAux available, it is attested at very similar rates as the VOAux pattern in active clauses.

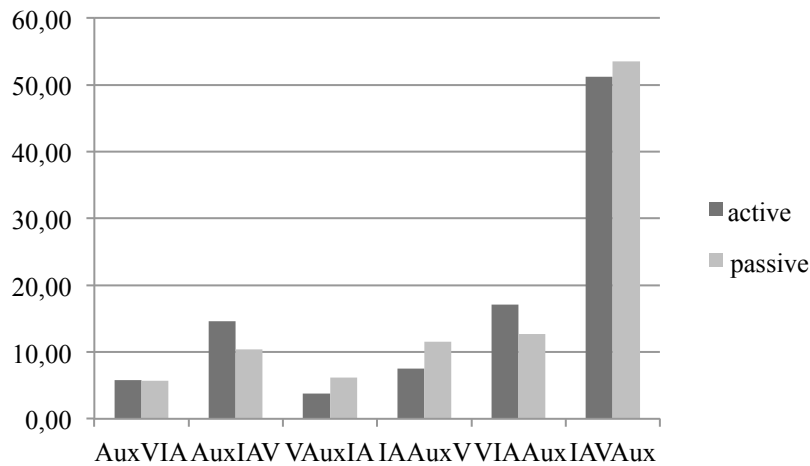
At present, I can only present detailed quantitative data on clauses with the modal auxiliary *possum* 'be able' and infinitival complements, and not yet about regular passives with an analytic verb from featuring a BE-auxiliary. The results for the clauses with *possum* are as follows (as above, I only included data from texts that yielded 20 or more tokens):

Author	Date	% AuxVIA	% AuxIAV	% VAuxIA	% IAAuxV	% VIAAux	% IAVAux	N =
Cicero	55 BC	2,16	9,73	3,24	12,43	18,38	54,05	185
Caesar	50 BC	0	5,48	1,37	4,11	1,37	87,67	73
Varro	45 BC	4,35	8,7	6,52	23,91	4,35	52,17	46
Livius	10 AD	1,63	2,17	4,61	1,08	30,35	60,16	369
Seneca	50 AD	8,43	16,87	6,02	13,86	13,86	40,96	166
Q. Curtius	70 AD(?)	2,33	3,49	6,98	19,77	17,44	50	86
Quintilianus	95 AD	12,35	6,17	7,41	8,64	8,64	56,79	162

Plinius	100 AD	10,81	10,81	13,51	13,51	13,51	37,84	37
Tacitus	110 AD	10,53	31,58	8,77	10,53	14,04	24,56	57
Gaius	170 AD	4,55	9,09	3,41	7,95	4,55	70,45	88
(Average) total:		5,71	10,41	6,18	11,58	12,65	53,47	1269

Table 3: word order in clauses with *possum* complemented by a(n active or deponent) transitive infinitive and an overt object: percentages + total number of clauses.

Interestingly, if we compare the data on passive clauses obtained for these 10 authors with the corresponding data on active clauses, it turns out that placement of internal arguments seems to be more or less identical across voice distinctions.¹³ Not only are the frequencies of Aux-final clauses very similar, the other four possible word orders behave similar to one another as well:



Graph 2: distribution of internal arguments in active and passive clauses (Y-axis: percentages).

As it turns out, when we compare the average frequencies of the six possible orders of the elements 'internal argument (IA)', 'non-finite lexical verb (V)' and 'auxiliary (Aux)' in active and in passive *possum* clauses, none of the observed differences can be shown to be (anywhere near) statistically significant:

	AuxVIA	AuxIAV	VAuxIA	IAAuxV	VIAAux	IAVAux
Active	5,84	14,59	3,82	7,51	17,07	51,18
Passive	5,71	10,41	6,18	11,58	12,65	53,47
Statistically significant (Independent samples T- test)?	NO (p = .956)	NO (p = .341)	NO (p = .284)	NO (p = .142)	NO (p = .358)	NO (p = .778)

Table 4: comparing placement of internal arguments in clauses with the modal auxiliary *possum* 'be able' and a dependent active or passive infinitive.

At this point, we can tentatively conclude that the data discussed in this final section, in conjunction with the observation that scrambling generally seems to affect noun phrases (with a particular discourse status) only, lend support to the view that VP-movement involved in the derivation of Latin Aux-final clauses is an instance of EPP-driven A-movement.

However, this is not to say that all questions surrounding subjecthood and EPP-checking in Latin are resolved. More specifically, more research on the distribution of external arguments (in both preverbal and postverbal position) is needed to arrive at a better understanding of the syntax of subjects in Latin, and by extension of Latin clause structure more generally. In addition, nothing analytic was said about the syntax of clauses where no VP-movement takes places (cf.

the data presented in section 1.2): such structures are available throughout the history of the Latin language, but seem to instantiate an innovative pattern, which gradually gains ground in the evolution towards the Romance languages. This suggests that EPP-checking in Latin is subject to diachronic parametric changes. However, discussion of such diachronic facts falls well beyond the scope of this paper (see Ledgeway 2012 for elaborate discussion).

5. Conclusion

In this paper, I have discussed the synchronic syntax of Aux-final clauses in Classical Latin (ca. 100 BC - 200 AD), which were shown to be the statistically predominant word order pattern in this particular period of time. I concluded that a roll-up derivation for Latin Aux-final clauses is highly problematic, given some robust facts concerning the syntax of negation, as well as the availability of the (cross-linguistically rare) order VOAux. An alternative analysis was defended, in line with earlier proposals in the literature (Biberauer and Roberts 2005; Travis 2005), in which VP-movement across the T° node takes place to satisfy the clausal EPP-requirement. Empirical evidence in favour of this analysis comes from a comparison between internal arguments in active and passive clauses: despite the fact that these elements could be considered to qualify as derived subjects in the latter environment, no positional differences could be detected across the two types of voice. In addition, it was shown that nominative DPs can remain in their VP-internal base position, witness availability of the order VSAux in passive clauses. All this suggests that EPP-checking in Classical Latin does not involve A-movement of a nominative

DP, which in turn is at the very least compatible with an analysis that assumes VP-movement to be responsible for EPP-checking.

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¹ The term 'classical' is not used with any stylistic or register-related connotation.

² Abbreviations in references to Latin texts are as in the *Oxford Latin Dictionary*.

³ Of all the authors mentioned, all extant works were investigated, except for Cicero, where I only looked at a selection of speeches, and Suetonius, of whom only the *Vitae Caesarum* were taken into account.

⁴ The text of the *Panegyricus* was taken from the CD-ROM Hyperbase, whereas I used the Brepolis database for the correspondence.

⁵ Similar (but not quite the same) implementations of phrasal roll-up have been proposed by, among others, Koopman & Szabolcsi (2000) and Cinque (2005). Roll-up movement is potentially identical (or at least similar) to fairly local movement of a portion of the extended projection of the verb, as discussed in Larson (1988), Barbiers (1995), Cinque (1999), Hinterhölzl (2009) and Belletti & Rizzi (2012). Note that all of the operations of 'VP-intrapolation' or 'Light Predicate Raising' argued for in this last family of proposals seem to take place in the lower regions of the clause. In contrast, as we will see below, there is good reason to assume that pre-Aux VPs in Classical Latin end up much higher in the clause, at least higher than T^o (witness the clause-final position of the auxiliary).

⁶ Thus Wurmbrand (2006, 257): 'as many authors have suggested, verb-cluster formation can involve both types of movement - that is, certain configurations are derived by head-movement, others by phrasal movement [...].' See also the previous footnote.

⁷ In all apparent counterexamples to this generalization, *non* acts as a constituent negator, as in (i):

- (i) *Coguntur enim non pignoribus, sed*
force.PASS.PR.3.PL PRT not pledges.ABL but
eorum [...] gratia.
they.GEN gratitude.ABL

'For the are forced not by pledges but by their gratitude.' (= Cic. *Phil.* 10.12)

⁸ Note that the hierarchically highest verb (by assumption located in T°) cannot in the same fashion (i.e. by means of XP movement) circumvent the locality effect created by an intervening negator, given that TPs are generally known to be syntactically immobile (see for instance Abels 2012). In general, derivations involving phrasal movement of a remnant TP (containing just the highest verb) across negation might not violate locality, but can all be ruled out on independent grounds, regardless of the type of phrasal movement involved (L-movement: FOFC (at least in Latin, see section 3.3); A-movement: Improper Movement (and Anti-locality); A'-movement: Anti-locality).

⁹ A reviewer points out that (some of) the verb movement phenomena discussed here could alternatively be analysed in terms of 'Long Head Movement' (LHM), in the sense of Lema & Rivero (1989) and Rivero (1993), among many others). LHM is a non-local variant of 'classical'

(i.e. strictly local) head movement, and has been claimed to exist in certain Old Romance varieties as well as in a number of modern Slavic languages (on the latter, see for instance Rivero 1991). However - apart from LHM being far from generally accepted as a plausible primitive of generative syntactic theory - an account in terms of LHM only clearly cannot account for the entire range of Latin verb placement facts. More specifically, it can only deal with the asymmetry between the hierarchically highest verb in a clause and all lower verbs (explained here in terms of X° vs. XP movement) if an additional stipulation is made to the effect that LHM can only affect the highest verb. In addition, deriving VAux-orders by means of LHM faces the same locality problem as regular head movement, namely that it cannot plausibly be reconciled with the availability of the order V-Neg-Aux.

¹⁰ As indicated in (21b,c), I assume that L-movement adjoins a given phrasal category to the maximal projection of the head immediately dominating that category.

¹¹ The connection between the VOAux and VSAux orders was also pointed out in Biberauer, Holmberg & Roberts (2010).

¹² There are good reasons to assume that in both the VOAux and the VSAux patterns, the strings 'VO' and 'VS' form a constituent, and that alternative derivations in which the same linear order is derived through movement of the internal argument out of the VP, with subsequent remnant movement of the VP across it is unlikely. For reasons of space, I cannot elaborate on this issue at present: the reader is referred to Danckaert (2013).

¹³ In order to compare likes with likes, only data on active clauses from those authors that also feature in Table 3 were taken in Graph 2 and Table 4. Put differently, not all data from Table 2 were taken into account when comparing word order in active and passive *possum* clauses.