*Phonological constituents and their movement in Latin**

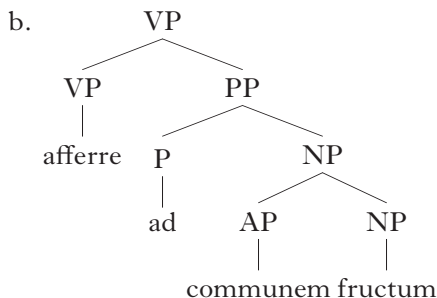**Brian Agbayani**
Chris Golston
California State University, Fresno

We document a fronting process in Latin that is difficult to model as syntactic movement but fairly easy to model as phonological movement. Movement with similar properties has been observed elsewhere in Classical Greek, Russian, Irish and Japanese; we suggest that the Latin movement is of the same type and takes place in the phonological component of the grammar, following the mapping from syntactic to prosodic structure.

1 Introduction

Natural languages group words into syntactic and prosodic constituents, based on requirements that often conflict. A Latin string like that in (1a) has the syntactic structure in (1b), based on lexical (N, V, A) and functional (P) heads and their projections.

(1) a. afferre   ad communem   fructum
       contribute.INF to common.ACC fruit.ACC
       'to contribute to the common good'

   b.

The same string has the prosodic structure in (2), based on the right-alignment of prosodic edges to syntactic edges.

(2) (   )$_\varphi$ phonological phrase
     (afferre)$_\omega$ (ad (communem)$_\omega$)$_\omega$ (fructum)$_\omega$ prosodic word

Syntactic constituency differs from prosodic constituency in a number of ways. In the case at hand, the string *ad communem* is not a syntactic constituent, straddling a preposition and the first half of its complement, but it *is* a phonological constituent, a prosodic word, consisting of a functional head plus a following lexical head (Selkirk 1984, 1986, 1996).

   This difference between syntactic and prosodic structure becomes crucial when we consider how focused and topicalised material is fronted in Latin, a process known traditionally as HYPERBATON (see Adams 1971, Devine & Stephens 2000, 2006, Bolkestein 2001 and Agbayani & Golston 2010a on hyperbaton in Classical Greek, and Powell 2010 on hyperbaton in Latin). The general view is that hyperbaton involves fronting and that the fronting involves focus, topicalisation or some other kind of discourse prominence. Consider the example of hyperbaton from Cicero in (3), derived from (1a) through fronting of *ad communen*.

(3) *ad communem*   afferre   [__ fructum]
     to common.ACC contribute.INF   fruit.ACC
     'to contribute *to the common* good' (Cicero, *Pro Archia* 12)

The string *ad communem* has moved to the left of the verb, splitting the PP *ad communem fructum* (the moved string is italicised to highlight the discontinuity). Notice, however, that while *ad communem* is a prosodic constituent, it is not a syntactic constituent, suggesting that the movement is phonological – i.e. movement of a prosodic constituent in the phonological component – rather than syntactic.[1] We present here a range of evidence that hyperbaton in Latin is phonological movement. The data discussed here is similar to data found in Classical Greek (Agbayani & Golston 2010a), Russian (Agbayani *et al.* 2011) and Ukrainian (Teliga 2011). Related facts can be found in Japanese (Agbayani *et al.* 2015), in which prosodic scrambling of a recursive phonological phrase occurs in the phonological component in situations where XP scrambling in the syntax is not available; and in Irish (Bennett *et al.* 2016), in which pronominals shift rightward to satisfy the STRONGSTART constraint (Selkirk 2011).

   The bulk of this article lays out the evidence for prosodic words (ω) and phonological phrases (φ) in Latin (§2), and the characteristics of hyperbaton in the language (§3). We then show that existing syntactic analyses

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[1] It cannot be the case that *ad communem* and *fructum* form separate syntactic DPs/ NPs, since the adjective *communem* participates in accusative case concord with the modified noun *fructum*, suggesting a syntactic relation of modification originating within the same DP/NP.

of hyperbaton are inadequate, and present an analysis based on phono-logical movement (§4).

2 Latin prosody

More than a century of research has established that function words in Latin are prosodically dependent on nearby lexical words; prosodically de-pendent function words are often called 'appositives' in the literature on Latin (not to be confused with NP appositives in contemporary syntactic analysis). The degree of dependency seems to correlate with the morpho-logical and phonological complexity of the function word: simplex func-tion words (conjunctions, complementisers, prepositions) are heavily dependent on nearby content words – though monosyllabic prepositions are more dependent than polysyllabic prepositions – while morphological-ly complex function words (demonstratives, adverbials, pronominals) are also dependent, but less so. Evidence for all of this comes from several areas, including direct testimony from ancient authors (§2.1), word-break conventions in orthography (§2.2) and phrasing in poetic metre (§2.3). The combined evidence points to function words forming recursive prosodic words with nearby content words (Selkirk 1996), either as words themselves (demonstratives, adverbials, pronominals) or merely as the phonological feet that Latin employs, i.e. moraic trochees (§2.4).

2.1 Ancient testimony

Direct evidence for the prosodic dependence of function words on adjacent content words comes from authors like Quintilian (1st century), who says that a preposition and a noun are pronounced as a single word when joined together: 'For when I saw *circum litora* ['around the shores'] I pronounce the phrase as one word, concealing the fact that it is composed of two, con-sequently it contains but one acute accent, as though it were a single word' (1.5.27; transl. Butler 1920).

The grammarian Audax (4th century) says plainly that 'all prepositions in fact are without an accent' (GL VII, 320–361, 12). He goes on to say that:

> not all parts of speech are equal. For noun and verb and participle dom-inate among all the parts of speech; following these the others seem like appendages. For a pronoun is connected with a noun, and an adverb serves a verb. A conjunction too and a preposition are dependents of the major parts of speech. So these parts of speech, which are appen-dages, are so joined together with the major ones that they coalesce into one utterance and lose their own accent entirely, not all to this extent, but most. (Audax, K. VII, 360)

Finally, authors like Cicero (1st century BCE), Quintilian and Velius Longus (2nd century) report cases of external sandhi involving function

words, such as place assimilation in *cun nobis* for *cum nobis* 'with us' or *etian nunc* for *etiam nunc* 'so now'. Orthographic evidence backs this up as well, as we will see in the next section.

2.2 Orthography

Additional evidence for the prosodic subordination of function words comes from the distribution of the interpunct (·) in Latin monuments, graffiti and manuscripts. Roman orthography was generally written in *scriptio continua*, which lacked spaces between words, but some writing and nearly all inscriptions used an interpunct to show word breaks, as in the fragment from a letter in (4) (Adams 1995: 96).

(4) dehac·re   'about this thing' (fragment 211)
    about this·thing

This fragment shows the case we are especially interested in, where the phonological/orthographic constituency (*de hac*) (*re*) '(about this) (thing)' differs from the syntactic constituency [*de* [*hac re*]]) '[about [this thing]]'. There is often no interpunct between various kinds of function word and an adjacent lexical word: this is most common between a preposition and a following word (Wingo 1972: 16), a conjunction and a following word (Corsen 1859: 868), or a complementiser and a following word. But it also takes place between a verb and a following pronoun (Adams 1996), showing that function words are dependent on content words generally, some on those that precede (pronouns) and some on those that follow (prepositions, conjunctions, complementisers).

   Authors from Blair (1874) and Greenough (1894) to Fortson (2008) have noted that place and voicing assimilation occur in external sandhi in texts and on monuments, as in (5). Almost all cases apply to function words, as (5) shows.

(5) SET QUI   'but who' (*Corpus Inscriptionum Latinarum* X 2496.5)
    sed qui

As *set qui* shows, assimilation takes place within a prosodic word whose members may not be sisters syntactically, showing that the process is prosodically rather than syntactically bounded, as is the case with external sandhi generally (Nespor & Vogel 1986, Selkirk 1986, Hayes 1989). Similar phenomena are found in manuscripts, as in (6) (Ribbeck 1866: 433–434).

(6) im pace   'in peace'
    in pace

   Similarly, the manuscripts of Plautus often show the copula written as part of the preceding participle or adjective: *locutast* for *locuta est* 'is spoken', *copiast* for *copia est* 'are many', and so on, suggesting that the

copula formed a prosodic word with its complement (see Fortson 2008: 134–175).

2.3 Metrical evidence

Additional evidence that function words form prosodic words with adjacent content words comes from poetic metre, especially the lining up of the edges of function and content words with verse feet in the classical metres of Latin.

Most Latin poetry is in metres borrowed from Greek, in which the edges of prosodic words pattern pretty much the same whether they consist of a single lexical word or of one or more function words next to a lexical word. Certain positions in the line ('caesurae') require word breaks, and others ('bridges') abjure them; but what counts as a word break for either is what counts as a word break in the orthography or in phonological movement. Function words are prosodically subordinated in Latin metre just as they are in writing:

> According to an oft-repeated rule of the grammarians the monosyllables are usually without the accent … This rule does not apply of course to monosyllabic nouns and verbs, as many other testimonies of the grammarians show … but only to those words which, owing to their meaning, are naturally unaccented in many languages, viz., the monosyllabic prepositions, conjunctions, pronouns, and adverbs. (Radford 1903: 63)

Metrical work on where word stress falls in a line of poetry shows that many function words fuse so closely with the following word that they are positioned within the line as if they were a single word. Thus Radford (1904) finds that strings like *sed id* 'but it', *sed amor* 'but love' and *sed homines* 'but men' pattern like two-, three- and four-syllable lexical words. With trisyllables in particular, Radford shows that function words so closely adhere to what follows that they can take the only accent of the group: *'sed agit* rather than *sed 'agit* 'but I lead', and *'sed erus* rather than *sed 'erus* 'but the head of the family', where the recessive accent expected on the content word shows up on the preceding function word. Radford points out that the same types of combination are often written together in manuscripts: *etea* for *et ea* 'and those', *utipse* for *ut ipse* 'so that he'. His data suggests that 'the monosyllabic particles … like all other independent words, have originally an accent, as in fact the grammarians expressly declare; if they very frequently lose this accent, this happens simply because they are subordinated in sense to the other words of the sentence and, at the same time, in the majority of cases, cannot preserve their accent through the operation of the three-syllable law' (1904: 160).

Mercado (2012: 115) argues that early Latin Saturnian metre distinguishes primary, secondary and zero stress, and that 'function-word accent is scanned the same way as secondary stress'. Primary stress in polysyllabic content words has to occur in metrically strong positions in the

line, but this is not the case for the single stress in polysyllabic function words: 'secondary stress-bearing syllables and primary-stressed syllables in function words admit of variable scansion, depending on what metrical positions they fill and on the phonological prominences of the syllables that occupy the metrical positions immediately following' (2012: 110). Monosyllabic content and function words pattern the same in Saturnian, though it does not follow from this that they were prosodically identical (2012: 116ff). What we can be sure of is that function words didn't carry the same kind of primary stress as content words, and thus that they were somehow prosodically subordinated.

2.4 Prosodic constituency

In current terminology, it appears that function words form recursive prosodic words with nearby content words, as in (2) above (Booij 1996, Selkirk 1996). So while *afferre* (V) and *fructum* (N) form their own prosodic words above, *ad* (P) must be adjoined to the prosodic word formed by *communem* (A). We will discuss the exact prosodic size of function words in what follows: in principle they could be syllables, feet or prosodic words. All words in Latin, whether function or content, are minimally bimoraic (Allen 1973: 51; see also Golston 1991, Mester 1994). We can therefore surmise that function words are either bimoraic feet or prosodic words. Since syllables can be light or heavy in Latin, while feet are bimoraic, the simplest assumption is that functional heads (other than clitic heads like =*que* 'and' and =*ve* 'or') are minimally bimoraic, because they are minimally feet. We will assume that conjunctions, complementisers and prepositions (which never move) are feet, while pronouns, wh-words, auxiliaries, closed-class adverbs and the like (which do move) are prosodic words.[2]

3 Hyperbaton in Latin

Hyperbaton takes place against a backdrop of fairly free constituent order, such that S, V and O can occur in any order, even in mundane prose texts (see e.g. Devine & Stephens 2006, Spevak 2010, Danckaert 2012), as shown in (7).

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[2] An anonymous reviewer notes that prepositions actually *can* get moved leftwards out of a PP with the preposition *per* in oaths, but notes that this is probably 'an archaic holdover of an earlier time when prepositions were free-floating adverbials that could be fronted like any other constituent'. The reviewer notes that prepositions can be fronted in poetry as well, and points out that both facts potentially support our claim that hyperbaton acts on almost any syntactic type. We leave this to future research, as archaisms and poetry are not our concern here.

(7) a. SVO
    avus   eius in Africa   manu   propria occidit
    grandfather.NOM his in Africa.ABL hand.ABL own.ABL killed.3
    elephantem   'his grandfather killed an elephant in Africa
    elephant.ACC   with his own hand' (Honoratus, *CV* 286)

  b. SOV
    insecuti   magnum ex iis   numerum occiderunt
    pursuers.NOM great.ACC of them.ABL number.ACC killed.3PL
    'the pursuers killed a great number of them'
    (Caesar, *Bello Gallico* 1.53.1)

  c. OSV
    Germanum   Cimber   occidit
    Germanus.ACC Cimber.NOM killed.3
    'Cimber killed Germanus' (Cicero, *Philippics* 11.6.14)

  d. VOS
    occidit Saturninum   Rabirius
    killed.3 Saturninus.ACC Rabirius.NOM
    'Rabirius killed Saturninus' (Cicero, *pro Rabirio postumo* 11.31)

  e. VSO
    vidit … pater   tuus   Appium   Claudium
    saw.3   father.NOM your.NOM Appius.ACC Claudius.ACC
    'your father saw Appius Claudius' (Cicero, *pro Plancio* 21.51)

  f. OVS
    patrem   occidit Sextus   Roscius
    father.ACC killed.3 Sextus.NOM Roscius.NOM
    'Sextus Roscius killed his father' (Cicero, *pro Roscio Amerimo* 14.39)

Devine & Stephens (2006) posit that the canonical surface order of major constituents in Latin is SOV, specifically as in (8).

(8) [S [IO/Obl [Adjunct [Goal/Source [DO V]$_{VP}$]$_{VP}$]$_{VP}$]$_{VP}$]$_{IP}$

They propose that this order is derived syntactically from an underlying order in which the VP is head-initial. Danckaert argues for an underlying VO structure as well (2012: 312ff). We currently lack data to show whether the word order in (8) is derived syntactically or phonologically, and leave this issue for future research. Our focus henceforth will be on hyperbaton.

   Hyperbaton is the traditional term for fronting that results in a discontinuous constituent, and it is clear when a constituent is split, even when it is not clear what the head/complement order was before the split occurred. Consider the OSV case above in (7c); we do not know if it comes from SVO or SOV underlyingly, but this need not keep us from recognising that the object has been fronted from some position within VP, and that the VP is now discontinuous, split by the subject.

   The core cases of hyperbaton involve movement of units smaller than a full XP, where a basic order is sometimes easier to come by. PPs, for

instance, are usually head-initial on the surface (9a), but allow material from the object to be fronted just past the preposition (9b), as long as the entire object is not fronted (9c).

(9) a. ex   una   parte   'from one part'
         from one.ABL part.ABL   (Seneca the Elder, *Controversiae* 6.3)

   b. *una*   ex   [__ parte]   'from *one* part'
        one.ABL from   part.ABL   (Caesar, *Bello Gallico* 1.2)

   c. **una*   *parte*   ex   [__]   'from *one part*'
        one.ABL part.ABL from   [construct]

(9b) is the traditional hyperbaton case (since *una … parte* is a discontinuous constituent), and we can assume that it is derived from (9a) rather than from (9c) – that is, via leftward movement/fronting rather than via rightward movement or base generation – because (a) is extremely common, while (c) is completely unattested. Quintilian provides the following remarks on the matter:

> When, however, the transposition is confined to two words only, it is called *anastrophe*, that is, a reversal of order. This occurs in everyday speech in *mecum* and *secum*, while in orators and historians we meet with it in the phrase *quibus de rebus*. It is the transposition of a word to some distance from its original place, in order to secure an ornamental effect, that is strictly called *hyperbaton:* the following passage will provide an example: *animadverti, iudices, omnem accusatoris orationem in duas divisam esse partes*. ('I noted, gentlemen, that the speech of the accuser was divided *into two parts*.') In this case the strictly correct order would be *in duas partes divisam esse*, but this would have been harsh and ugly. (Quintilian, *Institutio Oratoria* 8.6.65; transl. Butler 1921)

Other data that argues for fronting includes long-distance cases like (10) (cited in Spevak 2010).

(10) si *qua*   ego   [in __ re]   fratri   tuo   rei
        if any.ABL I.NOM in   matter.ABL brother.DAT your.DAT thing.GEN

     publicae   causa   restiterim
     public.GEN because opposed.1PERF.SUBJ
     'if I have opposed your brother in *any* matter of the public good'
     (Cicero, *Epistulae ad Familiares* 5.2.6)

Qua is fronted out of *in qua re* over the subject *ego*. Fronting *qua* leftwards is much simpler than scrambling *in re* rightwards, since the subject has scope over the PP and presumably starts out in front of it. Consider also (11) (from Pinkster 2005), where the adjective has moved across *equidem*, which clearly has scope over the whole PP, making an analysis with rightward movement hard to imagine.

(11) *magno*   equidem [cum __ dolore]   'though with *great* sorrow'
   great.ABL though   with   sorrow.ABL   (Cicero, *ad Atticum* 10.4.5)

The type of example in (12) makes leftward movement inescapable.

(12) *oleum* si [in   metretam novam   __ inditurus]   eris
   oil.ACC if into jar.ACC   new.ACC   put.into.FUT.PART.NOM want.2
   'if you want to put *oil* into a new jar' (Cato 100)

Everything is in place here except for *oleum*, which appears far to the left of its VP. If *oleum* has not moved, it's very hard to see how everything ends up where it does. Consider (13) as well.

(13) *meo*   tu   epistulam dedisti   [__ servo]
   my.DAT you.NOM letter.ACC gave.2PERF   servant.DAT
   'you gave the letter to *my* servant?' (Plautus, *Pseudolus* 1203)

Here the possessive adjective *meo* is fronted past the verb, object and subject; fronting is the traditional view, taken in Devine & Stephens (2006), and the one we adopt here.

It is more difficult to say exactly what 'discourse prominence' is. It often involves focus, so Devine & Stephens treat hyperbaton as syntactic movement to one of many [spec, Foc] positions. But they stress that what is moved isn't always exactly *focused*, and that what remains *in situ* is sometimes focused as well:

> There are enough instances that do not conform to the usual pragmatic structure to show that premodifier hyperbaton is a properly syntactic process not tied to a single pragmatics … So the correct generalization is that premodifier hyperbaton, like hyperbaton in general, is just partial movement. Part of the phrase moves (for whatever reason movement is licensed in any particular instance) and part is stranded. (Devine & Stephens 2006: 548)

The clearest cases of hyperbaton are those that create discontinuous constituents locally, as in (14), where *illis* is made discontinuous from its NP by intervening *autem*.

(14) *in illis*   autem [__ meis   actionibus   sententiis=que
   in that.ABL.PL but   my.ABL.PL action.ABL.PL motion.ABL.PL=and
   omnibus]
   all.ABL.PL
   'but *in those* actions of mine and all those motions'
   (Cicero, *Epistulae ad Familiares* 1.9.10)

The PP headed by *in* is also thereby made discontinuous, of course, but we tend to notice the lower discontinuities more. Fronting an adjective past a preposition makes a discontinuous NP (*magna cum __ laude* 'with great

praise'), fronting an object over a subject makes a discontinuous VP (7e), fronting a subject over a complementiser makes a discontinuous TP (14), and so on. A moment's reflection shows that all non-local movement creates discontinuous constituents, so we make no principled distinction between partial and full hyperbaton. The main issue this paper seeks to tackle, which we address in detail in §4 is whether such fronting is syntactic or prosodic.

It is not always clear what the basic order of lexical heads and their complements is; lexical heads (N, V, A) can occur before, within and after their complements, and are responsible for most of the apparent free word order and so-called non-configurationality of Latin. Nouns, for instance, usually occur before their complements, as in (15).

(15) spes   potiundi   oppidi   'hope of taking the town'
     hope.NOM taking.GEN town.GEN   (Caesar, *Bello Gallico* 2.7)

However, part of the complement may also be fronted very locally, just past the head, as in (16) – this is the case traditionally called hyperbaton.

(16) *domi*   spes   [__ prolis]   'hope of offspring *at home*'
     home.LOC hope.NOM   offspring.GEN   (Livy 1.9)

There is no traditional term for the third case, when the full complement is fronted past the head, as in (17), so we call this FULL HYPERBATON, to distinguish it from the partial hyperbaton just seen.

(17) *domum*   *reditionis*   spe   [__]
     home.ACC returning.GEN hope.ABL
     'with hope of *returning home*' (Caesar, *Bello Gallico* 1.5.3)

We see no deep distinction between full and partial hyperbaton, since the difference is only a matter of whether part or all of the complement has been fronted past the head. We will therefore discuss them in tandem in what follows; the reader should remember, however, that the traditional notion of hyperbaton is narrower, usually including only the partial type. We treat both types as phonological movement, though the argument against syntactic movement is clearer for partial hyperbaton, where obvious discontinuous constituents result. Even with full hyperbaton, though, we see insensitivity to various syntactic conditions, suggesting that it is on a par with the partial cases as an instance of phonological movement of a prosodic constituent.

The rest of this section explores the core properties of hyperbaton, both partial and full. Many of these make a syntactic analysis difficult (§3.1–§3.12); others specifically suggest a phonological analysis (§3.13–§3.16).

3.1 Category-neutrality

Hyperbaton moves material of almost any syntactic type, and thus appears to be category-neutral. The only syntactic categories that do not undergo

hyperbaton in Latin are complementisers, conjunctions and prepositions, which do not form a natural class syntactically. They do, however, form a phonological class of sorts, in that they are not prosodically autonomous, but readily cliticise onto other categories (cf. the discussion in §2 above). We therefore suggest that they can't move because they are feet, not phonological words, though for conjunctions and complementisers it is hard to see what would motivate moving them in the first place. We begin with what does move in Latin and then look at what does not.

In (18) we see discontinuous constituents that result from moving a demonstrative (a), noun (b), relative pronoun (c) and verb (d).

(18) a. *hanc*   cum habeat   [__ praecipuam   laudem]
     this.ACC since has.3SUBJ   particular.ACC merit.ACC
     'since he has *this* particular merit' (Cicero, *Brutus* 261)

    b. *potestatem* Pompeio   [__ civitatem   donandi]
      power.ACC Pompey.DAT   citizenship.ACC giving.GEN
      dederat   'he had given to Pompey *the power* of
      gave.3PLUP   giving citizenship' (Cicero, *Pro Balbo* 32)

    c. *quas*   inter   [__ et   castra]
      which.ACC.PL between   and camp.ACC.PL
      'between *which* and the camp' (Caesar, *Bello Gallico* 6.36)

    d. *conclamant* Haedui   [__ et Litaviccum   obsecrant]
      shout.3PL Haedui.NOM.PL   and Litaviccum.ACC implore.3PL
      'the Haedui *shouted* and implored Litaviccus'
      (Caesar, *Bello Gallico* 7.38)

The examples in (18) are representative, not exhaustive. This diversity of targets is important because syntactic movement usually targets very specific categories (wh-words, NPs, verbs, auxiliaries, etc.), rather than categories in general.

The same variety is found in (19) for full hyperbaton, where we see movement of any type of constituent, an adverbial adjunct in (a), a NP subject in (b) and a VP in (c).

(19) a. *ibi*   si [__] variaret   'if it varied *there*'
     there if   vary.3IMPF.SUBJ   (Livy 1.43.11)

    b. *olea*   si [__] fructum non feret
      olive.NOM if   fruit.ACC not bear.3
      'if *an olive tree* doesn't bear fruit' (Cato 93)

    c. nam *convenit*   harundinetum   [__] cum corruda
      for goes.well.3 reed.thicket.NOM   with wild.asparagus.ABL
      'for a reed-thicket *works well* with wild asparagus' (Cato 6)

Note that (a) fronts an adverb and (b) an NP past a complementiser, while (c) fronts a verb just past the subject: the targets are as heterogeneous as the places they move to.

There are three syntactic categories that hyperbaton does not target in Latin: complementisers (*si* 'if', *nam* 'for', etc.), conjunctions (*et* 'and', *sed* 'but', etc.), and prepositions (*cum* 'with', *ex* 'out of', etc.). In §3.8, we ascribe this to the prosodic size of such elements, that they are merely feet, and not prosodic words.

3.2 'Bar-level' neutrality

Hyperbaton equally affects strings that are X^0 and XP in the syntax and thus seems to be neutral with respect to head or phrasal status, a surprising result if the movement is syntactic. Cases of moved heads and phrases consisting of a single lexical item have already been presented in (18) and (19). Additional cases include wh-heads (20a) and subject NPs (20b).

(20) a. *quis*   umquam [__ Graecus]   comoediam scripsit
        which.NOM ever   Greek.NOM comedy.ACC wrote.3PERF
        '*Which* Greek ever wrote a comedy?' (Cicero, *pro Flacco* 27.65)

     b. *festus*   *dies*   cum   [__] erit
        festive.NOM day.NOM when   be.3FUT
        'when (it) is *a holiday*' (Cato 143.2)

The fact that hyperbaton moves both heads and phrases to what appear to be the same positions is problematic for syntactic accounts, because heads and phrases typically have different landing sites.

3.3 Non-constituent movement

A startling property of hyperbaton involves the movement of strings that are not syntactic constituents, as in (21).

(21) *in eodem*   occiderint   [__ castello]
     in same.ABL died.3PL.PERF.SUBJ   castle.ABL
     'had died *in the same* castle' (Caesar, *Bello Gallico* 6.37)

The problem for any syntactic analysis is that the moved string *in eodem* does not form a syntactic constituent, and thus should not move. This is clear from the pre-movement syntactic constituency for (21) given in (22).

(22)
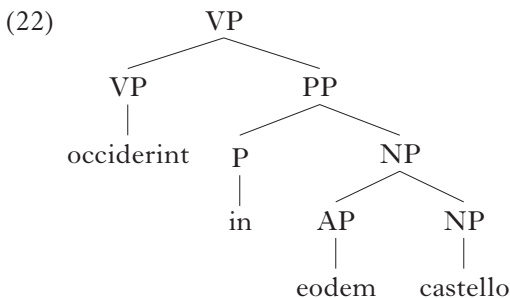
Similar cases occur with VP and PP, as in (23).

(23) a. *conatus   est*   Caesar   [reficere   pontes   __]
        tried.NOM has.3 Caesar.NOM repair.INF bridge.ACC.PL
        'Caesar *has tried* to repair the bridge' (Caesar, *Bello Civili* 1.50)

   b. *hanc   unam*   [ob   __ causam]   'from *this one* cause'
       this.ACC one.ACC from   cause.ACC   (Cicero, *ad Atticum* 7.9.2)

Cases like this can be multiplied *ad libitum*.[3]

3.4 Insensitivity to syntactic islands

Hyperbaton is completely insensitive to syntactic islands and to locality-related conditions in Latin, another major problem if the movement takes place in the syntax.

3.4.1 *Insensitivity to the Coordinate Structure Constraint.* Ross's (1967) Coordinate Structure Constraint (CSC) bans movement of a conjunct out of a coordinate structure. Hyperbaton freely moves a left conjunct, as in (24a) (for right conjuncts see §3.7).

(24) a. *sapientiae*   laudem   [__ et   eloquentiae]
        wisdom.GEN reputation.ACC   and eloquence.GEN
        'a reputation for *wisdom* and eloquence' (Cicero, *de Oratore* 2.363)

   b. *et   carminibus* edunt   [__ et   cantibus]
       both poem.ABL.PL bring.out   and song.ABL.PL
       'they bring out things in *both their poems* and their songs'
       (Cicero, *Tusculanae Quaestiones* 471)

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³ For similar cases in South Slavic, Bošković (2005) proposes that adjectives move to a position c-commanding P, which then cliticises onto the adjective prior to further leftward movement of the adjective. This will not generalise to (N, V, A) heads that are not clitics but evince the same patterns as Ps in Latin. Crucially for his analysis, adjectives can't move alone, nor may P+N front, stranding the (otherwise) intervening adjective, nor may determiners move along with adjectives in the South Slavic cases. All three cases are attested in Latin, as long as what has locally fronted forms (at least) a prosodic word.

   (i) a. elicire   nostros   *in   locum*   conaretur [__ iniquum]
          entice.INF our.ACC.PL into ground.ACC try.3SUBJ   unfavourable.ACC
          'should try to entice our men *into* unfavourable *ground*'
          (Caesar, *Bello Gallico* 8.16)

      b. *in sinu*   semper [__ et   complexu   meo]
          in bosom.ABL always   and embrace.ABL my.ABL
          'always *in* my *bosom* and my embrace'
          (Cicero, *Epistulae ad Familiares* 14.4.3)

      c. *hoc tam gravi*   dignus   [__ nomine]
          this so heavy.ABL worthy.NOM   name.ABL
          'worthy of *this so dignified* name' (Cicero, *de Oratore* 1.64)

c. *Faesulas*   inter   [__ Arretium=que
   Faesulae.ACC between   Arretium.ACC=and
   'between *Faesulae* and Arretium' (Livy 22.3.3)

d. *legiones*   eduxit [duas   __ et   cohortes
   legion.ACC.PL led.out two.ACC.PL   and cohort.ACC.PL

   praetoria*s*   duas]
   pretorian.ACC.PL two.ACC.PL
   'he led out two *legions* and two pretorian cohorts'
   (Cicero, *ad Familares* 10.30.1)

In 'both … and' structures we see 'both' dragged along with the fronted left conjunct, as in (24b); this occurs with the clitic conjunction =*que*, too, as in (24c). The CSC also bans movement from *within* a conjunct, and hyperbaton is not constrained by this either, as shown in (24d).

Hyperbaton that breaks up coordinate structures in these ways is common (Devine & Stephens 2006: 586–591).

3.4.2 *Insensitivity to the Left Branch Condition*. Ross's (1967) Left Branch Condition (LBC) rules out extractions such as **Whose did you see book?*. Such extractions are commonplace in Latin, as in (25).

(25) a. *quis*   eum   [__ senator]   appellavit
        which.NOM he.ACC   senator.NOM addressed.3PERF
        '*which* senator addressed him?' (Cicero, *ad Catilinam* 6.12)

   b. *magna*   proponit eis   qui
      great.ACC.PL propose.3 those.DAT.PL who.NOM.PL

      occiderint   [__ praemia]
      died.3PL.PERF.SUBJ   reward.ACC.PL
      'proposes *great* rewards for those who died'
      (Caesar, *Bello Gallico* 58)

Devine & Stephens (2006: 542ff) list a dozen syntactic categories that can undergo left-branch extraction. They make very clear the complete impotence of the CSC and LBC in Latin (2006: 524).

3.4.3 *Insensitivity to the Adjunct and Subject Conditions*. The Adjunct Condition bans movement from within adjuncts (Huang 1982, Chomsky 1986, Takahashi 1993). Hyperbaton ignores it, as shown in (26a).

(26) a. de   se   ipsis   *et carminibus* edunt   [__
        about self.ABL.PL same.ABL.PL both poem.ABL.PL reveal.3PL

        et   cantibus]   'reveal about themselves in *both poems* and
        and song.ABL.PL   songs' (Cicero, *Tuscalanae Quaestiones* 4.71)

   b. *aqua*   restebat   [__ et   terra]
      water.NOM remained.3   and earth.NOM
      '*water* and earth remained' (Cicero, *De natura deorum* 2.66)

c. *naves*   interim   Caesaris   [onerariae
   ship.NOM.PL meanwhile Caesar.GEN   merchant.NOM.PL

   errabundae   __]   'meanwhile, Caesar's wandering
   wandering.NOM.PL   merchant *ships*' (*Bello Africano* 21.3)[4]

This case simultaneously violates the CSC. Nor, as shown in (26b), is hyperbaton sensitive to the Subject Island (Ross 1967), a special case of the Adjunct Condition if subjects are adjuncts (Kayne 1994). This also ignores the CSC. Additional cases are not hard to find: e.g. *Bello Civili* 1.14, 1.50, 1.67, *Bello Gallico* 2.35, and that in (26c), from Spevak (2010), across a subject and a complementiser.

3.4.4 *Insensitivity to freezing islands*. Syntax doesn't move something out of a constituent that has already been moved; moved constituents constitute 'freezing islands' (Wexler & Culicover 1980). Hyperbaton ignores freezing, as in (27).

(27) *tuas*   etiam [__ *Epiroticas*]   exspecto [__ litteras]
    your.ACC.PL also   Epirian.ACC.PL await.1   letter.ACC.PL
    'I also await *your* letters *from Epirus*' (Cicero, *ad Atticum* 5.20.9)

Separate fronting of *tuas* and *Epiroticas* would violate cyclicity; if they fronted together it would front a non-constituent.

3.5 Extremely local movement

Extremely local movement within an XP is generally banned ('anti-locality'; Grohmann 2002, Abels 2003, Kayne 2005). However, in (17) above, *domum reditiones spe*, the complement moves just to the left of the head. Extremely local movement is clearest when material lands between a head and its complement, as in (28). Here *impium* has been fronted out of a coordinate structure past the noun it modifies, *bellum*, but not past the preposition whose complement it is part of. The only syntactic position after *ad* and before *bellum* is [spec, NP], which is too local.

(28) [ad *impium*   [bellum [__ ac   nefarium]$_{AP}$]$_{NP}$]$_{PP}$
    to impious.ACC   war.ACC   and wicked.ACC
    'to an *impious* and wicked war' (Cicero, *in Catilinam* 1.33)

3.6 Extremely distant movement

Hyperbaton often moves prominent non-wh-material to the left of C, as in (29a).

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[4] Author disputed, but probably not Caesar.

(29) a. *de his   rebus   cum   [__] ageretur   apud
        of this.ABL.PL thing.ABL.PL when   discussed.3PASS with
        Caesarem   'when it was discussed with Caesar
        Caesar.ACC   *about these things*' (Caesar, *Civili Bello* 3.109)

   b. sin dormitet, ita dormitet, *servum   sese*   ut
      if sleep.3SUBJ so sleep.3SUBJ slavish.ACC himself.ACC that
      [cogitet   __]
       think.3SUBJ
      'if he should sleep, he should sleep in such a way that he thinks
       himself a slave' (Plautus, *Aulularia* 591)

   c. *huius*   quas   dem   [__ matri]
      her.GEN which.ACC.PL give.3SUBJ   mother.DAT
      'which I could give to *her* mother' (Plautus, *Asinaria* 725)

It can front direct and indirect objects, adjuncts and even small clauses, as
in (29b). Here the fronted material appears before C, well to the left of the
Topic and Focus positions usually posited in syntax (e.g. Rizzi 1997). This
is fairly common in early Latin (Laughton 1960: 3).

   Latin also moves material past relative pronouns in [spec, CP], as in
(29c). Syntactically, this would require multiple distinct positions to the
left of C.

3.7 Movement past a coordinator

Returning now to issues mentioned in our discussion of the CSC, we con-
sider movement past a coordinator. Coordinators generally occur between
their conjuncts, so it is surprising to see that the Latin clitics =*que* and =*ve*
never surface there. Instead, they surface somewhere after the first word in
the second conjunct, as in (30).

(30) vir   magni   ingenii   *summa*=que   [__ prudentia]
     man.NOM great.ABL talent.ABL superior.ABL=and   wisdom.ABL
     'a man of great talent and superior wisdom' (Cicero, *Legibus* 3.45)
     *vir magni ingenii=que summa prudentia

In [XP & YP], there is no position within YP that precedes &, yet this
is precisely where material has moved to. The same problem applies to a
lowering analysis: there is no position within YP for the coordinator
to move to.

   Movement of material past the clitic conjunctions =*que* and =*ve* is
slightly different from hyperbaton, because it doesn't necessarily involve
discourse prominence on the material that is fronted. Instead, the move-
ment is required by the coordinators themselves: these words cannot
occur first in their phonological phrase, they are items which Dover

(1960) calls postpositives. Some of them are phonological clitics (=*que*, =*ve*); some are not (*autem*).

   If the second conjunct consists of a single word, the coordinator appears after both conjuncts, as in (31).[5]

(31) oppida   vicos=que   [__]   'towns and villages'
       town.ACC.PL village.ACC.PL=and   (Caesar, *Bello Gallico* 1.28.3)
        *oppida=que vicos

We take it as obvious that this cannot be syntactic movement; it is then either rightward prosodic flip (Halpern 1995) or another instance of the type of leftward phonological movement we are considering here.

   In poetry (but never in prose) we find movement past non-clitic coordinators such as *et* 'and' and *sed* 'but', as in (32).

(32) *ipsa*   sed in somnis   inhumati   venit [__ imago]
       self.NOM but in sleep.ABL.PL unburied.GEN comes   ghost.NOM

       coniugis   'but in her sleep comes the ghost *itself* of her unburied
       spouse.GEN   spouse' (Virgil, *Aeneid* 1.353–4)

Examples like this can be multiplied from the *Aeneid* alone, but we will look only at a few.

(33) *impius*   ex   quo   [__ Tydides]   sed enim
       impious.NOM from when   Tydides.NOM but indeed

       scelerum=que inventor   Ulixes
       evils.GEN=and inventor.NOM Ulysses.NOM
       'but indeed from when *impious* Tydides and Ulysses, inventor of
        evils' (Virgil, *Aeneid* 2.163–4)

The conjunction in (33) is *sed*: the PP *ex quo* has been fronted past it, as has the NP *impius Tydides*. Note that *impius* has also been fronted past *ex quo*, so that *impius Tydides* is discontinuous; to make matters worse, *impius Tydides* is conjoined with *scelerum inventor Ulixes*.

   The lines in (34) show a number of the peculiarities of hyperbaton in a single passage. The first line involves fronting two adjectives (*duri, magno*) from distinct NPs past the sentential conjunction *sed*.

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[5] There are similar cases in Caesar, *Bello Gallico* 1.2.1 and Frontinus, *de Aquaeductu* 1.18.

(34) *duri*   *magno*   sed [__ amore]   [__ dolores]
    harsh.NOM.PL great.ABL but   love.ABL   agony.NOM.PL

    polluto,
    desecrated.ABL

    notum=que,   *furens*   quid   [__ femina]   possit,
    known.ACC=and raving.NOM what.ACC   woman.NOM can.3

    triste   per   [__ augurium]   Teucrorum   pectora
    sad.ACC through   foreboding.ACC Trojan.GEN.PL heart.ACC.PL

    ducunt
    lead.3PL

    'but the *harsh* agonies, with a *great* love desecrated and it being known
    what a *raving* woman can do, lead the Trojans' hearts through a *sad*
    foreboding' (Virgil, *Aeneid* 5.6–8)

There is no syntactic position to the left of *sed* that could be accessible to
material from the right conjunct; no-one has ever proposed topicalising or
focusing material by moving it to the end of the preceding clause. The
second line involves movement of the participle *furens* past the relative
pronoun *quid*, which should itself be in [spec, CP] if this is syntactic.
The third involves extremely local movement of *triste* past the preposition
per. None of this looks like syntax.

    We do not generally hold syntactic theory accountable for all the vaga-
ries of poetic word order, but the data above should give us pause: these
lines are all clearly serviceable and thus presumably not outside the
realms of UG. Although they are not part of Latin prose (our focus
here), they were produced and understood by Latin speakers, and thus
stand in need of some kind of analysis.

3.8 Invisibility at LF

Anaphors (reflexives and reciprocals) are generally preceded and c-
commanded by their antecedents, but hyperbaton ignores this, as in (35).

(35) ne *se$_i$* senatus$_i$ in acta   cuiusquam   obligaret [__]
    not self senate.NOM in act.ACC.PL someone.GEN bind.3
    'the senate should not bind *itself* to the acts of just any person'
    (Suetonius, *Tranquili vita Tiber* 67)

LF is thus blind to hyperbaton, not something we expect of syntactic
movement.[6]

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[6] Saito (1989) provides evidence that long-distance scrambling, argued to be syntac-
tic, is vacuous with respect to LF binding; note, however, that these 'radical recon-
struction' effects occur across the board for hyperbaton in Latin, whether it is local
or long-distance.

3.9 Partial movement

Fanselow & Lenertová ([2011](#)) point out that Czech and German allow a *subpart* of a focused constituent to be moved.[7] Specifically, these languages allow partial movement of just the leftmost accented part of the semantic focus. So to the German question meaning 'What did you do?', it is fine to answer with a discontinuous VP, where only the direct object is fronted, as in (36).

(36) *einen HAsen*   habe ich   gefangen   'I caught a *rabbit*.'
    a.ACC rabbit.ACC have I.NOM caught

Although the focus of the question is clearly on the whole VP, (36) has only a subpart of the focus fronted, with the focused verb remaining *in situ*. Fanselow & Lenertová argue that this makes little sense if the movement is driven by syntactic feature-checking, since we would then expect full fronting of the focused constituent rather than partial. They therefore reject analyses such as Rizzi's ([1997](#)) that have focus and topic positions in the syntax, and adopt Chomsky's ([2008](#)) view that there is no direct link between syntax and information structure.

Hyperbaton can be partial too, casting more doubt on its being syntactic: in what Devine & Stephens ([2006](#): 531ff) call postmodifier hyperbaton, for instance, the leftmost element (the adjective in (37)) is stranded *in situ*, but the entire XP is still generally focused.

(37) *legiones*   conscripsit [novas __], excepit   veteres
    legion.ACC.PL enlisted.3   new.ACC.PL took.over.3 old.ACC.PL
    'he enlisted new *legions*, and took over old ones'
    (Cicero, *Philippics* 11.27)

If Fanselow & Lenertová are correct, partial movement is fatal for a syntactic analysis based on feature checking or the like: whatever forces movement of an XP to the focus position should prohibit partial movement.

3.10 Focus and topic *in situ*

Fanselow & Lenertová also argue that focalisation and topicalisation *in situ* are incompatible with syntactic movement. German allows an unfocused subject to be moved while a focused object is left *in situ*. (38) is a good answer to 'What did you do?'.

(38) Ich   habe einen *HAsen*   gefangen   'I caught a *rabbit*.'
    I.NOM have a.ACC rabbit.ACC caught

They argue that an analysis based on feature checking cannot account for *in situ* focalisation or topicalisation. Latin allows *in situ* focus too, as in (39).

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[7] We thank an anonymous reviewer for directing us to this article.

(39) *non solum regem   sed regnum*   de   re publica sustulissem
non only   king.ACC but kingship.ACC from state.ABL   removed.1SUBJ
'I would have removed *not only the king but also the monarchy* from
the state' (Cicero, *Philippics* 2.34)

Devine & Stephens discuss a number of cases like this in which 'the strong focus does not move to the preverbal FocVP position but apparently stays in situ' (2006: 229; cf. p. 232).[8]

Thus we find three ways to focus something in Latin: move it, move part of it or move none of it. Only the first of these makes syntactic sense.

3.11 Superiority

Languages that allow only one wh-phrase to move require it to be the structurally higher one (Chomsky 1973), and languages that allow multiple cases of wh-movement within a clause generally require that the structurally higher one precede any structurally lower ones. This is known as 'superiority' (Chomsky 1973). Devine & Stephens (2006: 89) and Danckaert (2012: 244–253) note that superiority appears to hold for rare cases of multiple wh-movement in Latin, as in (40a), but also that Latin has a set of mostly homophonous indefinites, exemplified in (b) and (c), that need not obey superiority.

(40) a. ego *quid$_i$*   *cui$_j$*   debeam   [__]$_i$ [__]$_j$ scio
       I   what.ACC who.DAT owe.1SUBJ   know.1
       'I know *what* I owe *to whom*' (Seneca, *de Beneficiis* 4.32.4)

   b. si *cui$_j$*   *quid$_i$*   ille   promisit   [__]$_i$ [__]$_j$
      if someone.DAT something.ACC he.NOM promised.3PERF
      'if he promised *something to someone*' (Cicero, *Philippics* 1.17)

   c. ut   ne   *cui$_i$*   *quis*   noceat   [__]$_i$
      that not someone.DAT someone.NOM do.harm.1SUBJ
      'that *someone* not do harm *to someone*' (Cicero, *de Officiis* 1.20)

Though it appears from scant evidence such as (40a) that movement of wh-words may be sensitive to superiority, there is very little data to base a firm conclusion on. If it is assumed that wh-words respect superiority even when they function as indefinites, the last two cases are problematic for a syntactic analysis.

3.12 Split names

Hyperbaton can break up a proper name, as in (41) (Devine & Stephens 2006: 272ff).

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[8] Devine & Stephens (2006: 232) note that such cases could also result from string-vacuous movement, perhaps through scrambling to an argument position, though this raises a number of semantic issues.

(41) Marcus   *ad me* Brutus,   ut consueverat   cum Tito
Marcus.NOM to me Brutus.NOM as was.wont.3PLUP with Titus.ABL
Pomponio   venerat   [__]
Pomponius.ABL came.3PLUP
'Marcus Brutus had come *to me*, as he was wont, with Titus Pomponius'
(Cicero, *Brutus* 3.10)

Here the subject is interrupted by material (*ad me*) that has been fronted
from much lower in the clause. We know of no syntactic analysis of
proper names that includes a focus or topic position inside a name, so
this kind of movement seems especially difficult for syntax.[9]

(42) shows that it is also possible to move the first half of a name left-
wards (Devine & Stephens 2006: 272ff).

(42) ad *Castra*   exploranda   [__ Cornelia]
for Camp.ACC.PL exploring.ACC.PL   Cornelia.ACC.PL
'for exploring *Camp* Cornelia' (Caesar, *Bello Civili* 2.24)

This is surprising if the movement is syntactic, because names are gener-
ally treated as syntactic terminals (but see Bošković 2009).

The peculiar properties of hyperbaton we have just seen make syntactic
analyses difficult or impossible, given the usual limitations on how syntax
works. We turn now to a number of properties of hyperbaton that are sur-
prisingly phonological in character.

3.13 Movement of prosodic constituents

Lexical heads map onto prosodic words in the phonology, usually carrying
any preceding functional heads or following pronouns with them (Selkirk
1984, 1986). We have already seen a number of cases where a single lexical
head moves; each of these is a prosodic word, so the apparent movement of
a head in syntax can equally well be movement of a prosodic word in pho-
nology. We also saw simple and complex cases of apparent XP movement;
since XPs in syntax map onto phonological phrases in phonology, all of
these can also be seen as moving phonological phrases. When syntactic
heads and phrases are coextensive with prosodic words and phonological

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[9] Cal Watkins (personal communication) alerted us to the line in (i.a), attributed to
Ennius, where the noun *cerebrum* is split by the verb *comminuit*.

(i) a. saxo   cere *comminuit* brum
rock.ABL cere- smashed   -brum.ACC
'he *smashed* his brain with a rock' (Ennius, fragment 609)

b. per *mihi*   mirum   visum est
very- me.DAT -strange seen   is
'appeared very strange *to me*' (Cicero, *de Oratore* 1.214)

The case in (i.b), from Cicero's prose, may be related; here prefixed *permirum* (nor-
mally one word) is split by the insertion of *mihi*.

phrases, it is difficult to decide which has undergone movement: was a syntactic constituent moved or was it a phonological constituent?

  We showed above that many of the strings that are moved in hyperbaton are not syntactic constituents (§3.3). They are, however, prosodic constituents, either ω or φ. In the simplest case, nothing moves, as in (43a) (note that the preposition *in* is treated just as a foot and that it and the relative pronoun *qua* form a recursive ω, which itself forms a recursive ω with the following content word *re*).

(43) a. $((\text{in } (\text{qua})_\omega)_\omega$ $(\text{re})_\omega)_\omega$ virtus   militum
       in which.ABL matter.ABL bravery.NOM soldier.GEN.PL
       'in which matter the bravery of the soldiers'
       (Caesar, *Bello Gallico* 5.8)

   b. $(qua)_\omega$ $(\text{in}\_\_(\text{re})_\omega)_\omega$ Caesar   non solum
       which.ABL in   matter.ABL Caesar.NOM not only
       'in *which* matter Caesar not only' (Caesar, *Bello Gallico* 1.12)

In (43b) we see the same phrase undergoing hyperbaton: *qua* is fronted past the preposition, suggesting that it forms its own prosodic word separate from both *in* and $(re)_\omega$. If the PP *in qua re* were a simple ω with no recursion, it's hard to see how *qua* could be fronted without dragging the rest along. We assume that when *qua* is fronted in (b), *in* is forced into a recursive ω with what now follows, *re*. Fortson (2008: 112–117) provides evidence from metre that the preposition in such cases does indeed form a prosodic unit with the following word rather than the preceding word; for evidence that such *magna cum laude* constructions involve fronting (of *magna*) rather than postposing (of *cum*), see Fortson (2010).

  In many cases, the string that moves in hyperbaton is simply a function word followed by a content word, as in (44), where movement of *per Graecas* strands *sacerdotes*.

(44) $(per\,(Graecas)_\omega)_\omega$ curata   sunt   semper
     by Greek.ACC.PL carried.out.NOM.PL are.3PL always
     [__ sacerdotes]   'and are always carried out *by Greek* priestesses'
         priestess.ACC.PL   (Caesar, *Pro Balba* 55)

These provide some of the clearest cases for phonological movement, because the ω doesn't correspond to any syntactic constituent. This can involve more than one function word, as in (45).

(45) $((ex$ $(his)_\omega)_\omega$ $(omnibus)_\omega)_\omega$ iudicat $(\_\_ \text{rebus})_\varphi$
     from this.ABL.PL other.ABL.PL judges.3   thing.ABL.PL
     '*from all these other* things he forms a judgement'
     (Caesar, *Bello Gallico* 5.52)

Here the function words form a recursive ω, which itself forms a recursive ω with the following content word; and this maximal recursive ω is fronted

past the verb, stranding the head noun. If movement always involves constituents, it must be phonological constituents in such cases, since the syntactic constituency is [*ex* [*his* [*omnibus rebus*]]], where *ex his omnibus* is not a syntactic constituent of any kind.

Alternatively, the ω can be just a content word on its own, part of a larger φ, like *ceteris* in (46).

(46) cum (*ceteris*)$_\omega$ coronas   imposuerint   (__ victoribus)$_\varphi$
     when other.ABL.PL crown.ACC.PL put.on.3PL.PERF   victor.ABL.PL
     'when they've put crowns on the *other* victors'
     (Cicero, *ad Familiares* 5.12.8)

Movement of φ is also common: we have seen it already with multi-word XPs ((17), (19b), (29b)) and one-word XPs ((24a, c), (26b, c), (28), (29a)), and it occurs with fronted PPs (§3.15). When the entire complement is fronted, its prosodic size depends on whether it is lexical or not. If it is a non-lexical XP we assume that it is just a ω (recall that all words in Latin are subject to a $\mu\mu$ minimum): this includes many left-branch cases, subject and object pronouns, closed-class adverbs, and so on. If what is moved corresponds to a lexical NP, VP or AP, it is likely a φ, as we saw with subjects, direct objects, VPs, etc. In all such cases, it is of course difficult to know whether the moved constituent is syntactic (XP) or prosodic (ω, φ), and the decision must be made on other grounds: we have argued above that, for various reasons, many kinds of hyperbaton cannot be syntactic, so we assume here that it is generally phonological, and that what appear to be cases of XPs moved in the syntax are actually φ's moved in the phonology. Whether higher levels of the prosodic hierarchy ever move is something we do not address here.

Assuming that conjunctions, complementisers and (monosyllabic) prepositions are feet, not prosodic words (§2), we may say that phonological movement in Latin targets ω and φ but nothing smaller, just as syntactic movement generally targets X^0 and XP but nothing smaller.[10] We note, however, that this cannot be a general property of phonological movement, since Irish allows phonological movement of syllables (Bennett *et al*. 2016) and Classical Greek allows movement of monomoraic *ho* 'the (MASC.NOM. SG)' and *tá* 'the (NEUT.NOM.SG)' (Agbayani & Golston 2010b), but it does seem to be a property of phonological movement in Latin.

3.14 Second-position phenomena

Devine & Stephens (2006) consider a number of 'second-position' particles that bring about discontinuous constituency, including sentential connectives like *autem* and *=que*, as well as focusing particles like *quoque* 'also' and *quidem* 'even'. Since Wackernagel (1892), these have been treated separately from hyperbaton, in part because second-position particles *require*

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[10] We assume that apparent cases of X′ movement are actually XP movement, following Speas (1990) and Carnie (2010: 136ff).

movement, while focalisation and topicalisation merely *allow* it. We follow Agbayani & Golston (2010a, b) in treating both as phonological move-ment: as we have seen, hyperbaton is conditioned by focalisation and top-icalisation, while second-position placement is required by certain particles that may not be initial in a φ (see §3.7 above). In Dover's (1960) terminology, they are 'postpositive', subject to the condition in (47) in the postsyntactic phonology (Agbayani & Golston 2010a: 160).

(47) PostPos
    No postpositive is initial in its φ.

Thus *quidem* has scope over the entire PP *ex qua re* in (48), but it cannot be initial in its φ, so instead of **quidem ex qua re* we find the following.

(48) (qua)_ω   quidem (ex__ (re)_ω)_ω   hominum   multitudo
    which.ABL indeed   from thing.ABL man.GEN.PL multitude.NOM
    cognosci   potuit
    recognise.PASS.INF could.3
    'from *which* thing indeed a multitude of men could be recognised'
    (Caesar, *Bello Gallico* 5.42)

For Halpern (1995), Devine & Stephens (2006) and others, this kind of movement involves 'flipping' *quidem* and *qua*, or lowering *quidem* into the PP, all of it done after the syntax proper; *quidem* is left *in situ* and *qua* is moved to its left, using the same phonological movement we propose for hyperbaton. As evidence that this is the same type of move-ment found with hyperbaton, we note that it has the same insensitivity to islands and so on which is found with hyperbaton, as we will now see.

   Second-position sentential connectives like *enim* 'for', *autem* and *vero* 'as for' exemplify how similar second-position phenomena are to hyperbaton in their unsyntactic behaviour (see Devine & Stephens 2006: 266–277 for discussion and more examples). Note from the gloss in (49a) that *autem* has scope over the NP it sits within. It can also split a proper name (b), move a left branch (c), move something out of a coordinate structure (d) or move a prosodic word that isn't a syntactic constituent (e).

(49) a. *princeps* autem [__ civitatis]
        first.NOM but   citizenry.GEN
        'but *the first* of the citizens' (Cicero, *post reditum in Senatu* 4)
    b. *Publius*   autem [__ Vatinius]
        Publius.NOM but   Vatinius.NOM
        'but *Publius* Vatinius' (Cicero, *Philippics* 10.13)
    c. *eo*   autem [__ frumento]
        that.ABL but   grain.ABL
        'but with *that* grain' (Caesar, *Bello Gallico* 1.16

 d. *populo*   autem [__ et   Pompeio]
    people.ABL but   and Pompey.ABL
    'but from *the people* and Pompey' (Cicero, *ad Atticum* 1.19)

 e. *ex quattuor* autem [__ locis]
    of four.ABL but   division.ABL.PL
    'but *of the four* divisions' (Cicero, *de Officiis* 1.6)

All of this suggests that the placement of *autem* and similar words is dependent on phonology, either in whole or in part (see Devine & Stephens 2006: 275ff).

3.15 Hyperbaton blocked by homophony

Hyperbaton is blocked if it would bring together homophonous function words within a *ω*.[11] The blocking comes about when a PP headed by the preposition *cum* 'with' is fronted in a subordinate clause headed by the complementiser *cum* 'when'. We expect to find clauses that begin *cum cum* 'when with', but none occur, showing that the fronting is blocked. The argument is only interesting, of course, to the extent that the string *cum cum* would otherwise be expected, so this section will show that it should be common, based on the ubiquity of other complementisers and PPs.

   PPs are fronted quite regularly in Latin, not only in matrix but also in subordinate clauses. This results in complementiser + preposition strings like *cum ad* 'when to' or *ut cum* 'so that with', as in (50).

(50) ut   *cum L. Aemilio   Caeso*   Fabius   consul
     so that with L. Aemilius.ABL Caesus.ABL Fabius.NOM consul.NOM

     crearetur   [__]   'so that Fabius was made consul *with*
     made.3PASS.SUBJ   *L. Aemilius Caesus*' (Livy 42)

   To gauge how common this is, we searched for strings with *ut* + various prepositions and found that all combinations are attested in all but two authors (Frontinus has no *ut cum* and Sallust has no *ut ad*, probably due to their relatively small corpora), as shown in Table Ia. Crucially, none of the columns is underpopulated. The same goes for the complementiser *cum* 'when' in Table 1b, except when it is followed by the homophonous preposition *cum* 'with', in which case the number of occurrences drops to zero for every author. Put another way, we find nothing like (51a) anywhere in Latin.

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[11] Something similar has been discussed for Ancient Greek (Smyth 1920: §1162, Golston 1995), but not for Latin, as far as we know.

(a)

	ut in	ut ad	ut ab	ut ex	ut cum
Caesar	48	14	16	14	8
Cicero (letters)	80	85	31	22	24
Cicero (philosophy)	246	73	74	60	55
Cicero (speeches)	112	53	56	32	29
Frontinus	13	8	4	6	0
Livy	23	3	4	4	4
Pliny the Younger	40	4	10	10	5
Sallust	3	0	1	2	2
Seneca the Elder	19	10	5	5	4
Suetonius	19	13	8	8	5
Tacitus	41	10	2	6	4
Varro	144	6	65	21	9

(b)

	cum in	cum ad	cum ab	cum ex	cum cum
Caesar	41	31	22	11	0
Cicero (letters)	43	54	39	16	0
Cicero (philosophy)	136	55	57	52	0
Cicero (speeches)	128	38	54	31	0
Frontinus	14	6	12	7	0
Livy	13	7	3	0	0
Pliny the Younger	11	6	2	8	0
Sallust	2	3	2	1	0
Seneca the Elder	17	11	3	1	0
Suetonius	14	9	4	9	0
Tacitus	10	4	3	7	0
Varro	20	11	11	9	0

Table I
Number of occurrences of (a) *ut* 'so that' and (b) *cum* 'when'
followed by various prepositions in a number of prose authors.

(51) a. *cum *cum Phania*   loquerer   [__]
        when with Phania.ABL spoke.1IMPF.SUBJ
        'when I was speaking *with Phania*' [construct]
    b. cum loquerer   cum Phania
        when spoke.1IMPF.SUBJ with Phania.ABL
        'when I was speaking with Phania' (Cicero, *ad Familiares* 3.5.1)

Cases like (51b), where material appears between the complementiser *cum*
and the preposition *cum*, are attested. Thus there is no issue with a PP

headed by *cum* in a clause headed by *cum*; it is just that *cum* and *cum* cannot appear next to each other.

Since the two instances of *cum* in these cases are morphosyntactically distinct but phonologically identical, we assume that what keeps them from showing up next to each other is an instantiation of the OCP (Leben 1973). Similar bans on adjacent homophonous function words are found in French (Radford 1977), Ancient Greek (Golston 1995), Mandarin (Yip 1998), Dutch (Ackema 2001), Russian (Agbayani *et al.* 2011) and Ukrainian (Teliga 2011). The OCP should not block *syntactic* movement if syntax is phonology-free (Zwicky & Pullum 1986a, b), but it should block phonological movement, and does.[12]

3.16 Hyperbaton blocked by syllable count

Recall from *magna cum laude* constructions that material (*magna*) can be fronted past a preposition (*cum*). But there is a restriction against fronting all of the NP when the preposition is monosyllabic: constructions like **laude cum* 'with praise' are completely unattested in Latin prose.

Significantly, this order is possible with polysyllabic prepositions like *super*, e.g. *humum super* 'on (the) ground' (Tacitus, *Annales* 16.35), as discussed in Fortson (2010: 139).[13] The facts are matched by surprisingly similar data in contemporary Russian (Henderer 2010: 9) and Ukrainian (Teliga 2011: 21ff): a PP can only end in P if the P is polysyllabic. In all three languages, then, hyperbaton stranding a preposition is blocked if the P is monosyllabic, clearly a phonological restriction.

4 Analysis

We turn now to two existing analyses of hyperbaton in Latin, both of them syntactic, and to analyses of similar phenomena in other languages that might be extended to Latin. We show that these analyses all fail in one way or another to model hyperbaton in Latin (§4.1). We then propose an analysis based on phonological movement and prosodic recursion (§4.2).

4.1 Hyperbaton as syntactic movement

In their extensive study of Latin word order, Devine & Stephens (2006) propose that Latin has Topic and Focus projections above every XP, so that hyperbaton can move material to two distinct positions at the edge of any phrase:
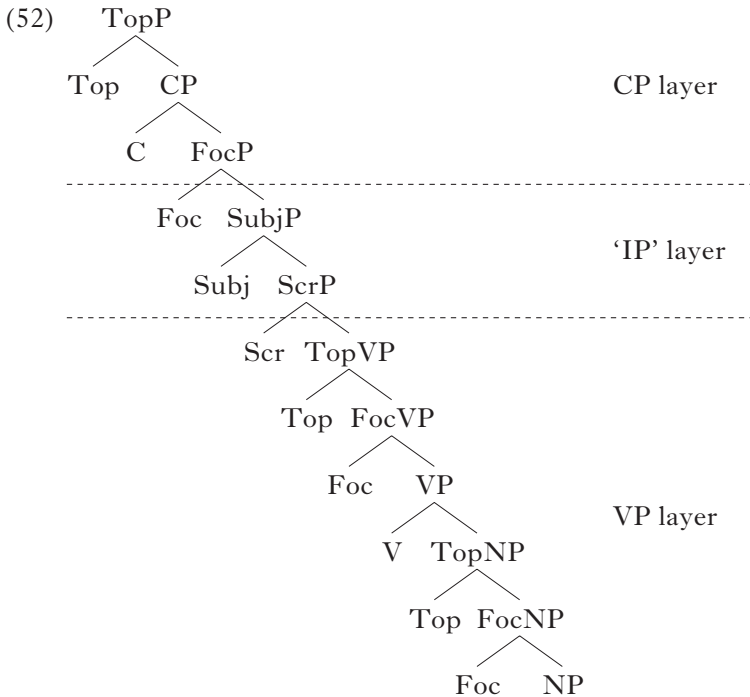
> One of the characteristic features of Latin syntax is that it has pragmatically defined functional projections superordinate to XP which are crosscategorial. We define these as FocXP and TopXP. FocXP is a

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[12] We agree with Zwicky & Pullum that syntax is phonology-free; we disagree that all movement is syntactic.

[13] We thank an anonymous reviewer for bringing this to our attention.

focus position local to the phrase XP, and TopicXP is a topic (subject) position local to the phrase XP. (2006: 25)

Their complete model is as in (52), with little structure above the complementiser but a large amount of additional structure below it (2006: 27–28).

(52)

```
        TopP
       /    \
     Top     CP                        CP layer
            /  \
           C    FocP
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
              Foc   SubjP
                   /    \              'IP' layer
                 Subj    ScrP
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                      Scr   TopVP
                           /    \
                         Top    FocVP
                               /    \
                             Foc     VP
                                    /  \             VP layer
                                   V    TopNP
                                       /    \
                                     Top    FocNP
                                           /    \
                                         Foc     NP
```

Although it isn't clear from (52), Devine & Stephens allow multiple Foc and Top positions for a single XP, e.g. $[[[[\ ]_{NP}]_{FocNP}]_{TopNP}]_{FocNP}]_{TopNP}$ (2006: 490). This proliferation of cross-categorical topic and focus projections solves the issue of category-neutrality discussed above (§3.1); if we allow heads to move to Foc and Top positions and phrases to move to their spec positions, the fact that hyperbaton targets both X^0 and XP (§3.2) can be handled as well, the issue of extremely local movement (§3.5) is also solved, since movement to Foc and Top positions falls outside of the minimal XP in which a phrase originates, and having a TopP above CP allows for fronting to the left of a complementiser (§3.6).

The many Foc and Top positions would seem to allow for many positions for foci and topics to occur in, and something like this richness does indeed occur. Consider *ea* in (53), which occurs *in situ* (a), or fronted past a verb (b), direct object (c), adverb + verb (d) or clause (e). The first case involves no movement, so if there is focus, it is focus *in situ*; on Devine & Stephens' analysis, the second presumably involves successive cyclic movement through [Foc, NP] to [Foc,VP].
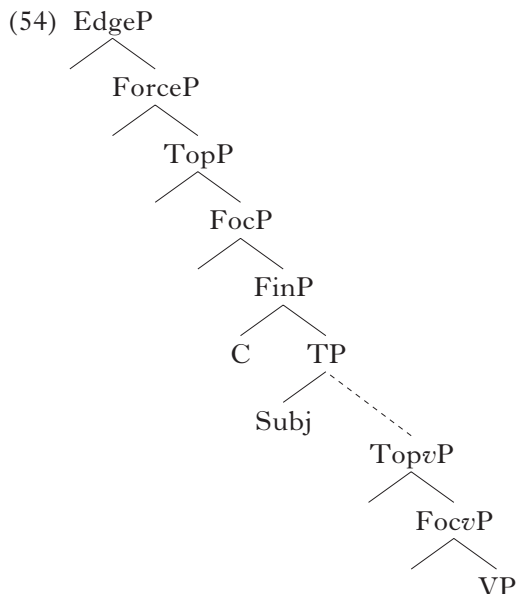
(53) a. iter   [*in ea*   *loca*]   facere   coepit
       march.ACC in that.ACC.PL area.ACC.PL direct.INF began.3
       'began to direct his march *into those areas*'
       (Caesar, *Bello Gallico* 4.7.1)

   b. qui   tum *ea*   tenebant   [__ loca]
      who.NOM.PL then that.ACC.PL occupied.3PL   area.ACC.PL
      'who then occupied *those* areas' (Livy 1.1.5)

   c. quin   *ea*   me [__ cura]   vehementissime
      that.not this.NOM me   trouble.NOM most.vehemently

      sollicitet   'that *this* trouble doesn't disturb me most
      disturb.3   vehemently' (Cicero, *ad Familiares* 2.16.5)

   d. *ea*   denique videtur [__ condicio]   impendere
      that.NOM finally   seem.3   condition.NOM be.imminent.INF
      'finally, *that* condition seems to be imminent'
      (Cicero, *ad Familiares* 5.18.1)

   e. *ea*   profugus ex Peleponneso   auctoritate
      that.ACC.PL exiled.NOM from Peleponnese.ABL authority.ABL

      magis quam imperio   [regebat   [__ loca]]
      more than power.ABL ruled.3IMPF   area.ACC.PL
      'exiled from the Peleponnese, he ruled *those* areas more by authority
      than power' (Livy 1.8)

But the other cases are problematic. (c) fronts the left branch (*ea*) of the subject past a pronominal object *me* that must itself have been fronted (it is the object of *sollicitet*); the problem is that Devine & Stephens have only a single position between the subject and the complementiser (filled by *quin* in (c)), so it's unclear where *ea* and *me* could be moved to. Similarly in (d): if *condicio* remains in the subject position, three things (*ea*, *denique* and *videtur*) have been fronted past the subject into just two positions, the TOP position above C and the FOC position below it. These problems might be solved with additional FOC and TOP projections, but that still leaves other problems: (c) and (d) ignore the Subject Condition and (b)–(e) the LBC. A difficult question for any analysis comes from comparing (b) and (e). If (b) satisfies whatever it is that drives fronting, why does (e) move *ea* so much further, not just past the verb (*regebat*), but all the way to the beginning of the clause?

   In any case, the additional structure does not address how hyperbaton moves strings that aren't syntactic constituents (§3.3); why it is blind to islands that usually block syntactic movement (§3.4) and is semantically vacuous at LF (§3.8); why it sometimes moves only part of a focused or topicalised constituent (§3.9) and is generally optional (§3.10); or how it can ignore the superiority condition (§3.11) and split apart names (§3.12). Although Devine & Stephens (2006) discuss the word order of both prose and poetry at length, the model above cannot account for movement to the left of a sentential conjunction in poetry (§3.7), as their FOC and TOP projections don't extend above CP. The tree above also fails to

cast any light on the phonological properties of hyperbaton: moved strings are either prosodic words or phonological phrases (§3.13); hyperbaton is required by 'second-position' particles (§3.14), and it is blocked when it would bring together adjacent homophones within a ω (§3.15) or would end a φ with less than a ω (§3.16). These things require a more active role of prosody than their core analysis admits.

Danckaert (2012) adds additional Foc and Top projections to those of Devine & Stephens, and in so doing captures some types of data for which their model fails. Specifically, Danckaert (2012: 280) proposes a rich left periphery above the complementiser (C in (54)).

(54) EdgeP
      └─ ForceP
         └─ TopP
            └─ FocP
               └─ FinP
                  ├─ C
                  └─ TP
                     ├─ Subj
                     └─ Top*v*P
                        └─ Foc*v*P
                           └─ VP

Danckaert's model allows multiple XPs before the complementiser, which the Devine & Stephens model doesn't, but it otherwise falls short in the same ways that the Devine & Stephens model does.[14] We move on now to models that were not originally designed for Latin.

The important issue of non-constituent fronting (§3.3) has received a great deal of attention in syntax, and we need to see if the proposals

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[14] Danckaert (2012) observes that certain cases of leftward movement past a complementiser in adverbial subordinate clauses are associated with presentational focus. His analysis places the fronted material in the [spec, FocP] position of an articulated syntactic left periphery to the left of the complementiser, expanding the 'cartographic' approach to clausal architecture of Rizzi (1997). But in Rizzi's system, FocP in the clausal left periphery is associated typically with identificational ('only' or 'exhaustive') focus, not with presentational (new information) focus. This makes the syntactic left periphery an unlikely position for presentational foci like those in Latin. Presentational focus is typically associated with immediate VP-external position within the clause, and appears to extend to extremely local fronting cross-categorially.

made there can be extended to cover the Latin facts. Non-constituent fronting is attested in some Slavic languages, particularly with 'split' PPs (Franks & Progovac 1994, Bašić 2004, Bošković 2005). An influential approach to such data is 'scattered deletion' (Ćavar & Fanselow 2000, Nunes 2004), which uses multiple feature-checking positions for syntactically moved constituents whose material is spelled out discontinuously at these different positions. Discontinuously spelling out material is determined by purportedly phonological conditions on the expression of copies in multiple syntactic checking positions. The conditions require upper copies to be spelled out discontinuously, and the lowest copy to be deleted.

Another approach base-generates the 'fronted' material and then lowers it back into thematic positions at LF (see Bošković & Takahashi 1998 on Japanese scrambling). Applied to Latin, it would address the semantic vacuity of hyperbaton at LF (§3.8), which is also a property of 'A-bar scrambling' in Japanese (Saito 1989). But it is unclear what the motivation for LF lowering would be in Latin, especially in the many cases where theta assignment is not relevant. For example, we have seen that quantifiers, demonstratives, adjectives and non-constituent strings like Dem+A or P+A are fronted. In these cases, there is no interpretive property that would require lowering into the regular constituent position. Perhaps most problematic for a base generation with lowering analysis are cases of non-constituent string fronting in PP-splitting cases (e.g. (3)), in which a preposition and part of the left branch of the complement NP are fronted. We don't see how or why P+A would be assembled together from a lexical array in the first place, then base-generated in a fronted position in syntax, then lowered at LF for interpretation.

Scattered deletion can thus capture non-constituent movement (§3.3), and base-generation can address semantic vacuity (§3.8). But these approaches fail to address category and bar-level neutrality (§3.1, §3.2), insensitivity to islands (§3.4), extremely local movement (§3.5), fronting to the left of a complementiser (§3.6) or conjunction (§3.7), partial and optional movement (§3.9, §3.10), insensitivity to the superiority condition (§3.11), name-splitting (§3.12) or any of the phonological aspects of hyperbaton (§3.13–§3.16).

4.2 Hyperbaton as phonological movement

We propose that hyperbaton in Latin moves discourse-prominent ω and φ within prosodic trees, with no direct reference to syntactic features, categories or constituents of any kind. Hyperbaton simply fronts a ω or φ to the left edge of some ω, φ or ι (intonational phrase). This accounts immediately for the irrelevance of syntax, as well as the surprising relevance of phonology to hyperbaton. In this section we lay out more generally what phonological movement looks like, following Agbayani & Golston (2010a) and Agbayani *et al*. (2015), an approach which is similar in most respects to that of Bennett *et al*. (2016).

The idea is that phonology is roughly like syntax, with structure, recursion and movement. Following most work in generative grammar, we assume that syntax moves words and phrases (X^0, XP) to head and specifier positions, is syntax-sensitive and phonology-free (Zwicky & Pullum 1986a, b). In parallel fashion, phonology moves words and phrases (ω, φ) to the edges of ω, φ and ι, and is syntax-free and phonology-sensitive. Syntax feeds phonology and is not co-present with it (*contra* Zec & Inkelas 1990), so that all syntactic representations and features are lost in the translation to prosodic structure. We assume a familiar Selkirkian prosodic interface and prosody, with three levels, ω, φ and ι, corresponding roughly to lexical heads, lexical phrases and clauses (Ito & Mester 2012, 2013), as in (55).

(55)	syntax	$[[\text{cum}_P, [\text{laude}_N, \text{magna}_A]_{NP}]_{PP}$	immediate dominance movement
	⇓		
	interface	$((\text{cum magna})_\omega (\text{laude})_\omega)_\varphi$	linear precedence prosodic tree
	⇓		
	phonology	$((\text{magna})_\omega (\text{cum laude})_\omega)_\varphi$	movement postlexical phonology

The prosodic tree results from what Büring (2013) calls narrow syntactic mapping (NSM), the edge-based alignment (Selkirk 1986), containment-based alignment (Truckenbrodt 1995) or match-based alignment (Selkirk 2009) that converts syntactic trees into the prosodic hierarchy. Büring identifies a second mapping as well:

> The second I will call EXTRANEOUS FEATURE MAPPING (EFM), by which I mean the way things like focus, topic, givenness, etc. are reflected in prosody. Unlike NSM, EFM relates to features and properties that probably would not have a life in syntax, were it not for their prosodic effects (2013: 860).

We take the initial interface between syntax and phonology to be the prosodic structure with nothing moved that wasn't moved syntactically. In languages without phonological movement, the constraints in (56) are high-ranked and keep everything *in situ* (cf. Agbayani & Golston 2010a: 158).

(56) a. STAY(Ft)
       No phonological foot moves.
    b. STAY(ω)
       No prosodic word moves.
    c. STAY(φ)
       No phonological phrase moves.

These STAY constraints play the role that NOSHIFT plays in Bennett *et al*. (2016). We hypothesise that STAY(Ft) is undominated in Latin, so nothing smaller than ω and φ moves; we treat conjunctions, complementisers and (monosyllabic) prepositions as feet in Latin, which keeps them from fronting and from occurring phrase-finally. To simplify the following presentation, we will not consider cases that front a foot, as this never occurs in the language.

We attribute hyperbaton to the constraint in (57) (Agbayani & Golston 2010a: 158), which fronts material that is focused, foregrounded, topicalised and the like.

(57) PROM-L

Prominent material occurs to the left of its interface position.

PROM-L forces discourse prominent material to front; we posit no dedicated topic or focus positions in the phonology, merely a tree with the usual ω's, φ's and ι's.[15] Anything that shows up somewhere to the left of where the syntax put it is focused or topicalised to some degree. A similar variability of positioning is found with pronoun postposing in Irish, where the relevant pronoun can remain *in situ* (if the vowel is lengthened), or move to the right edge of a following φ (Bennett *et al*. 2016). PROM-L may well have been triggered in Latin by the alignment of some kind of focal pitch accent (cf. Szendrői 2001 on Hungarian), but the orthography and known phonetics of Latin do not indicate either way whether such an accent was present.

We do know, however, that Latin allowed prominence to be marked *in situ* (53a), and that it allowed prominent material to be fronted a fairly short distance (53b, c) or to the very front of a clause (53d, e). We model the optionality of movement with a partially ordered grammar, following Reynolds (1994) and Anttila (1997). The relative ranking of PROM-L, STAY(ω) and STAY(φ) is not fixed on this account, so that the grammar sometimes has PROM-L outranking STAY(ω) and STAY(φ), yielding hyperbaton, and sometimes has STAY(ω) and STAY(φ) outranking PROM-L, yielding prominence *in situ*. We model the *in situ* type in (58), where moving *communem* (b) or *fructum* (c) fatally violates STAY(ω). We have italicised *communem* to show that it bears a general feature F common to focus and topicalisation.

(58) In situ *prominence*

$((\text{ad } (communem)_\omega)_\omega (\text{fructum})_\omega)_\varphi$	STAY(φ)	STAY(ω)	PROM-L
☞ a. $((\text{ad } (communem)_\omega)_\omega (\text{fructum})_\omega)_\varphi$			*
b. $((communem)_\omega (\text{ad } (\text{fructum})_\omega)_\omega)_\varphi$		*!	
c. $((\text{fructum})_\omega (\text{ad } (communem)_\omega)_\omega)_\varphi$		*!	*

[15] Constraints that directly align focus with the left (or right) edges of ω, φ and ι could work similarly; see Féry (2013).

The faithful candidate (a) wins because of high-ranked STAY(ω), which kills candidates (b) and (c), each of which fronts something. When these STAY constraints are dominated by PROM-L, as in (59), we get movement of the focused adjective, in *magna cum laude* fashion.

(59) *Hyperbaton*

((ad (*communem*)$_\omega$)$_\omega$ (fructum)$_\omega$)$_\varphi$	PROM-L	STAY(φ)	STAY(ω)
a. ((ad (*communem*)$_\omega$)$_\omega$ (fructum)$_\omega$)$_\varphi$	*!		
☞ b. ((*communem*)$_\omega$ (ad (fructum)$_\omega$)$_\omega$)$_\varphi$			*
c. ((fructum)$_\omega$ (ad (*communem*)$_\omega$)$_\omega$)$_\varphi$	*!		*

Candidate (a) again has nothing fronted, but the violation of PROM-L is now fatal. Similarly for (c), which leaves F-marked *communem in situ*, leaving (b) as the winner.

Far less commonly, Latin fronts the noun and strands the adjective, as in (60) (Devine & Stephens 2006: 572).

(60) *parte*   in alia   [__]   'on the other *side*'
     side.ABL on other.ABL   (Livy 26.46.2; app. crit.)

We attribute this to the noun being prominent rather than the adjective; from there the analysis in (61) is the same as it was for the *magna cum laude* type of case.

(61)

(((in (alia)$_\omega$)$_\omega$ (*parte*)$_\omega$)$_\varphi$	PROM-L	STAY(φ)	STAY(ω)
a. ((in (alia)$_\omega$)$_\omega$ (*parte*)$_\omega$)$_\varphi$	*!		
b. ((alia)$_\omega$ (in (*parte*)$_\omega$)$_\omega$)$_\varphi$	*!		*
☞ c. ((*parte*)$_\omega$ (in (alia)$_\omega$)$_\omega$)$_\varphi$			*

Why adjective fronting should be more common than hyperbaton of nouns is beyond the scope of this paper; we assume it is due to pragmatic considerations and just note here that when fronting of nouns does occur, everything proceeds as expected.

Recall that Latin forbids stranding a monosyllabic preposition in hyperbaton: *magna laude cum (§3.15). We propose that such prepositions cannot occur phrase-finally because they are prosodically feet and because Latin requires that φ's end in nothing smaller than a ω. Selkirk (1996: 199ff) notes the same prohibition for English, based on the inadmissibility of reduced prepositions in sentences like **Who did you do it* [fϑ]? and reduced auxiliaries like **This is what the problem's*. She proposes the constraint in (62).

(62) ALIGN-R(φ, ω)
     Every phonological phrase ends in a prosodic word.

English avoids violation of ALIGN-R(φ, ω) by promoting final function words to ω; we propose here that Latin avoids violation of ALIGN-R(φ, ω) by blocking hyperbaton which would put prosodically light function words in φ-final position. This links the lack of full hyperbaton in PPs to the lack of fronting a preposition: if prepositions are feet, they will be both too small to move and too small to strand phrase-finally. This also allows us a principled solution to why *mecum, tecum* and other pronoun + *cum* forms are allowed. They don't contain any lexical XP that would constitute a φ, and thus slide under the radar of the alignment constraint in (62). PPs with relative pronouns are allowed for the same reason: *quibus de* 'about which', *quos ad* 'towards which', etc., don't contain lexical material that constitutes a φ, and so are phrased as σ's that are not regulated by ALIGN-R(φ, ω).

Latin allows fronting that is less local than these cases, as we have seen. In (3) we saw a case where part of a PP fronts past a verb: *ad communem afferre fructum*. This is the result of the F-feature spreading to the maximal ω that contains it, so that *ad communem* is assigned F rather than just *communem*. From there the phonology precedes as before to front whatever is F-marked, as shown in (63).

(63)	$((afferre)_\omega\ (ad\ (communem)_\omega)_\omega\ (fructum)_\omega)_\varphi$	PROM-L	STAY(φ)	STAY(ω)
	a. $((afferre)_\omega\ (ad\ (communem)_\omega)_\omega\ (fructum)_\omega)_\varphi$	*!		
	b. $((communem)_\omega\ (afferre)_\omega\ (ad\ (fructum)_\omega)_\omega)_\varphi$	*!		*
☞	c. $((ad\ (communem)_\omega)_\omega\ (afferre)_\omega\ (fructum)_\omega)_\varphi$			*
	d. $((ad\ (communem)_\omega)_\omega\ (fructum)_\omega)_\varphi\ ((afferre)_\omega)_\varphi$			**!

Two candidates fatally fail to front focused material: (a) strands *ad communem* and (b) strands *ad*. The decision between the remaining (c) and (d) falls to STAY(ω), which is violated minimally by (c) and superfluously by (d), since *fructum* is moved but not F-marked. When the partially ordered grammar ranks STAY(φ) and STAY(ω) above PROM-L, the faithful candidate (a) wins, and we get prominence *in situ*. When the entire PP is F-marked, PROM-L fronts the whole thing.

It might seem that fronting past the verb in (63) is forced by the fact that *ad communem* is F-marked rather than just *communem*. If *ad communem* is to be fronted, after all, it has to occur to the left of something, which is minimally *afferre*. But there is data to show that Latin allows non-local fronting even when local fronting would suffice. Consider again fronted *magno* in *magno equidem cum dolore* in (11). *Magno* could also have been fronted minimally, just to the left of *cum*, resulting in a *magna cum laude* structure after *equidem*. This is reminiscent of phonological movement in Irish, which shifts a light pronoun rightward so it doesn't occur initially in its φ. Crucially, Irish can shift the pronoun to the end of the first phrase to its right, or the next, or the next, as in (64).

(64) *Pronoun postposing in Irish*

[V   DP   Pro   XP   YP   ZP]

In much the same way, material can be fronted in Latin just a short distance or further to the left, as we saw in (54).

The avoidance of *cum cum* (§3.15) is captured by the constraint *Echo in (65) (Yip 1998), at the level of the recursive ω in Latin.

(65) *Echo
      No phonologically identical ω's occur within a ω.

The ω-within-ω formulation makes *Echo applicable only to homophonous function words, which are recursively embedded into ω's formed around lexical items, nouns, verbs and adjectives. Thus *Echo doesn't exclude *Call a spade a spade* or the like, since each occurrence of *a spade* is its own prosodic word: $((kɔl)_\omega(ə\ speɪd_\omega)_\omega\ ə\ speɪd_\omega)_\varphi$. Nor does it bar the many compound function words like *quisquis* 'whoever' or *quemquem* 'whomever', even if they form recursive ω's, e.g. $((k^wis)_\omega(k^wis)_\omega)_\omega$. Such words are created by compounding in the lexicon, which has its own constraint-ranking, not by hyperbaton in the postsyntactic phonology.

Our analysis of phonological movement is simple, because the prosodic trees within which the movement takes places are simple. An embedded ω can move to the left of the closest ω (66a), or further past the next-closest ω (b).

(66) a. ($)_\varphi$
        $(equidem)_\omega$ $(cum(magno)_\omega)_\omega$ $(dolore)_\omega$

     b. ($)_\varphi$
        $(equidem)_\omega$ $(cum(magno)_\omega)_\omega$ $(dolore)_\omega$

As in Irish, the distance moved seems to be optional, though further study should be done to confirm this. Following Selkirk (1995), we assume that F-marking on a complement like *magno* licenses F-marking on the head that selects it (*cum*), so that the head and its complement can be marked if the complement is. This is what lies behind fronting not just part of the PP, but the whole thing, as in (67).

(67) ($)_\varphi$
     $(equidem)_\omega$ $(cum\ (magno)_\omega)_\omega$ $(dolore)_\omega$

In her account of similar phenomena in Ukrainian, Teliga (2011) points out that such movement is not structure-preserving: it does not move a ω to an empty ω-position. Rather, the ω is simply shunted leftwards, where it sits at the same level of structure it occupied before it moved.

Phonological movement is meant to occur in a bracketed grid or its arboreal equivalent, not in a syntactic tree: we assume that the syntax–phonology interface transforms syntactic structure into prosodic structure once and for all (Selkirk 1986), and that once prosodic structure is present, syntactic structure is unavailable and never directly referred to by any phonological process.

In this way our notion of phonological movement differs drastically from the ill-named 'movement-at-PF', in which syntactic constituents move in a syntactic tree (sometimes for phonological reasons), but late in the derivation and without LF consequences. The notion that syntactic structure persists into 'Phonetic Form' is incoherent in our view. We reject the notion of PF entirely, and posit no components in the grammar other than a phonology-blind syntax and a syntax-blind phonology. Under the present proposal, morphology and syntax play no role in phonological movement, unlike PF-movement analyses such as Kidwai 1999 (for XP scrambling) and Embick & Noyer 2001 (for morphosyntactic processes). Phonological movement as we understand it takes place entirely in the phonological component, and has no effect whatsoever on syntax.

The complete irrelevance of syntax to hyperbaton follows immediately from our analysis: hyperbaton is blind to syntactic categories (§3.1), syntactic levels (§3.2), syntactic constituency (§3.3), syntactic islands (§3.4), locality (§3.5), binding (§3.8), superiority (§3.11) and proper names (§3.12) because it takes place in the phonology, where such things are undefined. Hyperbaton past a complementiser (§3.6) is just movement to the left edge of ι. Thus the clause-boundedness of hyperbaton can be captured without reference to syntax: it follows from the fact that a clause is wrapped inside an ι and that hyperbaton is bounded by the top node of the prosodic hierarchy, ι.

We have seen that prosodic recursion plays a crucial part in this as well. The bizarre fronting past a sentential coordinator in metre (§3.7) might also be better understood with the help of prosodic recursion. A sentential coordinator like *and* or *but* is incorporated into the following clause rather than the preceding clause in Latin, just as coordinators conjoining XPs go with the rightmost XP prosodically. Presumably this gives us something like $(\& \text{ (CLAUSE)}_\iota)_\iota$, with recursion of ι. In prose, hyperbaton can front material to the left of the inner ι, but no further (unless the & is a clitic, in which case fronting *must* pass it). In metre, hyperbaton can front to the outer ι, presumably because the metre wants as few prosodic breaks as possible within the line. This squeezing of prosody in metre might be what allows for fronting past (non-clitic) sentential conjunctions.

The fact that hyperbaton allows both partial and full movement of focused and topicalised constituents (§3.9) is unremarkable from a phonological perspective. We saw above that hyperbaton can select the minimal prosodic word $(\text{magno})_\omega$ in the PP $((\text{cum } (\text{magno})_\omega)_\omega (\text{dolore})_\omega)_\varphi$, and move it minimally to yield $((\text{magno})_\omega (\text{cum } (\text{dolore})_\omega)_\omega)_\varphi$ (66a), or further, to yield something like (66b). But hyperbaton can also select the next

largest ω, as it does in (67) and phonologically pied-pipe the preposition with the adjective. Or it can select the entire φ, and front the PP in its entirety, as we saw in (29a) or the many cases of PP-fronting in §3.15, where it is blocked by the OCP. This is presumably related to the fact that F-marking can project from the head of a phrase to the phrase itself, and from an internal argument of a phrase to the head that selects it (e.g. Selkirk 1995: 553ff).

The optionality of hyperbaton (§3.10) is also easily modelled in the phonology, as we saw in §4.2. We have no numerical data for how common fronting is, so we cannot currently decide among the various formal approaches to variation in the literature (see Anttila 2012). The relevant point at present is that this kind of variation is common in phonology and amenable to analysis, but rare and dubious in syntax.

The surprising relevance of phonology to hyperbaton also follows from our analysis: hyperbaton moves ω and φ (§3.12) because those are the constituents available to it in phonology, phonological movement is required by 'second-position' particles because those particles have suffix-like requirements which block them from occurring phrase-initially (§3.13) and hyperbaton is sensitive to the OCP (§3.14) because that is a phonological issue and hyperbaton is a phonological process.

5 Conclusion

We have argued that hyperbaton in Latin is a case of PHONOLOGICAL MOVEMENT, a species of movement that is strictly prosodic, in that it moves prosodic constituents to the edges of other prosodic constituents. Because it applies entirely in the phonological component of the grammar, it is sensitive to prosodic constituency, *ECHO, prosodic alignment and the like, but insensitive to syntactic constituency, island conditions, syntactic category and bar-level. Though it is sensitive to discourse prominence, it ignores LF issues like binding and scope. Hyperbaton is thus movement that is entirely syntax-free. This strongly suggests that syntax and phonology operate in different spheres, such that syntactic alternations have no phonological conditions, and phonological alternations have no syntactic conditions. As such, phenomena that require reference across the syntax–phonology divide cannot exist: any apparently syntactic movement that refers to phonology must be phonological movement, and any phonological alternation that apparently refers to a syntactic constituent must in fact refer to its phonological double, e.g. φ.

The possibility of phonological movement opens up an intriguing parallelism between phonology and syntax that has, until recently, been largely unexplored. The diagnostics for phonological movement presented in this paper may be employed to uncover other cases of post-syntactic phonological movement cross-linguistically.

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