María Mare*

# Issues on word formation. The case of Latin *circum*

**Abstract:** This paper focuses on the characteristics of *circum*'s prefixation in Latin taking into account the properties of this item in different syntactic contexts and its combination with transitive and intransitive base verbs. The analysis follows a non-lexicalist framework –Distributed Morphology (Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In K. Hale & S. Keyser (eds.), *The view from building 20*, 111–176. Cambridge, MA: MIT Press), specifically Acedo-Matellán's (Acedo-Matellán, Víctor. 2016. *The morphosyntax of transitions. A case study in Latin and other languages*. Oxford: Oxford University Press) approach–, which is particularly relevant to relate the prefix to its homophonic preposition and adverb. Thus, we assume that this prefix is a Root related to Place in the main structure, not a preposition or an adverb incorporated to a verbal configuration. In fact, we argue that the distinction among the prefix, the preposition and the adverb derives from the merger of the same Root √CIRCUM in different structures. Along this discussion, it is shown that *circum*'s prefixation has different consequences for the argument structure depending on the location of √CIRCUM in the structure: when it adds the nuance of manner, its presence does not trigger the addition of new arguments; nevertheless, when it is interpreted with reference to final location, unexpected accusative objects frequently appear with the prefixed verb. We argue that these unexpected objects do not end up showing accusative case because of *circum*'s case assignment, but because of the DP position in the main structure. For that reason, the DPs involved in the structure of the prefixed verb behave like any other argumental DP and they are subject to the same syntactic operations (ellipsis, demotion, and so on).

**Keywords:** argument structure, distributed morphology, Latin, Place, prefixed verbs

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# 1 Introduction

The subject-matter of the present paper is the study of the Latin prefix *circum* 'around' and the consequences that its attachment has for the original verb argument structure and meaning. Latin prefixation with *circum* is in general transparent, as it maintains the nuance associated with the corresponding preposition. In fact, the result of *circum*'s prefixation is the addition of its meaning to the base: *eo* 'to go' > *circumeo* 'to go around'; *caedo* 'to cut' > *circumcido* 'to cut around', and so on.[1] This relationship between prefixes and homophonic prepositions has been highlighted not only for Latin (see Lehmann 1983) but also for different languages (see Asbury 2008; Biskup 2007; among many others). Moreover, changes in the base verb argument structure have been related to the selection properties of prefixed prepositions (Lehmann 1983). In revising these changes, it is worth mentioning that *circum* is also a Latin adverb. This means that, contrary to *circum* preposition, the adverb does not need a complement, and instead of referring to a final location, it can introduce a manner of movement.

The aim of this study is to offer an account of the behavior of the prefix *circum-*, in order to understand its particular properties and its relationship with the corresponding homophonic preposition and adverb. At this point, our discussion focuses on three main questions: (1) are prefixes and prepositions/adverbs different morphemes or are they the same element in a particular structure?, (2) if we postulate a unique morpheme, which are the processes involved in the prefixation of this element?, and (3) which consequences, if any, does *circum-*'s prefixation have in the argument structure of the base verb?

The review of the data leads us to propose the structures in (1) and (2). These structures, which are discussed in detail in Section 3, allow us to account for the distinction among the adverb, the preposition and the prefix. Specifically, we show that *circum* as a prefix can be analyzed as both (1) and (2), depending on the syntactic-semantic properties of the complete predication.



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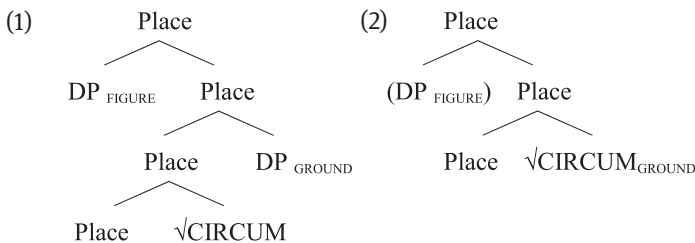
1 All definitions taken from the *Oxford Latin Dictionary* (2012).

The realization of *circum* as an independent word (an adverb or a preposition) or as a prefix depends on the configuration in which (1)/(2) merge. Following Acedo-Matellán (2016), we assume that prefixation can be the result of post-syntactic head moment triggered by specific structures, in which *circum* is inside the *v*P. Nevertheless, we also present cases, in which the prefix *circum* seems to be outside the *v*P and, consequently, it does not affect the argumental and the aspectual properties of the base-verb.

In order to illustrate the peculiarities of *circum-*, we have taken into account texts in prose by Classical Latin authors. Regarding the period, we adopt a *broad* sense of the term Classical Latin, following Crocco Gàleas & Iacobini (1993), because of the relative homogeneity owing to the written norm. For that reason, the period observed spans from first century BC to second century AD. Unless otherwise stated, the data as well as the translations have been extracted from *Perseus Digital Library Project*. In Section 2.2 the corpus is described in detail.

The paper is divided as follows. Section 2 presents the general behavior of *circum* (as a prefix, adverb and preposition). Specifically, we focus on the identification of argument selection patterns. In Section 3, we develop the theoretical framework of this study, which is based on Acedo-Matellán (2016) and Acedo-Matellán and Mateu (2013)'s neo-constructionist approach. Section 4 is devoted to discussing the configurations related to the different patterns described in Section 2. Final remarks and conclusions are summarized in Section 5.

# 2 Prefixes, prepositions and adverbs. Methodology and empirical description

When studying Latin prefixation, Lehmann (1983) is an unavoidable reference. The author discusses the status of prefixes and prepositions as different items and refers to them as elements that relate a *locatum* with a *relatum* ('local relators'). The *locatum* is something –a person, a thing, an event– whose position in space/time is described by the construction, while the *relatum* is the item in respect to which the *locatum* is localized. Locative adverbs are also relators but they are classified as 'adverbs' because the *relatum* is omitted. These relations are equivalent to Talmy's (2000 and previous work) Figure and Ground (*locatum* and *relatum*, respectively).[2] In the following description, Talmy's terminology is used.

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**2** In Talmy's words: "The Figure is a moving or conceptually movable entity whose path, site, or orientation is conceived of as a variable, the particular value of which is the relevant issue.

## 2.1 General facts

There are two regular properties about *circum*'s prefixation, which are always highlighted in grammars. The first one is that the coocurrence of *circum-* prefix and *circum* preposition/adverb is not attested (cf. Lehmann 1983: 152, among others),[3] in contrast to what occurs with other prepositional prefixes. The second characteristic is that c*ircum-* presents the same meaning as the corresponding preposition and adverb, i.e., *around*.[4] This means that the resulting prefixed verb has a compositional interpretation. All in all, the distinction among these three categories – *circum* prefix, preposition and adverb– follows from their morpho-syntactic behavior, but not from a difference in meaning.

When comparing *circum* preposition and *circum* adverb, we note that the former always has an accusative object (3a), while the latter appears alone (3b).[5]

(3)  a. quae              circum Aquileia-m        hiemabant
        REL.F.NOM.PL  around Aquileia-ACC.SG  winter.IPFV.IND.3PL.
        'which were wintering around Aquileia'
        (Caes. *Gall*. 1.10)
     b. ne    stantes                    circum  suis            umbris
        NEG  be.PTCP.PRS.NOM.PL  around  POSS.ABL.PL  shadow.ABL.PL
        obscurent              lucem
        darken.PRS.SBJV.3PL   light.ACC.SG
        'so that the shadows of those who stand round it may not obstruct the light'
        (Vitr. 5.10)

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The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's path, site, or orientation is characterized." (2000: 312).

**3** However, we have found an example of duplication in Cato (*Agr*. 115.2): *Tris fasciculos veratri* **circum***ponito* circum *radices* "place three bundles of black hellebore around the roots" (Lacus Curtius's translation). There are also examples with the preposition *circa* 'about' (Liv. 31.30).

**4** Revuelta-Puigdollers (2016: 141) points out that *circum*, as well as the English preposition *around*, "can express a movement either along the external periphery of an entity or within its internal limits". In this study, the author analyzes *circum* as a prefix and he points out that beyond the prototypical interpretations of this item (in circles, around), there are non-prototypical interpretations, such as successive movement, not necessarily circular: *omnes portas contionabundus ipse imperator circumiit* 'The general visited all the gates to harangue his men' (Liv. 40, 27, 8, 2). In this example, the general does not surround the gates, but he moves from one gate to another (2016: 132–133). It is noteworthy that this interpretation is not only related to the prefix, but also to *circum* as a preposition: *ducebat eos circum civitates* 'he took them with him around the different cities' (Cic. *Ver*. 2.3.65). This means that they were lead from one city to another.

**5** We use a morpheme-by-morpheme gloss just when it is relevant for our discussion. Otherwise, we add the morphological information without segmentation.

We would like to stress that although Latin accepts different kinds of ellipsis, the elision of the prepositional complement is not possible in this language. For that reason, (3b) is said to present an adverbial configuration in which the Ground is omitted, but, as the English translation shows, it is recoverable from the previous context. This notwithstanding, adverbial *circum* is not always equivalent to the prepositional item without its Ground, but can also be interpreted as a manner of staying/moving, as in the following example.

(4)  ut       intercolumnii            latitudinis       intervallum
     CONJ  intercolumnation.GEN.SG  breadth.GEN.SG  interval.NOM.SG
     sit                a    parietibus  circum  ad  extremos
     be.PRS.SVJB.3SG  from  wall.ABL.PL  around  to  extreme.ACC.PL
     ordines       columnarum
     line.ACC.PL  columns.GEN.PL
     'as to leave a space, the width of an intercolumnation, all round between
     the walls and the rows of the columns on the outside'
     (Vitr. 3.2)

In the case of the prefix, it is possible to find an explicit Ground related to *circum* –the accusative object *eam* (5a), an implicit (but recoverable) Ground (5b), and the addition of manner of stay/movement (5c), as in (4). In sum, the prefix seems to offer the same options as the preposition and the adverb. We will revise these examples in detail in Sections 3 and 4.

(5)  a. nunc  **eam**  (Antiochiam)  circum-fluunt                  Meander
        now   DEM.ACC.SG           around-flow.PRS.IND.3PL  Meander.NOM
        et    Orsinus
        and   Orsinus.NOM
        'now the Meander and the Orsinus flow around it'
        (Plin. *Nat*. 5.108)
     b. ita  multi          circum-stant (...)
        so   many.NOM.PL   around-stay.PRS.IND.3PL
        'he (Octavius) is surrounded by such a number of people'
        (Cic. *Att*. 14.12.2)
     c. si  nubes          **solem**      circum-cludent
        if  cloud.NOM.PL  sun.ACC.SG  around-close.FUT.IND.3PL
        'if clouds form a ring round the sun'
        (Plin. *Nat*. 18.119)

Examples in (5) demonstrate the relationship of the prefix with the preposition and with the adverb, not only in meaning but also in argument selection. According to Lehmann, the argument structure of the verb and the argument structure of the prefix are superimposed. He proposes three possibilities for one of the arguments of the prefix: (I) it may be added to the argument of the basic verb; (II) it may be lost in prefixation; and (III) it may be identified with one of the arguments of the basic verb. In the following subsections, we present our corpus and we revise *circum-* data taking into consideration Lehmann's observations.

## 2.2 Our corpus

In the introduction we referred to the period of time our corpus belongs to (first century BC – second century AD) and also to the fact that we predominantly take into account texts in prose. From that corpus, we selected eighteen verbs prefixed by *circum-*. As shown in Table 1, they are divided according to their base verb transitive properties. In the left column, there are base verbs that select an accusative argument only and base verbs that also present a dative argument, such as *ago, do, fero* and *mitto*.

**Table 1:** List of verbs.

| Transitive base verbs | Intransitive base verbs |
|---|---|
| Circumago > *ago* 'to move sthg' | Circumcurro > *curro* 'to run' |
| Circumcido > *caedo* 'to cut sthg' | Circumequito > *equito* 'to ride' |
| Circumcludo > *claudo* 'to close sthg' | Circumfluo > *fluo* 'to float' |
| Circumdo > *do* 'to give sthg to sbd' | Circumgradior > *gradior* 'to walk' |
| Circumduco > *duco* 'to lead sthg/sbd' | Circumsisto > *sisto* 'to stay' |
| Circumfero > *fero* 'to carry sthg/sbd' | Circumsono > *sono* 'to sound' |
| Circumiaceo > *iaceo* 'to place sthg' | Circumsto > *sto* 'to stay' |
| Circummitto > *mitto* 'to send sthg to sbd' | Circumvenio > *venio* 'to come' |
| Circumvolvo > *volvo* 'to revolve sthg' | Circumvolo > *volo* 'to fly' |

For these eighteen verbs we have inquired into their argument selection and we have searched for passive sentences in order to discuss some traditional descriptions regarding the behavior of prefixed verbs. In the previous section, we mentioned that *circum-*'s prefixation could result in the introduction of an accusative argument related to *circum-* (example 5a). According to this, we could expect that *circum-*'s prefixation would lead to a double accusative pattern

when the base verb is transitive. In fact, grammars and dictionaries mention the double accusative construction for these verbs and exemplify this pattern with the passive form plus an accusative argument.

A final remark on the corpus is needed. As it is pointed out in the *Oxford Latin Dictionary, circum* can appear as an independent word in compounds, so it is not always easy to distinguish the prefix from the adverb or from the preposition, the latter being frequently placed after its accusative complement (especially in poetry). For that reason, we exemplified the adverbial and the prepositional uses with sentences in which *circum* is not adjacent to the verb.

## 2.3 Remarks on argument structure

Dictionaries and grammars (Bassols de Climent 1956; Ernout and Thomas 1953; Woodcock 1971; Allen and Greenough 1903; Kühner and Stegmann 1912) observe that a verb becomes transitive when it is prefixed by *circum*. This notwithstanding, the data shows a more complex panorama, which is particularly relevant to the discussion about the status of the prefix, i.e., whether it is related to the adverb or to the preposition, and how relevant this word-class distinction is. Furthermore, the analysis of these prefixed verbs argumental properties allows us to revise the occurrence of unselected object constructions (Mateu 2002; Acedo-Matellán and Mateu 2013 and the references therein), whose existence is an interesting argument for *constructionist* approaches to argument structure, as we will show in Section 3.

At the end of Section 2.1, we reviewed Lehmann's possibilities for prefixed verb arguments. Briefly, the prefix's Ground (I) may be added to the base verb argument structure; (II) it may be lost or (III) it may be identified with another argument. This distinction is not totally clear, at least for *circum*'s prefixation. As we have just mentioned, *circum*'s Ground can be explicit or implicit (but recoverable) in the new verb. Examples in (6) show this contrast. In (6a) there is an overt accusative argument (*senatum* 'the Senate'), which is clearly related to *circum*, the base verb being intransitive. Meanwhile, in (6b) the resulting verb presents a silent object, recoverable from the discursive context: *milites* 'the soldiers', in this case.

(6)   *Circumsto > circum + sto* 'to stand' int.: to stand around
   a. Ceteri-que          fortissimi          cives,          qui
      other.NOM.PL-and  virtuous.NOM.PL  citizen.NOM.PL,  REL.NOM.PL
      circum-stant                  **senatu-m**
      around-stay.PRS.IND.3PL  Senate-ACC.SG

'and the other virtuous citizens who are now surrounding the Senate'
(Cic. *Catil*. 1.8.21)

b. Morini (...)       primo  non  ita  magno      suorum
   Morini.NOM.PL  first   no   so   big.ABL.SG  POSS.GEN.PL

   numero            circum-steterunt
   number.ABL.PL  around-stand.PRF.IND.3PL

   'the Morini (...) at first surrounded them with a small number of men'[6]
   (Caes. *Gall*. 4.37)

How could (6b) be analyzed under Lehmann's claim? Is it a case of (I), i.e.,
*circum*'s Ground is added but not pronounced, or is it an instance of (II), i.e.,
*circum*'s Ground is lost? This case is particularly problematic, because its use
depends on certain assumptions about the status of the prefix and on what we
consider to be "the loss of an argument". Lehmann (150–151) highlights some
particularities of that possibility and concludes that "most prefixes are like
adverbs, and unlike prepositions, in that they need not be rectional, but may
be deictic as to their *relatum* [Ground]" (1983: 151). Nevertheless, when compar-
ing (6b) with (7), it is not easy to conclude that both are examples of the Ground
loss in Lehmann's terms In (6b) the Ground is recoverable, while in (7) any
Ground can be recovered. Instead, *circum*- seems to refer to a manner of flying
(in circles), being the locative adverb *eodem* 'in the same place', neither related
to the verb nor to the prefix.[7]

(7)  donec  una            circum-volet              eodem
     till    one.NOM.SG  around-fly.PRS.SBJV.3SG  in.the.same.place
     'till one bee flies round'[8] (Plin. *Nat*. 11.9)

Furthermore, it is not easy to recognize clear examples of the configuration (III),
which must be tested with base transitive verbs. The sentence in (8) could be a
prototypical example of this pattern, *cellam* 'cell' being the internal argument of
the base verb *claudo* 'to close' and the Ground of *circum*-. However, the

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**6** W. A. McDevitte's translation (*Perseus Project*).

**7** We also found an instance of *circumsto* in which any object can be recoverable and it is
interpreted as a manner of staying:

Circum-stant                      properi          aurigae [Verg. A. 12, 85]
Around-stand.PRS.IND0.3PL  nimble.NOM.PL  charioteer.NOM.PL
'The nimble charioteers stood by' (T. Williams's translation. Perseus Project)

**8** H. Rackham's translation, Loeb *Classical Library*.

interpretation as a manner of closing is also possible and in Vitruvius' example it is the correct one.

(8)  antas (...)        qui            **cellam**        circum-cludunt
     anta.ACC.PL   REL.NOM.PL   cell.ACC.SG   around-close.PRES.IND.3PL
     'antae (...) which enclose the cell'
     (Vitr. 3.2)

In addition, the following example presents the verb *circumcido* (*circum-caedo*) 'to cut around'. In this case, *circum-* seems to modify the event (*caedo caespites* 'to cut the grass') and the internal argument (*caespites*) is not the Ground of *circum*, but of *caedo*.

(9)  gladiis          **caespites**       circum-cidere... nitebantur
     sword.ABL.PL   grass.ACC.PL   around-cut.INF   force-IPFV.IND.PASS.3PL
     'they were striving to cut the turf with their swords'
     (Caes. *Gall*. 5.42)

Similarly, when comparing (10) with (11), we observe that the base verb and the prefixed verb show almost the same argument structure, *circum-* adding a manner of movement.[9] In fact, in (10) as well as in (11) the prototypical arguments of the base verb *duco* 'to lead' are recognized: an internal object in accusative case and an accusative noun of path or a prepositional phrase of path.

(10) *in fines            Suessionum        **exercitum**      duxit*
     in  territory.ACC.PL  Suession.GEN.PL  army.ACC.SG  lead.PRF.IND.3SG
     '(Caesar) led his army into the territories of Suessiones'
     (Caes. *Gall*. 2.12)

(11) ut  *per       colles*        circum-ducat        **equites**
     that  through  hill.ACC.PL  circum-lead.PRS.3SG  rider.ACC.3PL
     (he ordered Laelius) 'to lead the cavalry round by the hills as secretly as possible'[10]
     (Liv. 28.33)

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**9** Gaffiot (1934)'s dictionary presents this example when defining *circumduco* as *conduire en cercle* 'to lead in circles'. He differentiates this case from *conduire autour* 'to lead around'. However, Revuelta Puigdollers (2016: 134) points out that no circular interpretation is possible with the marker *per* + accusative in cases like this.
**10** Cyrus Evans's translation (Perseus Project).

In contrast, in the example below it is hard to recognize this argument config-
uration. Indeed, in (12) the accusative *furunculum* 'boil' seems to be the Ground
and the Figure (*novem granis* 'nine grains') is in ablative case. The two elements
would be related by *circum*.

(12)    *Novem granis*      **furunculum**   si   quis
      Nine     grain.ABL.PL   boil.ACC.SG   if   PRON.NOM.SG
      circum-ducat
      around-lead.PRS.SBJV.3SG
      'If a person traces nine grains of barley and traces three times round a boil'
      (Plin. *Nat*. 22.135)

According to Pinkster (2015: 172) the configuration in (12), i.e. accusative + ablative,
is a very frequent pattern when both arguments are inanimate and "supplies" the
double accusative construction (bitransitivization). However, this appears not only
with transitive verbs, as in (9) and (12), but also with intransitive base verbs (*fluo* 'to
flow'). In (13) the ablative is not *circum*'s Ground, but its Figure, while the Ground is
the relative pronoun in nominative case (*qui*). The sentence cannot be paraphrased
by *fluere circum omnes copias* 'to flow around all the wealth'.

(13)    Qui       velit (...)          circum-fluere     *omnibus*    *copiis*?
      REL.M.SG   want.PRS.SBJV.3SG   around-flow.INF   all.ABL.PL   wealth.ABL.PL
      'Who would wish to be surrounded by unlimited wealth?'
      (Cic. *Amic*. 52)

Regarding bitransitivization patterns, there are some noteworthy alternations.
Let us focus on *circumdo* 'to put round/surround' for which Gaffiot's dictionary
defines three possible configurations: accusative + dative (14); (b) accusative +
ablative (15)[11]; and (c) double accusative (16).

(14)    **cancellos** (...)       **quos**       *mihi*     ipse
      Enclosure.ACC.PL   REL.ACC.PL   me.DAT   myself.NOM
      circumdedi
      around- give.PRF.IND.1SG
      'those barriers to which I have confined myself'
      (Cic. *Quint*. 10, 36)

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**11** The example in (15) represents the prototypical pattern: The Figure in ablative case and the
Ground in accusative case. However, in Caesar (*Gall*. 7, 72) we have found the opposite pattern:
et **turres**<sub>ACC</sub> [*toto opere*]<sub>ABL</sub> circumdedit 'and surrounded the entire work with towers'.

(15) **omnemque      aciem      suam          raedis**
     All.ACC.SG-and   army.ACC.SG  POSS.ACC.SG  chariot.ABL.PL
     *et    carris*           circum-dederunt
     and   wagon.ABL.PL   around-give.PRF.IND.3PL
     'and they surrounded their whole army with their chariots and wagons'
     (Caes. *Gall.* 1.51)

(16) *duas          partes       terrae*       circum-dato
     Two.ACC.PL    part.ACC.PL   earth.GEN.SG   around-give.FUT.IMP.2SG
     **radices**
     root.ACC.PL
     'cover the roots with two parts of earth'[12] (Cat. *Agr.* 114, 1)

In (14) the accusative argument is the Figure (*cancelos*), while the animate Ground shows dative case (*mihi*).[13] In contrast, the Ground in (15) and (16) is in accusative case (*omnem aciem suam* and *radices*), but these sentences differ in the case shown by the Figure: ablative in (15) and accusative in (16). Both Figures are inanimate elements and in each sentence it is possible to recognize an instigator of the event. As we have just mentioned, the pattern in (16) is not frequent.[14]

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**12** Hooper & Ash's translation, *Loeb Classical Library*.
**13** The dative case for the Ground does not seem to be related to the semantic properties of the argument (an animate/human referent). The same pattern is found in Livy's use of *circumiaceo* 'to throw around' in the example below, where the dative argument is inanimate.

(i)   alia          munimenta       verticibus       iis (...)
      other.ACC.PL   fortification.ACC.PL  summit.DAT.PL   those.DAT.PL
      circum-iacere
      around-throw.PRF0.3PL
      'they threw a ditch and other fortifications round the summits' [Evan Sage's translation, *Perseus Project*]

**14** Pinkster (2015: 173) also mentions the following example from Caesar (*Civ.* 3. 51), as a case of the occurrence of an accusative argument related to the base verb (*quos*) and another related to the prefix *circum* (*omnia sua praesidia*).

(i)   Quos          Pompeius (...)       omnia         sua            praesidia
      REL.ACC.PL    Pompeius.NOM.SG   all.ACC.PL    POSS.ACC.PL   detachment.ACC.PL
      circum-duxit
      around-lead.PRF.IND.3SG
      'Pompeius (...) carried them [horses and servants] over all the camp'

To sum up, *circum*'s prefixation leads to the following patterns:

A.  Addition of new arguments to the base verb (unselected objects)
    a.  Transitivization of an intransitive base verb, i.e., the introduction of a Ground in accusative case (examples in 6).
    b.  Figure in ablative case, Ground in nominative case (example 13)
    c.  Figure in ablative case, Ground in accusative case (examples 12 and 15)
    d.  Figure in accusative case, Ground in dative case (example 14)
    e.  Both, Figure and Ground, in accusative case (bitransitivization) (example 16)
B.  No new argument added to the base verb. Manner interpretation (examples 7, 8, 9, 11)

Accordingly, Lehmann's three-pattern proposal seems inadequate to describe the possibilities found when *circum* is prefixed to a verb. In the next sections, we revise these examples from a neo-constructionist approach.
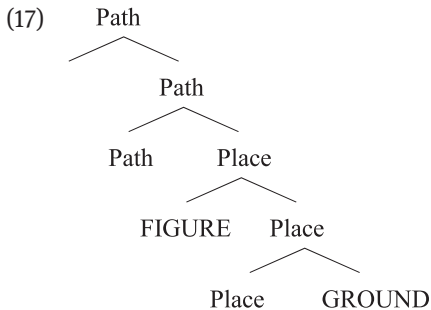
# 3 Making words

As we have pointed out, *circum*'s affixation gives no metaphorical interpretation, neither idiosyncratic meaning. *Circum* always has the same nuance in meaning, no matter if it is a preposition, an adverb or a prefix. Regarding selection, the prefix shows properties of both: it always has a *Figure*, but the *Ground* can appear or not. For a lexicalist approach this difference deserves the postulation of two lexical items: a transitive one (the preposition) and an intransitive one (the adverb). For Distributed Morphology (DM), this distinction is useless. In this section we present our proposal about *circum*'s occurrence by discussing the different aspects involved in *circum*'s prefixation, i.e., the structure of prepositions/adverbs/prefixes, the relationship between the structure and the possible nuances, the introduction of locative adjuncts and the presence of accusative arguments.

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This example is mentioned in different grammars with the same goal as Pinkster's. However, we would like to mention that there is no agreement among Latin versions on the second accusative. De Valbuena (1789), among many others, recognize the preposition *per* 'through' before *omnia sua praesidia*. This preposition has an accusative complement and involves the idea of Path, which is compatible with the semantics of the verbs *duco* and *circumduco*. Examples like (16) are less frequent than what Latin grammars and dictionaries propose.

## 3.1 On *circum* distribution and interpretation

Svenonius (2008, 2010) reviews Talmy's (1978, 2000) proposal about preposi-
tions taking into account the idea of category-defining functional heads (see
Section 3.2) and the split-V hypothesis (Kratzer 1996). He proposes, then, that
there is a lexical shell –the Root–, which selects the internal argument
[Ground] and there is also a functional node *p*, which introduces the external
argument [Figure] and determines which categories modify the PP. In a refined
analysis about spatial prepositions, Svenonius –and many others who also
follow Jackendoff's (1983) terminology–, recognizes Place and Path elements.
Place is associated with locational meanings and Path represents directed
motion. Place elements give information about the physical configuration of
the relationship between a Figure and a Ground, while Path elements give
information about a trajectory –for instance, its orientation (*go **down***)–, and
may specify whether a Place is a Goal (***to*** *Vien*) or a Source (***from*** *Vien*). In
these terms, the structure of a complex *p*P – i.e., a *p*P which projects both, Path
and Place–, is the one in (17).[15]

(17)
```
        Path
       ╱    ╲
           Path
          ╱   ╲
     Path      Place
             ╱    ╲
       FIGURE      Place
                  ╱   ╲
             Place     GROUND
```

Baños Baños (2009: 315) points that the most frequent *semantic functions* of
*circum* are UBI (location) and DIR (direction). These nuances are related to
Svenonius' Place and Path respectively. However, we do not agree with the
proposal that *circum* implies direction in itself and follow Gehrke's (2008: 244)
observation: "the directional component can be provided by certain verbs or by
other means such as case and syntactic movement". The data supports that

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**15** Path and Place are just expository names. The main point is the fact that a structure presents
one *p*P shell or two. One *p*P shell, i.e., Place, is a predication; while two *p*P shells imply a
change of state/location. The Ground represents this final state/location.

proposal, because *circum* is location with stative verbs (18) and implies direction/change of location with verbs of motion (19).

(18) nunc   omnes      urbes       quae             circum  Capuam
      now   all.NOM.PL  city.NOM.PL  REL.F.NOM.PL  around  Capua.ACC
      sunt
      be.PRS.IND.3PL
      'but now, all the cities which are around Capua'
      (Cic. *Agr*. 1.7)

(19) ducebat            eos                circum civitates
      lead.IPFV.IND.3SG  PRON.ACC.PL  around  city.ACC.PL
      'he took them with him around the different cities'
      (Cic. *Ver*.2.3.65)

Accordingly, the structure for (18) and (19) contains Place, but only (19) implies movement and, in consequence, direction. It seems to be clear that this difference follows from the structure related to the verb, not from the properties of *circum*. Gehrke states that the directional and the locative reading of *p*Ps is associated with different structure positions that these phrases occupy. We thus assume that *circum* in (18) is related to Place in a structure in which it is the only predication, *sum* 'to be' being a non-lexical verb. On the other hand, in (19) *circum* is also related to Place, but there is a lexical verb, *duco* 'to lead', which presents an agentive argument. This projection is related to *duco*, independently of *circum*'s presence. We will return to these examples in order to present the corresponding configurations, after we develop some relevant notions for the analysis.

     The just mentioned difference has selectional consequences: when *circum* is related to a stative verb such as *stare* 'to stay', *essere* 'to be', *sistere* 'to stay' and so on, the presence of a plural Figure is obligatory,[16] no matter if *circum* is a preposition, like in (18) or (20) below, or a prefix, like in (21).[17]

---

**16** We use *plural* in a broad sense, because in these cases plurality can be syntactic or semantic.

**17** It is interesting to point out that in passive sentences, when the agent is introduced, it is also plural.

i.  Ne  ab  omnibus  civitatibus  circumsisteretur
    that  by  all.ABL.PL  state.ABL.PL  around-sit.IPFV.SBJV.PASS0.3SG
    'In order to prevent his being surrounded by all the states' (Caes. *Gall*. 7.43.5)

(20)  si  circum  vias                    publicas
      if  around  thoroughfare.ACC.PL  public.ACC.PL
      erunt            aedificia        deorum
      be.FUT.IND.3PL  edifice.NOM.PL  god.GEN.PL
      'likewise if the edificies of the gods are about the public thoroughfares'
      (Vitr. 4.5)

(21)  Illi            circum-sistunt          hominem
      PRON.NOM.PL  around-sit.PRS.IND.3PL  man.ACC.SG
      'They surround the man'
      (Caes.*Gall.* 5.7.9)

By contrast, when *circum* appears with a verb of motion, there are no restrictions on the plurality of the subject, as it can be observed in (19) and in (22).

(22)  quem        per      arbitrum          circum-venire      non
      REL.ACC.SG  across  arbitrator.ACC.SG  around-come.INF  not
      posses?
      can.PRS.IND.2PL
      'the man whom you could not circumvent before an arbitrator'
      (Cic. *Rosc.* 9)

For *circum* as an adverb, we assume that it is an adjunct that can select an event as Figure, but it does not project a Ground. Below, we repeat the example of a prototypical preposition (3a) and a prototypical adverb (3b).

(3)   a.  quae            circum  Aquileia-m        hiemabant
          REL.F.NOM.PL  around  Aquileia-ACC.SG  winter.IPFV.IND.3PL.
          'which were wintering around Aquileia'
          (Caes. *Gall.* 1.10)
      b.  ne     stantes              circum  suis          umbris
          NEG  be.PTCP.PRS.NOM.PL  around  POS.ABL.3PL  shadow.ABL.PL
          obscurent          lucem
          darken.PRS.SBJV.3PL  light.ACC.SG
          'so that the shadows of those who stand round it may not obstruct the light'
          (Vitr. 5.10)

Regardless the position in which *circum* merges in the structure, it is clear that in (3a) *Aquileiam* is the Ground of *circum*, while in (3b) there is not an object as Ground. In the next sections, we discuss this difference in detail.

To sum up, we propose that *circum* is related only to a Place, which sometimes projects a DP Ground (this is the difference between *circum*-preposition and *circum*-adverb) and the Figure can be an object as well as an event. Moreover, the locative and direction readings are obtained in accordance with the projections that appear in the structure in which *circum* merges and this imposes semantic restrictions on arguments.

## 3.2 Arguments

An analysis in terms of incorporation (Baker 1988) is a very attractive option, when one takes a look at some examples. However, the data are not very clear and regular, as we have described in the previous section. The fact that *circum-cidere caespites* ('to cut the grass around', example 9) is not equivalent to *caedere circum caespites* ('to cut around the grass') is a problem for incorporation: if *circum* were an incorporated preposition, there would be no difference between them. Moreover, it is not easy to determine the syntactic structure which permits the incorporation of a non-selected phrase, like in the case of *circum-*. On the other hand, if incorporation is assumed, it is hard to explain the frequent elision of internal arguments in a language which does not admit ellipsis for prepositional complements (remember the examples in 5b and in 6b).

Furthermore, the occurrence of dative arguments with *circum-* compounds is hard to explain from an approach based on incorporation. Many authors mention that prefixed verbs usually present a dative argument (Kühner and Stegmann 1912; Bassols de Climent 1956: I, 319; Woodcock 1971: §62; Oroz 1956, Lehmann 1983). Lehmann, for instance, points out that the *relatum* (Ground) of prefix *com-* frequently takes a dative case form when the verb is transitive and that it is rare, but possible, to find dative arguments in verbs prefixed by *circum-*.

In the grammars we have just named, there is a special section for verbs governing the dative case and a review of compounds with dative arguments (see also Pinkster 2011: §2). However, Pinkster (2011), as well as Allen (1912), shows that the presence of dative arguments is not really frequent. In fact, Latin prepositions do not select this case for their complements. These authors observe that dative arguments do not depend on the prefix but on the meaning of the prefixed verb. Consequently, the dative here corresponds to the general uses of this case (indirect object, possessive, *commodi, ethicus*, etc.) and it is not a particular kind of dative argument. On this matter, Allen & Greenough (1903:

§370a) hold that "in these cases the dative depends not on the preposition, but on the compound verb in its acquired meaning".

This observation is relevant to our discussion, because if any argument is considered in this way, then, we could explain the different options we find. What we mean is that the merger of two elements with their own meaning has consequences for the global meaning and for argument selection.

## 3.3 Word formation in a non-lexicalist framework

The remarks on previous sections are attractive for a syntactic approach on word formation. Clearly, if the prefix *circum* has the same meaning as the corresponding preposition/adverb, it would be desirable, for economy purposes, that just one component of the grammar were in charge of both combinations: a prefix with a basic verb and a verb with a preposition/adverb. Distributed Morphology (DM) provides this kind of analysis and simplifies the grammar component proposing *Syntax-all-the-way-down* (Halle and Marantz 1993; Halle and Marantz 1994; Harley and Noyer 1999). It means that the syntactic component is responsible for each combination of meaning units.

The terminal nodes, which present semantic, syntactic and morphological information, are organized into hierarchical structures determined by the principles and operations of the Syntax, i.e., merge and move (Halle and Marantz 1994: 276). In this approach, the morphology is not concentrated in a single component of the grammar, but it is distributed among several different components. In Siddiqi's (2009: 8) words, "since the grammar manipulates only syntactic features, the complex structure of a word is created in the same way as is the complex structure of a sentence".

A central assumption is that the Syntax and the Logical Form operate only with syntactic-semantic features and that phonological material is inserted later –*Late insertion*–, following a group of rules (Vocabulary Items), which relates syntactic/semantic/morphological features to phonological features. This is a significant difference from Lexicalist models, which assume that Syntax operates directly with vocabulary items (VI) and do not distinguish between the syntactic-semantic features of terminal nodes and lexical items For DM, the terminals the Syntax operates with are divided into two classes: f-nodes, consisting of boundless of features, and l-nodes or Roots. These nodes are filled by f-morphemes and l-morphemes, respectively. Both are Vocabulary Items, but there is a fundamental difference between the insertion of VIs in f-nodes and l-nodes. While the VIs which may fill f-nodes are in competition, because the latter are fully specified with features, the VIs for l-nodes are not subject to competition.

A property of VIs which may fill f-nodes is *underspecification* in the insertion into a terminal node of the syntax. A VI can satisfy all the specifications of the node or a subset of them, but cannot exceed them. The insertion of VIs is subject to the *Subset Principle* (Halle 1997: 128). This property explains phenomena associated with polysemy and syncretism.

In the case of Roots, they are considered to be category-neutral and must combine with a category-defining functional head, such as *n, v, p*, according to the *Categorization Assumption* (Marantz 1997; Marantz 2000). The l-node hypothesis (Harley and Noyer 2000) proposes that the syntactic status of it is always determined by its local relation with functional heads. Therefore, the insertion at an l-node is constrained by licensing. For these authors –and also for Siddiqi (2009) and others– VI's licensing conditions can be underspecified. When it happens, a VI may be licensed in more than one syntactic structure and argument structure alternations arise.[18]

As Embick (2015) points out, Roots do not possess syntactic-semantic (*synsem*) features, nor can they be decomposed into *synsem* features. The first property restricts the possibilities for Roots' features: they only have phonological or morphological features inherently. The second property states that Roots meaning is not reducible to the *synsem* feature inventory of human language. Traditionally, prepositions have not been considered as presenting a Root in their structure. However, the difference among 'around' and 'between', for instance, cannot be reduced to *synsem* features, but to their conceptual content. In consequence, we assume in this work that *circum*, wherever it appears, presents a Root in its internal structure.

The different distribution of Roots follows from their interaction with the *synsem* features in the structure. In neo-constructionist theories the combination of Roots with relational elements (Mateu 2002) –such as *v*, Path, Place– gives rise to differences in meaning and argument selection. Acedo-Matellan's (2016) approach to argument structure is inscribed in this kind of frames. We assume, in accordance with this author, that Roots present the same behavior as DPs: they do not project structure and they are interpreted according to the position they occupy in the structure (see Marantz 2013, for a relevant discussion).

Both types of nodes, f-nodes and Roots, can be affected by post-syntactic operations and this may change the structure formed by the syntactic derivation. These operations take place before the insertion of VIs and are responsible for the lack of isomorphism between the syntactic structure and the final

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**18** In the next section, we revise some properties of Roots and the functional categories they relate to, in the frame proposed by Acedo-Matellán and Mateu (2013) and Acedo-Matellán (2016).

phonological form. For instance, these operations explain that in English the [PL] feature for nouns can be realized by /-z/, but in some nouns this element is not recognized as an independent morpheme, as in *mouse > mice/\*mouses*, where the terminal node for Number fuses with the nominal categorizer (*n*) and the Root. Many of these morphological operations are part or the PF component. The Grammar Structure for DM is the following.

(23)
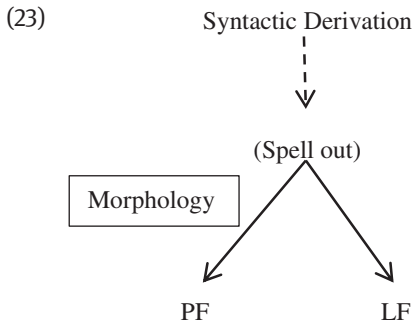


For the following discussion, it is important to emphasize that Lexicalist theories propose that a verb, for instance, can specify what type of element it merges with and, therefore, projects the structure it appears in. On the contrary, in DM the words do not determine the structure of the sentence by themselves, but are inserted into a fully formed structure.

## 3.4 Discussing configurations

Acedo-Matellán and Mateu (2013) and Acedo-Matellán (2016), following Hale and Keyser (1993; 2000) and Mateu (2002), revise Talmy's notions and extend them to general properties of argument structure configurations. They interpret Path as the configuration associated with *change-of-state* and Place as a predication of state/location. When both projections meet, as in (17), Path 'transforms' the predication denoted by Place into a final state/location, i.e., it induces the telic reading of the resulting predicate. For instance, a verb of movement, such as *go*, takes Path as complement (*John went to Vien*; where *Vien* is the final location), while a verb of state, such as *stay*, takes Place as complement (*John stays at home/quite*; where *at home* and *quite* are location and state, respectively).

In this framework, Roots are deprived of a particular category and cannot project structure, but are related to functional heads. The semantic

interpretation –together with the aspectual properties of predicates– derives from the different combinations. Moreover, a structure cannot project a specifier if it does not have a complement (cf. Hale and Keyser 1993; Mateu 2002). It means that unergative predicates are underlying transitive predicates.

The interpretations of the arguments depending on their position are:

Originator: a DP at Spec-Voice (VoiceP in terms of Kratzer 1996)
Effected object: a DP or a Root at Compl-$v$
Figure: a DP at Spec-Place
Central Ground: a DP or a Root at Compl-Place, when no Path is projected.
Terminal Ground: a DP or a Root at Compl-Place when Path is projected.
Measurer: a DP raised from Spec-Place to Spec-Path.
Co-event (Manner): Adjunct to $v$.
Conformation (type of spatial relation): Adjunct to Place
[Adapted from Acedo-Matellán 2016: 44]

Considering these observations, we propose that the difference sketched in section 3.1 between *circum*-preposition and *circum*-adverb can be formulated as follows: what we call preposition is a structure in which the node Place takes a DP as Ground and a Root like √CIRCUM as an adjunct of this head, i.e., it specifies the type of spatial relation; while for the so called adverb the complement of Place –the Ground– is the Root √CIRCUM. These structures show that the Ground DP and √CIRCUM are the final states, respectively, and consequently, *circum*-preposition introduces the reference to a place (around a place) –*Conformation*–, while *circum*-adverb introduces manner (in a circle/circles).[19] That is what Acedo-Matellán (2016: 42) calls *Central Ground*, i.e., "a location/state that corresponds to a static description".
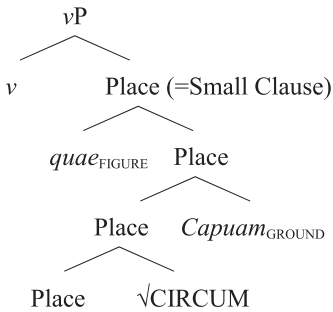
(24) *Circum*-preposition
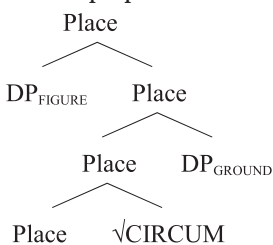
(25) *Circum*-adverb



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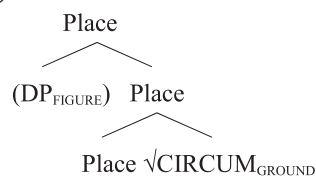
19 Or the non-prototypical interpretations discussed in Revuelta Puigdollers (2016).

The second observation we sketched in Section 3.1 regards *circum*'s interpretation as stative (example 18) or dynamic (example 19). We propose that in this frame the difference follows from the structure in which *circum* is merged. In both examples, *circum* is a preposition, i.e., the structure in (24) is recognized. The schemas below represent the relevant part of the structure.
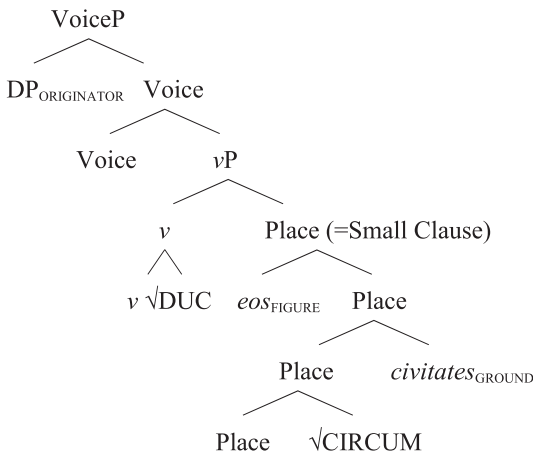
(26)  Analysis of (18)
      (urbes) *quae circum Capuam sunt* 'all the cities which are around Capua'

```
                vP
              /    \
           v        Place (=Small Clause)
                    /    \
            quae_FIGURE    Place
                          /    \
                     Place    Capuam_GROUND
                    /    \
               Place    √CIRCUM
```

(27)  Analysis of (19)
      *ducebat eos circum civitates* 'he took them with him around the different cities'

```
                   VoiceP
                 /        \
         DP_ORIGINATOR    Voice
                        /      \
                  Voice         vP
                              /    \
                            v       Place (=Small Clause)
                           / \      /    \
                      v  √DUC  eos_FIGURE   Place
                                          /      \
                                     Place       civitates_GROUND
                                    /     \
                                Place     √CIRCUM
```

In the case of (26), we propose a structure in which the only predicate is *circum*, *sum* 'to be' being a non-lexical verb. On the other hand, in (27) there is a predicate, *duco* 'to lead', which implies movement and the presence of an agent. Thus, we propose the projection of Voice. Moreover, while in (26) the

only predicate is *circum*, in (27) there are two predicates, *circum* and *duco*, the latter being a Co-event (Manner Conflation). In both configurations *circum* is part of a locative Small Clause. In example (18), the (inanimate) Figure stays around Capua, while in (19) the (animate) Figure is lead from one city to another. In this case no final location is recognized (change of location), so according to Acedo-Matellán's proposal, there is not a projection of Path.[20]

Let us see now what happens with the prefix. We agree with Acedo-Matellán in that the functional projections, in which prefixes are inserted, are part of the basic argument structure and that the resulting construction presents a telic reading. For instance, *ebibo* 'drink up' is the result of the presence of the prefix *ex-* in the structure corresponding to *bibo* 'drink' (28), an atelic verb. "The prefix is originated as a Root merged as Compl-Place; here it is understood as a Terminal Ground, expressing the final state of the Figure *tantum medicamentum*: the state of disappearance (akin to the one encoded by *up* in English *drink the wine up*)" (Acedo-Matellán 2016: 121). Accordingly, the structure presents necessarily a Path. The base verb corresponds to a Co-event (a secondary predicate) that specifies the Manner in which the event is performed and the prefix acts as the main predicate.

(28)  *bibo* 'to drink'
     [$_{VoiceP}$ *qui* [$_{v'}$ *v* √BIB]

(29)  a. Tantum       medicamentum e-bibisti?'
        so_much.ACC  medicine.ACC   out-drink.PRF.2SG
        'Have you drunk up such an amount of medicine?'
        (Petr. *Sat*. 20, 5)
     b. [$_{vP}$ [*v* √BIB] [$_{PathP}$ [$_{DP}$ *tantum medicamentum*] [$_{Path'}$ Path [$_{PlaceP}$ [$_{DP}$ tantum medicamentum]] [$_{Place'}$ Place √EX]]]]]]
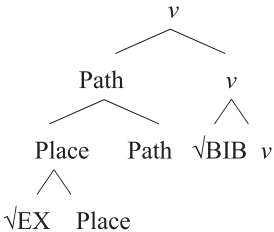        (Adapted from Acedo-Matellán 2016: 121)

Acedo-Matellán proposes that a structure like (29b) gives rise to the following operations at PF: Place-√EX moves to Path and later, but also before vocabulary insertion, this complex node rises to *v*.[21] In this frame, Latin prefixation is the result of a structure in which the prefix is interpreted as a final state and Path is the complement of *v*. This configuration induces the PF operation in (30) – Path to *v* Raising.

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**20** In fact, for Acedo-Matellán (2016) telicity does not only depend on the projection of Path, but also on the quantificational properties of the DP$_{FIGURE}$.

**21** Following Marantz (1988)'s original formulation of Merger, Acedo-Matellán adopts *Raising* as a variety of Merger before Vocabulary Insertion (PF- head movement). Accordingly, he defends an analysis with just one type of head movement (postsyntactic) and rejects syntactic head movement (see footnote 2, page 61).

(30)  PF Raising of Y$^o$ to X$^o$ (Acedo-Matellán 2016: 61)
[$_{XP}$ X$^o$... [$_{YP}$ ...Y$^o$...]] → [$_{XP}$... [$_{Y^o}$ Y$^o$ + X$^o$]... [$_{YP}$...]]

The resulting structure is shown in (31a). (31b) and (31c) represent Linearization and Vocabulary insertion, respectively.

(31)  a.



    b.  Linearization
        √EX- Place-Path-√BIB-$v$

    c.  Vocabulay insertion
        ex-Ø-Ø-bib-Ø

With this analysis in mind, we present our proposal for the sentences below, which differ in the final realization of *circum*, being a preposition in (32a, example 3a) and (32b), and a prefix in (33, example 16).

(32)  a. quae          circum  Aquileia-m        hiemabant
         REL.F.NOM.PL  around  Aquileia-ACC.SG  winter.IPFV.IND.3PL.
         'which were wintering around Aquileia'
         (Caes. *Gall*. 1.10)
      b. eas           radices    dato              circum  vitem
         This.ACC.PL   root.ACC.PL  place.FUT.IMP.2SG  around  vine.ACC.SG
         'apply (these roots) around the vines'[22]
         (Cat. *Agr*. 114.1)

(33)  duas          partes       terrae          circum-dato
      Two.ACC.PL    part.ACC.PL  earth.GEN.SG    around-place.FUT.IMP.2SG
      radices
      root.ACC.PL
      'cover the roots with two parts of earth'
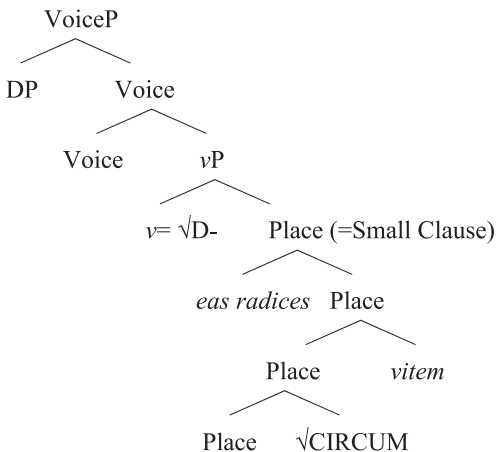      (Cat. *Agr*. 114, 1)

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**22** For Cato's examples in (32) and (33), we follow Hooper & Ash's translation, *Loeb Classical Library*.

The structure for (32a) is similar to the one presented in (26) for *quae circum Aquileiam sunt* '(cities) which are around Aquileia', Place being a sister of *v* and the DP *Aquileiam* being a Central Ground. The difference between (32a) and the example represented in (26) is that in the former there is a Co-event (Manner), i.e., √HIEM- is merged as an adjunct of *v*. In this atelic structure, √CIRCUM's prefixation cannot take place (there is not a Path which induces Path to *v* Raising).
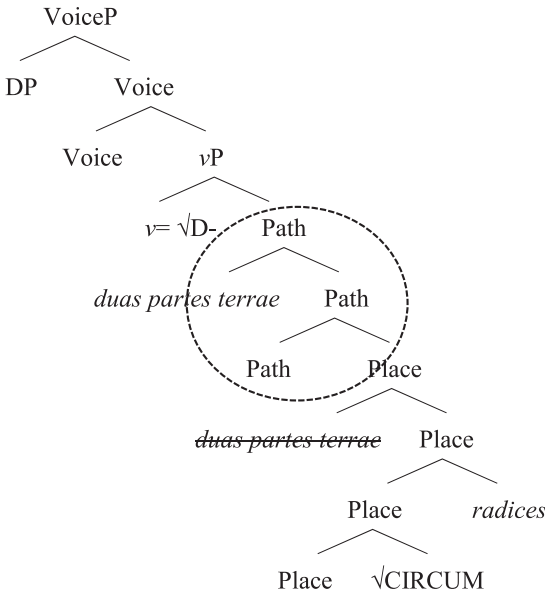
(34)   [$_{vP}$ *quae* [$_{v'}$[*v* √HIEM] [$_{Place}$ [$_{DP}$ *quae*] [$_{Place'}$ Place √CIRCUM [$_{DP}$ Aquileiam]]]]]

The examples of (32b) and (33) appear in the same paragraph of Cato's *De Agri Cultura*. Pairs like this, in which there is a locative interpretation of the verb, could motivate an approach based on incorporation. However, *circum* behaves differently in each case. In (32b), the wine is not necessarily surrounded by the roots. It means that there is a final location for the roots (in the same place), but not a final state for the wine (surrounded). On the other hand, in (33) *circum* refers to the final state of the roots (surrounded by two parts of earth). Moreover, while in (32b) the ellipsis of *circum*'s complement is not possible, constructions like (33) admit the ellipsis of the 'surrounded' DP (*Albani*$_{NOM}$ *fossa*$_{ABL}$ *circumdant* $_{ACC}$ 'The Albans surrounded it with a moat', Liv. 1, 23). For that reason, we propose different structures for each example, √CIRCUM being part of a Small Clause in a non-resultative configuration, like (32b) and a Root inserted in the main structure in cases like (33).

(35)   Analysis of *dare circum* DP

(36)  Analysis of *circumdare*[23]

```
              VoiceP
             /      \
          DP        Voice
                   /     \
                Voice     vP
                         /  \
              v= √D-    Path
                       /    \
          duas partes terrae   Path
                              /    \
                           Path    Place
                 duas partes terrae    Place
                                      /     \
                                   Place    radices
                                  /    \
                              Place    √CIRCUM
```

To sum up, a neo-constructionist frame like the one presented lets us explain √CIRCUM'S distribution in order to account for the different interpretations found. Structures like (36), where Path is the complement of *v* and √CIRCUM is interpreted as a final state/location, motivate post-syntactic head movement and, consequently, *circum*'s prefixation. Prefixation does not take place when there is not a Path in the structure as in (32a) and (32b).[24] In the next section, we extensively discuss the different sentences presented in Section 2 and revise the interpretation of the DPs involved.

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23 We will return to examples like (33) after discussing more productive structures (Section 4.1).
24 In their analysis of *Navigant ad primum emporium* 'They sail up to the first emporium' (Plin. *Nat.* 6, 104, 1), Acedo-Matellán & Mateu (2013: 238–239) propose a structure that could trigger the prefixation of *ad*: [$_{vP}$ *v* [$_{Path}$ Path [$_{Place}$ Place]]]. "The preposition *ad* is first merged as Place, since it characterizes the final location of movement". In cases of prefixation, "there is an additional affixation operation from Path position onto the verb". Although we agree with the fact that aspectual properties of events are the result of compositionality, we assume that prefixation, at least in the case of *circum-*, is the result of an obligatory post-syntactic operation in a particular context. When this context is not found, *circum* appears as an independent word.

# 4 The proposal

In Section 2, we presented examples of *circum*'s prefixation taking into account the transitivity properties of the base verb and the case of DPs interpreted as Figure and Ground in Talmy's terms. In Section 3, we developed Acedo-Matellán's DM approach to argument structure and we revised some basic properties of *circum* in this frame (particularly, the distinction among the preposition, the adverb and the prefix). According to that, we propose that in the three cases *circum* is a Root related to Place. It appears as a prefix as the result of post-syntactic head moment from a position inside the *v*P. This operation takes place under particular conditions: the projection of Place, in which *circum* is merged, must be the complement of Path. It means that verbs prefixed by *circum-* are interpreted as transitions. For a verb like *circumdare*, discussed in the previous section, the relevant part of the structure after post-syntactic head movement is represented in (37).

(37) a.

         *v*

     Path     *v*= dare

    Place  Path

   √CIRCUM Place

  b. Linearization
    √CIRCUM- Place-Path-√DARE

When there is not a PathP in the structure or when the projection of Place related to *circum* is an adjunct, post-syntactic head movement does not take place and *circum* materializes as an independent word (an adverb or a preposition, depending on the structure of Place). Although it has been noticed that 'prepositional' prefixes in Latin behave more like adverbs than like prepositions, the case of *circum* deserves deeper consideration. According to our corpus, while the occurrence of unexpected accusative DPs is frequent with intransitive base-verbs, these DPs are almost absent with transitive base-verbs. Moreover, regarding interpretation, *circum*'s presence as a prefix with intransitive base-verbs induces a final location reading (38), while in the case of transitive base-verbs it frequently refers to manner

(39) and the information related to location/direction (if present) is introduced by another preposition or adverb.[25]

(38) Cum    equitibus        Numidis          circum-equitabat
     With    horseman.ABL.PL Numidian.ABL.PL  around-ride.IPFV.IND.3SG
     **urbem**
     city.ACC.SG
     'He rode round the city with his Numidian horsemen'[26]
     (Liv. 29.7.5)

(39) qui           circum-duceret            eum
     REL.NOM.SG  around-lead.IPFV.SBJV.3SG  PRON.ACC.3SG
     '(L. Cornelius Scipio, the quaestor,) was appointed to take him around'
     (Liv. 45.44.7)

According to these examples, our distinction between transitive and intransitive base verbs seems to be relevant. While intransitive base verbs frequently become transitive when prefixed by *circum*, transitive base verbs maintain its transitivity and seldom present a second accusative DP (bitransitivization). Notwithstanding, the situation for *circum*'s prefixation is not accounted for by proposing two types of structures according to the (in)transitivity properties of the base verb. In fact, among our examples, we find different interpretations not only for the DPs involved, but also for the relation between *circum*- and the event. The latter distinction leads us to reconsider *circum*- as an internal or an external prefix (Di Sciullo 1997, Svenonius 2004, for that distinction).

---

**25** Among our examples, there are also cases in which the accusative DP is not pronounced, but recoverable from the previous sentences: *Octavius* (i), already shown in (5b).

(i)    ita  multi         circum-stant (...)
       so   many.NOM.PL  around-stay.PRS.IND0.3PL
       'he is surrounded by such a number of people' (who even threaten our friends with death)
       (Cic. *Att.* 14.12.2)

**26** Gardener Moore's translation in Perseus Project.

## 4.1 New arguments added to the base verb

As shown, verbs prefixed by *circum-* differ from the base verb in that the former can present a new argument, unselected by the latter. This phenomenon is productive with intransitive base verbs, but infrequent with transitive base verbs.[27] In the following subsections, we analyze these two patterns.

### 4.1.1 Transitivization of intransitive base verbs

Let us start with the comparison of two intransitive base verbs, *circumequitare* 'to ride around' and *circumfluere* 'to flow around', in the already shown sentences of (38) and (5a).

(40)  (Ille) circumequitabat urbem$_{ACC}$ 'he rode round the city'

(41)  Aquileiam$_{ACC}$ circumfluunt [Meander et Orsynus]$_{NOM}$ 'the Meander and the Orsinus flow around it'
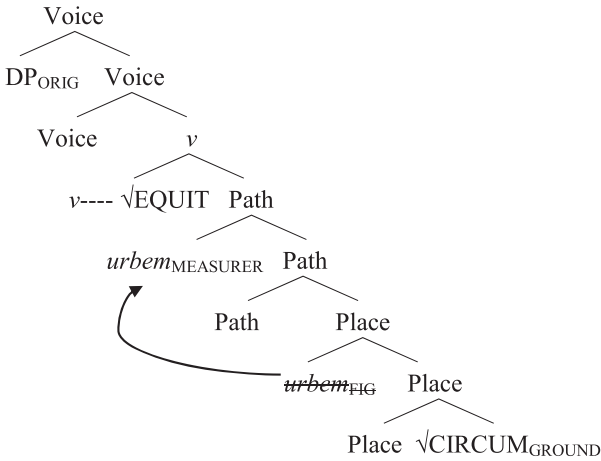
The main difference between this pair is that the subject is an Originator in (40) – according to the frame presented in Section 3.1–, while it is a Figure in (41). As it was developed, each interpretation for the DPs corresponds to a particular structure, the DP at SpecVoice being interpreted as the Originator and the DP at SpecPlace as the Figure. Moreover, *urbem* 'the city' in (40) is the Measurer of the event, while *Aquileiam* 'Aquileia' in (41) cannot be interpreted as a Measure, but as a Terminal Ground. In Acedo-Matellán's (2016: 43) words "these events will be completed as soon as the entities denoted by the Measurers attain the location/state denoted by PlaceP". The final state in (40) is 'round'

---

**27** As we mention in Section 2.2, grammars and dictionaries present passive sentences to exemplify the bitransitivization pattern. The *Oxford Latin Dictionary* exemplifies the double accusative constructions for the verbs *circumago* (Cat. *Agr.* 141.2; Liv. 10.2.6); *circumfero* (Cat. *Agr.* 141.2); *circumicio* (Cic. *Div.* 2.62), *circumduco* (Caes. *Civ.* 3.51; Tac.*Hist0.*3.54). Most of the examples are cases of passive sentences with one accusative argument. Within a framework like the one adopted here, the existence of passive sentences with an accusative argument is not direct evidence for bitransitivization. In fact, the bitransitive configuration is hard to find in the period we study. "Particular in Late Latin (but starting as early as the archaizing author Apuleius and the Vetus Latina version of the Bible), numerous compounds with *circum, ex, in, ob*, and *per* are occasionally found with two accusatives." (Pinkster 2015: 171). See also Revuelta Puigdollers (2016: 133). We leave the discussion related to passive constructions and demoted arguments for further research.

and it is predicated about *urbem*, a singular countable noun. Contrarily, *circum Aquileiam* is the final location predicated about the rivers –the Meander and the Orsinus (M&O in 43). The relevant structures are presented below.

(42)  Analysis of (40)

```
                Voice
              /       \
         DP_ORIG      Voice
                     /      \
                Voice        v
                           /    \
                      v---- √EQUIT  Path
                      urbem_MEASURER   Path
                                     /      \
                                 Path        Place
                                           /       \
                                    urbem_FIG       Place
                                                  /       \
                                             Place   √CIRCUM_GROUND
```

(43)  Analysis of (41)

```
                  v
               /     \
         v---- √FLU   Path
         M&O_MEASURER   Path
                       /     \
                   Path       Place
                            /       \
                       M&O_FIG       Place
                                   /       \
                              Place         Capuam_GROUND
                            /       \
                       Place    √CIRCUM
```
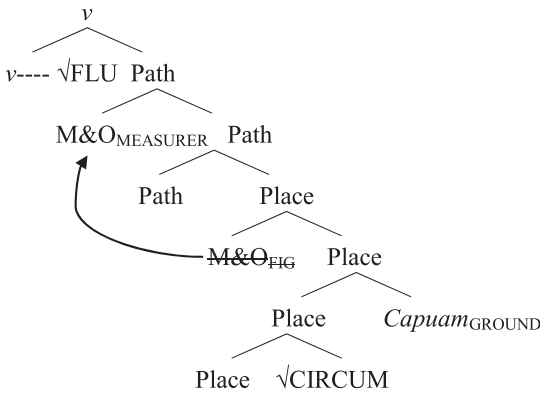
Let us revise more examples of intransitive base verbs.

(44)  a. Si  tu    Mesopotamia,          nos  Armenia
         if  you   Mesopotamia.ABL.SG,   we   Armenia.ABL.SG

circum-gredimur[28]          **exercitum**
around-step.PRS.IND.PASS.1PL  army.ACC.SG
'If you on the side of Mesopotamia, and we that of Armenia surround their army'[29]
(Sall. *Hist*.21)

  b. Tua         **te**        altera        patria (...)
POSS.2SG.NOM    you.ACC   other.NOM.SG   patria.NOM.SG
Messana           circum-venit.
Messana.NOM.SG around-come.PRS.IND.3SG
'Your second country (...), Messana herself attacks you'
(Cic. *Ver*. 2.4.17)

  c. Et    **mercatores** (...)    vulgus
and   merchant.ACC.PL   common-people.NOM.PL
circum-sistunt
around-stay.PRS.IND.3PL
'And in towns the common people throng around merchants'
(Caes. *Gall*. 4.5.2)

  d. cives,           qui           circum-stant
citizen.NOM.PL  REL.NOM.PL  around-stay.PRS.IND.3PL
**senatum**
Senate.ACC.SG
'citizens who are now surrounding the Senate'
(Cic. *Catil*. 1.8.21)

  e. clamor        **hostes**       circum-sonat
cheer.NOM.SG  enemy.ACC.PL  around-sound.PRS.IND.3SG
'their cheer resounded on all sides of the enemy'
(Liv. 3.28.3)

Examples in (44a) and (44b) –*Messana* being understood as a synecdoche (the citizens of Messana) –, can be analyzed as (42), because in both a DP$_{ORIGINATOR}$ can be observed. The difference between (44b), on the one hand, and (40- 44a), on the other, is that the former does not present Manner conflation, i.e., there is not a Co-event.
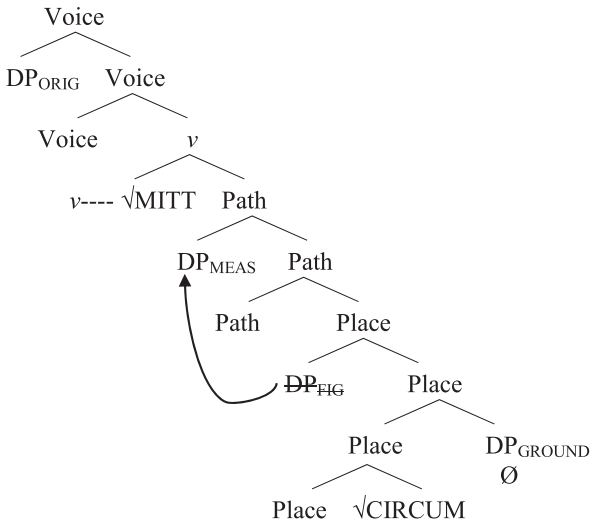
    Examples in (44c), (44d) and (44e) -and also (40)- are related to the structure in (43). None of them present a DP$_{ORIGINATOR}$, thus VoiceP is not in the structure. Finally, we point out that only (44e) presents Manner conflation as (41).

---

**28** *Gradior* 'to step, to walk' is a deponent verb.
**29** Charles Rollin's translation in Perseus Project.

It is noteworthy that the observation pointed out in Section 3.1 (about plurality requirements for DPs when the base verb is stative) can also be accounted for in this framework. This is the case of *circumsto* in (44d) and (40), where the Measurer –i.e., the DP at SpecFigure that then moves to SpecPath–, represents the measure needed for the final location to be completed and it must be plural[30].

With regard to the case shown by the DPs, we assume McFadden's (2004) proposal. This author –following Calabrese (1996)– recognizes that denominations such as nominative, accusative, dative and so on, consist on boundless of distinctive features. Thus, nominative case would be the absence of features (or just the feature [+case] in McFadden 2004) and the accusative would present the feature [+inferior] because it is a dependent case. Case distribution in our examples is prototypical: the DP related to agreement is in nominative case; the lower DP ends up being in accusative case (that is the notion of 'dependent' case).[31]

### 4.1.2 Bitransitivization

As we have mentioned, when √CIRCUM is prefixed to a transitive base verb, the result can be the addition of a new argument in accusative case. Let us recall that this configuration is not frequent in the period studied.

(45)  tribunos                militum        et    praefectos
      tribune.ACC.PL          soldier.GEN.PL  and  overseer.ACC.PL
      circum-mittit
      around-send.PRS.IND.3SG
      'he ordered the military tribunes, and officers of the cavalry, to patrol about the works'
      (Caes. *Civ.* 1.21.4)

The example in (45) has a $DP_{ORIGINATOR}$ and √CIRCUM as Conformation, the $DP_{GROUND}$ being omitted. For this case, we propose the structure in (46).

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**30** See footnote 16.

**31** In passive sentences, the absence of the highest DP triggers the verbal agreement with the $DP_{GROUND}$, which will be nominative, instead of accusative. This is an unexpected behavior if we postulate that the accusative case is related to the presence of *circum* (as a preposition with its $DP_{ACC}$ argument), but not if we assume that this prefix can transitivize a construction.

(46) Analysis of (45)



Cato's example in (33), *duas partes terrae circumdato radices* 'cover the roots with two parts of earth', can be analyzed in a similar structure, as we proposed in (36). In this case, there is an explicit DP$_{GROUND}$ (*radices*) and there is not Manner conflation.

## 4.2 No new argument added to the base verbs

Along this paper we also present examples in which no new DP is added and *circum-* is interpreted as manner (of movement). We repeat them below and add some more examples.

(47) a. qui          circum-duceret          eum
       REL.NOM.SG   around-lead.IPFV.SBJV.3SG   PRON.ACC.3SG
       '(L. Cornelius Scipio, the quaestor,) was appointed to take him around'
       (Liv. 45.44.7)
    b. Baliares       ceteram-que     levem        armaturam
       Baliares.ACC   rest.ACC.SG-and   light.ACC.SG   arm.PTCP.FUT.ACC.SG
       post      montes            circum-ducit
       behind   mountain.ACC.PL   around-lead.PRS.IND.3SG
       'Baliares and the rest of his light-armed forces he lead round behind the mountains'
       (Liv. 22.4.3)

    c. gladiis         caespites      circum-cidere... nitebantur
       sword.ABL.PL  grass.ACC.PL  around-cut.INF  force-IPFV.IND.PASS.3PL
       'they were striving to cut the turf with their swords'
       (Caes. *Gall.* 5.42)

    d. Olea          et    populus      alba         et    salices
       olive.NOM.SG  and  poplar.NOM.SG  white.NOM.SG  and  willow.NOM.SG
       solstitio        folia          circum-agunt
       solstice.ABL.SG  leave.ACC.PL  around-turn.PRS.IND.3PL
       'The olive and white poplar and willow turn round their leaves at the solstice'
       (Plin. *Nat.* 45)

    e. antas (...)    qui         **cellam**       circum-cludunt
       anta.ACC.PL  REL.NOM.PL  cell.ACC.SG  around-close.PRES.IND.3PL
       'antae (...) which enclose the cell'
       (Vitr. 3.2)

These examples present interesting differences from the cases discussed in Section 4.1. First of all, the surrounding interpretation is impossible (#*ducere circum eos* 'to lead around them'; #*cidere circum caespites* ´to cut around the grass'; #*agere circum folia* 'to turn around the leaves'; #*claudere circum cellam* 'to close sthg. around the cell'). In these cases, the argument structure of the base verb is not affected and there are no changes in its aspectual class. The accusative DPs in the sentences in (47a-e) are not interpreted as Measurers or as Grounds of projections related to *circum-*. In these cases, *circum-* adds the manner in which these events develop.[32] Although this kind of interpretation is more frequent with transitive base verbs, it is also found with intransitive base verbs, as can be observed in Pliny's example about bees' work, already shown in (7) and repeated in (48). Let us compare (48) with (49).

(48)  donec  una          circum-volet          eodem
      till    one.NOM.SG  around-fly.PRS.SBJV.3SG  in.the.same.place
      'till one bee flies round' [H. Rackham's translation, Loeb *Classical Library*]
      (Plin. *Nat.* 11.9)

---

**32** The difference between (47a) and (47b) is that the latter specifies a location (*post montes* 'behind the mountains'). It is also possible to find a direction *p*P as *per colles* 'through the hills' in *per colles (...) circum-ducat equites* (Liv. 28.33) '(he ordered Laelius) to lead the cavalry round by the hills as secretly as possible'. See Revuelta- Puigdollers (2016: 136–137) for the use of *per* + accusative with verbs prefixed by *circum-*.

(49) circum-volare  **sedem**      **illam**
     around-fly.INF  nest.ACC.SG  the.ACC.SG
     'to fly round about the nest'
     (Quint. *Inst*. 2.6.7)

While in (48) there is a locative construction (*eodem* 'in the same place')
frequently found with verbs of motion, in (49) we find an accusative DP,
which is not selected by the original base verb. In (48) the locative adverb is
interpreted as the place in which the bee flies doing circles. On the other hand,
in (49) the nest is surrounded by flying.

   In cases like (47) and (48), *circum-* seems to be an external or superlexical
prefix, following Svenonius (2004)'s terminology. According to the bibliography
(see Di Sciullo 1997, Svenonius 2004, Di Sciullo & Slabakoba 2005; Gehrke 2008;
among others), this kind of prefixes merges outside the *v*P, and consequently
presents a compositional adverbial meaning. In the structures presented in
Section 4.1, √CIRCUM appears as an internal prefix, i.e., it is inside the *v*P,
and it can be more like a preposition (Place presents a DP as complement) or
more like an adverb (√CIRCUM is the complement of Place).

   This distinction is closely related to Marantz's (2010) proposal on phases in a
DM framework. The author translates Chomsky's (2001, 2008) phase theory for
the sentence level into the word level, the categorizers being the elements that
trigger phases in the latter. Accordingly, the first phase in the word is consti-
tuted when a root is categorized. The most important difference between the first
phase and the next ones is that the former may result in a special outcome,
whereas subsequent phases result in a predictable outcome.

(50)
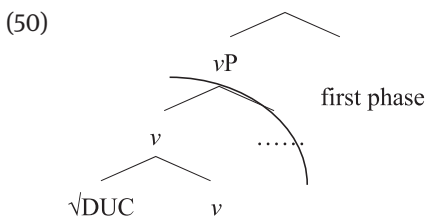


Regarding our data, the special outcome seems to be the addition of new
arguments and changes in aspectual properties, as it was shown for the cases
discussed in Section 4.1. However, the examples in (47) and (48) do not present
these properties. Consequently, we assume that [_Place_ Place [√CIRCUM]] merges
outside the *v*P, also following Svenonius's (2004) proposal for what he calls
superlexical prefixes. This author argues that in these cases the *p*P merges in the

Specifier of Asp(ectual)P (2004: 229). Accordingly, any kind of movement is not necessary for this element to reach the preverbal position and to appear as a prefix.[33]

(51)  Circum- as an external prefix: Ille circumducebat eos 'He lead them around'
      [$_{VoiceP}$ [$_{DP}$ Ille] [$_{Voice'}$ Voice [$_{ASPP}$ [$_{Place}$ Place √CIRCUM] [$_{Asp'}$ Asp [$_{vP}$ducere [$_{DP}$ eos]]]]]]

Although more discussion is needed to develop a complete analysis for these cases, it seems to be clear that from a neo-constructionist approach it is necessary to present a different structure from the ones proposed in Section 4.1.

## 4.3 Summarizing

At the end of Section 2, we summarized the different patterns derived for *circum*'s prefixation taking into account the addition of new arguments to the base verbs and the case in which DPs interpreted as Figure and Ground appear. In the present section, we discussed the following general patterns:
A.  Addition of new arguments to the base verb (unselected objects)
    a.  Transitivization of an intransitive base verb, i.e., the introduction of a Ground in accusative case. Structure in (42) and (43)
    b.  Both, Figure and Ground, in accusative case (bitransitivization). (46)
B.  B. No new argument added to the base verb. *Circum* is an external prefix merged outside the *v*P. (51).

According to the discussion presented at the end of Section 4.1 and in Section 4.2, the pattern of (A) corresponds to structures in which *circum*- merges inside the *v*P (52), while the pattern of (B) corresponds to structures in which *circum*-merges outside the *v*P (53).

(52)  *Circum*- as an internal prefix: Ille circumequitabat urbem 'He rode round the city'
      [$_{VoiceP}$ [$_{DP}$ Ille] [$_{Voice'}$Voice [$_{vP}$ *v*-√EQUIT- [$_{PathP}$ [$_{DP}$ *urbem*] [$_{Path'}$ Path [$_{PlaceP}$ [$_{DP}$ ~~urbem~~] [$_{Place'}$ Place √CIRCUM]]]]]]]

---

**33** That *circum*- ends up being a prefix can be explained in terms of string vacuous Local Dislocation from the DM framework (see Embick 2007). At this point, it is noteworthy to mention again that different dictionaries point out that *circum* can appear as an independent word in compounds (Section 2.2). We leave this discussion open for further research.

(53)  *Circum-* as an external prefix: Ille circumducebat eos 'He led them around'
[<sub>VoiceP</sub> [<sub>DP</sub> Ille] [<sub>Voice'</sub> Voice [<sub>ASPP</sub> [<sub>Place</sub> Place √CIRCUM] [<sub>Asp'</sub> Asp [<sub>vP</sub>ducere
[<sub>DP</sub> eos]]]]]]

# 5 Concluding remarks

Along these lines, we have focused on the characteristics of *circum*'s prefixation in Latin. The major contribution of this work concerns the discussion on argument selection of verbs prefixed by *circum-*, following Acedo-Matellán's (2016) approach. Thus, we assume that this prefix is a Root related to Place in the main structure, not a preposition or an adverb incorporated to a verbal configuration. In fact, we argue that the distinction among the prefix, the preposition and the adverb derives from the merger of the same Root √CIRCUM in different structures. Accordingly, unexpected objects do not end up showing accusative case because of preposition *circum*'s case assignment, but because of the DP position in the main structure. For that reason, the DPs involved in the prefixed verb's structure behave like any other argumental DP and they are subject to the same syntactic operations (ellipsis, demotion, etc.).

We have also directed our attention to the distinction between transitive/intransitive base-verbs, on the one hand, and stative/motion base-verbs, on the other. The first distinction helps us to understand the occurrence of accusative DPs and to differentiate cases in which *circum-* is an internal prefix from cases in which it appears as an external prefix. The stative/motion distinction was fundamental to determine the properties of the Figure, which must be plural with stative verbs. We have also been able to relate this difference to the combination of the prefix construction with diverse adjuncts.

We left some points for further research. One of them concerns the explanation for the infrequent introduction of unexpected objects with transitive base-verbs, while this is the common pattern with intransitive base-verbs. Despite the opened questions, we hope that this approach on *circum*'s prefixation may be a contribution to the advance in the study on word formation and on grammar structure in general.

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