

16. The perfect system in Latin

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Abstract

The Latin perfect system is argued to denote that an eventuality described by a predicate terminates prior to some moment in time, whether utterance time in the case of the ‘present’ perfect, or reference/topic time, in the case of the perfect infinitive, past and future forms. The ‘present’ perfect is argued to function as a perfective, while the past, future and infinitive perfect are argued to denote anteriority. Additional conditions are considered in order to explain the behaviour with state and achievement predicates. The participle in **-to-* generally denotes that an eventuality described by the predicate terminates prior to topic time, as well as that an event’s poststate (if any) holds at topic time. As such the participle is generally passive in diathetical orientation, although there are exceptions. In certain kinds of predicate, namely those describing extent and mental state, the perfect loses direct reference to a prior event and refers only to an eventuality’s poststate.

Keywords: tense, viewpoint aspect, resultative, perfective, poststate, anterior, synthetic, analytic, non-active

1 Introduction

1.1 Formal overview

Latin¹ finite verbs are marked for tense (present, past, future), voice (active and passive), mood (indicative, subjunctive), and aspect (the categories of which

¹ The present article focuses almost entirely on Latin, at the expense of other ancient Italic languages. For some discussion of developments in wider Italic, see Schumacher (this volume, chapter 15, §5.1).

are discussed in this article). The infinitive is marked only for tense-aspect and voice.

Latin verbs have two stems, which are termed in the literature INFECTUM and PERFECTUM (Pinkster 2015: 382; Vairel 1980). The infectum is used to form the imperfect, present and future tense forms, while the perfectum is used to form the past, present and future perfect tense forms.² The perfectum, from the formal perspective, is held to be the product of the merging of the inherited perfect and aorist stems (Clackson & Horrocks 2007: 20, 64, 98f.; Willi 2016: 77f.). The Sabellian languages, making up the other half of the Italic language group, also participated in this process, although the two subgroups opt for different stems in most lexemes (Clackson & Horrocks 2007: 64, citing Meiser 1993: 170f., 2003).

In Latin this resulted in inherited perfect stems showing reduplication, e.g. perfectum *pe~pig-*, infectum *pang-* “fix”, or perfectum *fe~fell-*, infectum *fall-* “deceive”, sitting side by side in the same paradigm with inherited aorist stems in *-s-*, e.g. perfectum *dix-* (= *dik-s-*), infectum *dic-* “say”,³ as exemplified in examples (1) and (2).⁴

² These terms are retained here, as against adopting a term such as ‘imperfective’ and ‘perfective’ stems, in order to differentiate clearly between tense-aspect morphology and tense-aspect semantics, and so as not to prejudge the conclusions of the present investigation.

³ On the formal origins of the Latin perfect stem, see e.g. Meiser (1998: 202-214).

⁴ Examples were found either given in literature discussing the forms concerned, cited *ad loc.* Where a translation is given secondary sources, it should be assumed that the citation was found there. Further examples were found through searches of the *Loeb Classical Library*, <http://www.loebclassics.com/> and the *Perseus corpus* using both the website <http://www.perseus.edu/hopper/>, and a search algorithm written by the author using the morphological data provided in Diogenes, <https://community.dur.ac.uk/p.j.heslin/Software/Diogenes/>, applied to the XML files provided by the *Perseus Digital Library*. Translations are my own unless otherwise stated. Textual sources are given under the appropriate section at the end of the paper. Texts quoted are normalized for capitalization and diacritics, regardless of what is published in each edition. Texts taken from secondary sources may not be quoted to the same extent as in those sources.

- (1) *num me fe~fell-it, Catilina*
PTCL PRON.1SG.ACC deceive.PRF-3SG Catiline.VOC.SG
“**Was I mistaken**, Catiline [... ?]” (Cicero *In Catilinam* 1.3.7, text
Clark 1908, translation Yonge 1856)
- (2) *dix-i ego idem in senatu ...*
say.PRF.ACT-IND.1SG PRON.1SG.NOM also in senate.ABL.SG
“**I also said** in the Senate ...” (Cicero *In Catilinam* 1.3.7, text Clark
1908, translation based on Yonge 1856)

The regular forms in *-v-* in Latin, as with their counterparts **-tt-** and **(n)ç-/nš-** in Oscan and Umbrian respectively, likely do not have a direct Indo-European ancestry.⁵

By the time of our earliest Latin texts, the merging of the former perfect and aorist paradigms is complete. While the inherited synthetic perfect stem had no voice distinction, at the point when the perfect was integrated into the rest of the verb system, an analytic form was developed for it, consisting of a finite form of *esse* “be” and a participle in *-tu-* (inherited **-to-*). The general scheme, in the first person singular indicative, is given in Table 1, using the verb *amo* “love”.⁶

⁵ For this view, and an overview of the various arguments, including those of Rix (1992) and Meiser (1998, 2003), see Willi (2009, 2016). See also Grestenberger’s recent work on deponents at an IE level, e.g. 2016.

⁶ For full paradigms, see e.g. Kennedy & Mountford (1962).

Table 1. Latin verb system

		Synthetic		Analytic	
		Active		Non-active	
		Infectum	Perfectum	Infectum	Perfectum
IND	PRS	<i>amo</i>	<i>amavi</i>	<i>amor</i>	<i>amatus sum</i>
	PST	<i>amabam</i>	<i>amaveram</i>	<i>amabar</i>	<i>amatus eram</i>
	FUT	<i>amabo</i>	<i>amavero</i>	<i>amabor</i>	<i>amatus ero</i>
SBJV	PRS	<i>amem</i>	<i>amaverim</i>	<i>amer</i>	<i>amatus sim</i>
	PST	<i>amarem</i>	<i>amavissem</i>	<i>amarer</i>	<i>amatus essem</i>
INF		<i>amare</i>	<i>amavisse</i>	<i>amari</i>	<i>amatus esse</i>
PTCP		<i>amans</i>		<i>amatus</i>	

In Latin there also exists a group of so-called ‘deponent’ verbs which are traditionally glossed as passive in form, while active in meaning.⁷ The forms are given in Table 2, using the verb *hortor* “encourage”.

Table 2. Latin verb system: ‘deponents’

		ACTIVE	
		INFECTUM	PERFECTUM
IND	PRS	<i>hortor</i>	<i>hortatus sum</i>
	PST	<i>hortabar</i>	<i>hortatus eram</i>
	FUT	<i>hortabor</i>	<i>hortatus ero</i>
SBJV	PRS	<i>horter</i>	<i>hortatus sim</i>
	PST	<i>hortarer</i>	<i>hortatus essem</i>
INF		<i>hortari</i>	<i>hortatus esse</i>
PTCP		<i>hortans</i>	<i>hortatus</i>

⁷ For discussion of the syntax and semantics of these forms see e.g. Baldi (1976); Embick (2000); Clackson & Horrocks (2007: 225).

1.2 The problem of the semantics of the Latin perfect

The ‘present’ perfect,⁸ henceforth simply ‘perfect’ (opposed to the future perfect or pluperfect, henceforth ‘past perfect’) is generally regarded as the most problematic part of the Latin verb system from a semantic perspective (Pinkster 2015: 444, 1983: 286; Haverling 2010: 343). Since the perfectum is paradigmatically opposed to the infectum, that we find a perfective ~ imperfective opposition (per e.g. Acedo-Matellán 2016: 46) is not surprising:

(3)	<i>ardere</i>	<i>censui</i>	<i>aedis.</i>
	burn.PRS.INF.ACT	think.PRF.IND.ACT.1SG	house.ACC.PL
	<i>ita</i>	<i>tum</i>	<i>confulgebant.</i>
	so	then	shine.IPRF.IND.ACT.3PL
	“ I thought that the house was burning. It was so bright at that time.”		
	(Plautus <i>Amphitruo</i> 1067, text from Pinkster 2015: 414)		

As such, the perfect is the standard form used for narrating a sequence of past events in narrative:

(4)	<i>Suebi ...</i>	<i>domum</i>	<i>reverti</i>
	Suebi.NOM.PL	home.ACC.SG	return.PRS.INF.NACT
	<i>coeperunt;</i>	<i>quos</i>	<i>ubi</i>
	begin.PRF.IND.ACT.3PL	REL.ACC.PL	when
	<i>qui</i>	<i>proximi</i>	<i>Rhenum</i>
	REL.NOM.PL	near.SUPERL.NOM.PL	Rhine.ACC.SG
	<i>incolunt</i>	<i>perterritos</i>	
	inhabit.PRS.IND.ACT.3PL	terrify.PRF.PTCP.ACC.PL	

⁸ That is paradigmatically opposed to the past and future perfects, although not carrying present time semantics.

<i>senserunt,</i>	<i>insecuti</i>	<i>magnum</i>
perceive.PRF.IND.ACT.3PL	follow.PRF.PTCP.NOM.PL	great.ACC.SG
<i>ex</i>	<i>iis</i>	<i>numerum</i>
from	them.ABL.PL	number.ACC.SG

occiderunt.

kill.PRF.IND.ACT.3PL

“the Suebi... **began** to return home; when those who live nearest the Rhine **saw** that they were terrified, pursued and killed a great number of them.” (Caesar *De bello Gallico* 1.54.1, text Holmes 1914)

In narrative, reference time is necessarily set prior to the time of utterance. However, the perfectum has other uses which presuppose a reference time at the time of utterance. Such instances come out as a present perfect or present in English, per example (5).

(5) <i>eadem</i>	<i>nocte</i>	
same.ABL.SG	night.ABL.SG	
<i>accidit</i>	<i>ut</i>	
happen.PRF.IND.ACT.3SG	that	
<i>esset</i>	<i>luna</i>	<i>plena,</i>
be.IPRF.SBJV.ACT.3SG	moon.ABL.SG	full.ABL.SG
<i>qui</i>	<i>dies</i>	<i>maritimos</i>
REL.NOM.SG	day.NOM.SG	of_the_sea.ACC.PL
<i>aestus</i>	<i>maximos</i>	<i>in</i>
swell.ACC.PL	great.SUPERL.ACC.PL	in
<i>Oceano</i>	<i>efficere</i>	
Ocean.ABL.SG	produce.PRS.INF.ACT	
<i>consuevit</i>		
accustom.PRF.IND.ACT.3SG		

“On the same night it happened to be a full moon, which **is accustomed** to cause very high tides in the Ocean” (Caesar *De bello Gallico* 4.29, text Holmes 1916; also given in Allen & Greenough 1887: 198)

Approaches to analysing the Latin perfect have treated the perfect as fundamentally denoting:

1. Perfective aspect (Meillet 1933: 28f.);⁹
2. Past tense (Serbat 1980a: 53f.; cf. Poirier 1980: 88);
3. Both tense and aspect, as an anterior perfective (Pinkster 2015: 442-444).

The third view has in recent times gained ascendancy, and is often explained within the context of the historical development combining not only formally but also semantically the senses of the IE perfect and aorist (Hoffmann & Szantyr 1972: 317; Pinkster 1983: 293f., 2015: 444; Clackson & Horrocks 2007: 20). As Pinkster (2015: 444) points out, however, the mere fact of formal syncretism of perfect and aorist systems “can be explained much better by assuming that the semantic differences between them had disappeared, than by assuming that the original differences were preserved.”

1.3 Periodization of Latin

Notwithstanding the many difficulties in periodizing Latin (for which see Penney 2011; Adams 2011; Clackson & Horrocks 2007: 265f.), or indeed any language, it is nevertheless helpful to identify characteristics of the language of particular periods. For these purposes, I follow the periods and associated dates given by Pinkster (2015: 5), except that I do not make use of ‘Silver Latin’

⁹ Meillet does not use the term ‘perfective’ or its equivalent, but rather describes it as denoting “le procès achevé”. For discussion see Pinkster (1983: 286f.) and Szemerényi (1987: 5f.).

and instead for simplicity of exposition follow Clackson (2011a) in taking Classical and Silver Latin together as ‘Classical’. The periods and approximate dates are given in Table 3.

Table 3. Periodization of Latin

Period	Approximate dates
Early Latin	c. 240 – 90 BCE
Classical Latin	90 BCE – AD 199 CE
Late Latin	200 – 600 CE

2 Frameworks, terminology and definitions

2.1 Viewpoint aspect

In the spirit of Klein (1992, 1994), Bary (2009, 2012) and Devine & Stephens (2013: 69), I take viewpoint aspect to be a relation between the time of a situation, or ‘situation time’, and the time about which a claim is being made, or ‘topic time’ (also known as ‘reference time’). Situation and topic time may be regarded as sets or spans of time atoms (Krifka 1989: 96, 1992: 33). Situation time may be understood as a function mapping a situation to a set of times, or temporal trace, $\tau(e)$ (Krifka 1989), while topic time can be understood as a set of times t_t .

On this understanding, perfective aspect denotes that situation time is included in topic time (Devine & Stephens 2013: 69), imperfective that topic time constitutes a non-final part of situation time (per Bary 2009: 78), and anterior that situation time precedes topic time.¹⁰ These definitions are given formally in (6) through (8):

¹⁰ This anterior formulation constitutes a modification of Klein’s definition of the aspectual semantics of the perfect (Klein 1992: 538), namely that topic time is included in the posttime of situation time. My formulation does not posit a separate expanse of time ‘posttime’, but relies for the definition purely on a relation to situation time.

- (6) PFV: $\tau(e) \subseteq t_t$
- (7) IPFV: $\tau(e) \supseteq t_t$
- (8) ANT: $\tau(e) < t_t$

2.2 Tense

Tense is understood here as a relation between topic time and the time of the utterance, or set of times that constitute utterance time, t_u (Klein 1992: 536). On this model, past tense denotes that topic time occurs prior to utterance time, present tense that topic time includes utterance time, and future tense that utterance time precedes topic time:

- (9) PST: $t_t < t_u$
- (10) PRS: $t_t \supseteq t_u$
- (11) FUT: $t_t > t_u$

2.3 Situation types

Starting with Aristotle and in modern times Ryle (1949), Vendler (1957) and Kenny (1963), it has been standard in discussion of verbal semantics to distinguish various situation types, of which the most commonly referred to are those of Vendler (1957): accomplishments, activities, achievements and states. In general these may be distinguished according to the properties of telicity (in general terms, the presence or absence of terminal point) and whether or not the situation has phases. Thus accomplishments are telic and have phases, activities have phases but are atelic, states have no phases and do not involve change, while achievements are telic but do not have phases. Furthermore, since telicity may be taken to be a property of whole predicates / VPs (see Horrocks & Stavrou 2007: 638), Vendlerian situation aspectual distinctions are best taken as descriptions of whole predicates / VPs rather than of individual verb types. This is not the place to discuss the extent to which, and manner in

which, the verbal head plays a role in determining the situation aspect of the predicate, except to say that I follow Rothstein (2004, 2008: 2f.) in holding that the verbal head has an important role to play here.¹¹

In more specific terms, we may define Vendlerian predicate types as follows:

- (12) ACTIVITY: a potentially infinite set of subeventualities in the denotation of X, each of which subeventualities in turn consists of a finite set of subsubeventualities, which however are not in the denotation of X;
- (13) STATE: a predicate subdivisible into an infinite number of subeventualities in the denotation of X, i.e. each subeventuality may itself be subdivided into eventualities in the denotation of X *ad infinitum*. This is also known as the subinterval property (for a full overview of the history of which concept, see Landman & Rothstein 2012). Note the difference with activities, where subeventualities may not be so infinitely divided;¹²
- (14) ACHIEVEMENT (following Ramchand 1997: 120-123): a predicate X describing a transition of zero conceptual length from a situation where the state in question does not hold to one where it does. At this point we do not take into account achievement change-of-state eventualities, for which see below 2.4;
- (15) ACCOMPLISHMENT: a predicate X describing a transition with an endpoint, where the transition consists of a finite set of subeventualities each of which is not in the denotation of X.

For present purposes, I take achievements, accomplishments and activities together, and treat states separately. The key distinction between these two groups of predicates is the presence and absence of atomicity

¹¹ For a brief survey of the issues see Rothstein (2008: 1-3).

¹² Activities also show the subinterval property down to a certain granularity (Taylor 1977; Dowty 1991: 170-173; Ramchand 1997: 123).

(defined immediately below) in the definition of the predicate, for which see Krifka (1989), Rothstein (2004). An eventuality may be said to be atomic if the following condition holds (after Rothstein 2004: 161):

- (16) If a predicate P is atomic then the elements of P have no proper parts which are also elements of P.

In these terms accomplishments and achievements in themselves, and the minimal subeventualities of activities, are atomic. By contrast, states are not atomic, since a state X has no subparts that are not also subparts of X.

2.4 Conceptual moments

Following Ramchand (1997) and Krifka (1992), I hold that temporal structure in linguistic terms is atomic, so that T_a is the set of all time atoms. Ramchand refers to these atomic entities as CONCEPTUAL MOMENTS. Following Krifka, there may be said to exist for every eventuality e a temporal trace function $\tau(e)$, which “maps every event onto its temporal duration” and “which gives us the conceptual moments isolable in the event, in correct temporal order” (Ramchand 1997: 68), i.e.:

$$(17) \quad \tau(e) = (t_0, t_1, \dots, t_{n-1}, t_n)$$

In this way, one can distinguish between physical time as a continuous function, and ‘linguistic time’ which can be modelled as atomic.

As Ramchand (1997: 124) observes, state predicates are different, in that their temporal structure is non-atomic. Rather for a state predicate one may say that ‘there is an interval t over which the state is predicated to hold’ but ‘no fixed endpoint to the state and there is no individuation into different conceptual moments’. Accordingly, for her, “the temporal trace function is not

defined for them” (Ramchand 1997: 124). However, it does not seem to me necessary to take this step. Rather, one may say instead that the atomic units into which the temporal trace function divides up the stative eventuality may be of arbitrary length in terms of physical time, and that accordingly there are multiple solutions to the application of the temporal trace function to a state predicate. This property of state predicates turns out to have important implications for the interpretation of state predicates headed by perfects in Latin, as we will see.

2.5 Change of state

Certain verbs head predicates which describe transitions from one state to another, i.e. change of state. These may be modelled as complex eventualities consisting of a change-of-state subevent, either accomplishment or achievement in the terms outlined above, followed by a state subevent, having the properties of states (Rappaport Hovav & Levin 1998: 104f.; Kiparsky 2002: 115). In what follows I term this state subeventuality the *POSTSTATE* (cf. Bary 2009). By contrast, I reserve the term *POSTSITUATION* for a situation pertaining after the termination of an eventuality, regardless of whether such a situation is specifically envisaged in the semantics of the predicate.

In the case of accomplishment changes of state, the two eventualities can be understood to abut one another on the right/left respectively, i.e.:

$$(18) \quad \tau(e) \supset\subset \tau(s)$$

We have said that a prestate achievement eventuality is minimally defined in terms of two conceptual moments, a moment where the state does not hold, followed by one moment where the state does hold. An achievement change-of-state compound eventuality therefore consists of such an eventuality

followed by the poststate. However, the poststate may be counted from the first moment where the state holds followed by all subsequent moments where this is the case. This means that the temporal trace of the prestate subeventuality and that of the poststate may be said to intersect by a single conceptual moment, i.e.:

$$(19) \quad |\tau(e) \cap \tau(s)| = 1^{13}$$

This is significant in particular for our understanding of the semantics of the future perfect (see 3.2.2).

2.6 Resultative

Resultatives do not fit neatly into a division between situation and viewpoint aspect. However, insofar as they relate the temporal trace of a state described by a change-of-state predicate to topic time, specifying that the latter is included in the former, they may be regarded as parallel to tense-aspect forms. However, while the result state may either logically or actually be the result of some prior event, for reasons that will become clear I hold that the resultative (at least in Latin) does not necessarily relate the temporal trace of this eventuality to topic time, according to (20), where square brackets indicate that an element is optional.

$$(20) \quad [\tau(e) < t_t \wedge] \tau(s) \supseteq t_t$$

2.7 The semantics ~ pragmatics interface

At various points I will have recourse to pragmatic considerations in the final resolution of the interpretation of the Latin perfect, in particular in regard to

¹³ Where $|x|$ is the cardinality function returning the number of elements of a set x , rather than the absolute function, which (confusingly) has the same notation. See *Wikipedia* ‘Cardinality’ (<https://en.wikipedia.org/wiki/Cardinality>, accessed December 11, 2017).

whether or not the perfect is taken to refer to a situation holding at topic time. It is beyond this paper to address this issue in detail. For these purposes, a given semantic description carries entailments particular to that description which cannot be cancelled, while a pragmatic implicature may be cancelled (see Grice 1975). To exemplify, consider the following cases from English:

- (21) I have stood here for many years.
- (22) I have stood here for many years, and I am still standing here.
- (23) I have stood here for many years, but no longer do.
- (24) I stood here for many years.
- (25) *I stood here for many years, and I am still standing here.

From example (21) the reader is likely to infer that the subject is still standing at the location in question at topic time. However, the felicity of both (22) and (23) show that this inference may be said not to be a function of the semantic description of the perfect, but rather be a pragmatic implicature. By contrast, at least for this native speaker of (British) English, (24) asserts that the standing event terminated prior to topic time. This is shown by the infelicity (again for this speaker of British English) of (25), where the combination of ‘still’ with the simple past is jarring.

3 The semantics of the EL and CL perfect stems¹⁴

3.1 Synthetic present perfect

3.1.1 *Semantics and the sequence of tenses*

I propose that the perfect form in CL denotes past tense and perfective aspect.¹⁵ However, in order to make this case, it is necessary to address the most powerful argument against such a thesis, namely the behaviour of the perfect in respect of the sequence of tenses.

The behaviour of the perfect in regard to the so-called ‘sequence of tenses’ has generally been taken as decisive in favour of the perfect carrying two senses (Devine & Stephens 2013: 91f.; Pinkster 1983: 291; Comrie 1976: 53).¹⁶ According to the rules of the sequence of tenses, Latin tense forms may be divided into two groups: past, including imperfect and pluperfect, and non-past, including present and future. A past tense form (i.e. imperfect or pluperfect) in the matrix clause will introduce a past tense of the subjunctive in a dependent clause. This is termed ‘secondary’ or ‘historic sequence’. By contrast, in so-called ‘primary sequence’, a non-past tense (i.e. present or future) in the matrix clause will introduce a non-past tense of the subjunctive in a dependent clause (Clackson & Horrocks 2007: 59; see Pinkster 2015: 552-605 for detailed discussion). The EL and CL perfect is unlike other tenses in that it may introduce a verb in a dependent clause in either historic or primary sequence. This is usually explained with reference to polysemy of the present perfect, i.e. perfective and anterior:

¹⁴ Here only the indicative, infinitive and participle are described. For descriptions of the function of the subjunctive forms see Pinkster (2015: ch. 7).

¹⁵ Such an understanding is in fact implicit in Pinkster’s formulation: “States of affairs that are presented as anterior to the time of speaking are at the same time presented in retrospect and as one complete, indivisible whole – in other words, they have perfective aspect ...” (Pinkster 2015: 442)

¹⁶ Pinkster also cites among others Harris (1970: 65) and Poirier (1978).

- (26) *nunc* *prorsus*
 now directly
hoc *statui,* *ut [...]*
 this.ACC.SG decide.PRF.IND.ACT.1SG that
utri=que *a* *me*
 both.DAT=CONJ by PRON.1SG.ABL
mos *gestus*
 custom.NOM.SG obey.PRF.PTCP.SG
esse *videatur*
 be.PRS.INF see.PRS.SBJV.NACT.3SG
- “**I have** right now **come to the view** that [...] in both (ways of life) I have kept the precepts [*lit.* that [...] **it seems** that the custom has been kept by me]” (Cicero *Epistulae ad Atticum* 2.16.3, text Purser 1903)¹⁷

- (27) *statuerunt* ... *maiores* *nostrī* *ut [...]*
 establish.PRF.IND.ACT.3PL forefather.NOM.PL POSS.1PL.NOM.PL that
sortito *in* *quos=dam*
 lot.ABL.SG against some.ACC.PL=PTCL
animadverteretur
 censure.IPRF.SBJV.NACT.3SG
- “[O]ur forebears **determined** that... against a few punishment **should be brought** by lot” (Cicero *Pro Cluentio* 46.128, text Clark 1908)¹⁸

For us the question is the extent to which the matrix verb may be said fully to determine the tense of the subordinate clause. Only if this is the case is

¹⁷ Cf. in narrative: *perduxit ... possent* (Livy 2.1.6, text Foster 1919).

¹⁸ Cf. Cicero *Pro Roscio Amerino* 32, cited by Pinkster (1983: 289).

it possible to argue that the tense-aspect of the dependent verb sequence reflects the tense-aspect semantics of the matrix verb.

Certainly there is plenty of evidence of the alternation of primary and historic sequence after the perfect which might support this thesis. Thus in narrative it is normal to find a subordinate clause with a historic sequence verb after a perfect. However, historic sequence is also found where we might expect non-past.

(28) <i>huic</i>	<i>ego</i>	<i>causae [...]</i>
this.DAT.SG	PRON.1SG.NOM	case.DAT.SG
<i>accessi</i>	<i>ut</i>	<i>infamiae</i>
undertake.PRF.IND.1SG	in_order_to	disgrace.DAT.SG
<i>communi</i>	<i>succurrerem.</i>	
public.DAT.SG	aid.IPRF.SBJV.1.SG	

“**I undertook** this case [...] in order **to bring assistance** to public disgrace (of the Senate).” (Cicero *In Verrem* 1.2, text Peterson 1917)

By contrast, on occasion primary sequence is found where we should expect historic on the basis of the rules of the sequence of tenses:

(29)	<i>in</i>	<i>eodem</i>	(<i>Lucullo</i>)
	in	same.ABL.SG	Lucullus.ABL.SG
	<i>tanta</i>	<i>prudencia</i>	<i>fuit</i> [...]
	so-great.NOM.SG	prudence	be.PRF.IND.ACT.3.SG
	<i>ut</i>	<i>hodie</i>	<i>stet</i>
	that	today	stand.PRS.SBJV.ACT.3SG
	<i>Asia</i>	<i>Luculli</i>	<i>institutis</i>
	Asia.NOM.SG	Lucullus.GEN.SG	ordinance.ABL.PL
	<i>servandis</i>		
	keep.GDV.ABL.PL		

“There **was** so much prudence in the same (i.e. Lucullus) [...] that today Asia **stands** by holding to his arrangements” (Cicero *Academica* 2.1.3, text from Hale 1886: 447, translation based on Hale)

In this passage Cicero describes Lucius Licinius Lucullus, who died in 57/56 BCE (Badian 1999). The *Academica* is dated to 45 BCE (Corbell 2013: 22) well after Lucullus’ death.

Crucially, primary sequence can even be introduced by the imperfect, which never has present time reference. In the following example the primary sequence non-active perfect / resultative *sit appellatus* is introduced by the imperfect *excellebat*.¹⁹

¹⁹ This example is also discussed in Pinkster (2015: 575-576), who gives it as an example of an author seeking to “avoid ambiguity”.

(30) <i>quamquam</i>	<i>enim</i>	<i>adeo</i>
although	PTCL	so_much
<i>excellebat</i>	<i>Aristides</i>	<i>abstinentia,</i>
excel.IPRF.IND.3SG	Aristides.NOM.SG	self-control.ABL.SG
<i>ut</i>	[...]	<i>cognomine</i>
that		name.ABL.SG
<i>Iustus</i>	<i>sit</i>	<i>appellatus</i> [...]
Justus	be.PRS.SBJV.3SG	call.PRF.PTCP.NOM.SG
<i>multatus</i>	<i>est.</i>	
punish.PRF.PTCP.NOM.SG	be.PRS.3SG	

“For, though Aristides **was** so **pre-eminent** in self-control that [...] he **is** (/ **has been**) named the Just [...] he was punished” (Nepos *Aristides* 1.2, text from Hale 1886: 450, translation based on Hale)

The following example is parallel, with imperfect *meditabar* introducing present subjunctive *accusem*:

(31) <i>pol</i>	<i>ego</i>	<i>ut</i>
indeed	PRON.1SG.NOM	how
<i>te</i>	<i>accusem</i>	<i>merito</i>
you.ACC.SG	accuse.PRS.SBJV.ACT.1SG	deservedly
<i>meditabar</i>		
consider.IPRF.IND.1SG		

“Indeed, **I was considering** how **to accuse** you, as you deserve it.” (Plautus *Aulularia* 550, text Leo 1895, translation de Melo 2007: 66)

Examples such as these show that the rules concerning the sequence of tenses after a present perfect are not hard and fast. For Pinkster (2015: 558) they are rather an “optional strategy, which has a semantic basis”, although he concedes that taking the temporal orientation of the matrix clause as the

orientation point for the subordinate clause “seems to have been the ‘default’ option” (p. 557).²⁰ In other words, while it may be said that the subordinate clause very often takes its temporal orientation from the matrix clause, it is clearly not required to do so, and its temporal orientation has the possibility of being independently derived. This point is critical, since it shows that the tense form of the matrix clause cannot be any guarantee of a particular tense-aspect reading in the subordinate clause. Indeed, it shows that the relationship between tense-aspect reading of the subordinate clause and that of the matrix clause lies in the domain of pragmatics rather than semantics, since the implicature that the temporal orientation of the matrix clause will be adopted by the subordinate clause can be cancelled.²¹

This means that the principal argument for believing that the Latin perfect might conserve two semantics, i.e. perfective and anterior, loses its strength. There is no reason in principle why a subordinate clause with primary tense forms and introduced by a perfect should not derive its temporal orientation from the discourse context more broadly, rather than rigidly depending on the matrix verb. Following this logic, the most economical explanation of the semantics of the Latin perfect is that it carries only one tense-aspectual value, namely perfective aspect and past tense, i.e.:

$$(32) \quad \tau(e) \subseteq t_t \wedge t_t < t_u$$

In what follows, I outline how such a description can explain the attested behaviour.

²⁰ For more radical conclusions regarding the existence of sequence of tense rules, see Hale (1886: 447). For a summary of other arguments used to support the polysemy hypothesis, see Pinkster (1983: 291f.).

²¹ Note that it does not matter how frequently counterexamples to the expected sequence occur. Rather it is important merely to show that they do occur to demonstrate that the subordinate clause can derive its temporal orientation independently of the matrix clause.

3.1.2 *Atomic predicates*

Perfects are frequently encountered heading accomplishment predicates where the subject does not change state, and describe events taking place and finishing prior to utterance time:

- (33) *maiores* *nostrī* [...]
 ancestor.NOM.PL our.NOM.PL
novam *urbem* *tam*
 new.ACC.SG city.ACC.SG so
brevi *aedificarunt*
 quick.DAT.SG build.PRF.IND.ACT.3PL
 “Our ancestors [...] **built** a new city so quickly” (Livy 5.53.9, text Foster 1924)

The perfect’s denotation of a completed event in past time leads directly to its predominant use as a narrative tense. However, the perfect can of course be used to describe an accomplishment or achievement whose resulting situation is perceptible beyond topic time, at utterance time:

- (34) *Dionysio* *plurimam* *salutem;*
 Dionysus.DAT.SG much.ACC.SG health.ACC.SG
cui *quidem* *ego*
 REL.DAT.SG indeed I.NOM.SG
non *modo* *servavi*
 NEG only keep.PRF.IND.ACT.1SG
sed *etiam* *aedificavi*
 BUT even build.PRF.IND.ACT.1SG
locum.
 place.ACC.SG

“My kindest regards to Dionysus; **I have** not only **kept** a place for him, but, actually **built** one.” (Cicero *Epistulae ad Atticum* 4.19.2, text Purser 1903, translation Shackleton Bailey 1999)²²

Note, however, that the availability of the anterior interpretation in this example is best seen as a function of the perfective semantics of the perfect combining with the pragmatics of the wider discourse structure, rather than part of the semantic definition of the Latin perfect: in (34) it is clear from the greeting that the temporal orientation of the wider discourse context is topic time. It is therefore highly likely that the effects of any event described by a perfect-headed predicate would be construed as holding or pertaining at utterance time. Indeed, in this example it would be odd in the extreme for Cicero to be stating that he built a place for Dionysius, but that that place no longer exists.

Note that the perfect of these predicates is not used to describe an activity starting in the past and continuing into the present. For this the present tense is used:

(35) <i>multos</i>	<i>me</i>	<i>hoc pacto</i>
many.ACC.PL	me	in_this_way
<i>iam</i>	<i>dies</i>	<i>frustramini.</i>
now	day.ACC.PL	trick.PRS.IND.NACT.2PL

“**You’ve been tricking** me like this for many days already.” (Plautus *Mostellaria* 589, text from Pinkster 2015: 399, translation Pinkster)

²² Parallel: *scripsi antea* “I wrote previously” (Cicero *Epistulae ad Atticum* 1.2.1, text Purser 1903).

(37) <i>fuimus</i>	<i>Troes,</i>	<i>fuit</i>
be.PRF.IND.ACT.1PL	Trojan.NOM.PL	be.PRF.IND.ACT.3SG
<i>Ilium</i>	<i>et</i>	<i>ingens /</i>
Ilium.NOM.SG	and	great.NOM.SG
<i>Gloria</i>	<i>Teucrorum</i>	
glory.NOM.SG	Teucrian.GEN.PL	

“We Trojans are no more; no more is Ilium and the Teucrians’ great glory” [*lit.* “We Trojans have been, Troy has been, and the Teucrians’ great glory”] (Vergil *Aeneid* 2.325-326, text Greenough, translation Horsfall 2008: 19; cited in Pinkster 2015: 446)

This has been interpreted as referring to present time in Horsfall’s translation, and could be seen as an anterior use, i.e. locating the subject in the postsituation of the predicate. However, our understanding of the Latin perfect as a past perfective offers an alternative, namely, to assert that the state terminated prior to utterance time, with the implicature that the state is terminated at utterance time. A literal translation would thus read, ‘We were Trojans (i.e. we are not now); Ilium was (and is not now) ...’

However, unlike in the case of atomic predicates, the perfect does not NECESSARILY bound stative predicates:

(38) <i>vadimonia</i>	<i>deserere</i>	<i>quam</i>
bail.ACC.PL	desert.PRS.INF.ACT	than
<i>illum</i>	<i>exercitum</i>	<i>maluerunt</i>
that.ACC.SG	army.ACC.SG	prefer.PRF.IND.ACT.3PL

“[those who] **have preferred** to desert their bail rather than that army” (Cicero *In Catilinam* 2.3.5, text Clark 1908, translation Yonge 1856)

In this example, the perfect does not assert that at topic time those who preferred to desert their bail no longer prefer to do that. On the contrary, the

assumption is that they have stuck with their original decision and still prefer that. The issue is explicit in the next example:

(39) <i>equidem</i>	<i>certo</i>	<i>idem</i>
truly	certainly	same.NOM.SG
<i>sum</i>	<i>qui</i>	<i>semper</i>
be.PRS.IND.ACT.1SG	REL.NOM.SG	always
<i>fui.</i>		
be.PRF.IND.ACT.1SG		

“**I**’m certainly the same **I**’ve always **been.**” (Plautus *Amphitruo* 447, text Leo 1895, translation Pinkster 2015: 442)

However, there is a problem: according to our definition of the perfective, the eventuality described by the predicate must be included in topic time, which would require the state to cease prior to utterance time, since the entire eventuality would need to be included in topic time. As examples (38) and (39) show, however, this is not the case. It seems, then, that our current definition of perfective aspect is inadequate, and that the Latin perfect interacts differently with state predicates from atomic predicates, in that in state predicates it allows for the possibility that the state in question continue after topic time, while in atomic predicates it does not. Why should this be?²⁴

Earlier we defined stativity and the perfective, respectively, as follows:

- (40) STATE: a state predicate X may be subdivided into an infinite number of subeventualities in the denotation of X, i.e. each subeventuality may itself be subdivided into eventualities in the denotation of X *ad infinitum*.

²⁴ Devine & Stephens (2013: 71f.) do not address examples of this kind directly, but do mention inchoative readings of the perfect of stative verbs such as *amavi* “I loved” and *timui* “I feared” at Seneca *Epistulae* 3.2 and Livy 22.12.6: app. crit.

$$(41) \quad \text{PFV: } \tau(e) \subseteq t_t$$

As we have said, applying (41) to (40), should yield only one interpretation, namely that the state terminates within the bounds of, or coterminously with, topic time, the same interpretation we saw in atomic predicates. However, there is another way of understanding perfectivity, which still retains the observed behaviour in atomic predicates, but which still allows for state predicates, uniquely, to continue after topic time, as follows:

(42) The perfective includes situation time in topic time for an eventuality e' in the denotation of a predicate X, where e' is a subpart of e which is also in the denotation of X.

For telic predicates, i.e. accomplishments and achievements, this is only true where e and e' are coextensive. In the case of activities, by contrast, the perfective may include either e or e' in topic time. Nevertheless, the fact that at least one subeventuality must have finished prior to topic time yields the observed terminative readings in activity predicates. The same may be said to be the case with activity predicates

In the case of states, however, the predicate is not divisible into atomic units. Accordingly, the perfective may include in topic time either the entire predicate, or any subpart of it. There is no requirement for a terminative reading since there are no discrete elements in the predicate that have a natural terminal point. Thus, in effect the perfective is able to isolate a subpart of a static situation, as in the case of *idem sum qui semper fui* “I am the same I’ve always been” quoted at (39).²⁵

²⁵ This account avoids the need for the application of a coercion principle, as employed by Bary (2009) in the case of the Greek aorist, and in Latin by Devine & Stephens (2013: 71f.).

Note, therefore, that the perfect of state predicates is fundamentally ambiguous as to what part of an eventuality is ultimately related to topic time. If an author wishes to state unambiguously that a state starts prior to utterance time and continues at utterance time, the present is used, as in many languages (e.g. Fischer, this volume, §3.4):

- | | | | |
|------|-------------|------------------|----------------------|
| (43) | <i>is</i> | <i>Lilybaei</i> | <i>multos</i> |
| | DEM.NOM.3SG | Lilybaeum.LOC.SG | many.ACC.PL |
| | <i>iam</i> | <i>annos</i> | <i>habitat</i> |
| | now | year.ACC.PL | live.PRS.IND.ACT.3SG |
- “For many years **he has been living** at Lilybaeum” (Cicero *In Verrem* 4.38, text Peterson 1917, translation Pinkster 2015: 399)

By Late Latin the ambiguity of the perfect with respect to the continuing of the state of the predicate beyond topic time is exploited to the full with the advent of an ingressive sense, familiar from the Greek aorist (Pinkster 2015: 449f.):

- | | | | |
|------|-----------|-------------------|---------------------------|
| (44) | <i>et</i> | <i>Dorus</i> | <i>evanuit,</i> |
| | and | Dorus.NOM.SG | disappear.PRF.IND.ACT.3SG |
| | <i>et</i> | <i>Verissimus</i> | <i>ilico</i> |
| | and | Verissimus.NOM.SG | immediately |
- tacuit ...*
be_silent.PRF.IND.ACT.3SG
- “and Dorus disappeared, and Verissimus at once **held his peace**” (Ammianus Marcellinus 16.6.3, text from Pinkster 2015: 381, translation Rolfe 1935)

It is worth comparing our reformulation of the perfective with that of the imperfective, given above at (7), repeated here for convenience.

(45) IPFV: $\tau(e) \supset t_t$

Unlike the perfective, the imperfective includes topic time in a non-final subpart of situation time. Accordingly, the imperfective can yield in process readings for any predicate, regardless of its atomicity, whereas the perfective will only yield subpart readings for non-atomic predicates.

3.1.4 *Change of state*

As we saw at 2.5, change-of-state predicates can be characterised as complex eventualities, consisting of a change-of-state event e , followed by a poststate s . The interaction between the present perfect and such predicates is consequently more complex than that which we have so far encountered.

The synthetic perfect in these predicates is generally used where the verb accepts a single argument. It always denotes that the first eventuality, the change-of-state event starts and terminates within topic time, and before utterance time. It is, on the other hand, left open whether or not the poststate holds at utterance time. The following give examples of each use in the case of *corruo* “to fall down”:

(46) “Then, in the hand-to-hand fight [...]

<i>duo</i>	<i>Romani,</i>	<i>super</i>
two	Roman.NOM.PL	upon
<i>alium</i>	<i>alius,</i>	[...]
another.ACC.SG	another.NOM.SG	
<i>expirantes</i>	<i>corruerunt.</i>	
die.PTCP.PRS.NOM.PL	fall.PRF.IND.ACT.3PL	

two of the Romans **fell** as they died [...] one upon the other” (Livy 1.25.5, text Foster 1919, translation based on Foster 1919)

(47) “But you ask me why I have sent for Chryssipus:

<i>tabernae</i>	<i>mihi</i>	<i>duae</i>
shop.NOM.PL	me.DAT.SG	two.NOM.PL

corruerunt

collapse.PRF.IND.ACT.3PL

two of my shops **have collapsed** [and the others are showing cracks, so that even the mice have moved elsewhere, to say nothing of the tenants.]”
 (Cicero *Epistulae ad Atticum* 14.9.1, text Purser 1903, translation Shackleton Bailey 1999)

Since *corruerunt* in the first example occurs in narrative, it is clear that the change-of-state event and the poststate (i.e. being fallen) terminate prior to utterance time, and are in no way required to continue to the latter. By contrast, in the second example Cicero’s point is that at the time of writing, the shops underwent a collapse, and that they are still, at the time of writing, in a state of collapse: it is clearly not Cicero’s point that two shops have collapsed but have now been rebuilt. These examples show that the Latin perfect may be read as implying that the poststate holds at utterance time, or not. It is the pragmatics of the discourse, as we saw in §3.1.2 above, which establishes which is asserted in each case.

The temporal structure of these two examples is represented diagrammatically in Figures 2 and 3.

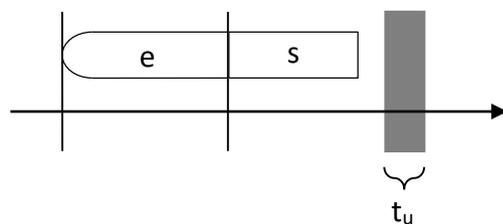


Figure 2. Poststate terminates prior to t_u

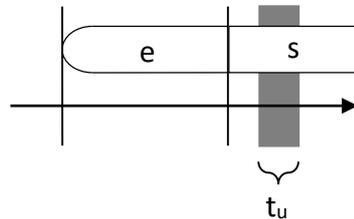


Figure 3. Poststate continues through t_u

3.1.5 Gnomic uses

The present perfect is attested in a gnomic use, which at first sight does not correspond well to our perfective analysis. However, perfectives are attested cross-linguistically with gnomic sense (Hildebrandt 2013; Rogland 2003: 20-23).²⁶ In some cases it is possible to understand a general time reference point relative to which another event must have taken place, as in the following example from Horace. In this example the perfect describes what the person who aims to reach the goal must previously have done:

(48) <i>qui</i>	<i>studet [...]</i>	<i>contingere</i>
REL.NOM.SG	aim.PRS.IND.ACT.3SG	reach.PRS.INF.ACT
<i>metam,</i>	<i>multa</i>	<i>tulit</i>
goal.ACC.SG	many.ACC.PL	bear.PRF.IND.ACT.3SG
<i>fecit=que</i>		
do.PRF.IND.ACT.3SG=CONJ		

“He who aims [...] to reach the goal, first bears and **does** many things.”
 (Horace *The Art of Poetry* 412, text Fairclough 1926, translation Ayer 2014: §475)

²⁶ For Greek influence, see Pinkster (2015: 450).

In other cases the gnomic use can be derived from encyclopaedic knowledge:

- | | | | |
|------|----------------|---------------------|------------------------|
| (49) | <i>non</i> | <i>aeris</i> | <i>acervus</i> |
| | NEG | brass.GEN.SG | pile.NOM.SG |
| | <i>et</i> | <i>auri</i> / [...] | <i>deduxit</i> |
| | and | gold.GEN.SG | remove.PRF.IND.ACT.3SG |
| | <i>corpore</i> | <i>febris.</i> | |
| | body.ABL.SG | fever.ACC.PL | |
- “A mass of brass and gold **does** not [...] **remove** [*lit. has not removed*] fever from the body.” (Horace *Epistulae* 1.2.47, text Fairclough 1926; cf. Ayer 2014: §475)

3.2 Synthetic past and future perfects

3.2.1 *Semantics*

The Latin past and future perfects are traditionally understood as denoting relative past or future tense, that is, denoting that the event of the predicate takes place prior to some other event or reference point (Pinkster 2015: 455, 462). However, I argue here that the use of the Latin perfect outside of the present perfect indicative is better understood within the broader context of anteriority, as defined in §2. This, with slight modifications, as we shall see, has the capacity both to explain the relative tense uses, as well as independent uses where it is not clear relative to what event or reference point the event in question is being located. In specific terms, we shall start from the position that the past perfect is a past anterior, while the future perfect is a future anterior:

- (50) PRF.PST: $\tau(e) < t_t \wedge t_t < t_u$
- (51) PRF.FUT: $\tau(e) < t_t \wedge t_t > t_u$

3.2.2 Atomic predicates

The past and future perfects are very frequently encountered heading accomplishment predicates, where the subject does not change state. Here past and future perfects are regularly used to denote that the event of the predicate either took place prior to another event in the past, or will take place prior to another event in the future, respectively. This is a very natural context for forms denoting that topic time is located after an event, since this semantic readily provides the context for talking about other events. Consider the following examples of the past and future perfects respectively heading accomplishment predicates. In the first Caesar writes that Pompey had previously written a reply, and in the second, Cicero asserts that he will write to Atticus at a point after he has looked through the nobles' wishes.

(52) “[I]t was not possible for the matter to be covered and concealed any longer.

<i>Pompeius</i>	<i>enim</i>	<i>rescripserat</i>
Pompey.NOM.SG	PTCL	reply.PST.PRF.IND.ACT.3SG
<i>sese</i>		
REFL.3SG		

For Pompey **had written in reply** that he ...” (Caesar *De bello civili* 1.19.4, text du Pontet 1901)

(53) <i>cum</i>	<i>perspexero</i>	<i>voluntates</i>
when	look_through.FUT.PRF.IND.ACT.1SG	wish.NOM.PL

nobilium, scribam ad
 noble.GEN.PL write.FUT.IND.ACT.1SG to
te.
 you.ACC.SG

“When **I have ascertained** the wishes of the nobles, I will write to you.”
 (Cicero *Epistulae ad Atticum* 1.1.2, text Purser 1903)

The relative arrangement of the events described may be represented diagrammatically as follows, where the eventualities marked e_1 and e_2 represent the events described by the predicates headed by the past perfect *rescripserat* and future perfect *perspexero* respectively:

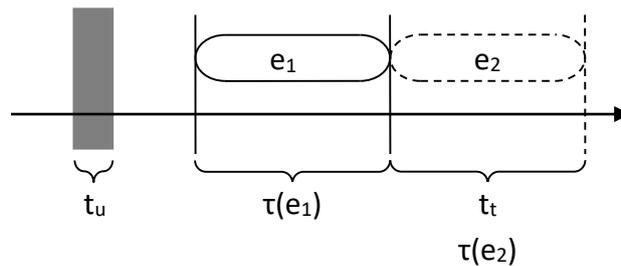


Figure 4. Future perfect

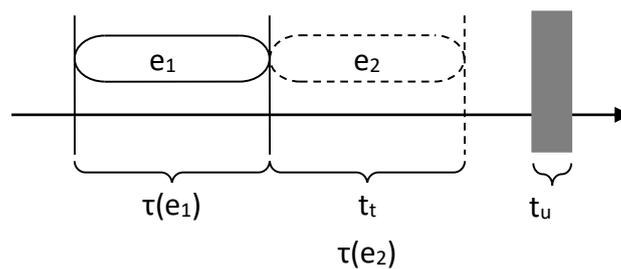


Figure 5. Pluperfect

Any situation pertaining after the terminal point of the event described by the predicate may still hold at topic time:²⁷

(54) <i>et</i>	<i>dum</i>	<i>in</i>
and	while	in
<i>unam</i>	<i>partem</i>	<i>oculos</i>
one.ACC.SG	part.ACC.SG	eye.ACC.PL
<i>animos=que</i>	<i>hostium</i>	<i>certamen</i>
mind.ACC.PL=and	enemy.GEN.PL	battle.NOM.SG
<i>averterat</i>	[...]	<i>capitur</i>
turn.PRF.PST.IND.ACT.3SG		capture.PRS.IND.NACT.3SG
<i>murus</i>		
wall.NOM.SG		

“and while the battle **held the attention** of the enemy in one direction [...] the wall was captured” (Livy 32.24.5, text Sage 1935, translation after Roberts 1912-1924)²⁸

However, this is not part of the denotation, as shown by examples such as the following, where the postsituation (having scared the enemy) is not assumed to hold at topic time (winning the wars):

²⁷ See also Pinkster (2015: 447).

²⁸ Also quoted with comment equating *averterat* with *tenebat* [IPRF.IND.ACT.3SG “to hold”] in Allen & Greenough (1887: 198).

- (55) *nautium* *propter* *expeditionem*
 Nautius.ACC.SG on_account manoeuvre.ACC.SG
qua *magni* *agminis*
 REL.ABL.SG large.GEN.SG army.GEN.SG
modo ***terruerat*** *hostes*
 size.ABL.SG frighten.PST.PRF.IND.ACT.3SG enemy.ACC.PL
 ‘Nautius [won his award] for the manoeuvre by which he **had frightened**
 the enemy by the size of his army...’ (Livy 10.44.4, text Foster 1926,
 translation based on Roberts 1912-1924)

The past and future perfect of achievement predicates are usually used to describe a situation having taken place at some time point prior to topic time, in line with anterior interpretation. The following example shows this behaviour with the future perfect:

- (56) *igitur* *tum* *accedam*
 therefore then approach.FUT.IND.ACT.1SG
hunc, *quando* *quid*
 this.ACC.SG when what.ACC.SG
agam ***invenero.***
 do.PRS.SBJV.ACT.1SG find.FUT.PRF.IND.ACT.1SG
 “So I will approach him when **I’ve found** what to do.” (Plautus *Mostellaria*
 689, text from Pinkster 2015: 467)

In the next example the same relationship of anteriority is present, although this may be transferred to the logical domain, since it is not necessarily clear that it is temporal anteriority is being asserted:

(57) <i>cuicumque</i>	<i>rei</i>	<i>magnitudinem</i>
whatever.DAT.SG	thing.DAT.SG	size.ACC.SG
<i>natura</i>	<i>dederat</i>	<u><i>dedit</i></u>
nature.NOM.SG	give.PST.PRF.IND.ACT.3SG	give.PRF.IND.ACT.3SG
<i>et</i>	<i>modum</i>	
also	limitation.ACC.SG	

“To whatever nature **had given** greatness it also gave limitation” (Seneca the Elder, *Suasoriae* 1.1, text Kiessling 1872, cited in Pinkster 2015: 456)

The future perfect, however, is occasionally found functioning much as one might expect a future perfective to function. These uses are particularly prevalent in Early Latin:

(58) <i>deus</i>	<i>sum,</i>	<i>commutavero.</i>
god.NOM.SG	be.PRS.IND.ACT.1SG	change.FUT.PRF.IND.ACT.1SG

“I am a God, and **I’ll change** it (i.e. the subject of the play).” (Plautus *Amphitruo* 53, text Leo 1895, translation Riley 1912; cited in Clackson & Horrocks 2007: 211)²⁹

Although less frequent, the use is paralleled in Classical Latin:³⁰

²⁹ Cf. Plautus *Casina* 786, cited Clackson & Horrocks (2007: 211).

³⁰ Cf. the future perfect of *increpo* “make a sound” at Cicero *In Catilinam* 1.7.18. Devine & Stephens (2013: 99) also quote in this connection *coniecturam ... ceperis* “you will draw your conclusion” (Cicero *Pro Murena* 9) and *meum officium ... praestitero* “I will prove [the worth of] my office” (Caesar *De Bello Gallico* 4.25).

(59) “... but yours is the harbour from which I shall most gladly set out to my deliverance, or, if that is past praying for,

<i>nusquam</i>	<i>facilius</i>	
nowhere	more_easily	
<i>hanc</i>	<i>miserrimam</i>	<i>vitam</i>
this.ACC.SG	miserable.SUPERL.ACC.SG	life.ACC.SG
<i>vel</i>	<i>sustentabo</i>	<i>vel [...]</i>
either	endure.FUT.IND.ACT.1SG	or

abiecero

cast_off.FUT.PRF.IND.ACT.1SG

nowhere else will I more easily either endure this most miserable life, or, [which is much better,] **cast it off.**” (Cicero *Epistulae ad Atticum* 3.19, Latin text from Pinkster 2015: 468, translation based on Shackleton Bailey 1999)³¹

These examples have generally been taken as evidence of a putative former perfective denotation of the future perfect (Clackson & Horrocks 2007: 211). However, the fact that these instances are of the future perfect heading achievement predicates has not to my knowledge previously been observed. This fact allows us to derive the attested behaviour from an anterior semantic. In §2.1 we defined anteriority as follows:

(60) ANT (1): $\tau(e) < t_t$

According to this definition, situation time occurs prior to topic time. However, in §2.3 we defined achievements in terms of two conceptual moments, the first where the state does not hold, the second comprising the first moment of the new state holding. Furthermore, in §2.5 we defined

³¹ Against a perfective interpretation, see Pinkster (2015: 468).

achievement change-of-state predicates such that the time of the poststate intersects by a single conceptual moment with event time. Accordingly, in the case of achievements, provided that in a particular instance topic time includes the first moment of the new state, event time and topic time can intersect by a single conceptual moment. The anteriority of the future perfect locates the prestate prior to topic time, which indeed the first conceptual moment of the prestate subevent (i.e. the non-holding of the state) is. However, the second and final conceptual moment of the prestate event is also the first moment of the poststate, which may legitimately be included in the postsituation. Accordingly, to account for this we should revise our definition of anteriority to the following:

- (61) The anterior locates topic time t_t after or concurrent with the temporal trace of e , and that the size of the intersection of topic time and the temporal trace of e cannot be greater than a single conceptual moment.

$$\text{ANT (2):} \quad \tau(e) \preceq t_t \wedge |\tau(e) \cap t_t| \leq 1$$

3.2.3 States

We saw in §3.1.3 that a key characteristic of the interaction of the present perfect with states is its ambiguity as to whether the state in question is understood as holding at utterance time. In parallel, the past and future perfect of state predicates is ambiguous as to whether the state holds at topic time.³² In the following example the state terminates immediately prior to topic time, when the needs are met.

³² As Kümmel (2013: 136f.) observes, penetration of the future perfect to the imperfective domain is restricted to stative verbs.

(62) <i>quae</i>	<i>amicis</i>	<i>suis</i>
REL.NOM.PL	friend.DAT.PL	their.DAT.PL
<i>opus</i>	<i> fuerant</i> [...]	<i>omnia</i>
need.NOM.SG	be.PST.PRF.IND.ACT.3PL	all.NOM.PL
<i>ex</i>	<i>sua</i>	<i>re</i>
from	their.ABL.SG	means.ABL.SG
<i>familiari</i>	<u><i>dedit</i></u>	
domestic.ABL.SG	give.PRF.IND.ACT.3SG	
“Whatever his friends needed [...] <u>he supplied</u> from his own means”		
(Nepos <i>Atticus</i> 7.1, text & translation Pinkster 2015: 459) ³³		

By contrast, in the next examples the state starts, but does not terminate prior to, topic time:³⁴

(63) <i>quae</i>	<i>naves</i> [...]	<i>in</i>
REL.NOM.PL	ship.NOM.PL	into
<i>portum</i>	<i>ad</i>	<i>Ruspinam,</i>
harbour.ACC.SG	to	Ruspina.ACC.SG
<i>ubi</i>	<i>Caesar</i>	<i>castra</i>
where	Caesar	camp.ACC.PL
<i>habuerat,</i>	<i>incolumes</i>	<u><i>pervenerunt.</i></u>
have.PRF.PST.IND.ACT.3SG	safe.NOM.PL	arrive.PRF.IND.ACT.3PL
“these ships <u>arrived</u> safely [...] at the harbour of Ruspina, the town where Caesar had his camp.” (<i>Bellum Africanum</i> 34.5, text & translation Way 1955; cf. Pinkster 2015: 459)		

³³ Parallel: *liber fueram* “I was [*lit.* had been] free” (Plautus *Captivi* 305, text from Pinkster 2015: 379).

³⁴ Parallel: *praefuerat* (Caesar *De bello Civili* 2.6.4, text from in Pinkster 2015: 459).

This sense can be paralleled in the future perfect. In the following example, the sense requires that at topic time Menaechmus will continue to be pleasing to Erotium:

(64) <i>at</i>	<i>placuero</i>	<i>huic</i>
but	please.FUT.PRF.IND.ACT.1SG	this.DAT.SG
<i>Erotio, </i>	<i>quae</i>	<i>me</i>
Erotium.DAT.SG	REL.NOM.SG	me.ACC.SG
<i>non</i>	<i>excludet</i>	<i>ab</i>
NEG	shut_out.FUT.IND.ACT.3SG	from
<i>se</i>		
self.ABL.SG		

“But Erotium here **will like** me, who will not lock me out from her place”
 [lit. “But **I will be pleasing** to this Erotium, who will not shut me out from herself”] (Plautus *Menaechmi* 670-671, text Leo 1895, translation Pinkster 2015: 467)

The continuing state in example (64) can be represented diagrammatically as follows:

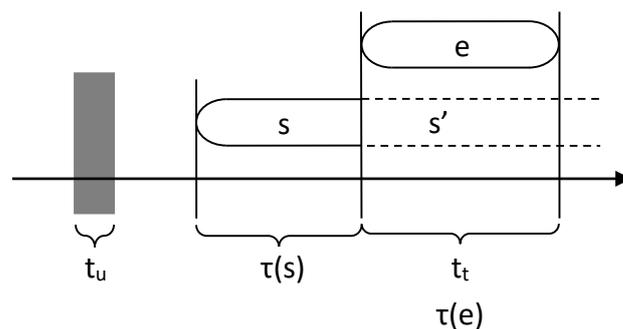


Figure 6. Diagrammatic representation of example (64)

- (66) *ab* *iis* *qui*
 by them.DAT.PL REL.NOM.PL
eum *maxime* *timuerant*
 him.ACC.SG most_greatly fear.PST.PRF.IND.ACT.3PL
maxime *diligetur*
 most_greatly.SUPERL.ADV love.FUT.IND.NACT.3SG
 “he will be most esteemed by those who [*lit.* had] **feared** him most.” (Cicero
Epistulae ad Atticum 8.13.1, text Purser 1903)

The characteristic of an anterior gram appearing to denote a state at topic time rather than a state prior to topic time is paralleled cross-linguistically (Bybee, Perkins & Pagliuca 1994: 74). As with the present perfect, the possibility of two interpretations in state predicates can be explained with reference to the subinterval property, for which see §2.3 above. To account for the attested behaviour in state predicates, we can revise our definition of anteriority, as we did for the perfective, i.e.:

- (67) The anterior locates topic time t_t after situation time for an eventuality e' in the denotation of a predicate X, where e' is a subpart of an eventuality e and e is also in the denotation of X, and that the size of the intersection of topic time and the temporal trace of e cannot be greater than a single conceptual moment.

3.2.4 *Change of state*

The usual interpretation of the past/future perfect of change-of-state predicates is that the poststate holds at topic time. This is often exploited to provide the backdrop to another situation:

(68)	<i>quem</i>	<i>ego</i>	<i>hominem</i>
	REL.ACC.SG	I.NOM.SG	man.ACC.SG
	<i>apolitikōtaton</i> ³⁷	<i>omnium</i>	<i>iam</i>
	unstatesmanlike.SUPERL.ACC.SG	all.GEN.PL	already
	<i>ante</i>	<i>cognoram</i> ,	<i>nunc</i>
	previously	know.PST.PRF.IND.ACT.1SG	now
	<i>vero</i>	<i>etiam</i>	
	truly	also	
	<i>astratēgētōtaton</i>		
	incapable_of_command.SUPERL.ACC.SG		
	“whom I had previously come to know as of all men most unstatesmanlike, and (whom I know) now (to be) most incapable of command.” (Cicero <i>Epistulae ad Atticum</i> 8.16.1, text Purser 1903)		

(69)	<i>de</i>	<i>quinque</i>	<i>praefectis</i>
	about	five	prefect.ABL.PL
	<i>quid</i>	<i>Pompeius</i>	<i>facturus</i>
	what.ACC.SG	Pompey.NOM.SG	do.FUT.PTCP.ACT.NOM.SG
	<i>sit</i>	<i>cum</i>	<i>ex</i>
	be.PRS.SBJV.3SG	when	from
	<i>ipso</i>	<i>cognoro</i>	<u><i>faciam</i></u>
	him.ABL.SG	find_out.FUT.PRF.IND.ACT.1SG	make.FUT.IND.ACT.1SG
	<i>ut</i>	<i>scias</i> .	
	that	know.PRS.SBJV.ACT.2SG	
	“when I know from Pompey what he will do about the five prefects, <u>I will let</u> you know.” (Cicero <i>Epistulae ad Atticum</i> 5.4.3, text Purser 1903)		

³⁷ *apolitikōtaton* and *astratēgētōtaton* are Greek words.

Occasionally the pluperfect of achievements occurs in main clauses denoting a sequence of events:³⁸

(70) <i>corruerat</i>	<i>alter</i>	<i>et</i>
collapse.PST.PRF.IND.ACT.3SG	other.NOM.SG	and
<i>plane,</i>	<i>inquam,</i>	<i>iacebat.</i>
completely	say.PRS.IND.ACT.1SG	lie.IPRF.IND.ACT.3SG
“The other (had) collapsed and, I say, <u>he was</u> completely <u>lying</u> on the floor.”		
(Cicero <i>Epistulae ad Atticum</i> 4.17.2, text Purser 1903)		

3.2.5 A note on the future perfect

It has been observed that the future perfect becomes increasingly restricted to subordinate clauses between Early and Classical Latin (e.g. Clackson & Horrocks 2007: 211f.; Pinkster 2015: 468), and its semantic scope is concomitantly restricted to anteriority. This is to say that we have a form with perfective denotation becoming moving to anterior. However, this development is unexpected from a typological point of view: we should rather expect the opposite phenomenon, that an anterior would develop to a perfective. The notion that the anterior sense of the future perfect is an innovation (Clackson & Horrocks 2007: 211f.) also sits uneasily with two further points:

1. The cross-linguistic tendency for subordinate clauses to be morphologically and syntactically conservative (Bybee, Perkins & Pagliuca 1994: 231, citing Givón 1979: 85).
2. The maintenance independent uses of the future perfect in colloquial varieties of Latin such as that seen in Cicero’s letters, vis-à-vis other

³⁸ Although in principle this could be taken as an epistolary use, for which see Devine & Stephens (2013: 47f.).

genres, (Clackson & Horrocks 2007: 212): one might expect these uses to be lost here first.

The behaviour can be explained, however, by taking account of the structural relationship of the future and future perfect: as argued by Kümmel (2013), the future can be seen to take over non-anterior perfective functions, leaving only anterior functions for the future perfect.

Table 4. Path of development, translated and adapted from Kümmel (2013: 136)

	IPFV	PFV	
		non-ANT	ANT
Pre-Latin	PRS.FUT	PRF.FUT	
Early Latin	PRS.FUT	PRF.FUT	
Classical Latin	PRS.FUT	PRF.FUT	

3.3 *Synthetic perfect infinitive*

The infinitive as a category lacks the category of absolute tense. This is to say, that the infinitive does not locate topic time with respect to utterance time, but only situation time with respect to topic time. In general, the perfect infinitive locates situation time prior to topic time (cf. Pinkster 2015: 536). The following are examples of an achievement/accomplishment and state predicate respectively:

(71) <i>Eumolpus</i>	[...]	<i>iurat</i> [...]
Eumolpus.NOM.SG		swear.PRS.IND.ACT.3SG
<i>nec</i>	<i>ullum</i>	<i>dolum</i>
<i>nor</i>	any.ACC.SG	deception.ACC.SG
<i>malum</i>	<i>consilio</i>	<i>adhibuisse</i> ...

evil.ACC.SG design.ABL.SG use.PRF.INF.ACT
 “Eumolpus [...] swore that [...] and that he **had** not consciously **used** any evil
 deception” (Petronius *Satyricon* 101, text Heseltine & Rouse 1913)

(72) *at* *ipsi* *tum*
 but they then
se *timuisse* *dicunt.*
 REFL.ACC.PL fear.PRF.INF.ACT say.PRS.IND.ACT.3PL
 “But they say that at that time they **were afraid.**” (Cicero *Epistulae ad Atticum* 9.5.4, text Purser 1903)³⁹

While anteriority is clearly an important and required reading of the perfect infinitive in accomplishment/achievement predicates, in state predicates, in parallel with what we have seen in the indicative, the perfect infinitive may describe a situation holding at topic time. Such examples are first attested in Lucretius, i.e. early Classical Latin, and become more common in poetry of the imperial period, even coming into prose works (Pinkster 2015: 539). Many of these examples can still be understood within the framework of anteriority, as at (73), where we have the perfect infinitive of a state predicate headed by *contineo* “to hold, surround”. Here the perfect infinitive can be read as describing an unbounded anterior state, so that the state still continues at topic time:

(73) *quam* *iuvat* *immites*
 how please.PRS.IND.ACT.3SG harsh.ACC.PL
ventos *audire* *cubantem /*
 wind.ACC.PL hear.PRS.IND.ACT lie.PRS.PTCP.ACT.ACC.SG
et *dominam* *tenero*

³⁹ Parallel: *habuisse* [have.PRF.INF.ACT] (Cicero *Pro Murena* 16.34, text Clark 1908).

and mistress gentle
continuisse *sinu*
 hold.PRF.INF.ACT bosom.ABL.SG

“What delight to hear the winds rage as I lie and **hold** my love safe in my gentle clasp” (Tibullus 1.45-46, text from Pinkster 2015: 540, translation Postgate 1913)

In parallel with the behaviour in state predicates, we also find that the perfect infinitive of change-of-state predicates may also denote that the poststate holds at topic time. In the following example, note the contrast between *cognosse* and *fuisse* (the latter notably collocating with anterior adverb *antea* “previously”):

(74)	<i>quod si</i>	<i>velim</i>	<i>confiteri</i>
	but if	want.PRS.SBJV.ACT.1SG	confess.PRS.INF.NACT
	<i>me</i>	<i>causam</i>	<i>A. Cluenti</i>
	me.ACC.SG	case.ACC.SG	A._Cluentius.GEN.SG
	<i>nunc</i>	<i>cognosse</i> ,	<i>antea</i>
	now	come_to_know.PRF.INF.ACT	previously
	<i>fuisse</i>	<i>in</i>	<i>ea</i>
	be.PRF.INF.ACT	in	that.ABL.SG
	<i>opinion</i>	<i>populari</i>	<i>quis</i>
	opinion.ABL.SG	popular.ABL.SG	who.NOM.SG
	<i>tandem</i>	<i>possit</i>	<i>reprehendere?</i>
	finally	can.IPRF.SBJV.ACT.3SG	blame.PRS.INF.ACT

“But suppose I were now to confess, that I had now **become acquainted** with the real merits of Cluentius’ case, but that **I was** previously **influenced by** [*lit.* was previously in] popular opinion concerning it, who could blame me”

(Cicero *Pro Cluentio* 51.142, text Clark 1908, translation based on Yonge 1856)

3.4 *Defective synthetic forms*

Forms including *odi* “I hate” and *memini* “I remember” are notable for not carrying any reference to time prior to utterance / topic time. Such cases are, however, lexically restricted, as well as showing morphological idiosyncrasy in not having present stems. It is therefore best to regard these as lexicalised exceptions. There is some evidence that *(g)nosco* “come to know”, often grouped with these verbs, behaves differently, but there is not the space to elaborate here.

3.5 *Participle in -tu- < *-to-*

This participle derives from what was originally an IE (verbal) adjective formation, for the origins of which form at the IE level, see e.g. Sihler (1995: 622) and Drinka (2009). In Latin this form had by historical times for the most part become grammaticalized as a resultative participle, denoting that the subject is in the poststate of the predicate at topic time. In most instances an event prior to topic time is in view, as in the following examples:

(75) *animalia* *capta* *immolant*
animal.ACC.PL capture.PRF.PTCP.ACC.PL sacrifice.PRS.IND.ACT.3PL
“they sacrifice the **captured** animals” (Caesar *De bello Gallico* 6.17.3, text Holmes 1914, translation based on McDevitte & Bohn 1869)

(76) ... *damnatus* *demum,* *vi*
convict.PRF.PTCP.NOM.SG finally force.ABL.SG
coactus *reddidit* *mille*
force.PRF.PTCP.NOM.SG return.PRF.IND.ACT.3SG thousand[ACC]

have.PRS.IND.ACT.3SG	from	East.ABL.SG
<i>arios,</i>	<i>a</i>	<i>meridie</i>
Arii.ACC.PL	from	South
<i>carmaniam</i>	<i>et</i>	<i>arianos,</i>
Carmania.ACC.SG	and	Ariani.ACC.PL
<i>ab</i>	<i>occasu</i>	<i>pratitas</i>
from	West	Pratiti.ACC.PL
<i>medos,</i>	<i>a</i>	<i>septentrione</i>
Medians.ACC.PL	on	north.ABL.SG
<i>hyrcanos,</i>	<i>undique</i>	<i>desertis</i>
Hyr cani.ACC.PL	on_all_sides	desert.ABL.PL
<i>cincta.</i>		

surround.PRF.PTCP.NOM.SG

“(Parthia) has the Arii on the East, on the South Carmania and the Ariani, on the West the Median Pratiti, on the north the Hyrcani, **surrounded** on all sides by deserts.” (Pliny the Elder, *Naturalis Historia* 6.38, text Mayhoff 1906)⁴⁰

(79) <i>itane</i>	<i>patris</i>	<i>ais</i>
thus	father.GEN.SG	say.PRS.IND.ACT.2SG
<i>adventum</i>	<i>veritum</i>	<i>hinc</i>
arrival.ACC.SG	fear.PRF.PTCP.ACC.SG	from_here
<i>abiisse?</i>		

leave.PRF.INF.ACT

“Thus do you say he left from here **fearing** the arrival of his father?” (Terence *Phormio* 315, text from Pinkster 2015: 548)⁴¹

⁴⁰ Parallel: *aperto mari* “open sea” (Cicero *De bello Gallico* 3.12.5, text Holmes 1914, translation McDevitte & Bohn 1869); *aperta loca lit.* “open places” (Livy 9.27.4, text Foster 1926). Although the possibility of lexicalisation should also be admitted here, the behaviour here is very much in keeping with what one might expect in extent predicates.

⁴¹ For a list of verbs showing this behaviour at different stages of the language, as well as further examples, see Pinkster (2015: 547-549).

Furthermore, where deponent verbs head accomplishment and activity predicates and the subject does not change state, the sense of the perfect participle is anterior:

- (80) *Sabinus* *suos* *hortatus*
Sabinus.NOM.SG his.ACC.PL encourage.PRF.PTCP.NOM.SG
cupientibus *signum* *dat.*
desire.DAT.PL signal.ACC.SG give.PRS.IND.ACT.3SG
“Sabinus, **having** encouraged his (troops), gave the signal to those who desired it.” (Caesar *De bello Gallico* 3.19.2, text from Pinkster 2015: 548)

Occasionally the participle in *-tu-* carries apparently active semantics even in non-deponent verbs, such as *ceno* “dine, eat”:

- (81) *cum* *illa* *munera*
when those.ACC.PL gift.ACC.PL
inspexisses *cenatus*
examine.PST.PRF.SBJV.2SG dine.PRF.PTCP.NOM.SG
“when **once you had dined** you had examined those gifts” (Cicero *Pro rege Deiotaro* 43, text Watts 1931)

While the subject is undoubtedly an agent in this case, unlike the passive use in (75), the subject also arguably changes state. A similar case to that in (81) is the following, involving *iuro* “swear”, where the *-tu-* participle *iuratus* describes as a result state for the subject, i.e. “having sworn” > “being on oath”:⁴²

⁴² Examples found from a search of *Loeb online* (<http://www.loebclassics.com/>, accessed April 21, 2017).

- (82) *si* *diceret* *iuratus,*
if speak.IPRF.SBJV.ACT.3SG swear.PRF.PTCP.NOM.SG
crederes?
believe.IPRF.SBJV.ACT.2SG
“If he told them **on oath** [*lit.* having sworn], would you believe him?”
(Cicero *Pro Quinctio Roscio Comoedo* 16.46, text & translation Freese 1930)

To summarise, the perfect participle heading change-of-state predicates describes the result state at topic time of the participant changing state, with or without explicitly locating the prior event of change with reference to topic time. The exception to this is the participle of certain deponent verbs such as *hortor* “encourage”, which does not denote the result state of the subject, but rather present the event as anterior. The participle then differs from both the finite and infinite perfect forms in that resultativity / anteriority is lexically rather than contextually determined.

3.6 Analytic perfect

As outlined in the introduction, the Latin perfect is morphologically split into a synthetic form and an analytical construction with the participle in *-tu-* + ESSE “to be”, or alternatively as the simple participle in predicative position.

A major function of the analytic construction is to denote the passive of predicates with two or more arguments, with the same flexibility regarding whether or not the poststate holds at utterance time. In this construction the participle in *-tu-* agrees with the grammatical subject:

- (83) *ibi* *Orgetorigis* *filia*
there Orgetorix.GEN.SG daughter.NOM.SG

<i>atque</i>	<i>unus</i>	<i>e</i>
and	one.M.NOM.SG	out_of
<i>filiis</i>	<i>captus</i>	<i>est.</i>
son.ABL.PL	capture.PRF.PTCP.M.NOM.SG	be.PRS.IND.ACT.3SG

“There the daughter and one of the sons of Orgetorix **was captured.**”
 (Caesar *De bello Gallico* 1.26.4, text Holmes 1914, translation based on McDevitte & Bohn 1869)

(84) *clamitans* ‘*arx* *ab*
 shout.PRS.PTCP.NOM.SG citadel.F.NOM.SG by
hospitibus ***capta*** ***est; [...]***
 enemy.ABL.PL capture.PRF.PTCP.F.NOM.SG be.PRS.IND.ACT.3SG
 “shouting, ‘The citadel **has been taken** by the enemy; [...]’” (Livy 9.24.9,
 text Foster 1926, translation based on Foster 1926)

Unlike the synthetic construction, however, but as with the participle in *-tu-*, the analytic construction especially of extent predicates need not denote that any event took place prior to utterance time:

(85) <i>Britannia,</i>	<i>quae</i>	<i>contra</i>
Britain.NOM.SG	which	opposite
<i>eas</i>	<i>regions</i>	<i>posita</i>
those.ACC.PL	region.ACC.PL	place.PRF.PTCP.NOM.SG

est
 be.PRS.IND.ACT.3SG
 “Britain, which **is located** opposite those territories.” (Caesar *De bello Gallico* 3.9.10, text Holmes 1916, translation based on Edwards 1917)

Note that examples like this are fundamentally different from a result state expressed by, for instance, the perfect passive of *inscribo* “entitle” discussed by Pinkster (2015: 446f.):

(86)	<i>nam</i>	<i>et</i>	<i>cohortati</i>
	for	also	exhort.PRF.PTCP.NOM.PL
	<i>sumus ...</i>	<i>ad</i>	<i>philosophiae</i>
	be.PRS.IND.ACT.1PL	to	philosophy.GEN.SG
	<i>stadium</i>	<i>eo</i>	<i>libro</i>
	study.ACC.SG	that.ABL.SG	book.ABL.SG
	<i>qui</i>	<i>est</i>	<i>inscriptus</i>
	REL.NOM.SG	be.PRS.IND.ACT.3SG	entitle.PRF.PTCP.NOM.SG
	Hortensius		
	Hortensius.NOM.SG		

“For we urged to the pursuit of philosophy in that book which **has been named** ‘Hortensius’.” (Cicero *De Divinatione* 2.1, text Falconer 1923, translation Pinkster 2015: 446)

Examples such as the latter are predicated on an event having taken place previously in time, while in examples like the former, there can never have been such an event. This kind of usage is of course consistent with the etymological origins of the construction, deriving ultimately from an adjectival formation in **-tos*. Furthermore, it is hard to find direct parallels for non-eventive readings, i.e. not denoting an event taking place in time, in the active.⁴³ Assuming that this accurately represents the distribution of the forms, there are three interpretations:

⁴³ *consuevit* “is accustomed”, given in (5) above, appears to have similar tense-aspect semantics, but neither forms an extent nor mental state predicate.

1. Contra Embick (2000), the semantic derivation of the perfect passive in Latin is different from that of the active, so that the active is fundamentally eventive in a way that the passive is not, with the eventive interpretation of given instances of the passive being a function of the particular predicate type and discourse context.
2. The perfect passive (unlike the active) is polysemous, so that *positum esse* “be placed” represents two homophonous constructions, one adjectival and the other eventive.
3. All predicates are viewed as predicates of space-time (cf. the approach taken in Crellin 2016: 199-227) where, if the event described is not viewed as passing through the time dimension, a predicate headed by a perfect does not carry the denotation of a prior event taking place in time.

The ambiguity as to the denotation of a state holding at utterance time is eventually resolved in the course of the development of the language, since gradually the past perfective sense is taken over by FUISSE [be.PRF.INF] formations, leaving ESSE [be.PRS.INF] formations with resultative-only semantics. These constructions in FUISSE are attested already in Classical Latin:⁴⁴

(87) <i>castra</i>	<i>in</i>	<i>agro,</i>
camp.NOM.PL	in	field.ABL.SG
<i>villa</i>	<i>defensa</i>	<i>est.</i>
house.NOM.SG	guard.PRF.PTCP.NOM.SG	be.PRS.IND.ACT.3SG

⁴⁴ For more details on this development, also known as ‘shift’, for which see Pinkster (2015: 473-478). In Romance the perfect passive is formed with FUISSE, while ESSE is used for the present passive (Clackson & Horrocks 2007: 280). Clackson & Horrocks do not, however, talk about the resultative specifically in this context.

“There is a camp in the field; the house **has been guarded.**” (Cicero *Epistulae ad Atticum* 13.52.1, text Purser 1903)

(88) <i>sed</i>	<i>opportunissime</i>
but	opportune.SUPERL.ADV
nuntiis	<i>allatis</i>
messenger.ABL.PL	convey.PRF.PTCP.ABL.PL
<i>oppidum</i>	<i>fuit</i>
town.NOM.SG	be.PRF.IND.ACT.3SG

defensum

guard.PRF.PTCP.NOM.SG

“But most fortuitously messengers had come and the town **was defended.**” (Caesar *De bello civili* 3.101.4, text du Pontet 1901)

4. Conclusion: unity in the semantics of the perfect system?

The elements of the perfect system have been seen to carry a variety of denotations, with the present perfect indicative denoting past perfective, while the past and future perfects, together with the perfect infinitive, have been shown to denote anteriority with respect to topic time. These may be expressed by the following general relations (omitting for the sake of simplicity the various qualifications and restrictions added in the case of state and achievement predicates):

- | | | |
|------|---------|--|
| (89) | PRF.PRS | $\tau(e) \subseteq t_t \wedge t_t < t_u$ |
| (90) | PRF.PST | $\tau(e) < t_t \wedge t_t < t_u$ |
| (91) | PRF.FUT | $\tau(e) < t_t \wedge t_t > t_u$ |
| (92) | PRF.INF | $\tau(e) < t_t$ |

On the other hand, the perfect participle carries either resultative or anterior denotation according to the lexical item in question:

$$(93) \text{ PRF.PTCP (1) } [\tau(e) < t_t \wedge] \tau(s) \supseteq t_t$$

$$(94) \text{ PRF.PTCP (2) } \tau(e) < t_t$$

The definitions given in (89) through (94) have two elements in common which may be taken as the basis for understanding a unity in the Latin perfect system:

1. Perfectivity: Specification that a situation in the denotation of the predicate terminates prior to a specific point in time, either future or past.
2. Anteriority: Specification that a situation in the denotation of the predicate takes place prior to a specific point in time. In the case of the past and future perfects, this moment is topic time, while in the case of the present perfect this moment is utterance time.

While Klein's (1992, 1994) distinction between utterance time and topic time is helpful, it is not the case that, simply because utterance time is not the same things as topic time, no claim is being made for utterance time. Rather, any utterance may be said to make a claim for the time of utterance and topic time together, namely that from the vantage point of utterance time the claim being made regarding topic time may be said to hold. Seen in this way, the Latin perfect forms throughout antiquity have in common the denotation of anteriority with respect to a specific point in time, whether topic time or utterance time. This we can formulate as follows:

$$(95) \text{ PRF } \tau(e) < t_x$$

This analysis is nevertheless incomplete, in that it leaves unresolved the derivation of eventive semantics in participle phrases, as well as for the subjunctive forms to be incorporated into the framework, questions that I leave for future work.

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Formal semantics symbols and abbreviations

\subseteq	is included in
\supseteq	includes
\ni	is a non-final part of
\prec	precedes
\preceq	precedes and/or overlaps with
$\supset\subset$	abuts
\cap	intersects
\wedge	and
t_t	topic time
t_u	utterance time
t_x	time marked with respect either to topic or utterance
e	eventuality variable denoting an event

e'	a subpart of an eventuality e
s	eventuality variable denoting a state
$ x $	cardinality function
$\tau(x)$	temporal trace function of an eventuality x