The Greek Perfect Active System:
200 BC – AD 150

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Summary

What does the ancient Greek perfect active stem mean in the Hellenistic and early Roman periods? This has proved a controversial question for at least a century, as it has been recognised that traditional accounts leave the form performing functions associated with present and past tenses in certain other European languages, as well as active and passive voice. The problem is not limited to Greek in the Hellenistic and Roman periods, but it has proved particularly acute here not least because of the considerable research which has been undertaken into verbal aspect in Biblical and New Testament Greek in recent years.

It is the aim of the present investigation to establish under what circumstances the various senses, past and present, active and medio-passive, may be attributed to the perfect active stem in this period, and from this to seek to provide an account of the semantics and function of the form which most readily accounts for the observed distribution. At the heart of the investigation is a very large corpus, approximately 800,000 words, containing work of the historians Polybius, Plutarch, Josephus and Appian. A combination of close contextual analysis and quantitative statistical methods is then used to analyse this. The investigation is primarily synchronic, but seeks to use findings made on a synchronic level to inform discussion of diachronic developments. Accordingly, the behaviour of the perfect active stem as seen in the Hellenistic and Roman periods is compared with that of the Greek of earlier periods to determine if the findings made for the later periods might successfully be applied to earlier ones.

After the introduction setting up the problems posed by the Greek perfect active stem, the dissertation contains three chapters. The first, a method chapter, places the transitivity and aspect of the Greek perfect active stem in the context of more wide-ranging linguistic discussion on these topics. The second addresses the transitivity problem of the Greek perfect, while the third elucidates the aspectual problem. A solution to both problems is sought in terms of lexical aspect, i.e. the aspectual contribution made by the semantics of individual lexical items. Accordingly, the two problems are shown to be related, with the aspect of the perfect active dependent on whether the subject participant can be presented by the perfect active as either being in, or having entered, a state: if it can, the perfect active stem will not necessarily carry past time reference, whereas if it cannot, it will in almost all circumstances do so.

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Chapter 1. Introduction

1.1. Problem of the Greek perfect active stem

What may be said to be the underlying semantics of the Ancient Greek perfect and pluperfect active? Indeed, may these morphological categories (or category) be said to have any unifying semantics at all? The presenting difficulty may be simply stated: these forms, though bearing the label (plu)perfect active, cannot be relied on to correlate with a meaning which is regularly perfect, i.e. having reference to some completed past event, or active. Specifically, in all periods up to at least the second century AD, the perfect and pluperfect active appear able to denote either a state concurrent with the reference time of the clause, with little or no reference to any past event, *or* the present consequences of a past event. On some occasions, indeed, it is hard to tell between these two interpretations. At the same time, the perfect and pluperfect may have either active and transitive sense, or intransitive and passive sense.

Let us consider first the question of temporal reference. To illustrate the problem, compare the following examples of perfect forms from the *Iliad*:[1]

[1]   ταῦτ᾽ αἰνῶς **δείδοικα** κατὰ φρένα, μή οἱ ἀπειλὰς

        ἐκτελέσωσι θεοί... (*Il.* 9.244)

        I am terribly **afraid** of this in my heart, that the gods will carry out this

        man's threats for him...[2]

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[1] Texts were provided electronically in XML format by the Perseus Project. The texts used for the historical authors and Homer, the principal authors of interest in this investigation, were as follows. (Dates refer to first printings of the respective texts are given unless otherwise stated.) For the *Iliad* the text of Monro and Allen (1920) was used, for the *Odyssey* Murray (1919), for Thucydides Jones and Powell (1942), for Herodotus Godley (1920), for Xenophon (Marchant, 1900-10), for Polybius Theodorus Büttner-Wobst (1893-), for Josephus Niese (1892), for Plutarch Perrin (1914), and for Appian Mendelssohn (1879-81). The texts of other authors will be given in footnotes at the appropriate places.

[2] The translations given throughout are my own. However, the following translations, those published electronically through the Perseus Project, were also consulted: for the *Iliad* Murray (1924), for the *Odyssey* Murray (1919), for Thucydides Crawley (1910), for Herodotus Godley (1920), for Xenophon Brownson (1918-22), for Polybius Shuckburgh (1889), for Josephus Whiston (1895), for Plutarch Perrin (1914), and for Appian White (The Foreign Wars, 1899) and White (The Civil Wars, 1899).

[2] τίς δὲ σύ ἐσσι φέριστε καταθνητῶν ἀνθρώπων;

οὐ μὲν γάρ ποτ' **ὄπωπα** μάχῃ ἔνι κυδιανείρῃ

τὸ πρίν· (*Il.* 6.123-5)

"Who are you, bravest of mortal men? For **I have** never yet **seen** [you]

before in battle, where men gain glory…"

The perfect form δείδοικα in [1] is only concerned with the narrative present: there is no interest in any prior situation. By contrast, in [2] the perfect indicative ὄπωπα, 'I have seen', collocated as it is with οὐ… πότε, clearly refers to prior experience. The problem may be expressed diagrammatically according to Figure 1.

Figure 1 – The temporal problem of the perfect indicative
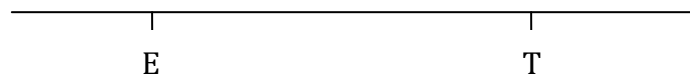
Let T, and E be points in time. T is the narrative present. E represents some event taking place. The problem of the Greek perfect is that sometimes it appears to imply reference to some event taking place prior to T, and at others there is no hint of this, and T is the only consideration. Thus in example [2] both T, the narrative present, and E, the occasion(s) when the subject might have seen such a hero, are in view. By contrast in [1] only T is in view.

Outside of the perfect indicative the problem becomes slightly more complex, as here a further time point comes into play. Consider the following two participial examples.

[3] ὡς δ' ὅτε ποιμὴν ῥεῖα φέρει πόκον ἄρσενος οἰὸς

χειρὶ λαβὼν ἑτέρῃ, ὀλίγον τέ μιν ἄχθος ἐπείγει,

ὣς Ἕκτωρ ἰθὺς σανίδων φέρε λᾶαν ἀείρας,

αἵ ῥα πύλας εἴρυντο πύκα στιβαρῶς **ἀραρυίας**… (*Il.* 12.450-4)

As when a shepherd carries a ram's fleece easily on his own, taking it with one hand, and only a slight burden weighs him down, thus did Hector pick up the stone and carry it straight against the timbers that tightly connected the firmly **fitted** gates…

[4]   ἔνθα Πυλαιμένεα ἐλέτην ἀτάλαντον Ἄρηϊ
        ἀρχὸν Παφλαγόνων μεγαθύμων ἀσπιστάων.
        τὸν μὲν ἄρ' Ἀτρεΐδης δουρικλειτὸς Μενέλαος
        ἐσταότ' ἔγχεϊ νύξε κατὰ κληῖδα τυχήσας. (*Il.* 5.576-9)

    Then the two of them took Pulaimenes, the like of Ares, the leader of the
    great-hearted Paphlagonian shieldmen. Then Menelaus, famous with the
    spear, pierced him with his spear **as he stood**, hitting him on the collar
    bone.

In [3] three time points are relevant: the narrative present, T, an event taking place (in
this case the fitting of the gates), and R, the guarding of the gates. By implication E has
taken place prior to R, according to the following schema.

Figure 2 - The problem of the perfect outside of the indicative
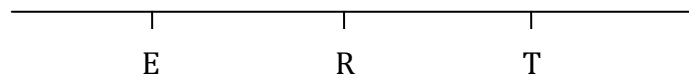
Contrast this with [4]. Here only two time points are relevant: the narrative present T,
and R, the piercing of Pylaemenes with a spear, concurrent with which is the standing of
Pylaemenes. There is no event E which leads up to R. Here it is hard to see the participle
ἐσταότα, agreeing as it does with the victim Pulaimenes, as anything other than
describing the state of Pulaimenes as he is attacked.

The pluperfect exhibits very similar properties to non-indicative perfects. Consider the
following two examples from Homer:

[5]   καρπαλίμως δ' ἵκετ' Ἄργος Ἀχαιικόν, ἔνθ' ἄρα ἤδη
        ἰφθίμην ἄλοχον Σθενέλου Περσηϊάδαο.
        ἣ δ' ἐκύει φίλον υἱόν, ὃ δ' ἔβδομος **ἐστήκει** μείς... (*Il.* 19.115-17)

    Swiftly [Hera] headed for Acahaean Argos, where she knew the stately wife
    of Sthenelus, the son of Perseus. She was pregnant with her dear son, and **it
    was** the seventh month...

[6]   Κτήσιππον δ' ἄρ' ἔπειτα βοῶν ἐπιβουκόλος ἀνὴρ
        βεβλήκει πρὸς στῆθος, ἐπευχόμενος δὲ προσηύδα... (*Od.* 22.285)

    And then as he was shouting the cowherd **wounded** Ctesippus, and he
    spoke to him as follows...

Example [5] provides information on the circumstances surrounding the wife of Sthenelus' pregnancy: 'the seventh month was come'. This is notably more static than βεβλήκει in [6], which refers to a prior *action*, namely the wounding of Ktesippus. Thus in [5] no event prior to R is in view, where as in [6] there is, namely the wounding of Ktesippus.

The first problem of the perfect and pluperfect may therefore be formulated as follows: under what circumstances, in the perfect indicative, does the perfect imply the existence of a time point E prior to T, or, outside of the perfect indicative, prior to R? Throughout this investigation T in the perfect indicative, and R, outside of this, will be known as 'reference time'.

The second problem of the perfect concerns transitivity. In each of the examples [1] and [2] the perfect takes a direct object complement (at least implicitly). By contrast in [3] and [4] both the perfects are intransitive, and in [3] ἀραρυῖας has a distinctly 'passive' feel. This is particularly strange in view of the semantics of the present active, ἵστημι and ἀραρίσκω respectively, which both have transitive active meaning.

Nor are such differences of behaviour among perfect forms the preserve of the Homeric corpus. Examples for each may be found both in the Classical and post-Classical periods. Consider first the following examples from Classical historians:

[7] καὶ περιεώσμεθα ἐκ πάντων Πλαταιῆς οἱ παρὰ δύναμιν πρόθυμοι ἐς τοὺς
Ἕλληνας ἐρῆμοι καὶ ἀτιμώρητοι· καὶ οὔτε τῶν τότε ξυμμάχων ὠφελεῖ
οὐδείς, ὑμεῖς τε, ὦ Λακεδαιμόνιοι, ἡ μόνη ἐλπίς, **δέδιμεν** μὴ οὐ βέβαιοι ἦτε.
(Thu. 3.57.4)

And we Plataeans stand rejected by everyone, desolate and unprotected, despite our readiness beyond our resources [to aid] the Greeks. And neither did any of our allies help then, and you, O Spartans, our only hope, **we fear** lest you be not true.

[8] οὗτοι δὲ οἱ ἐκ τῆς Ἀσίης Αἰθίοπες τὰ μὲν πλέω κατά περ Ἰνδοὶ ἐσεσάχατο, προμετωπίδια δὲ ἵππων εἶχον ἐπὶ τῇσι κεφαλῇσι σύν τε τοῖσι ὠσὶ ἐκδεδαρμένα καὶ τῇ λοφιῇ· καὶ ἀντὶ μὲν λόφου ἡ λοφιὴ κατέχρα, τὰ δὲ ὦτα τῶν ἵππων ὀρθὰ **πεπηγότα** εἶχον. (Hdt. 7.70.2)

These Ethiopians from Asia were mostly armed just like the Indians, and they had on their heads the foreheads of horses stripped along with the ears and the mane; and the mane served instead of the crest of the helmet, and they had the ears of the horses **fixed** upright.

[9] κἀκεῖθεν πέμψας τριήρεις εἰς Λακεδαίμονα ἐπὶ χρήματα, ἐκκλησίαν ἀθροίσας τῶν Μιλησίων τάδε εἶπεν. ἐμοὶ μέν, ὦ Μιλήσιοι, ἀνάγκη τοῖς οἴκοι ἄρχουσι πείθεσθαι· ὑμᾶς δὲ ἐγὼ ἀξιῶ προθυμοτάτους εἶναι εἰς τὸν πόλεμον διὰ τὸ οἰκοῦντας ἐν βαρβάροις πλεῖστα κακὰ ἤδη ὑπ' αὐτῶν **πεπονθέναι**. (Xen. *Hell.* 1.6.8)

And once he had sent triremes to Lacaedaemon from there for money, he called an assembly of the Milesians and spoke as follows: "I must, O Milesians, obey those who hold sway at home. I, however, consider you to be most ready for war on the grounds that you live among barbarians and **have** already **suffered** very many evils at their hand…"

[10] φαμένου δὲ καὶ ταῦτα ἑτοίμου εἶναι ποιέειν τοῦ Πρηξάσπεος, συγκαλέσαντες Πέρσας οἱ Μάγοι ἀνεβίβασαν αὐτὸν ἐπὶ πύργον καὶ ἀγορεύειν ἐκέλευον. ὁ δὲ τῶν μὲν ἐκεῖνοι προσεδέοντο αὐτοῦ, τούτων μὲν ἑκὼν ἐπελήθετο, ἀρξάμενος δὲ ἀπ' Ἀχαιμένεος ἐγενεηλόγησε τὴν πατριὴν τὴν Κύρου, μετὰ δὲ ὡς ἐς τοῦτον κατέβη τελευτῶν ἔλεγε ὅσα ἀγαθὰ Κῦρος Πέρσας **πεποιήκοι**… (Hdt. 3.75.1)

When Prexaspes said that he was prepared to do this too, the Magi called the Persians together and put him up on a tower and bade him speak. But he purposely forgot what they had asked of him, and beginning with Achaimenes he traced the paternal lineage of Cyrus, and afterwards, when he finished and came down to Cyrus, he listed all the good things the latter **had done** for the Persians…

First, some of these perfects imply the occurrence of an event prior to reference time while others do not. Thus in [7] δέδιμεν, 'we doubt, fear', refers to a *state* of doubt or fear, with no apparent concern regarding any prior state of affairs. πεπηγότα in [8], 'fixed', presupposes a prior event of fixing. In [9] the perfect infinitive πεπονθέναι presupposes *past* sufferings. The same may be said for the optative πεποιήκοι in [10] where there is direct reference to (a series of) acts performed (necessarily in the past) by Cyrus for the Persians.

Second, some of these perfects appear to function as passives or are intransitive with respect to their present stems, where these are attested. Thus πεπηγότα, whose present active πήγνυμι 'I fix' functions as transitive and active, in [8] has passive-like sense, similar to that of ἀραρυίας in [3] as compared with its present ἀραρίσκω. Furthermore, both [9] and [10] are grammatically transitive, in that they take a direct object. Yet πεπονθέναι in [9] is also accompanied by a prepositional ὑπό + gen. phrase indicating agency.

Nor does the situation become any more straightforward for the post-Classical period:

[11] ἔχει δὲ ναὸν οὐ μέγαν Ἀρτέμιδος ἐπίκλησιν Προσηῴας, καὶ δένδρα περὶ
      αὐτῷ πέφυκε καὶ στῆλαι κύκλῳ λίθου λευκοῦ **πεπήγασιν**… (Plu. *Them*. 8.2)

      [Artemisium] has a small temple to Artemis, bearing the name Proseoea;
      trees grow around it, and slabs of white stone **are fixed** in a circle…

[12] οἱ δὲ περὶ τὸν Χάρητα καὶ Ἰώσηπον, οὗτοι γὰρ ἦσαν τῶν κατὰ τὴν πόλιν
      δυνατώτατοι, καίπερ **καταπεπληγότας** τοὺς ὁπλίτας τάττουσιν, ἐπειδὴ
      μέχρι πολλοῦ πρὸς τὴν πολιορκίαν ἀνθέξειν οὐχ ὑπελάμβανον ὕδατι καὶ
      τοῖς ἄλλοις ἐπιτηδείοις μὴ διαρκούμενοι. (Jos. *BJ* 4.18)

      But Chares and Josephus' band, for these were the most important of those
      in the city, commanded the soldiers, even though **they were terrified**, since
      they did not expect to last long against the siege and endure with the water
      and other provisions which they had.

[13]   βασιλεὺς Ἀλέξανδρος Ἰωνάθῃ τῷ ἀδελφῷ χαίρειν. τὴν μὲν ἀνδρείαν σου
        καὶ πίστιν **ἀκηκόαμεν** πάλαι καὶ διὰ τοῦτο **πεπόμφαμεν** πρὸς σὲ περὶ
        φιλίας καὶ συμμαχίας. (Jos. *AJ* 13.45)

King Alexander to his brother Jonathan, greetings! **We have heard** about
your courage and your faithfulness since long ago, and on account of this **we
have sent** to you concerning friendship and an alliance.

[14]   ἐπὶ γὰρ τὴν προϋπάρχουσαν χιόνα καὶ **διαμεμενηκυῖαν ἐκ τοῦ πρότερον
        χειμῶνος** ἄρτι τῆς ἐπ' ἔτους πεπτωκυίας, ταύτην μὲν εὐδιάκοπτον εἶναι
        συνέβαινε... (Plb. 3.55.1)

For on top of the snow which **had remained** from the previous winter, that
from the present year had just fallen, and this, so it happened, was easy to
cut through...

[15]   τοῖς πλουσίοις ἐν τῷ νῦν αἰῶνι παράγγελλε μὴ ὑψηλοφρονεῖν μήδε
        ἠλπικέναι ἐπὶ πλούτου ἀδηλότητι ἀλλ' ἐπὶ θεῷ τῷ παρέχοντι ἡμῖν πάντα
        πλουσίως εἰς ἀπόλαυσιν... (1 *Timothy* 6:17)

Urge those who are rich in the present age not to be proud nor **to have
their hope** in the uncertainty of wealth, but in God who richly provides all
things for our enjoyment...

πεπήγασιν in [11] describes the state of the slabs. Indeed, appearing as it does in a
context describing a static situation, it carries little reference to any event which might
have brought the slabs to be in this state. Similarly καταπεπληγότας in [12] describes
the state of the men when they were ordered. Both behave as passives. In [13], by
contrast, both ἀκηκόαμεν and πεπόμφαμεν have expressed objects, and either explicitly
(πάλαι) or implicitly describe prior events which are in some way of relevance to the
narrative present situation. [14] combines everything, with clear reference to present
state and past time, with neither overtly passive or transitive active semantics. Finally,
in [15] ἠλπικέναι plays a complement role to παράγγελλε 'command' in an indirect
command (IDC) construction, and as such has an entirely future orientation.[3]

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[3] Infinitives are aspectual and so do not carry absolute tense.

Parallel behaviour can be seen for the pluperfect in both the Classical and post-Classical language. Consider the following examples from Classical writers:

[16] οἱ μέντοι τῶν Θηβαίων ἱππεῖς **ἐῴκεσαν** ὑποπεπωκόσι που ἐν μεσημβρίᾳ· ὑπέμενον μὲν γὰρ τοῖς ἐπελαύνουσιν ὥστ' ἐξακοντίζειν τὰ δόρατα, ἐξικνοῦντο δ' οὔ. (Xen. *Hell*. 5.4.40)

The Theban cavalry, however, **were like** those who are rather tipsy at midday; for they waited in order to launch their spears at the oncoming enemy, but they did not reach.

[17] ὁ δ', ἐπεὶ ἐκεῖνοι παρέπλευσαν, ὑποστρέψας εἰς Ἄβυδον ἀφίκετο· **ἠκηκόει** γὰρ ὅτι προσπλέοι Πολύξενος ἄγων τὰς ἀπὸ Συρακουσῶν καὶ Ἰταλίας ναῦς εἴκοσιν, ὅπως ἀναλάβοι καὶ ταύτας. (Xen. *Hell*. 5.1.26)

... and when [the Athenian forces] had sailed past him, Antalcidas turned and went back to Abydus, for **he had heard** that Polyxenus was sailing to him with the twenty ships from Syracuse and Italy, and he wished to take charge of these too.

[18] τοῖσι Μάγοισι ἔδοξε βουλευομένοισι Πρηξάσπεα φίλον προσθέσθαι, ὅτι τε **ἐπεπόνθεε** πρὸς Καμβύσεω ἀνάρσια, ὅς οἱ τὸν παῖδα τοξεύσας **ἀπολωλέκεε**, καὶ διότι μοῦνος ἠπίστατο τὸν Σμέρδιος τοῦ Κύρου θάνατον αὐτοχειρίῃ μιν ἀπολέσας, πρὸς δ' ἔτι ἐόντα ἐν αἴνῃ μεγίστῃ τὸν Πρηξάσπεα ἐν Πέρσῃσι. (Hdt. 3.74.1)

The Magi in council decided to befriend Prexaspes, on the grounds that **he had** both **suffered** hostility at the hand of Cambyses, who **had killed** his son by shooting him with an arrow, and because he alone knew of the death of Smerdis, Cyrus' son, having killed him with his own hand. Furthermore, Prexaspes was held in the highest regard among the Persians.

ἐῴκεσαν, in [16] concerns a state, namely the tipsiness of the Theban horsemen. ἠκηκόει in [17], by contrast, concerns an event, Antalcidas' learning of Polyxenus' approach, and his desire to join forces consequent upon that event. Similarly, both ἐπεπόνθεε and ἀπολωλέκεε in [18] give information about events which took place prior to the reference time situation, where the Magi are considering their relationship with Prexaspes.

A further difficulty with the perfect specifically is its alleged increasing overlap in sense and function with the aorist. To illustrate the problem consider the following two examples of narrative perfects from the New Testament:[4]

[19]   πάλιν ὁμοία ἐστὶν ἡ βασιλεία τῶν οὐρανῶν ἀνθρώπῳ ἐμπόρῳ ζητοῦντι καλοὺς μαργαρίτας· εὑρὼν δὲ ἕνα πολύτιμον μαργαρίτην ἀπελθὼν **πέπρακεν** πάντα ὅσα εἶχεν καὶ **ἠγόρασεν** αὐτόν. (*Matthew* 13.45-6)

Again, the kingdom of heaven is like a trader searching for beautiful pearls; when he found a pearl of great value he left, **sold** everything he had, and **bought** it.

[20]   καὶ **ἀνέβη** ὁ καπνὸς τῶν θυμιαμάτων ταῖς προσευχαῖς τῶν ἁγίων ἐκ χειρὸς τοῦ ἀγγέλου ἐνώπιον τοῦ θεοῦ. καὶ **εἴληφεν** ὁ ἄγγελος τὸν λιβανωτὸν καὶ **ἐγέμισεν** αὐτὸν ἐκ τοῦ πυρὸς τοῦ θυσιαστηρίου καὶ **ἔβαλεν** εἰς τὴν γῆν, καὶ **ἐγένοντο** βρονταὶ καὶ φωναὶ καὶ ἀστραπαὶ καὶ σεισμός. (*Revelation* 8.4f.)

And the smoke of the sacrifices, together with the prayers of the Holy Ones, **went up** from the hand of the angel before God. And the angel **took** the censer and **filled** it with fire from the altar and **threw** it on the earth, and **there were** peals of thunder, rumbles, lightning and an earthquake.

In the first example Jesus is narrating the parable of pearl of great price, in which a perfect is used to denote 'he sold', while 'he bought' is denoted by means of an aorist. The second example, from *Revelation*, describes a scene of devastation as God's judgment comes on the earth. John is narrating what he sees, and uses a sequence of aorists to do this. The one exception is εἴληφεν, a perfect. The problem with these examples is that they demonstrate the opposite of the problem previously discussed in this introduction, namely that, in the schematic terms introduced in Figure 1, the perfects bear no relation to speaker time, T, and only seem to refer to event time, E.

Whatever the underlying 'meaning' of the perfect and pluperfect active, it must ideally be able regularly and predictably to produce a reference-time only reading in certain circumstances, and produce the implication of an event taking place prior to reference time in others. Furthermore, it should ideally be able to explain why some perfects function as transitive actives, and others as intransitive passives. Accordingly the aims of the investigation are as follows:

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[4] Text: Nestle-Aland (1993).

1. To establish under what circumstances the perfect and pluperfect imply the occurrence of an event prior to reference time, rather than focusing purely on the situation at reference time.

2. To establish under what circumstances the perfect behaves as a narrative tense, i.e. describing an event occurring prior to reference time with no reference or implied relationship to the situation holding at reference time.

3. To establish under what circumstances perfect and pluperfect forms behave more like transitive actives, and which more like intransitive passives with respect to the semantics of the present active.

4. To consider what underlying semantics might regularly produce such outcomes.

Before embarking on this project, it is helpful to survey the scholarship on the perfect and pluperfect.

1.2. Scholarship on the Greek perfect and pluperfect

From the foregoing analysis it is easy to see why it has been so hard to come up with a one-size-fits-all 'meaning' for the category 'perfect'. The problem in Greek is made harder still not only by the purely written nature of the corpus, but, setting it apart from other corpus languages, the fact that the relevant forms occur relatively infrequently, and certainly much less so than their 'counterpart' forms in Latin. It is therefore not surprising that a wide variety of views have arisen. Research into the Greek perfect and pluperfect has been conducted in at least four fields: Greek philology, Indo-European linguistics, historical and synchronic typology, and Biblical studies. A variety of views are held in each. In this section I provide an overview of the various viewpoints.

Scholarly consensus has held, and continues to hold, that in Homer the perfect and pluperfect essentially denote the state of the syntactic subject.[5] This state, especially in dynamic (as opposed to state) verbs is often said to be that resulting from some past event.[6] Exceptions to the resultant state function of the perfect, such as that given at [2] above, are generally seen as presaging developments in a later stage of the language.[7]

Historical linguists interested in languages other than Greek were originally drawn to the Greek perfect primarily for its value for the study of Indo-European.[8] Although the form certainly goes back to the period of Proto-Indo-European unity, it is commonly held that only Homeric Greek and Vedic Sanskrit preserve it in anything like its original form and use.[9] Interest in the perfect has grown since the discovery of Hittite and the recognition of some kind of relationship between the PIE perfect, the PIE middle, and the –*hi* conjugation in that language. More recently historical linguists with more cross-

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[5] e.g. Perel'muter (1988). For diachronic studies, see n. 8. For a study of the perfect in Mycenaean see Chantraine (1967).

[6] Kohlmann (1881, p. 23), quoted by Haspelmath (1992, p. 193); Chantraine (1927, p. 16); Perel'muter (1988), Haspelmath (1992, p. 191).

[7] So Chantraine (1927, p. 14), Haspelmath (1992, p. 209f.).

[8] Diachronic studies include Malden (1865), Wackernagel (1904), Chantraine (1927), McKay (1965), Moser (1988), Haspelmath (1992), Duhoux (2000), Gerö & Stechow (2002), Haug (2004), Haug (2008), Moser (2008), Horrocks (2010).

[9] Wackernagel (1904, p. 5). In all other IE languages it has either merged with the preterite paradigm, or completely disappeared (Clackson, 2007, p. 122).

linguistic interests have entered the discussion, attracted by the great time-depth provided by the Greek data.[10]

Most historical linguists agree that the Greek perfect active of most verbs goes back to a form which in the proto-language was stative and intransitive.[11] This, it is said, accounts for the semantics of the majority of perfects in Homer,[12] and is supported by Mycenaean examples such as *a-ra-ru-wo-a*[13] 'fitted', corresponding to ἀρηρώς; this does not have the transitive semantics associated with the perfect active endings in later periods. Transitive examples are acknowledged to exist even in Homer, but these are seen as simple forerunners of the later situation.[14] However, the presence of the group of intensive perfects does not accord well with a hypothesised original stative function for the perfect endings.[15]

The traditional view among scholars of Classical Greek[16] has been that the perfect stem denotes an action finished at the point where the present would denote the action as ongoing (i.e. reference time).[17] Two uses are recognised to fall within this definition: perfect stems denoting a prior event, and those referring only to a situation at hand.[18] However, starting in the mid-nineteenth century, and continuing through the first half

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[10] Haspelmath (1992), Gerö and Stechow (2002, p. 1ff.). cf. also Malden (Malden, 1865, p. 168).

[11] e.g. Sihler (1995, pp. 564-79), Kulikov (1999, p. 31) and George (2005, p. 80). The other parts of the perfect paradigm- the perfect middle and pluperfect- are usually said to have arisen during the history of Greek e.g. Haug (2008, p. 296).

[12] Kohlmann (1881, p. 23), quoted by Haspelmath (1992, p. 193); Chantraine (1927, p. 16); Haspelmath (1992, p. 191). Wackernagel (1904, p. 4) and Perel'muter (1988, pp. 279-282) see the stative function as one of several performed by the Homeric perfect. The perfect is said to be in origin intransitive, despite οἶδα, probably the most archaic perfect, being transitive as far back as one can reconstruct (Haug, 2004, p. 396).

[13] KN Ra 1541, cited in George (2005, p. 82).

[14] Chantraine (1927, pp. 11-16), Willi (2003, p. 129), Moser (2008, p. 10), Gerö and Stechow (2002, p. 3).

[15] e.g. Haug (2004, pp. 398, 404), Gerö and Stechow (2002, pp. 16, 18).

[16] Studies include Donaldson (1859), Kühner & Gerth (1898), Gildersleeve (1900), Stahl (1907), Humbert (1945), Ruipérez (1954), Moorhouse (1982), Martinéz Vásquez (1993), Sicking & Stork (1996), Willi (2003), Orriens (2009). For diachronic studies, see n. 8.

[17] So Goodwin (1894, p. 272 §1273). See also Jannaris (1897, p. 438 §1862), Kühner-Gerth (1898, p. 146f.) and Stahl (1907, p. 152).

[18] Stahl (1907, p. 107) distinguishes between present-only intensive perfects and extensive perfects with a preterital component.

of the twentieth, certain scholars began to see the key function of the Classical Greek perfect as denoting the state or condition of the subject.[19] Here a key motivation was the perceived similarity in many instances between the semantics of the perfect in Homer and the Classical period. Yet it was also recognised that new to the Classical period was an increased presence of perfects carrying reference to an event prior to reference time, and a connection was seen between this behaviour and the form's transitivity.[20] The term 'resultative perfect' was coined, to describe the perfect of verbs such as δίδωμι and τίθημι which could not be interpreted to denote a state or condition of the subject.[21] The perfect of these verbs was seen to denote a past action whose effect continues to last in or for the object.[22] This was taken a stage further, with the assertion that these perfects came to denote the state of the object.[23]

In the mid-twentieth century others, responding to the concept of the resultative perfect, though not denying that the perfect can imply that the object is in a certain state, argued that the *essential* function of the Classical Greek perfect was to denote the state of the syntactic subject.[24] More recent exponents of this view have identified two types of state according to the semantic role played by the subject. Where the subject plays a patient role, the state denoted is that of the participant who has undergone the action denoted by the verb. By contrast, where the subject plays an agent role, the state denoted is that of a completed action.[25] Implicit here is a distinction between two different kinds of resultant state.[26]

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[19] e.g. Wackernagel (1904, p. 4).

[20] The connection between past reference and transitivity is implicit in Malden (1865), but is made explicit by Wackernagel (1904) and especially Chantraine (1927, p. 19).

[21] The term appears to be used first by Wackernagel (1904). Malden (1865) describes the concept but does not name it.

[22] Wackernagel (1904, p. 4).

[23] Chantraine (1927, p. 165) followed by Humbert (1945, p. 127).

[24] McKay (1965, p. 9), Sicking & Stork (1996, pp. 136f., 146).

[25] Rijksbaron implicitly distinguishes between two different kinds of state according to the semantic role played by the subject, i.e. whether agent or patient. Haug makes this more explicit giving different terms to the two kinds of state, drawing on work on the English perfect by Parsons (1990). For the history of the use of the term 'state' in describing the essential semantics of the perfect see n. 64.

[26] For critique of this see §1.3 below.

However, the suggestion that the perfect in essence denotes the state of the subject was attacked on several grounds. First, it cannot explain perfects which appear not to denote a state, but rather an action as an ongoing process, as notably with the group of so-called 'intensive' perfects.[27] These supposedly denote 'durative' events, differing from the present in the intensity with which the event is presented,[28] although others have doubted the existence of this intensity.[29] Verbs denoting the production of sound appear particularly to behave in this way, e.g. μέμυκα 'I moo'; τέτριγα 'I squeal'. A related problem is that the perfect of certain state verbs, such as σπουδάζω, while denoting a state, does not appear to imply any event of which it might be considered to be the result. There are also many verbs, such as τίθημι and δίδωμι, whose active forms hardly describe events with lasting consequences for the subject, as is implied should be the case if the perfect always denotes a state.[30]

Various attempts have been made to provide a framework taking account of these difficulties. Some have applied models developed in the context of the English perfect. Thus according to the 'extended now' view,[31] the Greek perfect 'stretches the reference time into an indefinite past'.[32] Others have analysed the Greek perfect as denoting current relevance.[33] Another approach involves dividing verbs into semantic types and observing how the meaning of the perfect differs accordingly.[34] According to one version, verbs can be divided into groups, e.g. transformative and non-transformative. Perfects denoting an event or situation which cannot be said to be a resultant state,

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[27] Ruipérez (1954, p. 49).

[28] e.g. Gildersleeve (1900, p. 100 § 229).

[29] Chantraine (1927, p. 17), Sicking & Stork (1996, p. 125f.), Haug (2004, p. 394); Ruipérez (1954, p. 51) also expresses doubts, but reinstates the intensive reading as one realisation of the semantics of the perfect form (1954, p. 64).

[30] Orriens (Orriens, 2009, p. 223f.).

[31] See Gerö & Stechow (2002).

[32] Gerö & Stechow (2002, p. 28). Gerö & Stechow (2002, p. 22f.): 'In terms of an XN-analysis [i.e. extended now] the speech time can be seen as a final subinterval of an interval which reaches into a contextually or lexically determined past...'

[33] Thus Comrie (1976, p. 52) for perfect aspect in general, and Orriens (2009, p. 222) and Horrocks (2010, p. 176) for Greek.

[34] Ruipérez (1954), Sicking & Stork (1996) and Rijksbaron (2002).

including the so-called 'intensive' perfects, all belong to this second group.[35] In these terms the semantics of the perfect can be said to be the consideration of the verbal idea after its terminal point.[36] Where the event denoted by the verb has no set final point, this terminal point is deemed to be the event's onset.[37] This has been followed by the suggestion that the perfect shares with the present the aspect feature of [+ duration].[38]

There is widely acknowledged to have been an important change in the meaning and distribution of the perfect, and the perfect active in particular. In Homer it appears heavily restricted lexically. By the later Classical period, however, the number of lexical items able to accept perfect active morphology increases markedly.[39] The causes of this change are, however, not so widely agreed. Chantraine suggested that the heart of the change was from the conveying of the state of the subject to conveying the state of the object.[40] More recently the change has been seen in terms of grammaticalisation parallel to the development of 'perfects' in many languages.[41]

Whatever view is taken on the nature of the underlying (change in) meaning of the perfect, the form is said to become available to more and more verbs, and towards the later Classical and into the post-Classical periods, starts to compete with the aorist.[42] Although there is disagreement on the identification of individual cases of 'aoristic' perfects, there is general agreement that these become more common.[43] The effective loss of the form in the medieval language, apart from a few relics, is generally assumed to be due to the perfect having become indistinguishable semantically from the aorist.[44]

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[35] Ruipérez (1954, p. 55).

[36] Ruipérez (1954, p. 65): la 'consideración del contenido verbal después de su término.'

[37] Ruipérez (1954, p. 62). Haug (2004, p. 394) explicitly starts from the aorist stem of these verbs, which carry inceptive sense, an approach that goes back to the nineteenth century; Kühner & Gerth (1898, p. 149 n. 2) express misgivings.

[38] Martinéz Vásquez (1993, p. 93).

[39] Wackernagel (1904, pp. 9-15, 22).

[40] Chantraine (1927, pp. 6, 12).

[41] Haspelmath (1992), Haug (2008).

[42] e.g. Horrocks (2010, p. 177).

[43] Evans (2001, p. 151).

[44] For a brief outline of this process from two theoretical perspectives see Gerö and Stechow (2002, p. 3).

Synchronic research[45] into the post-Classical and Koine perfect has, because of the specialised interest in the Bible and the papyri, tended to be conducted at one remove from that on the Classical and Homeric perfect. Nevertheless, it is possible to identify broadly the same range of views on the perfect in this later stage of the language as one can observe for the Classical, and the deficiencies of each position apply in much the same way. Many scholars of Koine Greek, particularly in the first half of the twentieth century, can be found adopting the traditional view that the perfect denotes an event finished at reference time.[46] The notion of the 'resultative' perfect is often invoked additionally as a framework for understanding perfects whose role does not denote the state of the subject.[47] Such analyses tend to see present-only perfects as an aberration and a vestige of a former state of affairs.[48]

Following the publication of McKay's work,[49] the present state understanding of the Koine perfect has been enthusiastically adopted and developed by many working on the Koine. Present-only perfects are brought forward as primary representatives and any past reference is seen purely as a function of lexical semantics.[50] This has been followed by the suggestion that the supposed stative aspect of the perfect should be analysed as a type of imperfective,[51] even able to denote progressive aspect.[52] Others, however, have sought to limit the present-only interpretation to stative verbs,[53] while still others have it that the perfect has no unified semantics in this period.[54]

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[45] Robertson (1919) (albeit with a great deal of historical information), Mayser (1926), Turner (1963), de Foucault (1972), Mandilaras (1973), McKay (1980), McKay (1981), Porter (1989), Fanning (1990), Olsen (1997), Evans (2001), Decker (2001), Campell (2007), Campbell (2008), Good (2010) and Porter (2011). For diachronic studies see n. 8.

[46] Robertson (1919, pp. 357, 892-910), Mayser (1926, pp. 176-83), Turner (1963, p. 81).

[47] e.g. Turner (1963, p. 83), de Foucault (1972, p. 134).

[48] Robertson (1919, p. 892f.), Turner (1963, pp. 81-5), Evans (2001, p. 42).

[49] i.e. McKay (1965), (1980), (1981).

[50] Porter (1989, p. 259), who, however, does not specify how this past reference is determined on a lexical level.

[51] Evans (2001, p. 30).

[52] Campbell (2007, p. 194) translates 1 *Tim*. 4.7, 'τὸν καλὸν ἀγῶνα ἠγώνισμαι...': 'I am fighting the good fight'. For criticism see e.g. Porter (2011).

[53] In Olsen's terms (1997, p. 232), 'unspecified for the privative [+dynamic] feature'.

[54] Haug (2008, p. 302).

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The apparently medio-passive-like behaviour of some perfects has received little in the way of synchronic explanation for any period of the language. Explanations have either been given in diachronic or synchronic terms. A case of the former is the theory that the perfect and middle endings in Proto-Indo-European are derivable from the same (not necessarily stative) source.[55] Synchronic approaches have seen a connection between the semantics of certain verbs and the middle behaviour of the perfect active.[56]

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[55] See Jasanoff (2003, pp. 55-63), Clackson (2007, p. 149).

[56] Sicking & Stork (1996, pp. 130-37) see the perfect and middle sharing the feature of control. Donaldson (1859, p. 273 §347) links the state meaning of the perfect to a cross-linguistic tendency for the perfect active of certain verbs to be used passively, although he does not specify what semantic elements must be present for the perfect active of a given verb to behave in this way.

1.3. Critical assessment of existing studies

Existing studies are lacking both methodologically and in the conclusions they reach. In terms of methodology, a small number of examples are given,[57] examples often with more than one interpretation. This problem is exacerbated by the tendency not to quote a full enough context for the examples that are given.[58] This in turn leads to claim and counter-claim, with sometimes very similar examples being used to support opposing hypotheses. This has tended to result less in a clearer understanding of the Greek perfect and pluperfect, and more in a greater and greater dogmatism and entrenchment on either side of the debate. Furthermore, no large-scale systematic corpus-based approaches have, to my knowledge, been undertaken, at least of the post-Classical data.[59] Even where larger scale analyses are undertaken, there is often a lack of statistical rigour in the analysis of data and the forming of hypotheses.[60]

A second problem is that, where the analysis has been diachronic, there has been a tendency to start from the supposedly well understood 'original' situation as exemplified in the Homeric poems, bolstered by other comparative, principally Vedic Sanskrit, data, and chart the development from there. While at first glance this seems a perfectly logical approach to adopt, it is in fact problematic because of the nature and paucity of the earliest evidence.[61] Specifically, Homeric Greek consists of multiple fragments of the Greek language at different points in its development before the seventh century BC, spliced together into two hexameter poems, totalling less than 200,000 words. Crucially, dating the different elements becomes essentially a matter of conjecture.[62] Arguing for a particular development of the language as seen in the Homeric poems, therefore, runs the very great risk of circularity. A related difficulty is

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[57] cf. Sicking & Stork (1996, p. 121).

[58] Sicking & Stork (1996, p. 121). For an example of the problems that this can cause see §3.7.4.

[59] The major exception here is Sicking & Stork's analysis of the Classical data (Sicking & Stork, 1996).

[60] Campbell, (2007) and (2008), uses a quasi-corpus based approach, invoking terms such as 'sample', and providing results in terms of percentages. However, claims are often based on these results which are not sufficiently supported by the data. At one place Campbell (2007, p. 220) attempts to compare proportions between *Vita Aesopi G* with the Gospels *Luke* and *John*. However, he attempts to do this with a total of only four examples at his disposal, which is statistically meaningless.

[61] cf. Ruipérez' complaint (1954, p. 51f.).

[62] As tacitly accepted by Haug (2008, p. 288).

that some scholars conducting synchronic studies have been tempted to use data from earlier stages of Greek to substantiate their case.[63] Such an approach, adopted without reference to the potential development of the perfect over time, is deeply problematic.

In terms of their conclusions, existing analyses of the Greek perfect tend to fail at one of two key points. The first concerns the notion of state, specifically the capacity of the perfect to denote that a given participant is in a given state. The second concerns the relationship between the capacity of the perfect to denote state, and its often passive-like behaviour.

As the foregoing analysis has shown, it has been popular in analyses of all stages of ancient Greek to assert that the function of the perfect is to denote the (resultant) state of the subject. However, such a view is fundamentally deficient when it comes to accounting for instances of the perfect where the subject does not enter into any recognisable state:

[21]   ὣς εἰπὼν ἐς δίφρον ἑλὼν ἔναρα βροτόεντα
        θῆκ', ἂν δ' αὐτὸς ἔβαινε πόδας καὶ χεῖρας ὕπερθεν
        αἱματόεις ὥς τίς τε λέων κατὰ ταῦρον **ἐδηδώς**. (*Il.* 17.542)

        So saying he put the gory spoil into his chariot
        and he himself went up onto it, his hands and feet bloody
        from above, just as a lion who **has devoured** a bull.

[22]   οὗτοι δὲ προσελθόντες καὶ καλέσαντες τοὺς τῶν Ἑλλήνων ἄρχοντας
        λέγουσιν ὅτι βασιλεὺς κελεύει τοὺς Ἕλληνας, ἐπεὶ νικῶν τυγχάνει καὶ
        Κῦρον **ἀπέκτονε**, παραδόντας τὰ ὅπλα ἰόντας ἐπὶ βασιλέως θύρας
        εὑρίσκεσθαι ἄν τι δύνωνται ἀγαθόν. (Xen. *Anab.* 2.1.8)

        These men approached and invited the Greek leaders saying, "The king
        orders the Greeks, since he is winning and **has killed** Cyrus, to put down
        their arms and come to the gate of the King, if possible to find something
        good for themselves...

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[63] In one instance Porter (1989, p. 260) uses a combination of Classical and post-Classical examples without any mention of the diachronic spread of these sources. cf. also Porter (2011, p. 120f.) where he cites Clackson (2007, p. 121) without acknowledging that Clackson's discussion is in the context of Proto-Indo-European reconstruction.

[23]   ὁρῶν δὲ Τολμίδην τὸν Τολμαίου… **πεπεικότα** τῶν ἐν ἡλικίᾳ τοὺς ἀρίστους

καὶ φιλοτιμοτάτους ἐθελοντὶ στρατεύεσθαι… (Plu. *Per.* 18.2)

And seeing Tolmides the son of Tolmaeus… of those who were of the right

age **having persuaded** the best and the most ambitious to take part

voluntarily in the campaign…

In each of these examples, one from each of Homer, Classical Greek and the post-Classical language, it is the object participant who may be said to be in a state, not the subject. Describing the subject in these examples as being in some state as a result of the action of the verb stretches the meaning of the term 'state' to breaking point. Indeed, far from denoting the present state of the subject, or indeed of the object, such perfects appear to have more to do with a past event and its relevance, in some way, at reference time.[64]

The second, related, difficulty, concerns the relationship between the transitivity of the perfect active form and its capacity to denote resultant state. Haspelmath (2001, p. 201) suggests that a form whose function is to denote resultant state of the subject should present the state of the affected participant, and therefore be capable of behaving in a passive-like fashion. However, this fails to account for why perfect actives such as ἔοργα in Homer are always semantically active and transitive.[65] Indeed, there are many perfect active forms, including those given in the examples above, which never behave in a passive-like fashion.

Chantraine's view, that the perfect, at least of certain verbs after Homer, denotes the state of the object, is more promising, since at least in these cases it acknowledges that it is the object participant that changes state. However, this view too is problematic, since, as McKay has observed,[66] the fact that the object enters a state does not

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[64] McKay (1965) is the first to assert that the perfect denotes the state of the subject in all situations, even where it is an experience that is being described. Prior to this, e.g. Wackernagel (1904), Chantraine (1927), the term 'state' was reserved for the description of a situation holding at reference time in which the subject is found, i.e. excluding the experience of the subject.

[65] Haspelmath (1992, p. 210) distinguishes between effected versus affected objects and argues that ἔοργα is therefore not a truly transitive perfect. However, this has the feel of special pleading. Sicking & Stork (1996, pp. 130-37), who explain in terms of the semantic feature of control, give no framework for distinguishing different behaviour in different verbs.

[66] McKay (1965, p. 9).

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necessarily mean that this it is the function of the perfect to denote this. Indeed, McKay produces convincing evidence to show that it is indeed unlikely that the function of these perfects is to denote the state of the object.[67] Nor indeed would such an explanation suffice for the meaning of the perfect as a whole, since there are plainly many examples where the perfect does indeed denote the state of the subject. It seems, therefore, that the suggestions that the function of the perfect is to denote either the state of the subject or of the object are flawed.

What then of the traditional view that the perfect denotes an action or event finished at reference time? This is able to account both for those perfects denoting the state of the subject and those where the subject does not enter into a new state, but has rather participated in some event in the past. There are, however, three problems. The first is that such a definition still does not account for the passive-like behaviour of certain perfect actives: why should a form denoting that an action is finished behave as a passive in certain cases? A second problem is that, insofar as the perfect is seen as denoting current relevance, it falls victim to the objections which have been raised regarding the current relevance theory of the English perfect, in particular in regard to the apparent confusion within the theory of semantic and pragmatic considerations.[68] Thirdly, it fails to account for the use of the perfect with state verbs, for instance the example with ἐλπίζω at [15] above, where it is very unclear what action is presented as having finished.

The lexical semantic approach adopted by Ruipérez and others provides a framework for resolving this third problem, since it deliberately encompasses both verbs with terminal points and those without.[69] However, the approach is lacking in that it leaves the transitivity question to one side, drawing no distinction between perfects whose subjects enter a state and those whose objects do. Accordingly, no reason is given for why in certain verbs the perfect active should behave in a passive-like manner. What is needed, therefore, is an approach which combines the lexical semantic framework with one that can adequately explain the transitivity alternations seen in the perfect active.

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[67] McKay (1965, p. 9ff.).

[68] See Fanning (1990, p. 111), who outlines concerns raised by McCoard (1978).

[69] The current relevance problem is, of course, not a relevant concern for this approach.

1.4. Aims and approach

The aim of the present investigation is to analyse the semantics of the perfect active stem in the historians of the Hellenistic and Roman periods, Polybius (c. 200 – 118 BC)[70], Plutarch (b. before AD 50, d. after AD 120), Appian (b. end of C1st AD, d. after AD 160), and Josephus (b. AD 37/8) and aims to address the areas where previous investigations have been deficient. It adopts a lexical semantic approach. However, it goes beyond previous studies of this kind by seeking adequately to elucidate the transitivity problem posed by the perfect active.

Given the difficulty in many contexts of establishing reference to a past event in a perfect form, the investigation is as empirical as possible. Measurements are taken of easily countable quantities, such as the number of anterior adverbs modifying a given form, rather than more subjective features. To establish the significance of any observed trends, tests of statistical significance will be employed in order to ensure that the chances of the trends observed being accountable to chance is lower than the threshold generally accepted in empirical investigations of this kind. Such a step goes beyond any investigations into the Greek perfect of any period.

The variables measured are those which are, as far as possible, self-evidently relatable to the two problems on which the investigation aims to shed light: the conditions under which the perfect and pluperfect active appear 'passive', and those under which an event E occurring prior to reference time is implied. To provide information on the former, perfects and pluperfects are examined for their complementation patterns, particularly the occurrence of subject and object complements. To provide information on the latter problem, collocation with particular temporal adverbials is measured, e.g. πρότερον and ἤδη, as well as other time expressions. The perfect and pluperfect active will also be examined for the constructions in which they themselves play a part, in particular those which bear an implicit or explicit focus on the non-past.

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[70] Author dates from relevant articles in The Oxford Classical Dictionary (1996).

The investigation is synchronic, focusing on the historians of the Hellenistic and Roman periods, for the following reasons. First, before a diachronic picture can be plausibly and accurately drawn, the synchronic situation in its various stages must be understood as well as possible.[71] The kind of quantitative study proposed here has yet to be carried out for the later period, whereas at least one study of this kind exists for the Classical language.[72] Related to this is the desirability in any investigation for as many variables as possible, apart from that being measured, to be kept constant. Register is acknowledged throughout the history of Greek to play a significant role in determining the kind of language written. This should therefore, as far as possible, remain constant, and an analysis based purely on the historians of this period meets this requirement. Furthermore, an analysis of the historians should shed interesting new light on Koine Greek of the same period, especially the biblical texts and the papyri where the debate regarding the perfect has been particularly fierce.

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[71] cf. Sicking & Stork (1996, p. 121f.), Campbell (2007, p. 23f.).

[72] Sicking & Stork (1996). Evans (2001) is quantitative in its approach with regard to the LXX Pentateuch, but this is translational material.

1.5. Outline

Chapter 2 outlines the principles and methods underlying the investigation. After this the questions at the heart of the investigation are addressed in turn: Chapter 3 deals with the question of transitivity through examining the complementation pattern of perfect and pluperfect actives, while Chapter 4 addresses the aspectual question, namely the implication of the occurrence of an event prior to reference time.

1.6. Capitalisation

Capitalised terms, e.g. STATE, PERFECT, are reserved for grammatical or semantic categories, in order to distinguish either from morphological categories, e.g. the morphological 'perfect', or non-technical uses of the words in question, e.g. state, which might otherwise result in confusion. Where ambiguity is not considered to be an issue, such as with the term 'atelic' grammatical categories will not generally be capitalised, except where the category concerned is in some kind of paradigmatic relationship to a capitalised category, e.g. PERFECTIVE which bears a paradigmatic relationship to PERFECT.

1.7. Abbreviations

The following abbreviations will be used in the course of the present investigation:

Table 1 – Marks and abbreviations

Apod.	Apodosis
Act.	Active
Aor.	Aorist
COL	Change-Of-Location
CON	Change-Of-Nature
Cond.	Conditional
COS	Change-Of-State
IDC	Indirect Command
IDQ	Indirect Question
IDS	Indirect Speech
Impf.	Imperfect
Ind.	Indicative
Inf.	Infinitive
Non-red.	Non-(valency-)reducing
LSJ	Liddell & Scott (as provided by TLG and Diogenes)
LXX	Septuagint
NT	New Testament
PAS	Perfect Active Stem
Opt.	Optative
Perf.	Perfect

PASF	Perfect Active Stem Form (any perfect or pluperfect active)
Plpf.	Pluperfect
Pres.	Present
Ptpl.	Participle
Red.	(Valency-)reducing
Relv.	Relative
RS	Resultant State
Rslt	Result (clause)
Sub.	Subordinate
Subj.	Subjunctive
Subst.	Substantive
Temp.	Temporal (clause)
TLG	*Thesaurus Linguae Graecae*
*	Sentence (or phrase) not valid

Chapter 2. Event structure, aspect and transitivity

2.1. Introduction

Two problems were outlined in the introduction regarding the Greek perfect, one aspectual, the other connected with transitivity. The aspectual problem is that some perfect and pluperfect forms imply the occurrence of an event prior to reference time, while others do not. The transitivity problem is that some perfect forms appear to have passive-like semantics. This chapter seeks to provide the framework necessary for explaining the problematic behaviour of the Greek perfect and pluperfect in regards to both aspect and transitivity. The first section, §2.2, discusses event structure and aspect. It discusses what an event is, and what aspectual distinctions may be made in language when describing events. Critical to this is the determination of telicity, which will be defined and distinguished from lexical aspect. §2.3 addresses transitivity. Important here is the distinction between ACTIVE, MIDDLE and PASSIVE relations, and the conditions under which forms usually associated with the ACTIVE denote either MIDDLE or PASSIVE. §2.4 draws the aspectual and transitivity problems associated with the Greek perfect active stem together and recasts them according to the tighter notions of transitivity and aspect which are established in this chapter. The problem of the core value of the perfect is also addressed here. Finally, at §2.5 the practical issues of building and analysing the corpus are laid out, as well as the principles of statistical analysis used in the investigation.

2.2. Events, tense and aspect

2.2.1. The true domain of an event

It appears self-evident that an event is 'something that happens'. Yet at what point does it become an event? Is it an event as soon as it happens, or as soon as it is perceived to have happened? This is to ask whether an event may be considered to be something taking place 'in the real world',[73] or as an interpretation of happenings in the world which takes place in the mind.[74]

For the purposes of this investigation I take an event to be a cognitive phenomenon. This is first because, while some happenings, such as the Earth's orbit of the Sun, are governed entirely by natural laws, the term 'event' can also be used of happenings which only make sense in the context of an observer with the capacity for understanding. Take, for example, the event 'dance a waltz'. This is an event which has an entirely human definition; there is no physical law which determines what a waltz is. In order for the event 'dance a waltz' to occur, an observer must be present who both knows what a waltz is, and who can identify that the event 'dance a waltz' is taking place.

A second consideration is the imperfective paradox: how is it possible to describe an event using the progressive, when the event need never come to an end for the statement in the progressive to hold. Consider the following sentences:[75]

[24]   John was crossing the street, when he was hit by a bus.

[25]   John crossed the street.

[24] denies that [25] ever happened, and yet the imperfective 'John was crossing the street' is perfectly felicitous. The most natural way to interpret this is that events are cognitive phenomena. [24] conceives of an event, 'John being hit by a bus', which takes place in the course of a hypothesised 'John crossing the street' event.

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[73] This view seems to be assumed rather than argued for in e.g. Bach (Bach, 1986). According to Rothstein (2004, p. 2), Kamp (Events, 1979) and Kamp (Some remarks, 1979) argues for this position.

[74] This is the view taken by Partee (1999, p. 98), Rappaport Hovav, Doron, & Sichel (2010, p. 1ff.) and Rothstein (2004, p. 2f.).

[75] Examples modified from Bach (1986, p. 12).

2.2.2. What constitutes an event?

Of what may the cognitive phenomenon of an event be said to consist? I take an event to be an extralinguistic cognitive unit[76] whereby the diverse happenings in the world may be separated into distinct units which may be described by linguistic means.[77] I take events to be extralinguistic first on the basis both of the very widespread, albeit not universal, encoding of aspectual distinctions in the worlds languages, as well as evidence from language acquisition: aspectual distinctions are gained easily by children without specific teaching.[78]

2.2.3. Aspect: semantic, pragmatic or morphological?

The term 'aspect' can be used in two different senses. First, it can refer to a set of semantic distinctions regarding the temporal constitution of an event. Secondly, it can be used to describe a formal opposition in a particular language (or group of languages) predicated on the semantic distinctions.[79] Finally, pragmatic categories are also wont to be identified with the 'meaning' of aspectual distinctions.[80]

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[76] A unit implies bounds. Yet for the purposes of identifying events these bounds are purely to enable reference to the event; it says nothing about the 'boundedness' of the event, a property which properly concerns aspect (see next sub-sections). Thus I take the unbounded STATE in e.g. 'the ice is frozen', i.e. the ice is in a frozen state, to be an event in the same sense as 'the car crashed'.

[77] cf. Rappaport Hovav, Doron, & Sichel's definition (2010, p. 1). Smith (1997, p. xiv) distinguishes between events and states, and gives the general term 'situation' to the category which contains both terms. I have not followed her in this because of the widespread use of the term 'event structure', which is a term as applicable to states as it is activities or any other kind of event.

[78] See Smith (1997, p. xv) and references *ad loc.*

[79] cf. Comrie (1976, p. 6).

[80] Campbell (2007, p. 24) states, summarising the literature in New Testament studies, that 'Aktionsart is regarded as a pragmatic category.' Comrie (1976, p. 52) seems to invoke a pragmatic distinction in describing the meaning of the perfect as indicating 'the continuing present relevance of a past situation'.

First, it is essential to distinguish semantic from pragmatic levels of interpretation, separating entailments from implicatures.[81] An entailment may not be cancelled by a further assertion made in the same context, and still remain true. By contrast, an implicature may imply that something is true, but this implication may be cancelled. Consider the following example from Russian:[82]

[26]   *On posidel v parke, i ešče tam sidit.

He sat for a while in the park, and is still sitting there.

On the intended reading, namely that both verbs refer to the same event, this sentence does not make sense: the statement 'On posidel v parke' (= 'he sat for a while in the park') excludes the possibility that 'ešče tam sidit' (= 'he is still sitting there').[83] The difference between these two statements is on the level of an entailment, since they cannot be put together and coerced to make sense.

Contrast this with the following examples in English:

[27]   Peter was building a castle.

[28]   Peter was building a castle but he never completed it.

[29]   Peter was building a castle and now it's finished.

All three of these examples make sense. On its own one might take [27] to indicate that Peter did not finish the castle. However, as [28] and [29] demonstrate, it is compatible both with assertions that the castle was completed, and that it was not. It may be taken from this that the sentence 'Peter was building a castle' carries no entailment regarding the completion of the action; any implication in this regard falls in the domain of implicature.

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[81] Implicatures can be further distinguished between conventional and conversational, a distinction first made by Grice (1975), who was primarily interested in the latter. For a concise definition of the latter see Potts (2005, p. 11).

[82] Example from Rappaport (1997, p. 231). My thanks to Julia Crellin for her help in checking the Russian examples.

[83] Rappaport (1997, p. 231).

Since different languages mark aspect formally in different ways,[84] the term 'aspect' will be reserved here for the semantic distinction. Other terms will be used to label the specific means used by Greek and other languages to realise these semantic distinctions. For the purposes of the present investigation, therefore, I adopt Smith's definition of aspect:[85]

> Aspect is the semantic domain of the temporal structure of [events] and their presentation.

2.2.4. Two kinds of aspect: viewpoint and event aspect

Two kinds of aspect are generally recognised in the world's languages: viewpoint aspect and the aspect of an event,[86] also known as *Aktionsart*. Smith outlines the difference between these two as follows:[87]

> Viewpoint aspect gives temporal perspective to a sentence. More subtly, [event] aspect also involves a point of view… [event] aspect presents a situation as belonging to a certain category of event or state.

Consider the following Russian examples:[88]

[30]   On napisal pis'mo.

He wrote a letter.

[31]   On pisal pis'mo.

He was writing a letter.

[32]   On posidel v parke.

He sat for a while in the park.

[33]   On sidit v parke.

He is sitting in the park.

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[84] Indeed, many languages, e.g. modern German, do not formally mark aspect at all.

[85] Smith (1997, p. 1).

[86] Smith (1997) calls the latter 'situation aspect'.

[87] Smith (1997, p. 1).

[88] Examples adapted from Rappaport (1997, pp. 230-32).

The first two examples concern a telic event, 'He writing a letter'. The second two, by contrast, concern an atelic event, 'He sitting in the park'. Yet both are compatible with both perfective and imperfective aspect marking, as demonstrated by the felicity of all four sentences. In [30] the telic event 'Him writing a letter' is presented as completed. In [31], however, a subinterval of the same telic event is presented. The same distinction holds between [32] and [33]: in the former the atelic 'He sitting in the park' event is presented as completed, whereas in the latter a subinterval of that event is given.

It is clear, then, that viewpoint aspect may, in principle, apply both to telic and atelic sentences, and that therefore the two categories of event and viewpoint aspect should be distinguished. Event aspect refers to the temporal properties a given event can possibly have, while viewpoint aspect selects which of those properties is in view in a given utterance.[89] It may be said, therefore, that '[t]he aspectual meaning of a sentence is a composite of the information from the components of viewpoint and situation type'.[90]

Across languages two viewpoint aspects are generally distinguished, perfective and imperfective. Smith defines the semantic difference in general between the two as follows:[91]

> The main semantic difference among aspectual viewpoints is in how much of a situation they make visible. Perfective viewpoints focus a situation in its entirety, including endpoints; Imperfective viewpoints focus an interval that excludes endpoints…

In the case of telic events, therefore, the perfective asserts that the endpoint inherent to the event is reached. In the case of atelic events, by contrast, a perfective will, depending on the language, either impose an arbitrary endpoint on the event, or mark simply the start point.[92]

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[89] Smith (1997, p. 61): 'Aspectual viewpoints function like the lens of a camera, making objects visible to the receiver. [Events] are like the objects on which the viewpoint lenses are trained.'

[90] Smith (1997, p. 1).

[91] Smith (1997, p. 62).

[92] For the role of lexical aspect in determining the telicity of a sentence see §2.2.6.

To illustrate this consider again examples [30]-[33]. In [30] the event aspect is determined by the predicate 'Him writing a letter'. In event-aspectual terms, the sentence is therefore telic, since there is an envisaged endpoint, 'The letter being written (by him)'. In viewpoint-aspectual terms, this predicate is perfective, since it specifies that the envisaged endpoint was reached. However, the imperfective viewpoint aspect of [31] specifies that the endpoint is not reached in this predicate, and that a subinterval before the endpoint is reached is being referred to. By contrast, the event denoted by the sentences in [32] and [33] is atelic: there is no envisaged endpoint. In [32] this atelic event is specified as being completed, arbitrarily, whereas in [33] it is specified as not completed, and rather a subinterval within this event is being referred to.

2.2.5. Event aspectual distinctions

So far distinctions in event aspect (telic vs. atelic) have been treated separately from distinctions in viewpoint aspect (perfective vs. imperfective). However, there is more to event aspect than simply the difference between telic and atelic. It is the purpose of the next two sections to identify these distinctions and discuss whether they are properly to be considered properties of the verb or the sentence to which the verb belongs.

In his seminal article Vendler identified the following event aspectual distinctions:[93]

Table 2 - Feature analysis of Vendlerian categories

	[± stages]	[± telic]
STATE	-	-
ACTIVITY	+	-
ACHIEVEMENT	-	+
ACCOMPLISHMENT	+	+

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[93] Vendler (1957); Vendler himself applied these distinctions to verbs, not sentences, and implicitly devotes his article to the question of event aspect, not viewpoint aspect. The question of whether event and viewpoint aspect are properly regarded as properties of individual verbs or sentences is addressed at §2.2.6. Vendler himself did not present his schema in terms of features. The table is that drawn up by Rothstein (2004, p. 12).

In this table the feature [± stages] refers to whether or not the event described is a process or not. The feature of [+ stages] is shared by activities and accomplishments, and is generally indicated by felicity with the progressive in English:

[34] Are you running? (ACTIVITY)

[35] Are you building a house? (ACCOMPLISHMENT)

By contrast, STATES and ACHIEVEMENTS lack this feature:

[36] *Are you loving this music?[94] (STATE)

[37] *Are you recognising this piece of work? (ACHIEVEMENT)

The feature [± telic] is shared by ACHIEVEMENTS and ACCOMPLISHMENTS. Thus the following sentences are infelicitous, because they simultaneously assert that the envisaged endpoint has been reached and that it has not:

[38] *I have run the 800 metres and I'm still running the 800 metres.

[39] *I have recognised you and don't know who you are yet.

By contrast the following sentences, involving ACTIVITIES and STATES respectively, are felicitous:

[40] I have run and I'm still running.

[41] I have loved you and I still love you.

Vendler summarises the differences as follows:[95]

> … the concept of activities calls for periods of time that are not unique or definite. Accomplishments, on the other hand, imply the notion of unique and definite time periods. In an analogous way, while achievements involve unique and definite time instants, states involve time instants in an indefinite and non-unique sense.

2.2.6. Sentence versus lexical aspect

It is a matter of contention whether or not it is valid to assign aspectual classes to verbs, or whether this is properly a property of the sentence.[96] A critical question is at which of these levels telicity is determined.

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[94] In some colloquial varieties of English such a sentence is acceptable.

[95] Vendler (1957, p. 149).

Many linguists hold that lexical items, as distinct from any morphological aspectual marking, have distinct aspectual characteristics.[97] However, it has been shown that the verbal head is not sufficient for determining the telicity of the sentence in which it sits, and that the presence of certain arguments and modifiers is also important.[98] Thus the same verb may occur in TELIC and ATELIC sentences according to different properties of its arguments:

[42]   My brother built houses (for years / *in ten years).

[43]   My sister built a house (in a day / *for a day).

The first example, 'My brother built houses,' is atelic, as shown by the felicity of combination with a 'for' adverbial expression, and infelicity of an 'in' adverbial expression. That the second example, 'My sister built a house,' is telic is shown by the felicity of the 'in' adverbial, and the infelicity of the 'for' adverbial. Some have taken this evidence to imply that discussion of verbal aspect at the level of the verb is irrelevant.[99]

Yet it is not clear that, just because the verbal head cannot always finally determine the telicity of its predicate, it has no role in determining the telicity of a sentence. This latter position has recently been argued by Rothstein.[100] For her '[t]he question to ask at the V level is not whether verbs are telic or not, but how different heads can be classified according to the contribution they make towards determining telicity'.[101]

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[96] For many the issue is whether telicity should be regarded as a property of individual verbs or of predicates, e.g. Rothstein (2008, p. 2) and Horrocks & Stavrou (2010, p. 290 n. 8). However, it seems more likely that the real question is whether or not aspect should be regarded as a property of individual verbs or of *sentences*, since the SUBJECT, especially where playing a thematic role, is also important (see n. 106).

[97] In Slavonic linguistics a separation has been maintained between aspectual distinctions marked by lexical and those marked by grammatical means. Confusingly, in this field the former is known as 'Aktionsart', and the latter as 'aspect' (Comrie, 1976, p. 7 n. 4).

[98] Verkuyl (1972), Dowty (1979). See also Krifka (1998, p. 207).

[99] e.g. Verkuyl (1972), Verkuyl (1993), Rappaport Hovav (2008).

[100] Rothstein (2004).

[101] Rothstein (2008, p. 2).

That the verbal head can be the key factor in determining the telicity of the predicate may be seen in the case of sentences with state verbs. Thus while in [42] and [43] a telic ~ atelic opposition was generated for 'to build' through the contrast of a singular versus bare plural noun, this is not the case for the verb 'to love':

[44]   Fred loved his car (*in/for a year).

[45]   Fred loved cars (*in/for a year).

[46]   Fred loved cake (*in/for a year).

This evidence suggests that the verbal head does play a role in determining the telicity of a sentence. Specifically, it may be said that:[102]

> … a VP is telic when we can identify an atomic set[103] which makes counting events in the denotation of the VP possible… Achievements are naturally atomic, and thus telic.

STATES, as in [44]-[46], are not atomic, since they are composed of an arbitrary number of infinitesimal instants. They are therefore inherently atelic.

The real issue, then, concerns ACTIVITY and ACCOMPLISHMENT sentences, where factors other than the verbal head certainly do play a role in determining telicity. Consider the following:

[47]   Fred built houses (*in/for a year).

[48]   Fred built his own house (*for/in a year).

ACCOMPLISHMENT sentences may be either telic or atelic. The atelicity of [47] comes from the fact that the number of houses is not specified (i.e. predetermined). Consequently, it is not possible, in Rothstein's terms, to count the number of building events. By contrast, in [48] the number of houses is specified. Therefore the number of building events is countable and the event is telic.

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[102] Rothstein (2004, p. 174).

[103] i.e. a set of sub-events which may be counted.

Now compare the following examples:

[49]   Fred played the piano (*in/for ten seconds).

[50]   Fred played the sonata (*for/in ten seconds).

The atelicity of [49] comes from the fact that the theme does not provide a criterion for counting events; you can in principle keep playing the piano for ever. By contrast, [50] does give these criteria, because a sonata has a predetermined extent.

Therefore, verbs which occur in both ACTIVITY and ACCOMPLISHMENT sentences may in principle be either telic or atelic. Because of this, telicity must be a property of sentences and not verbs, since in at least some cases the same verb can be part of both telic and atelic sentences.

However, ACTIVITY and ACCOMPLISHMENT events are not identical in terms of event structure. Consider the following atelic examples:

[51]   Fred made paper.

[52]   Fred played hockey.

Both of these involve mass themes and, therefore, the extent of the activity is not predetermined. However, in the event, 'Fred made paper,' there is a particular point that must be reached for the event to be said to have occurred: there must be some paper. Consider the following sentences:

[53]   *Fred made paper but there wasn't any paper at the end of the process.

[54]   Fred played hockey but he didn't finish the game.

[53] does not make sense because the predetermined minimal point, the making of some paper, did not occur. By contrast, [54] makes sense; it is possible to play hockey without any predetermined result having been reached.[104] In this investigation, the terminative ~ non-terminative distinction, as a property of verbs, is adopted to encapsulate this requirement: a terminative verb carries the requirement for a predetermined point to be reached for the event to be deemed to have occurred.[105]

The discussion so far has identified the following types of verb with the events they help to describe having the following properties:

1. ACHIEVEMENT: always occur in telic sentences.
2. STATE: always occur in atelic sentences, unless arbitrarily bounded.
3. ACCOMPLISHMENT: occur in either telic or atelic sentences, but require both that some result obtain for the event to be deemed to have occurred. This is to say that only '(CAUSE)-BECOME-X' verbs may be classed as ACCOMPLISHMENTS.
4. ACTIVITY: occur in either telic or atelic sentences, but have no constraint in terms of the existence of a result.

While telicity does not reside in the verb itself, the verb determines certain parameters according to which the property of telicity is set. Therefore, while not finally determining the structure of an event expressed at the sentence level, verbs determine the 'kind of event' that a sentence describes. The following table provides an overview of verb types:

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[104] The difference between the two lies in terms of change: accomplishments involve a change, whereas activities do not: 'Accomplishments are (potentially) telic because they are associated with a (potentially) atomic BECOME event, which provides the measure content of the atomic function. Activities are inherently unspecified for a criterion of atomicity, but an activity heads a telic VP if an external measure provides a criterion of individuation of atomicity.' (Rothstein, 2004, p. 174).

[105] This predetermined point does not have always to issue in a telic sentence: the sentence 'He made paper' is atelic but uses a terminative verb in these terms. For a narrower use of the term 'terminative', referring only to verbs of motion, see Horrocks & Stavrou (2007, p. 637f.). However, in a later article (Horrocks & Stavrou, 2010, p. 290) the term is used of the verb 'to melt', implying a wider application than to motion verbs only. Some verbs are ambiguous in terms of whether they demand any result to obtain for the event to be deemed to have occurred, e.g. 'Fred washed the car but it's still dirty,' versus 'Fred washed the car and now it's spotless.' (Horrocks & Stavrou, 2010, p. 289f.) Consequently their sentences are ambiguous between being ACTIVITIES and ACCOMPLISHMENTS.

Table 3 - Semantic sentence types, verbs, and telicity

Verb type	Example verb	Sentences always telic	Require result	Terminative
STATE	love	No	No	No
ACTIVITY	run, swim, play	No	No	No
ACCOMPLISHMENT	make, melt, rot	No[106]	Yes	Yes
ACHIEVEMENT	recognise, arrive	Yes	Yes	Yes

To sum up, the category telicity is regarded as a property of events and, by extension, sentences as their fullest linguistic expression.[107] Yet verbs also have properties concerning the structure of the event, including its endpoint. The kind of event, specifically whether STATE, ACTIVITY, ACCOMPLISHMENT or ACHIEVEMENT, are taken to be properties of verbs. Finally, terminativity is also taken to be a property of verbs: a terminative verb requires some pre-determined point to be reached before an instance of the event may be said to have occurred.

2.2.7. Viewpoint aspect and tense

In many languages, including English and Greek, verb forms are not only marked for viewpoint aspect, but also for tense.[108] Tense is a deictic category whereby an event can be placed along a universal timeline. Events on that timeline are then measured relative to the moment of speaking, to generate past, present and future tenses.[109]

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[106] This may be perceived to run counter to the view that ACCOMPLISHMENTS are inherently telic. Note, however, that even a verb such as 'melt' which denotes a '(CAUSE)-BECOME-X' event need not be telic if the theme is not atomic. Thus 'Ice melted (for *x* years).' In this way 'melt' behaves much like 'make' in 'Fred made paper' at [51].

[107] Here I follow Horrocks & Stavrou (2010, p. 290 n. 8).

[108] In ancient Greek non-indicative verb forms are not marked for tense, but assume the deictic centre provided by the sentence in which they are situated.

[109] Otherwise known as 'absolute tense'. See Comrie (1985, p. 36ff.) for some reservations in defining tense in this way.

Tense and aspect interact. A verb marked with PERFECTIVE aspect and past tense may be used to describe a terminated event prior to speaker time. Consider the following Russian example:[110]

> [55] On posidel v parke.
>
> He sat for a while in the park.

Here the atelic event 'sitting in the park' is marked in this Russian example as PERFECTIVE (i.e. bounded) and past. The assertion is therefore made not only that the event is *completed*, but that the sitting-in-the-park event took place prior to reference time. However, such entailments can vary from language to language.

2.2.8. PERFECT aspect

The opposition PERFECTIVE ~ IMPERFECTIVE is not the only viewpoint aspectual distinction to be drawn. Many languages also make use of the PERFECT aspect. PERFECT aspect differs from PERFECTIVE and IMPERFECTIVE in the placing of a reference point from which an event is viewed as having previously taken place.[111] This reference point differs from the deictic centre provided by the category tense in that the event described is explicitly related to the reference point, and is asserted to be relevant in some way.[112] Nevertheless, because of the requirement, at least in the languages discussed here, for verb forms to be temporally located, this reference point is placed somewhere along the universal timeline. One option is to set the reference point at the moment of speaking:

> [56] I have put the kettle on.

Here the prior event of putting the kettle on is related directly to the moment of speaking.

Alternatively another reference point is set up, either in the past or the future, from which the event will be viewed. The English pluperfect and future perfect do this, with the former setting the reference point in the past, the latter setting the reference point in the future:

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[110] Example from Rappaport (1997, p. 230).

[111] Comrie (Comrie, Aspect, 1976, p. 52ff.), Horrocks (2010, p. 176).

[112] Hence the notion that the perfect entails 'present relevance' (Horrocks, 2010, p. 176).

[57] I had put the kettle on, when I saw a bird sitting in a tree.

[58] When I hand this piece of work in, I will have put in a large number of hours in producing it.

In this investigation, the point relative to which events are measured is referred to as 'reference time'.

The problem posed by the Greek perfect and pluperfect, as demonstrated in the introductory chapter, is that it does not regularly behave in the way one might expect if it encoded perfect aspect: on many occasions the perfect does appear to set up a temporal reference point, whether at the moment of speaking or prior to it, asserting that some event took place prior to it, but on many other occasions it appears merely to assert that some situation holds at reference time. In these situations it appears to behave as a simple present or imperfect tense, respectively.

2.2.9. Beyond the endpoint: RESULTANT STATE

So far events have been discussed mainly in terms of what happens during the course of the event between the endpoints. However, what is presented as happening after the endpoint is just as important. Once the endpoint of an event is reached, one of two things can happen:

1. The event terminates and the participants do not enter any new STATE.
2. A STATE is entered into by one or more of the participants.

Whether or not a STATE is entered into by one or more participants after the termination point of an event may be determined at the lexical (verbal) level. Consider the verbs 'to run' and 'to come':

1. John ran.
2. John came.

In 'John ran' John does not enter a STATE after the termination of the running event. By contrast, in 'John came' John enters the new state of being at the deictic centre, i.e. 'here'.[113] 'To come' may be said to describe two sub-events: a dynamic and telic 'coming' event and a STATE event 'being at here'. The verb 'to run' describes only one sub-event, the dynamic atelic 'running' sub-event. The sub-events described by a verb will be termed its 'event schema'. An event culminating in a RESULTANT STATE will be termed a 'resultant state' (RS) event. A verb describing a RESULTANT STATE as part of its event schema will be termed a 'resultant state' (RS) verb, while a verb which does not describe such a STATE will be termed a 'non-resultant-state' (non-RS) verb.

For many languages it is possible to make a distinction not just between whether or not the RS was ever reached, but also between whether it still holds at reference time, or not. A resultative construction is a construction that denotes that a RS holds at reference time.[114] The resultative construction in English is denoted by the verb 'to be' construed with the past participle. Compare the following:

[59]   The door opened several times during the night, but it isn't open now.

[60]   The door is closed.

[61]   *The door is closed but now Aristotle has opened it.

Example [59] asserts that the door reached the STATE of being open several times during the night, but at reference time it is not in that STATE. By contrast [60] asserts that the the door is closed at reference time. This is shown by the infelicity of [61], which simultaneously asserts that the door is in the STATE of being closed at reference time, and that it is not.

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[113] Of course, the matter is not determined wholly at the lexical level. At the termination of the event described by 'John ran home' John enters the new state of 'being at home'.

[114] Bybee et al. (1994, p. 63) define a resultative as denoting 'a state that was brought about by some action in the past.' cf. similar definitions by Nedjalkov (1988, p. 6) and Haspelmath (1992, p. 191). This should not be confused with the so-called resultative perfect of ancient Greek grammar.

The RS construction may be used to test whether or not a verb denotes an RS sub-event as part of its event schema:

[62] The door closed.

[63] The door is closed.

[64] John ran.

[65] *John is run.

From these examples it is clear that 'to close' describes a STATE sub-event as part of its event schema, while 'to run' does not.

2.2.10. Perfect morphology, ANTERIOR and PAST REFERENCE

Another means of expressing RS in RS verbs in English is by means of the 'perfect' construction. Consider the following:

[66] The door has closed.

However, the perfect construction (at least in English) differs from the resultative construction in that it is not restricted to describing RESULTANT STATE. Compare the following examples:

[67] *The door is closed five times but is now open.

[68] The door has closed five times and but is now open.

Furthermore, non-RS verbs do not reject the perfect construction, whereas they do reject the resultative construction:

[69] *John is run.

[70] John has run.

In the event described here, there is no RESULTANT STATE for John; he is the same after the event as he was before it. The only difference is that after the event he has had the experience of running, and this is able to be conveyed by the perfect. For the purpose of the present investigation, this experiential non-RS sense of the perfect I will term ANTERIOR.[115]

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[115] Bybee et al. (1994, p. 54) define anteriority as denoting 'that the situation occurs prior to reference time and is relevant to the situation at reference time...'

There is a third use of the perfect. As well as describing RESULTANT STATE and ANTERIOR, it may (at least in English) be used with non-RS verbs, where a STATE continues to hold at reference time:

[71]   The house has remained (to this day).

The verb 'to remain' is not an RS verb (as shown by its rejection of the RS construction: '*The house is remained'), but a state verb. Yet the perfect, at least in this example, is being used to convey a STATE holding at reference time. I will term a STATE that continues up to reference time a CONTINUED STATE.

It is helpful to make one further distinction. RESULTATIVE, ANTERIOR and CONTINUED STATE all share a property which they do not share with a sentence describing a PURE STATE, e.g. 'I am here': this last sentence makes no assertions about any situation prior to reference time, while the others make implicit reference to a period prior to reference time. The sentence 'I have run' asserts that an event of running took place and terminated at least once prior to reference time. The sentence 'the door has closed' asserts that an event of closing terminated prior to reference time, and the RESULTANT STATE (probably) still holds. Finally the sentence 'the house has remained' implies that there was a house prior to reference time and there still is one. I will term this property, which is shared by RESULTATIVE, ANTERIOR and CONTINUED STATE, PAST REFERENCE.[116]

So far verbs prescribing roles for only one participant have been discussed. However, it is important to consider verbs with more than one participant. Consider the next example:

[72]   Fred has built a house.

'To build' is clearly a RS verb, since it describes a RESULTANT STATE for one of the participants. But what does the perfect convey? Is it RESULTATIVE, describing the RESULTANT of the house, or ANTERIOR, expressing Fred's experience of having built a house? The answer could be said to depend on which participant one is most important in a particular context. For the purpose of this investigation, any form which must be read as ANTERIOR from the perspective of at least one of the participants will be

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[116] Almost all English perfects carry past reference. The principal exception to this involves the verb 'to get', as in 'I've got a car'.

classed as such. Thus πεποίηκα must be read as ANTERIOR from the perspective of the SUBJECT:

[73]   ὅπου μὲν γὰρ Ἀγρίππαν ἐξ ἰδιώτου βασιλέα **πεποίηκεν**... (Jos. *BJ* 2.182)

For since [Caesar] **has made** Agrippa a king out of a private person...

However, the dependence of the ANTERIOR ~ RESULTATIVE reading on the participants involved implies a relationship between aspect and transitivity. Consider the verb 'to freeze' in English. This may alternate between causative and unaccusative readings, and may thus be used both transitively and intransitively:

[74]   He has frozen the water.

[75]   The water has frozen.

Despite the equivalence of the perfect form in both examples, in the first the perfect functions as ANTERIOR (from the perspective of the SUBJECT) and RESULTATIVE (from the perspective of the OBJECT), while in the second it is RESULTATIVE only. Significantly for this investigation, there are Greek perfect actives that behave in exactly the same way:

[76]   ὑφ' ὧν ἁπάντων ὁ Κλαύδιος ἐθορυβεῖτο δεδιὼς περὶ τῆς σωτηρίας...
εἱστήκει δὲ κατά τι προσβατὸν ὀλίγαις βαθμῖσι χωρίον **ὑπεσταλκὼς** τῷ κατ' αὑτὸ σκότῳ. (Jos. *AJ* 19.216)

Claudius was terrified by all this, fearing for his life… He was standing in a space, accessible by a few paces, **having taken cover** in the darkness there.

[77]   ὁ δὲ Φίλιππος, προειδὼς τὸ μέλλον, ὑπό τινα λόφον **ὑπεστάλκει** τοὺς Ἰλλυριοὺς ἐν τῇ καταβάσει καὶ τῶν πελταστῶν τοὺς ἐπιτηδειοτάτους. (Plb. 5.13.5)

But Philip, foreseeing what would come, **had sent** the Illyrians behind a hill, in the descent, and the most able of the peltasts.

Before proceeding, therefore, it is necessary to set up a framework for discussing transitivity.

2.3. Transitivity

2.3.1. What is transitivity?

Transitivity has become a somewhat controversial subject since the publication of Hopper and Thompson's article 'Transitivity in grammar and discourse' (Hopper & Thompson, 1980). As a consequence, transitivity is no longer regarded by many as denoting an opposition between TRANSITIVE and INTRANSITIVE, but is seen rather as a complex category comprised of many features including the number of participants, aspect, punctuality, volitionality etc.[117] This proposal has been met by a mixture of both criticism and support.[118]

It is not necessary for our purposes to examine in depth the issues involved here.[119] The transitivity issue presented by the Greek perfect and pluperfect is limited to its apparent capacity to carry out a valency-reducing operation on its verb. It is sufficient to distinguish various semantic roles played by a verb's arguments, as well as the grammatical relations with which these semantic roles are commonly associated.

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[117] Hopper & Thompson (1980, p. 252).

[118] See Kulikov (1999, p. 23) and references.

[119] Kulikov (1999, p. 23): '… much remains unclear about the intricate inner structure of the *semantic* concept of transitivity…'

2.3.2. Semantic roles versus grammatical relations

It is helpful to distinguish between semantic roles and grammatical relations. Semantic roles are 'semantic categories into which arguments may be classified according to the kind of role they play in the situations described by their predicates'.[120] The following semantic roles have been identified cross-linguistically:

Table 4 - Semantic roles (Kroeger, Analysing Grammar, 2005, p. 54f.)

AGENT	Causer or initiator of events
EXPERIENCER	Animate entity which perceives a stimulus or registers a particular mental or emotional process or state.
RECIPIENT	Animate entity which receives or acquires something.
BENEFICIARY	Entity (usually animate) for whose benefit an action is performed.
INSTRUMENT	Inanimate entity used by an agent to perform some action.
THEME	Entity which undergoes a change of location or possession, or whose location is being specified.
PATIENT	Entity which is acted upon, affected, or created; or of which a state or change of state is predicated.
STIMULUS	Object of perception, cognition, or emotion; entity which is seen, heard, known, remembered, loved, hated, etc.
LOCATION	Spatial reference point of the event (the SOURCE, GOAL, and PATH roles are often considered to be sub-types of LOCATION).
SOURCE	The origin or beginning point of a motion.
GOAL	The destination or end-point of a motion.
PATH	The trajectory or pathway of a motion.
ACCOMPANIMENT (or COMITATIVE)	Entity which accompanies or is associated with the performance of an action.

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[120] Kroeger (2005, p. 54).

Grammatical relations, by contrast, are non-semantic grammatical categories into which arguments may be classed. These often identified include:

1. SUBJECT
2. OBJECT
3. OBLIQUE

There are two types of grammatical relation into which arguments may be classified: DIRECT and OBLIQUE arguments.[121] DIRECT arguments comprise SUBJECTS and OBJECTS, while OBLIQUE arguments comprise other kinds of arguments. DIRECT arguments generally have a more intimate relationship with their verb than other arguments. This is reflected in English by the fact that OBLIQUE arguments are often marked by prepositions, while DIRECT arguments tend not to be.[122]

The particular grammatical relations specified by a given verb are its SUBCATEGORISATION.[123] Thus the verb 'donate' in English subcategorises for a SUBJECT, an OBJECT (the thing donated) and an INDIRECT OBJECT (the recipient of the thing donated). Its DIRECT arguments are the SUBJECT and OBJECT. Its OBLIQUE argument is the INDIRECT OBJECT. By contrast, the verb 'arrive' subcategorises for a SUBJECT only, a DIRECT argument.

Identification of the grammatical relation of an argument differs from language to language, and is based on syntactic as well as morphological criteria. In English the following are some of the criteria which have been used to identify the SUBJECT:[124]

1. Word order: the SUBJECT comes before the verb in a simple declarative sentence.
2. Number agreement with verb: The SUBJECT of the sentence will agree in number with the verb, where a distinction of form is made.
3. Pronoun forms: The pronoun has a special form which is directly related to it being a SUBJECT.

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[121] For this distinction see Kroeger (2005, p. 57f.).

[122] Kroeger (2005, p. 57f.). The INDIRECT OBJECT in English has the option of being marked by means of a preposition. cf. 'He gave me the book' with 'He gave the book to me'.

[123] Kroeger (2005, p. 67ff.).

[124] Criteria from Kroeger (2005, p. 56), in turn from Bickford (1998, p. 43).

In languages with freer word order than English, such as Greek, the first criterion is not applicable. The second two, however, are very useful. Indeed, the case system is much more extended in Greek than it is in English, and therefore of greater use in distinguishing grammatical relations.[125]

Semantic roles and grammatical relations are related. In a given language certain semantic roles are associated with particular grammatical relations for a given verb.[126] The following table gives some alignments between semantic roles and grammatical relations in English:

Table 5 - Alignments of grammatical relations and semantic roles in English

	SUBJECT	**OBJECT**	**Example**	**Transitivity**
Accusative	AGENT	PATIENT	give, make	TRANSITIVE
Perception	EXPERIENCER	STIMULUS	see, hear, suffer	TRANSITIVE
Unaccusative	PATIENT	-	come, go	INTRANSITIVE
Unergative	AGENT	-	run, crawl	INTRANSITIVE

2.3.3. Transitivity in terms of grammatical relations

For this study a verb's transitivity is defined by the grammatical relations, specifically the number of DIRECT arguments a verb subcategorises for. A verb subcategorising for only one grammatical relation is INTRANSITIVE. Where the number of DIRECT arguments is greater than one, a verb is TRANSITIVE. Thus 'arrive' in English, is INTRANSITIVE, but 'donate' is TRANSITIVE.

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[125] Case is not, however, a failsafe guide for determining grammatical relations. As Kroeger (2004, p. ch. 10) observes, case in some languages, e.g. Icelandic, very often marks the semantic role played by an argument.

[126] Kroeger (2005, p. 68).

2.3.4. Valency-reducing operations: PASSIVE

Many languages possess morphological means to change the number of DIRECT arguments a verb subcategorises for. A frequently attested means of doing this across accusative languages is to use the passive construction, which reduces the valency of a verb by one. The semantic role played by the OBJECT in the corresponding TRANSITIVE construction is taken on by the SUBJECT. Optionally the former SUBJECT may be reintroduced by means of OBLIQUE argument:

[78]   The men built a house.

[79]   The house was built (by the men).

Note that the particular semantic role played by the OBJECT in the TRANSITIVE construction does not matter. In the previous two examples the OBJECT plays a PATIENT role. By contrast, in the next two examples, the OBJECT plays a STIMULUS role:

[80]   They experienced many things.

[81]   Many things were experienced by them.

2.3.5. MIDDLE: valency-reducing?

Across languages there are recognised to exist categories superficially similar in function to the PASSIVE in its capacity to reduce valency. One such category is the MIDDLE. Linguists differ widely as to the specific value of the MIDDLE both cross-linguistically and in particular languages.[127] It is generally recognised, however, that the MIDDLE is a semantic category, concerned with reduction in agency. Thus Manney summarises recent research into the Greek middle, both ancient and modern, in the following way:[128]

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[127] Recent cross-linguistic studies in include Kemmer (1993), Klaiman (1991), Andersen (1994). For lack of consensus on the middle see Stroik (2006, p. 301). Faultines in the scholarly debate include the relationship of the middle voice to other, at least superficially similar, categories such as reflexive and reciprocal, as well as what the middle asserts about the agentivity of the subject. See Manney (2000, p. ch. 2) for a more detailed summary of different views.

[128] Manney (2000, p. 25).

> … the inflectional middle voice comprises a basic verbal category which is opposed, both morphosyntactically and semantically, to the active inflectional system, and that middle voice typically functions to encode reduced or absence of agency.

For this study I will take it that the MIDDLE encodes that the SUBJECT does not necessarily play the role of AGENT alone. The MIDDLE, defined in this way, differs in one crucial respect from the PASSIVE: while the MIDDLE is concerned with specifying the particular semantic role(s) played by arguments of a verb, i.e. by specifying that the SUBJECT does not necessarily play the role of the AGENT, the PASSIVE specifies that whatever role was played by the OBJECT in the corresponding ACTIVE construction is now played by the SUBJECT. Thus unlike a passive form, a middle form is able, optionally, to fill both SUBJECT and OBJECT positions.[129] Consider the following examples in English:

[82]   They got him killed.

[83]   He got (himself) killed.

[84]   *They were killed him.

[85]   He was killed.

Here while the English 'get' construction is able either to occur as TRANSITIVE, [82], or as INTRANSITIVE, [83], the English passive construction is obliged to occur as INTRANSITIVE.

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[129] For the syntactic/semantic distinction between the passive and the middle, respectively, see Robar (2007, pp. 1-7).

Notice, however, that MIDDLE and PASSIVE do overlap in some of their functions. If a particular verb in the middle form is not accorded an OBJECT argument, a raising/valency-reducing operation will appear to have taken place; the SUBJECT is accorded a NON-AGENT role, because this is the semantic contribution of the MIDDLE. When a NON-AGENT occurs with no other arguments, it is a natural step to infer that the SUBJECT is playing a role similar to that of a PATIENT. Since in many situations PATIENT is aligned with OBJECT, a reading of a sentence such as, 'He got killed,' as a valency-reduced transformation of, '[Someone] killed him,' strongly suggests itself, albeit with a greater sense of an EXPERIENCER role for the SUBJECT in the former than the latter. This is confirmed by the felicity of sentences such as the following:

[86]   He got killed by an axe-murderer.

Here the AGENT is reintroduced by the OBLIQUE phrase which would reintroduce the AGENT in the equivalent passive construction.

2.3.6. Change of STATE

Linguists traditionally identify change-of-state (COS) verbs, as a particular group describing a change of STATE as part of their event schema, from verbs which do not. The defining characteristics of COS verbs are that:

1. The theme participant must exist before the start of the event.[130]
2. The verb itself must fully specify a new STATE to be entered into by the theme participant.
3. The whole of the theme participant must be affected by the event.

The first criterion distinguishes COS verbs from other RS verbs. Thus 'to freeze' is a COS verb:

[87]   He froze the water by putting it in the freezer.

Here all the participants exist prior to the start of the event and the action of the event affects the theme. Contrast this with the following use of a non-COS RS verb 'to construct':

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[130] cf. Labidas (2009, p. 18).

[88]   Eutychus constructed a house.

This is not a COS verb because the theme participant, the house, only exists at the end of the event, and not at the beginning; the house enters into a STATE, but this is not a *new* STATE; it is the first STATE it has ever experienced.

The second criterion distinguishes COS verbs from verbs which may be used in sentences describing COS events, but which do not fully specify the resultant state:

[89]   He turned the water brown.

This sentence does indeed involve a change of STATE: the theme participant, the water, exists prior to the start of the event. However, the verb 'to turn' in this meaning is not a COS verb in the terms of this study since it does not determine the nature of the RESULTANT STATE. The nature of the RESULTANT STATE is rather determined by the complement 'brown'.[131]

The third criterion distinguishes COS verbs from verbs describing events where there is no RESULTANT STATE (e.g. 'to read', 'to run'):

[90]   Mary read the book.

[91]   Mary ran.

Here also there is no change of STATE because, although both participants exist prior to the start of the event, there is no RESULTANT STATE for either; the OBJECT and SUBJECT participants, respectively, are not affected. The impossibility of a COS interpretation of these sentences is shown by the infelicity of the following sentence as a RESULTATIVE:

[92]   The book is read.

[93]   *Mary is run.

The only reasonable interpretation of this sentence 'the book is read' is as a frequentative, i.e. 'the book is read (frequently)'. The sentence 'Mary is run' is simply ungrammatical.

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[131] cf. the COS verb 'to brown', e.g. 'He browned the water by putting a teabag in it.' Ancient Greek does not permit secondary predication of result states unless the verb itself denotes a transition (Horrocks & Stavrou, 2007, p. 621).

This criterion also distinguishes COS events from RS events where the whole of the theme participant is not affected. Compare the following examples:

[94] I planted a field.

[95] I froze the water.

In the first example parts of the field participant are completely unaffected by the planting action, while in the second the whole of the water participant is affected by the freezing event. The latter is therefore a COS event, while the former is merely a RESULTANT STATE.

2.3.7. Argument realisation and causative change of STATE

COS events may be conceived of in one of three ways. A COS verb can describe an event arising spontaneously, i.e. no external agent assumed to be causing the change, e.g. 'The water froze,' a so-called 'spontaneous' COS. Secondly, the change of STATE may be brought about by an external AGENT or CAUSE, e.g. 'I froze the water', termed 'causative' COS. Thirdly, a participant may act on him or herself, perhaps using a second participant, to change his or her STATE. This is termed a possessive COS.[132]

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[132] cf. Nedjalkov (1988), who distinguishes between subjective, objective and possessive resultative constructions. Comrie (1988, p. 158) notes that the label 'possessive' is unfortunate. Haspelmath (2001, p. 31) uses different terminology based on participant roles.

These different types of COS are associated with different syntactic behaviours. Specifically, verbs describing causative COS events tend, across languages, to exhibit a phenomenon known as labile transitivity.[133] In sentences with causative COS verbs the SUBJECT may be deleted and the OBJECT promoted. In terms of grammatical relations it appears that the participant at SUBJECT position changes roles, from AGENT to PATIENT.[134] Consider the following pair of examples:

> [96]   Empedocles melted the ice.

> [97]   The ice melted.

In the first example Empedocles, the participant in SUBJECT position is the AGENT, and he causes the ice, the participant in OBJECT position, playing the role of PATIENT, to melt. By contrast, in the second example there is no participant in OBJECT position, and the participant in SUBJECT position plays a PATIENT role. In this investigation the first kind of meaning will be known as the CAUSATIVE meaning, while the second will be known as the ANTICAUSATIVE.[135]

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[133] For this term cf. Kulikov (2003), and Labidas (2009).

[134] Some scholars call these verbs '(inherently) middle verbs'. See Sihler (1995, p. 448 §413a) and Robar (2007, p. 5 esp. n. 9). Lyons terms them 'ergative' (1977, pp. 351-360, §§ 8.2.3-8).

[135] In this I follow Labidas (2009, p. 18).

Finally, verbs which are limited to describing spontaneous COS do not exhibit labile transitivity, since they only ever allow for one participant:

[98]   The man came to the hospital.

[99]   The taxi *came the man to the hospital.

Similarly, an RS verb, as opposed to a COS verb, will likely not demonstrate labile transitivity:[136]

[100] I planted a field.

[101] *The field planted.

In this investigation, forms where the underlying SUBJECT is removed and the OBJECT promoted to SUBJECT position will be termed 'valency-reducing' or 'reducing', while forms where this does not occur will be termed 'non-valency-reducing' or 'non-reducing'.

Note that, while both PASSIVE and ANTICAUSATIVE are valency-reducing operations, they differ in that the former does not permit the denotation of an AGENT participant, while the latter does:[137]

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[136] In languages which allow for labile transitivity, exactly which verbs are regarded as describing causative versus spontaneous changes of state is language-dependent. In modern Greek many motion verbs, e.g. πάω, are labile, while in English they may not, e.g. 'to go'. Also language-dependent is the allocation of transitive verbs to causative COS and non-COS types. Furthermore, in a given language verbs with very similar semantics may behave differently in regards to labile transitivity. Thus, although βάλλω may be labile, the semantically very similar verb ῥίπτω is not attested as valency reducing (see LSJ *ad loc.*). Similarly in English 'to build' may be labile, while a verb with similar semantics, such as 'to construct' does not: 1) I built a house. 2) I constructed a house. 3) A picture is building of his final movements. 4) A picture *is contructing of his final movements. cf. Levin and Rappaport Hovav (2005, p. 19): '... certain happenings can be construed as events by languages in more than one way. Verbs used to describe such a happening will not have precisely the same meaning if they lexicalise distinct, though largely overlapping, sets of properties... When alternate construals are possible and involve different grammatically relevant aspects of meaning, the result can be pairs of near-synonyms within or across languages showing different argument realization options.'

[137] See Labidas (2009, p. 11).

[102] The door opened *by me.

[103] The door was opened by me.

2.3.8. Change of STATE and change of location

So far verbs describing change of location (COL) events, e.g. 'to move', 'to come', 'to go', have been treated as verbs describing COS events not entailing a change of location, e.g. 'to freeze', 'to stand', 'to break'. These latter events I will term change-of-nature (CON) events. However, although parallels have often been drawn between these two sets of verbs,[138] there are reasons for thinking that they should not necessarily be treated together. That they behave differently in terms of argument realisation has been shown for English.[139] Specifically a COS verb, such as 'to break', must have the entity which is broken as either its SUBJECT or OBJECT, and cannot have this participant as an ADJUNCT. By contrast, verbs describing causative COL events in English show flexibility in argument realisation which is not seen in causative CON verbs. Consequently the distinction will be born in mind for the present analysis.

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[138] See Rappaport Hovav and Levin (2005, p. 285) and references there.

[139] Rappaport Hovav and Levin (2005, p. 278).

2.4. Aspect and transitivity

2.4.1. Summary of distinctions in verb classes

This chapter has made a number of distinctions between different kinds of verbs on the basis of terminativity, transitivity and resultativity. These distinctions are summarised in the following table, along with the terms that will be used to describe them in the rest of the present investigation.

Table 6 - Feature analysis of verb types

Type	Example	Terminative	Causativity	Resultativity	[± COS]
Unaccusative change-of-state	'to go'	[+ terminative]	[- causative]	[+ resultative]	[+ COS]
Causative (accusative) change-of-state[140]	'to melt'	[+ terminative]	[+ causative]	[+ resultative]	[+ COS]
Accusative non-COS[141]	'to construct'	[+ terminative]	[- causative]	[+ resultative]	[- COS]
	'to read'	[+ terminative]	[- causative]	[- resultative]	[- COS]
Activity	'to run'	[- terminative]	[- causative]	[- resultative]	[- COS]
State	'to rule'	[- terminative]	[- causative]	[- resultative]	[- COS]

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[140] Labidas (2009, p. 18) terms this group 'alternating causative'.

[141] cf. Labidas (2009, p. 19): 'Many different verb types, whose only common characteristic is the presence of the morphological accusative case… are unified under the term transitive non-causative verbs. For this reason, I propose and will use the term "accusative verbs" for transitive non-causative verbs.'

2.4.2. The transitivity problem posed by the Greek perfect system

The transitivity problem posed by the Greek perfect active is as follows. The perfect active of certain verbs, such as πέμπω at [13] above, is always TRANSITIVE and ACTIVE, prescribing two participants and denoting the RS of the OBJECT participant, not the SUBJECT. The perfect active of other verbs, such as πήγνυμι at [11] above, behaves in a PASSIVE-like fashion reducing the number of participants by one, and describing the RS of the SUBJECT. Finally, the perfect active of a third set of verbs, such as ὑποστέλλω, is MIDDLE-like, showing labile transitivity. When the number of participants is reduced, as at [76], the perfect describes the RS of the SUBJECT participant. Otherwise, as at [77], it describes the RS of the OBJECT participant. The question this investigation aims to resolve is exactly under what circumstances the PASF of a given verb will behave in each of these three ways, and what semantics might generate such behaviour.

2.4.3. The aspectual problem posed by the Greek perfect active system

Earlier the aspectual problem was framed as follows: under what circumstances does the Greek perfect imply the occurrence of an event prior to reference time?[142] However, the meaning of 'an event prior to reference time' was left vague. The preceding discussion allows this question to be presented more tightly: under what circumstances does the perfect active stem a) carry PAST REFERENCE, either i) as ANTERIOR, where an event is presented as terminating prior to reference time and there is no RESULTANT STATE for the SUBJECT, ii) as RESULTATIVE, where an event is presented as terminating prior to reference time resulting in a new STATE for the SUBJECT, or iii) in the form of CONTINUED STATE, and when b) may it be said to lack these altogether and present a PURE STATE. On the face of it, the perfect may on occasion perform all of these functions: in the introduction were given RESULTATIVE, ANTERIOR, CONTINUED STATE and PURE STATE perfects, at [12], [13], [14] and [15] respectively. The purpose of the present investigation, therefore, is to establish, in terms as precise as possible, under what circumstances the perfect carries PAST REFERENCE in its various guises (ANTERIOR, RESULTATIVE and CONTINUED STATE), and when it conveys PURE STATE.[143]

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[142] cf. Haug (2004, p. 394).

[143] This formulation of the aspectual problem does not directly address the problem of the so-called 'aoristic' perfect. While in principle there is a clear difference between PERFECTIVE and PERFECT aspect (see §2.2.7 and §2.2.8 above), in individual cases it can be difficult to tell apart perfects from simple pasts. Doubt concerning the possibility of distinguishing between the two is expressed by Chantraine (1927, p. 189), de Foucault (1972, p. 134), Fanning (1990, p. 110) and Evans (2001, p. 151). For the lack of objectivity of Mandilaras' criteria, as established in Mandilaras (1973, p. 224ff.) and Mandilaras (1972, pp. 17-18), see Gerö and Stechow (2002, p. 36) and Evans (2001, p. 151) with references. The difficulty lies with ANTERIOR perfects: the ANTERIOR perfect and the simple past are crucially similar in that both describe terminated events prior to speaker time; the former because speaker time is the reference point set up relative to which the event is measured, the latter because the tense component of a simple past locates the event prior to speaker time. Because of this difficulty, individual PASFs will not be tested for their similarity to the aorist. Rather, an answer to the question of the development of the 'aoristic' perfect will be sought by other means. See §4.5.2 for the practical outworking of this for the present investigation.

However, as demonstrated at §2.2.10 above, the aspectual problem is inextricably linked with the transitivity problem. This is because of the phenomenon of labile transitivity in some perfect active forms, whereby the perfect active stem may in some situations describe the RS of the SUBJECT. The problem is epitomised by the capacity of ὑπεσταλκ- to be used to denote both ANTERIOR and RESULTATIVE senses ([76] and [77] above). Because an answer to the aspectual problem is predicated on an answer to the transitivity question, it is necessary to find an answer to this question first. Chapter 3 will therefore address this problem. Before this, however, the question of the core value of the perfect active stem, as well as the methods used for data gathering and analysis will be discussed.

2.4.4. The core value of the perfect active stem

At the heart of both the transitivity and the aspectual problems posed by the Greek perfect active is the question of its meaning: what underlying semantics could produce such diverse behaviour? As already noted in the introduction, existing accounts of the meaning of the perfect active for any period have tended to generalise one of its functions to the detriment of the other. Thus for some the perfect is fundamentally STATIVE and/or INTRANSITIVE, while for others it denotes a past event with present relevance. Neither properly accounts for the attested behaviour of the perfect active. The stative view has no place for perfects that describe an action performed by an AGENT SUBJECT on a PATIENT OBJECT where it is the PATIENT that changes STATE, not the AGENT, and the SUBJECT is not denoted as being in any STATE at all. Similarly, a view that sees the Greek perfect as denoting a past event with present relevance has no place for its valency-reducing role or its PURE STATE uses.

The broader aim of this investigation is therefore to provide an account of the semantics of the perfect active. Any formulation given must be framed in such a way as to tie together both transitivity and aspect, but must also plausibly and productively explain the various diathetical and aspectual functions the perfect is found to perform. Crucially, the formulation cannot afford to be so rigid as to describe a particular aspectual viewpoint, whether STATIVE, IMPERFECTIVE or PERFECTIVE, since it has been described in each of these ways and found to be wanting. By the same token, the formulation cannot ascribe a particular diathetical role to the perfect, whether INTRANSITIVE, ACTIVE TRANSITIVE, or PASSIVE, since it is attested in each of these roles. Rather, the formulation should provide parameters for predicting which of these will be carried in a given context. What is therefore sought is an answer in terms of a category which is neither aspect nor transitivity, but which carries implications for both.

Robert Crellin

2.5. Building and analysing the corpus

2.5.1. Designing the corpus

The present investigation is a corpus-based analysis based on a particular dataset (the corpus). This is to say that it seeks to examine the use of the perfect active stem within a specific set of texts, with a view to explaining the usage in that set of texts. Unlike many previous investigations, the corpus is sufficiently large to be able to give a fully representative view of the perfect. The corpus used for this investigation comprises post-Classical historians up to the mid-second century AD. The texts and authors used are given in Table 7.[144]

Table 7 - Corpus

Authors	Works and Abbreviations	Dates	Word count[145]
Polybius	*Histories* (books 1-5 only)[146]	C2nd BC	128 000
Josephus	*Antiquities (AJ), Jewish War (BJ), Life (Vit.)*	AD C1st	447 000
Plutarch	*Alcibiades (Alc.)*, *Aristides (Arist.)*, *Cimon (Cim.)*, *Lysander (Lys.)*, *Nicias (Nic.)*, *Pericles (Per.)*, *Solon (Sol.)*, *Themistocles (Them.)*, *Theseus (Thes.)*	AD C1st – C2nd	73 000
Appian	*Civil War (BC), Foreign Wars: Wars in Spain (Hisp.), Hannibalic War (Hann.), Punic War (Pun.), Illyrian Wars (Ill.), Syrian Wars (Syr.), Mithridatic Wars (Mith.)*	AD C2nd	210 000
TOTAL			858 000

[144] For the texts used see n. 1. The following were excluded: textually doubtful forms (e.g. enclosed in square brackets in the text); dialect forms (e.g. the infinitive ἐαλώκειν and the finite ἀλώκαντι, both at Plu. *Lys.* 14.4); quotes from other authors; forms ambiguous between perfect and non-perfect interpretation (e.g. ἦρχε, from ἄρχω). The perfect imperative was excluded from quantitative analysis because its forms in most cases are identical to the indicative.

[145] Word count figures are provided to three significant figures. These were established using a piece of software written by the author.

[146] Only books 1-5 of Polybius' *Histories* has been included because the remaining books remain only in fragments. Often they have synopses which are non-Polybian.

The reasons for focusing on these authors and texts were given above at 1.4. However, these notwithstanding, the earlier periods will not be excluded. Once a picture becomes clear for the semantics of the perfect in the post-Classical period, this picture will be used to inform discussion of earlier periods of the language.[147]

2.5.2. Collecting the data

The Greek perfect and pluperfect are relatively rare verb forms. This presents certain related difficulties in the collecting of examples, specifically:

1. A large quantity of text must be read to collect enough examples in order to make it possible to gain statistically significant results.
2. The reading of such a large amount of text presents practical difficulties within the time constraints presented by the PhD.
3. If such a large number of texts are to be read by one person, human error is likely to be a significant factor: it is very possible to read a text and miss certain instances of the forms which are being sought.

For the purposes of this investigation, therefore, it was decided to use a computer to find and store the forms required. This would have the advantage of being able to search a large quantity of text quickly. It would also ensure much more confidence that all relevant data had been collected, since computers do not suffer from fatigue.

The first requirement for such a computerised search is the existence of electronically searchable texts for the authors concerned. In the last few years the Perseus Project has been making available XML[148] files of their electronic corpus. Because the format of these files is standard and non-proprietary, they are very suitable for investigations such as that undertaken here.

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[147] The principal representatives of earlier Greek will be taken to be the *Iliad*, the *Odyssey*, Thucydides, Herodotus and Xenophon's *Hellenica* and *Anabasis*. For texts see n. 1.

[148] XML (eXtensible Markup Language). It is an standard open format for textual data. For more information see http://en.wikipedia.org/wiki/Xml (accessed 5/4/2011).

However, enabling a computer to search the XML files for all the perfects and pluperfects was inhibited by the fact that the publicly available search engines of Greek texts (TLG and Perseus) are designed for studies of individual words, not morphological forms. This is to say that, while they permit the searching of a given text for all forms of a given word, they do not permit the searching for all words of a given form. It was therefore necessary to find a way by which all words of a given form could be found in the corpus.

It was decided to write an application in Java to perform this task. It works by checking every word in the corpus against a lookup table of forms provided in the Diogenes application, which is designed to work with Perseus and TLG data.[149] The table consists of approximately one million forms, giving the forms in one column, and their potential parses in the other. The Java application written for this investigation conducts a binary search on this lookup table, so that as the program sweeps through the corpus it picks out potential perfect and pluperfect active forms. These forms once found were placed by the program into an XML file which could in turn be imported into a Microsoft Access database, where they were carefully checked to ensure that they were parsed correctly.

2.5.3. Accuracy of parsing

It was necessary to test the accuracy of the combination of automatic parsing and manual checking. Owing to the large corpus of data, it was not possible to conduct a purely manual check; in any case, such a test would be likely not to produce an accurate result. Instead, it was decided to test the number of examples found with that found by the BibleWorks 7.0 software package. BibleWorks allows certain texts to be searched for words of a particular morphological shape (e.g. perfect indicative active). The package includes of Josephus' works, among those of other authors, but not Polybius, Appian or Plutarch. The results of the comparison for the Josephus data are shown in the following table:

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[149] More information about this application can be found at:

http://www.dur.ac.uk/p.j.heslin/Software/Diogenes/index.php (accessed 1/9/2011).

Table 8 - Comparison of parser with that of BibleWorks 7.0 for Josephus

	BibleWorks	This investigation	Similarity
Perf. ind. act.	606	565	93%
Perf. subj. act.	5	6	120%
Perf. opt. act.	20	21	105%
Perf. ptpl. act.	1746	1753	100%
Perf. inf. act.	373	377	101%
Plpf. ind. act.	429	455	106%
TOTAL	3179	3177	100%

In all cases except that of the perfect indicative active, the present investigation found more PASFs than BibleWorks. The exception is the perfect indicative active where noticeably fewer forms were found in the present investigation. Although there are some genuine perfects found by BibleWorks not found in the present investigation,[150] for the most part the likely cause of this is a number of parsing mistakes in BibleWorks, where pluperfects such as γεγόνεισαν, συμβεβήκει and ἐγνώκεσαν are incorrectly identified as perfects.

2.5.4. Quantitative analysis and statistical significance

It is the aim of the present investigation to provide not only a large number of examples in context demonstrating particular uses to which the perfect may be put, but to test conclusions based on such analysis in empirical terms. Extensive use will therefore be made of quantitative analysis and tests of statistical significance. It is the purpose of this subsection to outline the approach that will be taken in conducting such quantitative analysis.

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[150] e.g. γέγονε (Jos. *AJ* 1.1), which occurs in a section which is a quasi table of contents, and therefore not part of the main text; κεκάθαρκε (Jos. *AJ* 3.198) which was not found because it does not occur in the lookup file; βεβάδικεν (Jos. *AJ* 6.227) and τέθνηκεν (18.228) which through a manual error were excluded from the input file.

The premise of this investigation is that lexical semantics play a determinative role in establishing the syntactic behaviour of a given PASF, and that by conducting an analysis based on lexical semantic types it may be possible to arrive at a formulation for the core value of the PAS. The purpose of the quantitative stage of analysis is to show that the PAS of verbs in different lexical groups, identified as part of the contextual analysis, may be shown to behave differently in terms of given quantitative variables.

The variables with which the present investigation is concerned are categorical. This is to say that instances of verbs of a given type will be classified according to whether or not they belong to a particular category, e.g. whether or not a particular instance collocates with an ANTERIOR adverbial, or whether or not the instance in question is valency-reducing.[151]

Even if lexical semantics were not a factor in determining the behaviour of the PAS in terms of various quantitative variables, one should expect some degree of variation between samples due purely to chance. A mechanism should be found to test whether the degree of variation between the PASs of the different lexical groups is sufficiently high to warrant the conclusion that random variation is not responsible. In statistical terms this means assessing the likelihood that the two samples are drawn from different populations with different characteristics, as opposed to being drawn from one population with one set of characteristics. A test of statistical significance provides such a mechanism.

Statistical significance tests work by permitting the testing of a null hypothesis, in this case that the two groups being compared belong to the same population. The distribution of the observed data is compared with a function, e.g. the chi-squared function, to establish to what extent the observed data may be said to be consistent with with the null hypothesis. Once the probability that the null hypothesis does not hold is less than 5%, or one in twenty, the null hypothesis is said to be disproved at the level $p \leq 0.05$. This is a standard threshold for a statistically significant finding.

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[151] Other kinds of investigation, e.g. an investigation into people's height, yield numerical data, where the data have natural order and spacing. For further discussion of the difference between numerical and categorical data see Woods et al. (1986, pp. 8-19).

Finally, the quantitative data is presented as a means of testing hypotheses which are proposed on the basis of careful qualitative analysis; the statistical evidence is, therefore, not left to stand on its own. Indeed, the present study goes further than any other in this field in using quantitative analysis at all, including the use of statistical significance tests, on such a large corpus of homogeneous data, and in this it represents a major step forward in the presentation of objective findings.

2.5.5. Chi-squared test

Different tests of statistical significance are available, suiting a range of purposes and questions. The present investigation is concerned with tests of independence, where the goal is to test the independence of two groups of a sample according to some categorical variable. The chi-squared test should be used in such situations.[152] The test works as follows. Suppose two lexical groups are identified, A and B, according to which, based on the contextual analysis, differences in the behaviour of the PAS has been observed. The total sample size is 80. Group A consists of 30 instances, while Group B consists of 50. The two groups are then compared according to some categorical variable x, e.g. collocation with a particular adverb. In Group A only two instances are recorded collocating with the adverb in question, with the remaining 28 not collocating with it. By contrast, in Group B 20 collocate with the adverb and 30 do not.

Table 9 - Contingency table of observed frequencies

	With adverb	Without adverb	TOTAL
Group A	2	28	30
Group B	20	30	50
TOTAL	22	58	80

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[152] Woods et al. (1986, p. 139f.).

The chi-squared test compares the proportions of the two groups collocating with the adverb. It does this based on a projection of how many in the two groups would be expected to collocate with the adverb were the two groups drawn from the same population. The expected value $e_{i,j}$ for a given observed value $o_{i,j}$, where i,j denotes a particular location in the contingency table, e.g. 'Group A, with adverb', are calculated according to the following formula:[153]

$$e_{i,j} = \frac{\sum_{k=1}^{c} o_{i,k} \sum_{k=1}^{r} o_{k,j}}{N}$$

where N is the total number of observations, r is the number of rows, c is the number of columns and k is a counter.

In the case of the present example, therefore, in Group A one would expect $\frac{22 \times 30}{80} = 8.25$ collocating with the adverb, i.e. the proportion of instances collocating with the adverb multiplied by the size of the group. In Group B one would expect $\frac{22 \times 50}{80} = 13.75$. In the same way the frequency occurring without an adverb can be estimated, and the following contingency table drawn up:

Table 10 - Contingency table of expected values

	With adverb	Without adverb	Total
Group A	8.25	21.75	30
Group B	13.75	36.25	50
Total	22	58	80

Note that for the chi-squared test to be held to be valid, the value of the expected frequencies must be greater than 5.[154]

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[153] For formulae see http://en.wikipedia.org/wiki/Pearson%27s_chi-square_test (accessed 1/9/2011).

[154] Woods et al. (1986, p. 136).

The chi-squared test involves comparing Table 9 with Table 10, i.e. the observed values o and the expected values e, and calculating the relative discrepancy between the two. This is measured by dividing the square of each absolute discrepancy by the expected frequency, i.e.:[155]

$$d = \frac{\left(o_{i,j} - e_{i,j}\right)^2}{e_{i,j}}$$

Where a 2x2 contingency table is used, the formula should be modified according to Yate's correction as follows:[156]

$$d = \frac{\left(\{o_{i,j} - e_{i,j}\} - 0.5\right)^2}{e_{i,j}}$$

The deviances may then be shown in a table as follows:

Table 11 - Contingency table of deviances

	With adverb	Without adverb
Group A	5.52	1.52
Group B	2.40	1.26

The total deviance may be assessed by summing these values, i.e.:

$$\chi^2 = \sum_{i=1}^{r}\sum_{j=1}^{c} \frac{\left(\{o_{i,j} - e_{i,j}\} - 0.5\right)^2}{e_{i,j}}$$

In this case the chi squared statistic turns out to be 10.70.

The final step of the process is to measure this total deviance against the critical values of the chi-squared distribution for a given number of degrees of freedom and a given tolerance level for p. The number of degrees of freedom is a variable concerning the number of independent pieces of information used to distinguish the groups, and may be established according to the number of rows (x) and columns (y) in the contingency tables as follows:[157]

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[155] Woods et al. (1986, pp. 135f., 138).

[156] Woods et al. (1986, p. 146f.).

[157] Woods et al. (1986, pp. 138, 141).

$$df = (y - 1) \times (x - 1)$$

The critical values for the chi-squared distribution may be found in any statistics text book.[158] In all tests conducted in the present investigation the number of degrees of freedom (df) is 1. The critical values for the chi-squared test where $df = 1$ are as follows for various levels of p:

Table 12 - Critical values for the χ^2 distribution for differing values of p

$p \leq$	5%	2.5%	1%	0.1%
Critical value	3.84	5.02	6.64	10.8

If the total deviance is found to be greater than this, as here, the null hypothesis may be said to have been disproved at the relevant level of p. Values for p greater than 5% are not generally regarded as statistically significant.

2.5.6. Criteria for the chi-squared test

Various criteria should be met for the correct application of the chi-squared test.

2.5.6.1. Representative data and random sampling

The observations used for a particular test should be representative of the population to which they are said to belong. Accordingly, if all of the observations of a particular (e.g. lexical) group are not considered, those that are considered should be chosen randomly.

2.5.6.2. Expected frequencies lower than 5

For the chi-squared test to work satisfactorily, the expected frequencies must be sufficiently large. The usually accepted threshold for this is 5.[159] Where expected frequencies are below this threshold, the conclusions reached should be expressed tentatively with reference made to the fact that this criterion has not been met.[160]

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[158] e.g. Woods et al. (1986, p. 301).

[159] Woods et al. (1986, p. 144f.).

[160] Woods et al. (1986, p. 145).

2.5.6.3. Independence of the observations

It is important that the observations making up the dataset should be considered to be independent from one other.[161] In the terms of the present study, in an ideal world, this would mean taking one, randomly chosen, perfect active form from thousands of authors, as advocated by Woods et al. for studies of first or second language acquisition.[162] However, in the present case, which concerns ancient corpus data, such an approach is not feasible. There are only a handful of historians from the period of investigation from which we have texts. Indeed, it seems unlikely that more than a few hundred ever existed. Rather, the purpose of this investigation is to examine the language of these authors, making the assumption that they are representative of the genre and time in which they write.

It is still important, however, to make sure that the criterion of independence is met, at least approximately. In practice the issue will be approached in the following way. For quantitative questions addressing the perfect and pluperfect alone, the full dataset will be analysed. On the basis of pilot tests conducted on very similar datasets, it was found that the observed trends, if anything, became more pronounced with increased average distance of the observations. For questions involving not just perfects but other active forms as well, the independence of the observations will be more important to assert, since it is more likely that the observations of the full dataset will not be independent. In this case, each member of the dataset will come its own 250 word section of the corpus.[163]

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[161] Woods et al. (1986, p. 147).

[162] Woods et al. . (1986, p. 147ff.).

[163] My thanks are due to Robert Patterson for his advice in dealing with this issue, and others in relation to the proper application of statistical methods in this investigation.

Chapter 3. Transitivity

3.1. Introduction

3.1.1. Aim

At §2.4.2 it was stated that the perfect active stem can perform ACTIVE-, MIDDLE- and PASSIVE-like functions.[164] It is for this part of the investigation to establish the circumstances determining the diathesis function of a given PASF. Accordingly, all the examples of the perfect active stem in the corpus used for the present investigation will be assessed for their function in terms of transitivity. If the perfect active stem is used intransitively, it will be examined in order to establish if the SUBJECT plays the same semantic role as played by the OBJECT of other active stem forms. This is to say, if the SUBJECT of a PASF plays the same semantic role as played by the OBJECT of a present or aorist active, it will be deemed to be valency-reducing. By contrast, if the SUBJECT of a PASF plays the same semantic role as played by the SUBJECT of TRANSITIVE ACTIVE uses of the present or aorist active, it will be deemed not to be valency-reducing. The following types will be identified:

1. TRANSITIVE non-reducing: both SUBJECT and OBJECT positions are filled; the SUBJECT plays the same role as the SUBJECT in any other TRANSITIVE ACTIVE construction with the same verb. Thus any active form of ποιέω carries an AGENT SUBJECT and PATIENT OBJECT, just as the perfect active:

[104] κατεμέμφοντο δ' αὐτοῦ καὶ τὴν τελευταίαν ἀφροσύνην, **ἀχρεῖον** ἐν στενῷ **τὸ κράτιστον** τοῦ στρατοῦ **πεποιηκότος**… (App. *Syr.* 7.37)

And they blamed him for his previous folly, **having rendered the best part** of the army **useless** (by putting it) in a confined area…

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164 For elaboration on the behaviour of the Greek middle see §3.2.2 below.

2. TRANSITIVE valency-reducing: both SUBJECT and OBJECT positions are filled, but the SUBJECT plays the same role as the OBJECT of a TRANSITIVE ACTIVE construction with the same verb. TRANSITIVE valency-reducing instances usually occur where the equivalent TRANSITIVE ACTIVE construction has two participants in OBJECT position:

[105] ἅτερος δὲ ὁ καλούμενος Ἄκρα καὶ **τὴν κάτω πόλιν ὑφεστὼς** ἀμφίκυρτος.
  (Jos. *BJ* 5.137)

  The other [hill], called Akra, **supports the lower city** on each side.

The hill Akra is asserted to support the lower city. However, in a truly non-reducing usage, the SUBJECT would move the OBJECT to be 'under' something else, as in the next example:[165]

[106] θαυμάσας δ' ὁ βασιλεὺς τοῦ φυτοῦ τὸ μέγεθος… **κορμὸν** ἔρεισμα τῇ στέγῃ
  ὑπέστησε. (Plu. *De Iside et Osiride* 357 a 8)[166]

  The king, in wonder at the size of the plant… **placed the trunk under** the
  roof as a support.

Here the SUBJECT causes the OBJECT to be under the roof. In the previous example, however, involving ὑφεστώς, the SUBJECT is under the city. Therefore, even though ὑφεστώς has an OBJECT complement, its SUBJECT is playing the role of the OBJECT in a non-reducing example. Therefore ὑφεστώς should also be regarded as valency-reducing.

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[165] There is one example of ὑφίστημι being used in a non-valency-reducing way in the present corpus, namely ὑπέστησε at Plb. 1.50.6, but this uses ὑφίστημι in a slightly different sense, namely 'to bring to a halt'. See LSJ *ad loc.* I.3.

[166] Text: Sieveking (1935).

3. INTRANSITIVE non-reducing: no OBJECT complement is specified, but the SUBJECT plays the same semantic role as played by the SUBJECT in the equivalent TRANSITIVE ACTIVE. This is to say that any OBJECT complement is inferred from the context. Compare the following examples:

[107] διὸ καὶ νῦν ἠξίου περὶ τῶν ὑπ' Ἀπελλοῦ λεγομένων καλεῖν τοὺς **ἀκηκοότας**, ἄγειν εἰς τὸ μέσον τὸν εἰρηκότα πρὸς αὐτόν… (Plb. 4.85.6)

> For this reason he thought it best in the matter of those things said by Apelles to summon those who had **heard**, and to bring into public the one who had spoken to him.

[108] ὁ δὲ βασιλεὺς **ἀκούσας τὰ γεγονότα**, τὴν μὲν λοιπὴν δύναμιν εἰς τὸ Λέπρεον ἀπέστειλε… (Plb. 4.80.8)

> But the king, **hearing what had happened**, sent his remaining force into Lepreon…

In both examples the SUBJECT plays an EXPERIENCER role, although one has an OBJECT specified and the other does not.

4. INTRANSITIVE valency-reducing: the UNACCUSATIVE member of a verb with CAUSATIVE ~ UNACCUSATIVE alternates. No OBJECT complement is specified, and the SUBJECT plays the semantic role played by the OBJECT of the equivalent TRANSITIVE ACTIVE construction.

[109] ἔνιοι γὰρ αὑτῶν οὕτως στέργουσι τὸν ἐπὶ τῶν ἀγρῶν βίον ὥστε τινὰς ἐπὶ δύο καὶ τρεῖς γενεάς, ἔχοντας ἱκανὰς οὐσίας, μὴ **παραβεβληκέναι** τὸ παράπαν εἰς ἁλίαν. (Plb. 4.73.7)

> For some [of the Eleans] so love life in the fields that many **have** not at all **set foot** in a court room for two or three generations, feeling that they have enough property.

Here the SUBJECT is playing a PATIENT/EXPERIENCER role. Compare this with the following TRANSITIVE ACTIVE example where an OBJECT complement is specified.

[110] καὶ τῶν μὲν ἰδίων ὠλιγώρουν καὶ **παραβάλλοντες [λέμβους]** πλαγίους συνήργουν ταῖς ἐμβολαῖς τῶν ὑπεναντίων. (Plb. 2.10.3)

[The Illyrians] had scant regard for their own safety, and **putting their enemies' [ships]** alongside their own, they fastened [the ships] together by ramming them.

Once all non-infinitive forms have been analysed for their syntactic behaviour in terms of transitivity, an explanation for ACTIVE, MIDDLE-like and PASSIVE-like behaviour in the perfect active stem will be sought.

3.1.2. Verbs with multiple perfect active stems

Some verbs, e.g. διαφθείρω and ἵστημι, have more than one perfect active stem, namely διεφθαρκ- and διεφθορ- in the case of the former, and ἕστακ- and ἑστηκ- in that of the latter. For the purposes of this investigation these stems will be treated independently.[167] This is not to say that it is assumed that the different stems have different functions. However, if there is a difference of function, the two must be treated separately in order for such a difference to be observed.

3.1.3. Exclusion of infinitives

Infinitives were excluded from quantitative parts of this investigation.[168] This is because in a large number of cases it is difficult to tell which participant is supposed to play the role of OBJECT and SUBJECT, both because of the lack of inflected morphology and because in many constructions the SUBJECT is marked in the accusative. Consider the following example:

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[167] There is also intra-paradigmatic differentiation within the ἑστηκ- stem, i.e. between ἑστ- and ἑστηκ-. Since this distinction is not maintained throughout the paradigm, however, ἑστηκ- and ἑστ- will be treated as allomorphs of the same stem.

[168] Infinitives may be used in non-quantiative parts of the investigation, where the reader may make his or her own judgment on the validity of the example.

> [111] καὶ ὁ Κίμων… εἶπεν, ὦ Λάχαρτε… κατασχίσαντες εἰσεβιάσασθε μετὰ τῶν
> ὅπλων ἀξιοῦντες **ἀνεῳγέναι** πάντα τοῖς μεῖζον δυναμένοις. (Plu. *Cim.* 17.1)

It is difficult, if not impossible, to tell *a priori* whether a) this is a case of valency-reduction, with πάντα serving as a promoted SUBJECT, or b) whether the implied SUBJECT of ἀνεῳγέναι is the implied OBJECT of ἀξιοῦντες. The first case would be translated as follows:

> And Cimon said [in reply], "You, O Lachertus, have hewn down [the gates] and forced your way in with your weapons, demanding that everything **be opened** up to those who have the greater power…"

The second would be translated like this:

> And Cimon said [in reply], "You, O Lachertus, have hewn down [the gates] and forced your way in with your weapons, demanding [the citizens] **to open** everything up to those who have the greater power…"

One could advance good reasons particularly for the first interpretation, but these would all be predicated on some assertion of the manner in which the perfect active behaved. It is consequently safer, when attempting to establish the pattern of behaviour of the perfect active, to exclude infinitives which have a great tendency to be ambiguous.

3.2. Transitivity in Greek

3.2.1. Transitivity in traditional Greek grammar

Traditionally Greek scholars have defined transitivity in terms of the ability to take a DIRECT OBJECT. This is the approach taken, for example, by Goodwin (italics his):[169]

> [112] 893. Verbs which can have a direct object are called *transitive*; those which cannot are called *intransitive*.

This formulation is in essence equivalent to the formulation given above (§2.3.3), that a TRANSITIVE verb requires more than one participant role to be filled, and transitivity in these terms is a question of grammatical relations, not semantic roles.

However, the ACTIVE ~ PASSIVE opposition is explained in terms which mix semantic roles and grammatical relations:[170]

> [113] 1233. In the passive voice the subject is represented as acted upon; as ὁ παῖς ὑπὸ τοῦ πατρὸς φιλεῖται, the child is loved by the father.

Thus in the passive, on the one hand, a valency-reducing operation is described as taking place, whereby the OBJECT of the active becomes the SUBJECT of the passive, an operation which concerns grammatical relations. On the other hand the role of the SUBJECT is expressed in terms of semantic roles. Thus Goodwin says that 'in the passive voice the subject is represented as acted upon', i.e. is a PATIENT. A further difficulty is that such formulations are based on prototypical examples of TRANSITIVE ACTIVE constructions where the SUBJECT plays an AGENT role, and the OBJECT that of PATIENT.

The traditional account of the means of reintroducing the SUBJECT similarly mixes grammatical relations and semantic roles:

> [114] 1234. The object of the active becomes the subject of the passive. The subject of the active, the personal agent, is generally expressed by ὑπό with the genitive in the passive construction.

Here the SUBJECT of the active is termed 'the personal agent', i.e. is an AGENT.

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[169] Goodwin (1894, p. 196). cf. Smyth (1920, p. 257).

[170] Goodwin (1894, p. 265).

No doubt the reason for the mixing of semantic roles and grammatical relations in the traditional grammatical description of Greek is that the middle denotes that the SUBJECT is not necessarily merely an AGENT. Such a function will, especially in the absence of an OBJECT complement, lead to the inference that the SUBJECT is a NON-AGENT, and a *de facto* valency-reducing operation will have taken place.

3.2.2. The function and development of the Greek middle

In Classical Greek, middle morphology performs a wide range of functions, consistent with a semantic category MIDDLE denoting that the SUBJECT plays a role of diminished AGENCY. First, the middle may perform a valency-reducing function, analogous to a PASSIVE operation:

[115] τοῦτον γὰρ δὴ **τίθεσθαι** τὸν νόμον ὀρθῶς ὑποτίθεμαι μόνον, ὃς ἂν δίκην

τοξότου ἑκάστοτε στοχάζηται τούτου ὅτῳ ἂν συνεχῶς τούτων ἀεὶ καλόν τι

συνέπηται μόνῳ… (Plato *Laws* 4.705e-706a)[171]

For I propose that the only kind of law that **is** rightly **established** is that

which aims, in the manner of an archer, always at that which good always

unswervingly accompanies…

It may also denote the REFLEXIVE:[172]

[116] οὐ γὰρ δὴ **λούονται** ὕδατι τὸ παράπαν τὸ σῶμα. (Hdt. 4.75.2)

For **they** do not **wash** their bodies with water at all.

Thirdly, it may denote BENEFACTIVE, i.e. that the SUBJECT benefits from the event in some way; in this usage an OBJECT complement may be supplied:

[117] **τίθεται** δέ γε **τοὺς νόμους** ἑκάστη ἡ ἀρχὴ πρὸς τὸ αὑτῇ συμφέρον,

δημοκρατία μὲν δημοκρατικούς, τυραννὶς δὲ τυραννικούς, καὶ αἱ ἄλλαι

οὕτως. (Plato *Republic* 338e)[173]

Each kind of rule **establishes laws** expedient to itself: democracy

democratic, despotic despotic, and the rest in the same way…

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[171] Text: Burnet (1907).

[172] Quoted by Labidas (2009, p. 84). In all quotations taken from Labidas the translations are my own and the context is expanded.

[173] Text: Burnet (1902).

Here the medio-passive of τίθημι functions as a TRANSITIVE ACTIVE with PATIENT DIRECT OBJECT. Yet the SUBJECT may be seen to have diminished agency since, as this text makes clear, the SUBJECT is also an EXPERIENCER: it enacts the laws to its own advantage.[174]

Finally, the Classical Greek middle may denote ANTICAUSATIVE. Contrast the following:[175]

> [118] καὶ τὸ σῶμα, ὅσονπερ χρόνον καὶ ἡ νόσος ἀκμάζοι, οὐκ **ἐμαραίνετο**… (Thu. 2.49.6)
>
> And the body, for as long as the disease was at its peak, would not **waste away**…

> [119] θεόσυτόν τε νόσον ὠνόμασας, ἃ
>
> **μαραίνει** με χρίουσα κέντροις… (Aesch. *Prometheus Bound* 597)
>
> You have named a heaven-sent illness that **causes** me **to waste away** by pricking me with goads…

The ANTICAUSATIVE function of the middle is akin to the PASSIVE in the sense that it, like the PASSIVE, is valency-reducing.[176]

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[174] This kind of behaviour can be paralleled in the perfect medio-passive as well, cf. Plb. 1.64.4 (πεποίηνται) and Plb. 1.79.7 (πεποίησθαι). In the first of the following examples both SUBJECT and OBJECT positions are specified, whereas in the second only the SUBJECT position is specified.

[175] Quoted by Labidas (Labidas, 2009, p. 89). Whether ANTICAUSATIVE must in fact be conveyed by middle morphology will be addressed for the present corpus at §§3.5 and 3.6, for Homer at §3.7.1 and for the Classical language at §3.7.2.

[176] The Classical Greek middle appears not to denote RECIPROCAL in the light of examples such as Thu. 3.10.1: τίς οὖν αὕτη ἡ φιλία ἐγίγνετο ἢ ἐλευθερία πιστή, ἐν ᾗ παρὰ γνώμην ἀλλήλους ὑπεδεχόμεθα… Here the middle is used along with the RECIPROCAL pronoun ἀλλήλους. This can be paralleled for post-Classical Greek, e.g. Jos. *AJ* 1.236: οἱ δὲ παρ' ἐλπίδας αὐτοῦ κεκομισμένου καὶ τοιούτων ἀγαθῶν ἐπαγγελίας ἀκηκοότες ἠσπάζοντό τε ἀλλήλους.

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However, in Koine the ANTICAUSATIVE and REFLEXIVE functions begin to be lost from the middle.[177] Already in the Classical language REFLEXIVE is denoted both by means of the middle voice and a reflexive pronoun, indicating that the middle was not seen to denote this category inherently:[178]

> [120] οἱ μέν φασι βασιλέα κελεῦσαι τινα ἐπισφάξαι αὑτὸν Κύρῳ, οἱ δ’ **ἑαυτὸν ἐπισφάξασθαι**… (Xen. *Anab.* 1.8.29)
>
> … some say that the king bade someone despatch him upon Cyrus’ [body], while others say that **he killed himself**…

ANTICAUSATIVE may be denoted by both active and the medio-passive morphology in the Koine:

> [121] **ἐγείρεσθε** ἄγωμεν· ἰδοὺ ἤγγικεν ὁ παραδιδούς με. (Matthew 26.46)
>
> **Get up**, let us leave; for my betrayer is near.

> [122] τί γάρ ἐστιν εὐκοπώτερον, εἰπεῖν· ἀφίενταί σου αἱ ἁμαρτίαι, ἢ εἰπεῖν· **ἔγειρε** καὶ περιπάτει; (*Matthew* 9.5)
>
> For what is easier, to say: “Your sins are forgiven,” or to say: “**Get up** and walk!”?

The use of active forms for ANTICAUSATIVE is particularly significant for the present investigation because this is precisely the kind of behaviour seen in some cases of the perfect active stem.[179] It could be therefore that this phenomenon is part of a broader picture of labile transitivity in the Greek active system. However, in order for the observed valency-reduction to be describable in terms of labile transitivity, there needs to be evidence of the following:

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[177] Labidas asserts that BENEFACTIVE is also lost. However, the examples given of active use in the Koine are often unconvincing. Thus he gives ψηφίζει δαπάνην at *Luke* 14.28 (Labidas, 2009, p. 108f.) as a case where active morphology is used where the SUBJECT participates in the action of the verb. However, it is unclear that this verb in the sense ‘to count’ was ever used in the middle (see LSJ *ad loc.*). At LXX *Ex.* 6.7 λήψομαι ἐμαυτῷ is given (Labidas, 2009, p. 111) as a case where the dative pronoun is supplied to strengthen the BENEFACTIVE sense of the middle. Yet ἐμαυτῷ is most likely a translation of the underlying Hebrew לי *li* ‘for myself’ at this point.

[178] Labidas (2009, p. 111).

[179] The situation is clearly still in a state of flux since there are examples in the Koine of ANTICAUSATIVE being denoted by the middle. Compare ἀνοιγήσετε (*Matthew* 7.7) with ἀνοίγεσθαι (Plb. 8.25.10), quoted by Labidas (2009, p. 114).

1. That the Greek perfect active stem of valency-reducing stems also behaves in a non-reducing way.
2. That the other, i.e. non-perfect, active forms of the verbs with valency-reducing perfect actives also behave in a valency-reducing fashion.
3. That expression of an AGENT participant is not permitted.

It is these questions which the current chapter will seek to answer for the corpus used in this investigation. First, however, it is necessary briefly to survey means of AGENT expression in Greek.

3.2.3. ADJUNCT expression of an AGENT or CAUSE participant

In the previous sub-section it was noted that if labile transitivity is the underlying cause of the observed valency-reduction in certain perfect active stems, the expression of an AGENT participant should not be permitted. In order to be in a position to assess this, it is important to understand the means by which an AGENT participant may be reintroduced through an ADJUNCT phrase.[180]

The principal means by which an AGENT participant may be expressed in Greek is through construal with a ὑπό + gen. phrase:[181]

> [123] τῶν δὲ λοιπῶν οἱ μὲν πλεῖστοι περὶ τὸν ποταμὸν **ἐφθάρησαν ὑπό** τε **τῶν θηρίων** καὶ **τῶν ἱππέων**… (Plb. 3.74.7)
>
> Of the rest, **most were killed** around the river **by both the wild animals and the horses**…

However, a ὑπό + gen. phrase is not limited to the expression of an AGENT participant. It may also be used to introduce a non-agent participant which is viewed as a CAUSE:

> [124] … **πεπηγόσι** μόνον **ὑπὸ βραχείας θερμότητος** τοῖς ἀπ' αὐτῶν ἄρτοις διετρέφοντο… (Jos. *AJ* 2.316)
>
> … they were nourished with this bread from them, bread which **had been cooked only under a gentle heat**…

There are other means too by which a CAUSE may be introduced obliquely, specifically via a dative, a διά + gen. or acc. phrase, or an ἐκ + gen. phrase.[182] On occasion such constructions may even introduce an animate AGENT participant:

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[180] For a full treatment see George (2005).

[181] cf. Labidas (2009, p. 106).

[125] … τῶν **δι' αὐτὸν ἀπολωλότων**… **ἀδελφῶν**. (Jos. *BJ* 1.560)

… **the brothers** who **had been killed on his account**.

Given that a ὑπό + gen. phrase may introduce a non-AGENT participant, and that other ADJUNCT phrases may introduce AGENT participants, I will not take the choice of preposition as indicative *per se* of the role of the participant, but will pay more attention to the particular role that the participant is seen to play in context. In such consideration the ANIMACY of the participant will weigh very heavily: an INANIMATE participant is much more naturally interpreted as a CAUSE, while an ANIMATE participant is much more easily interpreted as an AGENT.

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[182] e.g. Plb. 3.105.8 with διά + CAUSE participant.

3.3. Valency-reducing perfect active stems

3.3.1. Introduction

The PASFs of a large number of verbs are valency-reducing. At §3.3.2, the valency-reducing behaviour of the PAS in a number of key verbs is exemplified, with examples of non-valency-reducing non-perfect active forms set alongside the perfect active forms to demonstrate the valency-reducing nature of the perfect active. At §3.3.3 the data is summarised with a table giving the total number of instances of each verb alongside the stem used for the valency-reducing function, before preliminary conclusions are drawn at §3.3.4.

3.3.2. Lexical analysis

ἀνοίγνυμι 'to open'

This verb in the active typically subcategorises for an AGENT SUBJECT and PATIENT OBJECT:

> [126] ... **ἀνοίξας τὰς πύλας** ἐξέπεμψε τοὺς παῖδας. (Jos. *AJ* 8.374)
>
> ... **once he had opened the gates** he sent the children out.

There are two non-infinitive examples of the perfect active stem in use in the corpus, which in each case use the root stem. Both examples are valency-reducing; the SUBJECT is both times either an EXPERIENCER or PATIENT. In the first Josephus describes the situation of a cave into which David has run for refuge against Saul:

> [127] ... καὶ γενόμενος οὐ πόρρω τῶν τόπων ὁρᾷ παρὰ τὴν ὁδὸν σπήλαιον βαθὺ
>
> καὶ κοῖλον εἰς πολὺ καὶ μῆκος **ἀνεῳγὸς** καὶ πλάτος... (Jos. *AJ* 6.283)
>
> ... and when [Saul] was not far from the place [where David was] he saw
>
> along the road a cave, deep and hollow, **open** deep and wide a long way
>
> back...

Here no event of opening is implied. ἀνεῳγός simply describes the situation pertaining at reference time, and the SUBJECT is an EXPERIENCER. The second example is similar:

[128] καὶ οὕτως μὲν εἶχον αἰ τρεῖς πλευραὶ τοῦ περιβόλου· τῆς δὲ τετάρτης

πλευρᾶς, πεντήκοντα γὰρ οὖσα πήχεων ἡ ἑτέρα μέτωπον τοῦ παντὸς ἦν,

εἴκοσι μὲν πήχεις **ἀνεῴγεσαν** κατὰ πύλας, ἐν αἷς ἀνὰ δύο κάμακες

εἰστήκεσαν κατὰ μίμησιν πυλώνων. (Jos. *AJ* 3.111)

The three sides of the enclosure were like that. Of the fourth side (for, with it
being fifty cubits across, the one part of it functioned as a façade for the
whole) twenty cubits **were open** for the gates, within which space two
poles stood upright to look like gates.

ἀπόλλυμι *'to lose, to destroy'*

This verb is a slightly more complicated case than many other verbs which will be
examined in this investigation, in that it is attested in two senses: a) to destroy and b) to
lose. The first sense is attested in the following example:

[129] πάντων μὲν δὴ παθῶν ὑπερίσταται λιμός, οὐδὲν δ' οὕτως **ἀπόλλυσιν ὡς**

αἰδῶ. (Jos. *BJ* 5.429)

Hunger exceeds all kinds of suffering, and **destroys** nothing so much as
one's self-respect.

Here the SUBJECT plays an AGENT role, while the OBJECT plays that of PATIENT.

The second sense, 'to lose' is attested in the next example:

[130] οὗ πεσόντος οὐδὲ τὸ στράτευμα ἔμεινεν, ἀλλὰ **τὸν στρατηγὸν**

ἀπολέσαντες εἰς φυγὴν ἐτράπησαν ῥίψαντες τὰς πανοπλίας. (Jos. AJ

12.410)

When he fell, nor did the army stay its ground, but, **since they had lost
their general** they turned to flight, throwing down their weapons.

In the second example the SUBJECT plays an EXPERIENCER role with respect to the OBJECT: the soldiers lose their general. Note, however, that in the second example, as in the first, the OBJECT ceases to exist in that he dies. It is, therefore, a PATIENT, although the event of which it is a PATIENT has not been caused by the SUBJECT, but rather experienced. This is to say that the difference between the two kinds of event is defined by the role played by the SUBJECT, and not by the role played by the OBJECT. The consequence of this is that, in a valency-reducing situation, the difference between the two kinds of events should be neutralised. It should, therefore, be possible to find valency-reducing uses which are transformationally related to both the first sense of ἀπόλλυμι, 'to destroy', and the second sense, 'to lose'.

The perfect active is attested in two stems, the root and the kappatic. The root stem is only ever found with a valency-reducing function, and it is possible to find reduced versions of both senses of the verb. The following example is valency-reducing use of the first sense, 'to destroy':

> [131] … καὶ πάντες ἂν **ἀπωλώλεισαν**, εἰ μὴ νυκτὸς ἐπιγενομένης ἀπέσχοντο τοῦ κτείνειν. (Jos. *AJ* 3.54)
>
> … and everyone **would have been destroyed**, if at nightfall they had not held back from the slaughter.

There is no one 'losing' anything in this case. ἀπωλώλεισαν simply describes the destruction of the Amalekites. The next example, however, is a valency-reducing use of the second sense, 'to lose':

> [132] … τότε δὲ **ἀπολωλότων** αὐτῷ πολλῶν ἠπόρει, καὶ στρατιὰν ᾔτει καὶ χρήματα. (App. *Hann.* 3.16)
>
> … at that point [Hannibal] was in trouble: many **had been lost** to him, and he was demanding an army and money.

Here the EXPERIENCER participant, the person who loses something, is reintroduced by means of a dative complement expression, αὐτῷ.[183]

---

[183] A parallel may be seen at App. *BC* 5.8.72 with ἀπωλώλει, with an EXPERIENCER participant αὐτοῖς.

There are no examples in the present corpus of an AGENT participant being supplied by means of a ὑπό + gen. phrase. However, there are examples of the perfect active construing with expressions of the cause of an event, namely διά + acc. or gen. and ἐκ + gen.:[184]

> [133] … **τῶν δι' αὐτὸν ἀπολωλότων**… ἀδελφῶν. (Jos. *BJ* 1.560)
>
> … the brothers who **had been killed on his account**.

> [134] τοῖς μὲν οὖν παρ' αὐτὸν γενομένοις τὸν κίνδυνον ἦν ἐναργὲς ὅτι **διὰ** μὲν
> **τὴν Μάρκου τόλμαν ἀπόλωλε** τὰ ὅλα… (Plb. 3.105.8)
>
> So to those who had been present in the danger itself it was clear that
> everything had been lost **on account of Marcus' recklessness**…

Finally, notice that the valency-reducing instances of the perfect of ἀπόλλυμι all use the root stem ἀπολωλ-, and not the kappatic stem ἀπολωλεκ-.

βάλλω and compounds

βάλλω and its compounds only attest one perfect active stem, the kappatic stem. This stem may be used in a valency-reducing way. For each of the compounds of βάλλω attested as valency-reducing in the perfect active, the non-reducing usage outside of the perfect system will first be demonstrated, after which the reducing use of the perfect active will be shown.

ἐμβάλλω 'to throw in, to throw at'

In the following example, Leontius, Megaleas and Ptolemy 'throw words' to the peltasts:[185]

> [135] κατὰ δὲ τὸν καιρὸν τοῦτον οἱ περὶ τὸν Λεόντιον καὶ Μεγαλέαν καὶ
> Πτολεμαῖον… **ἐνέβαλον** λόγους εἴς τε τοὺς πελταστὰς καὶ τοὺς ἐκ τοῦ
> λεγομένου παρὰ τοῖς Μακεδόσιν ἀγήματος ὅτι… (Plb. 5.25.1)
>
> At about this time Leontius', Megaleas' and Ptolemy's men **told** [lit. **threw
> words among**] the peltasts and those from what the Macedonians call the
> Agema, to the effect that…

---

[184] ἀπολωλότα (Plb. 2.41.14) is construed with a διά + gen. phrase with animate participant. ἀπωλώλει (App. *BC* 5.8.72) is construed with an ἐκ + gen. phrase with inanimate participant.

[185] For similar usage cf. *Pun.* 11.74 (where the OBJECT complement is πόλις); *Pun.* 2.6 with OBJECT complement δόξα; *Pun.* 14.99 with OBJECT complement πῦρ; Plb. 5.8.9 with OBJECT complement πῦρ.

In the next example, however, ἐμβέβληκα has an unaccusative INTRANSITIVE sense namely 'to go into', which, when accompanied with a directional phrase, often comes to mean 'to invade':

> [136] κατὰ δὲ τοὺς καιροὺς τούτους Ἀννίβας μὲν εἰς Ἰταλίαν **ἐμβεβληκὼς**
>
> ἀντεστρατοπέδευε ταῖς τῶν Ῥωμαίων δυνάμεσι περὶ τὸν Πάδον
>
> καλούμενον ποταμόν... (Plb. 5.29.7)
>
> At about this time Hannibal, **having invaded** Italy, encamped opposite the
>
> Roman forces at what is called the Padus river...

The SUBJECT therefore plays a PATIENT role. This usage of the perfect is widely attested across the corpus. [186]

μεταβάλλω 'to change'

Speaking of Noah's flood, Josephus writes the following, using the aorist active of μεταβάλλω:[187]

> [137] ὁ δὲ θεὸς... εἰς θάλασσαν **τὴν ἤπειρον μετέβαλε**. (Jos. *AJ* 1.75)
>
> But God... **changed the land** into sea.

In the above example there is a clearly identifiable AGENT SUBJECT, namely God, a PATIENT OBJECT, namely the land, and a result, the sea. Compare this with the following example, with a perfect active stem:

> [138] Ἡρώδης δὲ ταῦτα πάντα φέρων ἠνείχετο **μεταβεβληκυίας** αὐτῷ τῆς
>
> παρρησίας, ἣν εἶχε διὰ Καίσαρα... (Jos. *AJ* 16.293)
>
> Herod suffered as he bore all this, the confidence he had had through Caesar
>
> **having changed**...

Here it is the SUBJECT, παρρησία, which undergoes the change, and is therefore a PATIENT.

προσβάλλω 'to put in, to put against'

In the following example the OBJECT κλίμακας, 'scaling ladders', functions as PATIENT, with an implied EXPERIENCER, presumably the walls of the city or the house:[188]

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[186] The other examples of this usage of the perfect are: Plu. *Arist.* 23.5, *Alc.* 29.2, Jos. *BJ* 1.116, 5.295, 6.397, *AJ* 6.271, 9.8, 13.419 and Plb. 2.26.1.

[187] Parallel: App. *Hann.* 5.31, *BC* 2.20.148 (ὄνομα).

[139] ἔτι δ' αὐτοῦ παρεπιδημοῦντος ἐν τῇ Μεσσήνῃ, συνεγγίσαντες τῇ πόλει νυκτὸς οἱ πειραταὶ καὶ **προσβαλόντες κλίμακας** ἐξέκοψαν τὸ Χυρῶνος καλούμενον ἐπαύλιον... (Plb. 4.4.1)

Even while [Dorimachus] was staying in Messene, pirates, approaching the city by night and **throwing scaling ladders** [against the walls], broke into[189] the house called Chyron's Villa.

Compare this with the following example of the perfect:[190]

[140] ... τὰς ὀγδοήκοντα Φοινίσσας τριήρεις, αἳ τῆς μάχης ἀπελείφθησαν, Ὕδρῳ **προσβεβληκέναι** πυθόμενος διὰ τάχους ἔπλευσεν... (Plu. *Cim.* 13.3)

... [Cimon], having found out that the eighty Phoenician triremes, which had been left out of the battle, **had put in at Hydros**, quickly set sail...

In this example προσβάλλω is used as an unaccusative with the sense 'to put (one's ship) in (at)'. The SUBJECT is therefore both an AGENT and an EXPERIENCER/PATIENT, and there is no separate EXPERIENCER/PATIENT identified as an OBJECT.

διαφθείρω 'to destroy'

TRANSITIVE uses of this verb are well attested outside of the perfect active system, subcategorising for an AGENT SUBJECT and PATIENT OBJECT, for instance:[191]

[141] ... **τοὺς οἰκήτορας** γυναιξὶν ἅμα **διαφθείραντες** μόνας τὰς παρθένους κατέλιπον... (Jos. *AJ* 4.162)

... **having killed the inhabitants** along with the women, they left only the unmarried women...

The perfect active stem frequently reduces valency, however:

[142] ... καὶ ποτὸν αἰτήσαντι δίδωσι γάλα **διεφθορὸς** ἤδη. (Jos. *AJ* 5.207)

... and he gave a drink to him when asked for it, milk **which had gone off** already...

There are only three examples of valency-reducing uses of this verb in the corpus. Notice again that it is the root stem that is used for valency-reduction.[192]

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[188] Plb. 3.93.8 seems likely to be a parallel for this, as taken by Shuckburgh (1889).

[189] In translating ἐκκόπτω as 'broke into' I follow Shuckburgh (1889).

[190] Parallels: Plu. *Cim.* 13.3 and Jos. *AJ* 12.338, the latter with προσβάλλω in the sense 'to attack'.

[191] Parallel: διέφθειρεν (Plu. *Thes.* 15.3).

There are no examples in the corpus either of the supply of an AGENT participant or of a CAUSE. However, it is interesting that in the previous example the participle διεφθορός describes the event of milk having gone off, an event without any obvious AGENCY, but which rather occurs by means of a natural process. The other two examples, however, appear to describe events where there is at least the implication that people have been killed, even if the AGENTS are not expressed directly. Consider the following:

> [143] ὡς τῆς τε χώρας ἀνατετραμμένης τοῖς πολεμίοις καὶ **διεφθορότων** τῶν ἀνθρώπων μηδὲν ἔτι μηδ' εἰς αὐτοὺς ἀντίπαλον καταλελεῖφθαι δοκεῖν. (Jos. *AJ* 15.123)
>
> ... so that, with the land both ruined by the enemy and with the people **having been killed**, they thought there was no adversary left for them.

Here, although syntactically the dative complement τοῖς πολεμίοις construes with ἀνατετραμμένης, the strong implication is that this participant was responsible for the killing of the people.

ἐγείρω 'to stir up, to raise'

ἐγείρω may be TRANSITIVE and non-reducing outside of the perfect, but in the perfect, at least in the root stem, it is valency-reducing:

> [144] ὁ δὲ Οὐεσπασιανὸς πανταχόθεν περιτειχίζων τοὺς ἐν τοῖς Ἱεροσολύμοις ἔν τε τῇ Ἱεριχοῖ καὶ ἐν Ἀδίδοις **ἐγείρει στρατόπεδα**... (Jos. *BJ* 4.486)
>
> Vespasian, then, as he was fortifying those in Jerusalem, **put up camps** in Jericho and Adida...

> [145] μέλλοντα δὲ περᾶν ἐκ τῆς Ἀσίας ἐς τὴν Εὐρώπην σὺν τῷ στρατῷ, νυκτὸς **ἐγρηγορότα**, μαραινομένου τοῦ φωτὸς ὄψιν ἰδεῖν ἐφεστῶσάν οἱ παράλογον καὶ πυθέσθαι μὲν εὐθαρσῶς, ὅς τις ἀνθρώπων ἢ θεῶν εἴη, τὸ δὲ φάσμα εἰπεῖν... (App. *BC* 4.17.134)
>
> [They say that] as [Brutus] was about to cross from Asia into Europe with his army, **having woken up** during the night and as the light was fading, he saw an unexpected vision standing over him. Boldly he asked the vision, so the story goes, what it was, whether of men or of the gods, and the apparition, in reply, said...

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[192] Parallels: Jos. *AJ* 15.123 (διεφθορότων τῶν ἀνθρώπων), 15.283 (τῶν διεφθορότων).

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ἐπιβαίνω 'to embark'

The aorist active of this verb may be used with an AGENT SUBJECT and PATIENT OBJECT meaning 'to put someone on something':[193]

> [146] αὐτομόλων δ' αὐτῷ λόφον ὑποδειξάντων ἐπιβατόν... **τὴν στρατιὰν** ἐς τὰς ναῦς νυκτὸς **ἐπέβησε**... (App. *Mith.* 4.26)
>
> Since the traitors had shown him an accessible hill, **he embarked his army** on ships during the night...

The perfect active stem, however, is always valency-reducing in the corpus, with PATIENT/EXPERIENCER SUBJECT:[194]

> [147] ὁ δὲ Πομπήιος οὐ πρότερον, ἀλλὰ νῦν Ἀντωνίῳ θαρρῶν **ἐπιβέβηκε** τῆς παραλίου. (App. *BC* 5.7.62)
>
> And Pompey, while not having done so previously, has now, encouraged by Antony, **set foot** on the shore.

ἵστημι 'to set up'

TRANSITIVE use of ἵστημι and its various compounds are well attested in the corpus. ἵστημι will be used to illustrate the behaviour of its compounds. The following are two typical examples:

> [148] θεασάμενος δὲ στρατὸν ἐπὶ τῆς γῆς πολὺν **ἔστησε τὸν πλοῦν** καὶ εἴκασεν, ὅπερ ἦν, παρεῖναι τὸν βασιλέα. (App. *BC* 2.12.84)
>
> Seeing a large army on the land **he stopped sailing** and supposed, which was in fact the case, that the king was there.
>
> [149] **ἵστη** δέ πη καὶ **βασιλέας**, οὓς δοκιμάσειεν, ἐπὶ φόροις ἄρα τεταγμένοις, Πόντου μὲν Δαρεῖον τὸν Φαρνάκους τοῦ Μιθριδάτου... (App. *BC* 5.8.75)
>
> And **he established kings**, whom he would test with tributes imposed on them, namely Darius, the son of Pharnakos the son of Mithridates, for Pontus...

---

[193] Parallels: ἐπιβήσας at Jos. *BJ* 4.439, 4.659, App. *BC* 2.9.59 and 5.10.92. Non-reducing uses such as those given here are only attested in the sigmatic aorist active stem. The present, however, is never attested as non-valency-reducing.

[194] Parallels: App. *Pun.* 14.100, *BC* 2.15.102, 5.8.71, Jos. *BJ* 6.69, *AJ* 2.235 and 18.320.

The perfect active occurs in the root stem (ἑστ-/ἑστηκ-) and the kappatic stem (ἑστακ-). In all instances of the root stem it is valency-reducing:

> [150] … ἐκέλευε τοὺς ἱππέας μήτε διώκειν μήτε ἐπιχειρεῖν ἔτι, ἀλλ' ἐν προβολῇ τὰ δόρατα θεμένους **ἑστάναι…** (App. *Hisp.* 14.88)
>
> He ordered the cavalry neither to pursue nor yet to attack, but, inserting their spears in the ground, **to stand**…

> [151] ἐν δὲ Δελφοῖς Παλλάδιον **ἕστηκε** χρυσοῦν ἐπὶ φοίνικος χαλκοῦ βεβηκός… (Plu. *Nic.* 13.3)
>
> In Delphi there **stands** a golden statue of Pallas placed on a bronze date-palm…

There are examples with the AGENT participant reintroduced via an ADJUNCT phrase:

> [152] καὶ γὰρ οὐ πολλῷ πρότερον συνεβεβήκει… τὸ χαλκοῦν **ἀνεστάναι** τρόπαιον **ὑπὸ τῶν Ἐφεσίων** ἐπ' αἰσχύνῃ τῶν Ἀθηναίων. (Plu. *Alc.* 29.1)
>
> For it had happened that, not much earlier… the bronze monument of defeat **had been set up by the Ephesians** to the Athenians' shame.

Notice that TRANSITIVE is not opposed to valency-reducing, at least for compounds of ἵστημι, as was demonstrated earlier in the case of ὑφίστημι at [105] and [106] above.

Finally, ἵστημι patterns with ἀπόλλυμι, διαφθείρω, and ἐγείρω in limiting valency-reducing function to the root stem, and with the AGENT participant able to be reintroduced via an ADJUNCT phrase.

καταπλήσσω 'to frighten'

This verb is used in the sense 'to strike or smite metaphorically', i.e. 'to strike fear into':[195]

> [153] **καταπλήττει** δὲ **τὸ πλῆθος** τῶν πολεμίων **αὐτόν** τε **Ἰησοῦν** καὶ τοὺς Ἰσραηλίτας... (Jos. *AJ* 5.64)
>
> The horde of the enemy **terrified** both **Joshua himself** and the **Israelites**.

Here the SUBJECT plays the role of STIMULUS, and the OBJECT that of EXPERIENCER.

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[195] Parallels: App. *BC* 4.2.8, *Pun.* 18.122, Jos. *AJ* 5.251, 6.24, 13.161 (but in a positive sense τῷ… θάρσει, i.e. 'with courage'), 13.357, 13.409, Plb. 3.116.8.

In many cases the second perfect active stem does not take an OBJECT complement:[196]

> [154] βλέπων δὲ οὕτως ὁ Ἰησοῦς τήν τε στρατιὰν **καταπεπληγυῖαν**... (Jos. *AJ*
> 5.38)
>
> Joshua, seeing the army **frightened** in this way...

In these cases the SUBJECT of καταπεπληγυῖαν plays the role of EXPERIENCER, the role played by the OBJECT in the equivalent construction in the other active forms.

When the root stem of καταπλήσσω does take an OBJECT complement, this complement does not play the same semantic role as it would play in an equivalent TRANSITIVE ACTIVE construction. Consider the following example:

> [155] ... θεωμένου τοῦ πλήθους καὶ **καταπεπληγότος αὐτὸν** καὶ τότε. (App. *BC*
> 1.12.104)
>
> ... the people wondered at him and **were awestruck by him** even then.

Here the SUBJECT plays the role of EXPERIENCER, while the OBJECT complement plays the role of STIMULUS. In this way, the perfect active of καταπλήσσω functions with its OBJECT in a way parallel to the root perfect active stem of ὑφίστημι given above.

The root stem is attested collocating with a prepositional phrase giving the cause of the awe:[197]

> [156] Μωυσῆς δὲ τοὺς μὲν οἰκείους ὁρῶν **ὑπὸ τῆς ἥττης καταπεπληγότας**...
> (Jos. *AJ* 4.9)
>
> Moses saw that his people **were now fearful because of their loss**...

There are no examples, however, of an AGENT participant given by means of an ADJUNCT phrase.

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[196] Parallels: Jos. *AJ* 5.516, 19.80, Jos. *BJ* 4.18.

[197] Parallels: Jos. *AJ* 5.158 (ὑπὸ τῆς ἥττης), 13.197 (πρὸς ταῦτα), Jos. *BJ* 3.228 (πρὸς τὴν τόλμαν), and 471 (πρὸς τὸ πλῆθος).

πείθω 'to persuade'

This verb in the active subcategorises for an AGENT SUBJECT and an EXPERIENCER OBJECT, whereby the OBJECT experiences the act of persuasion. There may also be a second OBJECT complement conveying the content of what the EXPERIENCER OBJECT has been persuaded to do:

[157] **τοὺς** μὲν **ταῦτα ἔπειθεν**… (Plu. *Thes.* 24.3)

To [his project] he persuaded some…

Alternatively the second OBJECT position may be occupied by an infinitive phrase:

[158] "εἰ γὰρ οὐ δύναμαι **πεῖσαι** τὰ δίκαια **ποιεῖν**," ἔφη, "**Καίσαρα**, τό γε ἄγος αὐτῷ καὶ μύσος οὕτως ἀποθανὼν ἐπιβαλῶ." (App. *BC* 2.2.11)

For if I am not able **to persuade Caesar to act with justice**, in death I will attach to him guilt defilement.

This verb is attested with two perfect active stems, the root stem (πεποιθ-) and the kappatic stem (πεπεικ-). The perfect active may convey a valency-reducing sense, but in every case it is the root stem which assumes this role:

[159] … **πεποιθὼς** γυμνὸν ὁμοῦ καὶ παῖδα ἔτι τὴν ἡλικίαν ἀπόνως ἀναιρήσειν. (Jos. *AJ* 6.188)

[Goliath]… **sure** that he would kill [David], who was both without armour and still a child in age, without difficulty.

This may seem a straightforward case of valency-reduction. However, on closer inspection it turns out not to be so simple. Strictly speaking, a truly valency-reducing sense ought to behave in exactly the same way as the non-reducing sense as regards the second OBJECT complement; it should be possible to find valency-reducing examples with an infinitive complement indicating some activity that the new SUBJECT has been persuaded (probably by him or herself) to do. However, the syntax of the reducing perfect active stem is quite different. Its complements are either a clause denoting the content of some belief on the part of the SUBJECT, as given at [159] or a dative complement indicating the place of trust of the SUBJECT, as in the next example:

[160] οὕτω μὲν ἀντὶ λογισμῶν ὁ Καῖσαρ **ἐπεποίθει** τῇ τύχῃ. (App. *BC* 2.9.58)

In this way Caesar **put his faith** in chance instead of calculation.

It seems then that, at least in the case of πείθω, a certain degree of specialisation of meaning has taken place in the perfect active stem.

πήγνυμι 'to fix; to freeze'

πήγνυμι subcategorises for an AGENT SUBJECT and PATIENT OBJECT:

> [161] καὶ ταῦτα μὲν Ἑβραίοις **τὰς σκηνὰς πηγνύουσιν** ἐπιτελεῖν ἐστι πάτριον.
>
> (Jos. *AJ* 3.247)
>
> It is a custom of the Hebrews to do this **as they fix their tents**.

There is only one perfect active stem attested in the corpus, the root stem, which in each case behaves in a valency-reducing way:[198]

> [162] μηδενὸς δὲ τῶν ἀπὸ τῆς γῆς εὐποροῦντες διὰ τὴν ἐρημίαν πεφυραμένοις
>
> τοῖς ἀλεύροις καὶ **πεπηγόσι** μόνον **ὑπὸ βραχείας θερμότητος** τοῖς ἀπ'
>
> αὐτῶν ἄρτοις διετρέφοντο, καὶ τούτοις ἐπὶ τριάκονθ' ἡμέρας ἐχρήσαντο.
>
> (Jos. *AJ* 2.316)
>
> And since they were furnished with nothing from the land on account of its
>
> desolation, they were nourished with loaves made from kneaded flour
>
> **hardened under a low heat**, and they made use of these for thirty days.

As the examples given above show, this verb may also be accompanied by an ADJUNCT phrase denoting the CAUSE of the event. No examples could be found of an ADJUNCT phrase denoting an AGENT participant.

πλήσσω 'to strike'

The active forms outside the perfect subcategorise for an AGENT SUBJECT and a PATIENT OBJECT, whereby the OBJECT receives the blow which is placed by the SUBJECT, as in the following example:

> [163] πολλοί τε διωθιζόμενοι μετὰ τῶν ξιφῶν **ἀλλήλους ἔπληξαν**. (App. *BC*
>
> 2.16.117)
>
> And many scuffling **struck each other** with their swords.

There is one example of a valency-reducing perfect active of this verb:

---

[198] cf. καταπεπηγότα at Plb. 3.55.5 where the particple is construed with a διά + acc. phrase giving the cause of the RESULTANT STATE.

[164] θορυβουμένων δ', ὡς εἰκός, αὐτῶν, καὶ τοῦ Νικίου μηδὲν ἔχοντος εἰπεῖν, ἀλλ' ἄχει καὶ θαύματι **πεπληγότος**... (Plu. *Nic.* 10.6)

While they were astir, as it seems, and while Nicias was unable to speak, but was **struck** with distress and wonder...

It is interesting to note that, while the roles here are indeed reduced in that the SUBJECT undergoes some kind of 'striking', it is not striking in the sense seen in [163]; there the striking was physical, but in [164] the striking is mental. This may not seem important, until it is noted that all of the non-perfect active examples of πλήσσω in the corpus involve the physical act of striking, and not the mental kind.[199] As in the case of πείθω, therefore, some kind of specialisation of meaning appears to have taken place in the case of the perfect active stem.

Finally, note that, as in the case of several other verbs, already discussed,[200] πλήσσω uses the root stem for the valency-reducing function.

πτερόω 'to furnish with feathers, wings'

This verb originally means 'to furnish with feathers or wings'.[201] However, when used with reference to ships it means 'to make spread the oars', i.e. so as the ship has 'wings'.[202] It is in this latter sense that the verb is used in the two instances where it is found in the present corpus. Both occur in the same context, namely the account of the Roman naval blockade of Lilybaeum, in which a certain Hannibal the Rhodian successfully runs the blockade. First the Roman ships ensuring the blockade are described in the following terms:

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[199] App. *BC* 2.16.117 (with two examples, including that quoted above), Jos. *AJ* 3.35, 3.37, 4.277, 4.218 (two examples), 4.282, 5.193, 7.15, 7.284, 7.317, 8.389, 8.390, 8.409, 12.373, 14.357, 16.329, *BJ* 1.43, 2.59, 5.313, 5.323, 6.138, 6.309, and Plu. *Nic.* 27.2.

[200] Namely ἀνοίγνυμι, ἀπόλλυμι, διαφθείρω, ἵστημι, καταπλήσσω, and πείθω.

[201] See LSJ *ad loc.* I.1.a.

[202] See LSJ *ad loc.* I.2 and references.

[165] αἱ δὲ νῆες τοῦ στόματος ἐξ ἀμφοῖν τοῖν μεροῖν, ἐφ' ὅσον ἦν δυνατὸν ἔγγιστα τοῖς τενάγεσι προσάγειν, ἐπεῖχον **ἐπτερωκυῖαι** πρὸς τὴν ἐμβολὴν καὶ σύλληψιν τῆς ἐκπλεῖν μελλούσης νεώς. (Plb. 1.46.9)

But the [Romans'] ships held close by the mouth of the harbour on both sides, coming as close to the shallows as possible, **oars out ready** to attack and seize any ship that tried to sail out.

Here the SUBJECT participants, the ships, play a PATIENT/EXPERIENCER role, as they are the participants who have had their oars put out. A couple of paragraphs later, however, Hannibal the Rhodian is described acting as follows:

[166] ἀλλὰ καὶ βραχὺ προπλεύσας ἐπέστη **πτερώσας τὴν ναῦν**, ὡσανεὶ προκαλούμενος τοὺς πολεμίους. (Plb. 1.46.11)

But [Hannibal the Rhodian], sailing on a bit ahead, stood still, **putting the oars of his ship out**, as if provoking the enemy.

Here the verb πτερόω, this time in the aorist active takes an OBJECT complement of the affected participant, his own ship.

ῥήγνυμι 'to break'

The aorist active of ῥήγνυμι always has an AGENT SUBJECT and PATIENT OBJECT:

[167] … **τήν** τε **ἄλυσιν ἔρρηξε** τοῦ λιμένος καὶ ἐς Μύρα ἀνήιει. (App. *BC* 4.10.82)

… and **he broke the chain** of the harbour and went up to Mura.

By contrast the perfect active stem has PATIENT/EXPERIENCER SUBJECT and no OBJECT:[203]

[168] ἔστι δ' ὁ χιτὼν οὗτος οὐκ ἐκ δυοῖν περιτμημάτων, ὥστε ῥαπτὸς ἐπὶ τῶν ὤμων εἶναι καὶ τῶν παρὰ πλευράν, φάρσος δ' ἓν ἐπίμηκες ὑφασμένον σχιστὸν ἔχει βροχωτῆρα πλάγιον, ἀλλὰ κατὰ μῆκος **ἐρρωγότα** πρός τε τὸ στέρνον καὶ μέσον τὸ μετάφρενον. (Jos. *AJ* 3.161)

This tunic is not made of two pieces, so that it is sewn at the shoulders and at the side, but it is one long woven garment and has a space cut for the neck along the side, but **is separated** length-wise at both the breast and in the middle of the back.

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[203] Parallels: ἀπερρώγει (Jos. *AJ* 14.61), διερρώγεσαν (App. *BC* 4.10.77), ἐξερρωγόσιν (Jos. *AJ* 14.422) and παρερρωγότα (Jos. *BJ* 3.258).

There is one TRANSITIVE example of a compound of ἔρρωγα, but this is clearly valency-reducing:

[169] **πέτραν οὐκ ὀλίγην** τῇ περιόδῳ καὶ μῆκος **ὑψηλὴν** πανταχόθεν
περιερρώγασι βαθεῖαι φάραγγες... (Jos. *BJ* 7.280)

Deep ravines **break** (i.e. are broken) **around** a not insignificant high rock
from all sides in a circle...

συνασπίζω 'to cause to lock shields (with)'

In the following passage the verb is used transitively, taking a direct OBJECT complement of the men who would form the *testudo*. Here Vespasian finds himself isolated with a few men in the upper part of the town of Gamala, whereupon he decides to form a *testudo*[204]:

[170] τραπῆναι μὲν οὖν οὔτε ἀσφαλὲς οὔτε πρέπον ἡγήσατο, μνησθεὶς δὲ τῶν
ἀπὸ νεότητος αὐτῷ πεπονημένων καὶ τῆς ἰδίας ἀρετῆς, ὥσπερ ἔνθους
γενόμενος, **συνασπίζει** μὲν **τοὺς** ἅμ' αὐτῷ τά τε σώματα καὶ τὰς πανοπλίας
ὑφίσταται δὲ κατὰ κορυφὴν ἐπιρρέοντα τὸν πόλεμον... (Jos. *BJ* 4.33f.)

So [Vespasian] did not consider it either safe or appropriate to flee, and
remembering what he had achieved from his youth, as well as his own
valour, as if inspired by a god, he **formed those around him into the**
testudo with both their bodies and their armour, and he withstood the
battle raining down above them...

---

[204] συνασπίζω is used in military language in association with forming the *testudo* e.g. Dio Cassius 49.29.2. On the *testudo* and for other texts discussing its use and formation see Knapp (1928). My translation in this case follows that of Shuckburgh (1889).

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The next passage, however, uses the perfect active of συνασπίζω intransitively, with the SUBJECT playing the role played by the direct OBJECT in the previous example, i.e. it is they who have their shields locked together:[205]

> [171] συννοήσας αὐτῶν τὴν ἐπιβολὴν ὁ βασιλεὺς παρήγγειλε τοῖς πελτασταῖς πρώτοις ἐμβαλεῖν εἰς τὸν ποταμὸν καὶ ποιεῖσθαι τὴν ἔκβασιν ἀθρόους κατὰ τάγμα **συνησπικότας**. (Plb. 4.64.6)
>
> Having come to know of their attack, the king ordered the peltasts to enter the river and come out of it arranged in line **with their shields locked together**.

ὑποστέλλω *'to hide'*

This verb may subcategorise for AGENT SUBJECT and PATIENT OBJECT:[206]

> [172] **τοὺς** δὲ **Βαλιαρεῖς** καὶ **λογχοφόρους**… ὑπὸ τοὺς ἐν δεξιᾷ βουνοὺς… **ὑπέστειλε**… (Plb. 3.83.3)
>
> **He sent the Balearic troops along with their pikemen**… under the cover of the hills on the right hand side…

The PASF may, however, be used in a valency reducing way, as already shown at [76] above.

φύω *'to cause to grow'*

φύω itself will here be taken as representative of the syntax of it and its compounds. In the following example the aorist active of φύω takes a PATIENT OBJECT:[207]

> [173] … παρατίθεμαι δ' ὑμῖν τοὐμὸν φρόνημα καὶ παρακαλῶ μὴ γενέσθαι κακοὺς αὐτοῦ φύλακας, ἀλλὰ μεμνημένους τῆς τοῦ **φύσαντος ὑμᾶς** καὶ θρεψαμένου προαιρέσεως… (Jos. *AJ* 12.280)
>
> I give you my will and urge you not to be bad guardians of it, but mindful of the plan of the one who **sired** and nurtured **you**…

---

[205] Whether or not a *testudo* is implied here or not is not clear. Jos. *BJ* 3.271 could be parallel, where a *testudo* does seem to be implied.

[206] Parallels for this can be found at Plb. 1.16.10 and at Jos. *BJ* 4.44.

[207] For examples of the aorist active of compounds of φύω behaving likewise cf. Jos. *AJ* 12.75 (ἐκφύσαντες), and Jos. *AJ* 1.317 (ἐμφῦσαι). The imperfective stem occurs once at Jos. *BJ* 7.180 (φύει), where it is non-reducing.

However, in the following examples the perfect active has a PATIENT SUBJECT:[208]

[174] τοῦ δὲ Ἰωσήπου γνῶναι θελήσαντος, τίς αὐτῷ τῶν υἱῶν πρὸς ἀρετὴν εὖ
πέφυκεν… (Jos. *AJ* 12.191)

While Josephus wanted to know, which of his sons **was well born** with
regard to virtue...

3.3.3. Analysis

The full dataset giving all the PASFs found performing a valency-reducing role may be
found at Appendix List 1. The following table gives the overall frequency data.

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[208] For the examples of the perfect active of compounds of φύω behaving likewise cf. Jos. *AJ* 10.270
(ἐκπεφυκότα), Jos. *AJ* 16.175 (ἐμπεφυκυίας) and Jos. *AJ* 15.84 (ἐμπεφυκότες).

Table 13 - Frequency data of valency-reducing PASFs

Lemma	Frequency of valency-reducing PASFs
ἀναστρέφω	2
ἀνθίστημι	3
ἀνίστημι	5
ἀνοίγνυμι	2
ἀντικαθίστημι	1
ἀπαίρω	1
ἀπόλλυμι	74
ἀπορρήγνυμι	3
ἀφίστημι	35
διαρρήγνυμι	1
διαφθείρω	3
διίστημι	23
ἐγείρω	4
ἐκρήγνυμι	1
ἐκφύω	1
ἐμβάλλω	9
ἐνδίδωμι	1
ἐξαγριόω	2
ἐπιβαίνω	8
ἐπιστρέφω	1
ἐφίστημι	64

ἵστημι	57
καθίστημι	35
καταλύω	1
καταπήγνυμι	1
καταπλήσσω	15
μεταβάλλω	1
παραρρήγνυμι	1
παρεμβάλλω	2
παρίστημι	25
πείθω	41
περιίστημι	34
περιρρήγνυμι	1
πήγνυμι	10
πιστεύω	25
πλήσσω	1
προΐστημι	78
προσβάλλω	1
πτερόω	1
ῥήγνυμι	1
συνασπίζω	3
συναφίστημι	1
συνίστημι	56
ὑποστέλλω	1

ὑφίστημι	4
φύω	37
TOTAL	677

It is clear from the foregoing analyses that the PASFs of a large number of verbs may be valency-reducing. Furthermore, all of the valency-reducing stems have an important semantic characteristic in common: their verbs denote causative change of STATE, whether describing a change of location, as in the case of προσβάλλω or ὑποστέλλω, or a change of nature, whether physical, as in the case of πήγνυμι or ῥήγνυμι, or mental, as in the case of καταπλήσσω. The following table groups the verbs into the two types of change of STATE:

Table 14 - Valency-reducing perfect active stems by type of COS

	Lemma	Gloss
Change of nature (CON)	ἀνοίγνυμι	'to open'
	ἀπόλλυμι	'to destroy; to lose'
	διαφθείρω	'to destroy'
	ἐγείρω	'to raise'
	ἐξαγριόω	'to make angry'
	-ίστημι	'to set up'
	καταλύω	'to disband'
	μεταβάλλω	'to change'
	πήγνυμι	'to fix; to freeze'
	-πλήσσω	'to strike'
	πτερόω	'to furnish with feathers/wings'
	-ρήγνυμι	'to break off'
	συνασπίζω	'to cause to lock shields (with)'
	-φύω	'to generate, to produce'
Change of location (COL)	ἀναστρέφω	'to turn back'
	ἀπαίρω	'to remove'
	ἐμβάλλω	'to throw in/at'
	ἐνδίδωμι	'to give in'
	ἐπιβαίνω	'to put on board'
	ἐπιστρέφω	'to return'
	παραβάλλω	'to put alongside'
	προσβάλλω	'to put in/against'
	ὑποστέλλω	'to hide'

The fact that it is verbs describing COS events that demonstrate valency-reduction in the PAS is in keeping with what one might expect cross-linguistically.[209] *A priori*, therefore, one might suspect that the fact that these verbs demonstrate valency-reduction in the perfect is not connected with them being perfects *per se*, but is rather a function of the semantics of the verb.

However, it is not possible yet to assert this. First, in some cases the valency-reducing PASFs have been shown to collocate with an ADJUNCT phrase giving the AGENT participant; this was stated at §2.3.7 to count against an ANTICAUSATIVE reading, since ANTICAUSATIVES do not prototypically allow the specification of an AGENT participant. Furthermore, it has not yet been established a) whether or not these verbs also demonstrate non-valency-reducing use in the perfect, and b) whether or not the non-perfect active forms of these verbs demonstrate labile transitivity. These questions must be explored before answering whether or not the attested valency-reduction in the perfect is part of the wider labile transitivity in the Greek active system.

It has been noted in passing that a number of verbs use the root stem for valency-reduction. Many of these verbs also have non-root stems, either with an aspirated final root consonant, as in the case of πλήσσω ~ πέπληχα, or with kappa, as in the cases, for instance, of διαφθείρω and ἀπόλλυμι. The significance of this will be explored in the following section.

3.3.4. Conclusion

In each of the cases discussed above, the PAS has been shown to have a reduced valency as compared to other active stem forms. It was observed, furthermore, that all the verbs seen to demonstrate valency-reducing behaviour in the perfect active belong to the group of causative COS verbs. This raised the possibility that the observed valency-reduction is in fact not a function of the PASF, but rather of the semantics of the verb in question. Before this can be asserted, however, it is necessary to establish a) whether or not the PASF of these verbs exhibits non-valency-reducing behaviour and b) whether or not the other active stem forms exhibit valency reducing behaviour.

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[209] See §2.3.7.

If the other active stem forms do not exhibit valency-reducing behaviour, it is to be concluded that the perfect active stem does perform some kind of valency-reducing role. Similarly, if the perfect active stem only ever reduces valency, while other active stem forms exhibit labile transitivity, it is to be concluded that the perfect active stem is tied to performing a specifically valency-reducing function. However, if neither of these situations pertain, it is to be concluded that the valency-reducing behaviour observed in the perfect active stem should be accounted for with reference to the semantics of the relevant verb. It is to addressing these questions that I now turn.

3.4. Non-valency-reducing uses of valency-reducing perfect active stems

3.4.1. Introduction

It was shown in the previous section that the PAS of certain verbs exhibits valency-reducing behaviour. However, in order to establish to what extent the PAS is responsible for this behaviour, it is necessary to establish whether the PASs of these verbs are also capable of non-reducing behaviour. This is the aim of the present section.

Only certain of the verbs demonstrating valency-reducing behaviour were found to be both valency-reducing and non-reducing in the present corpus. The examples that were found are discussed individually at §3.4.2. The data is summarised in a table at §3.4.3, and compared with the valency-reducing data, before further preliminary conclusions are drawn at §3.4.4.

While valency-reducing behaviour was widely attested in the perfect active, non-reducing behaviour in the perfect active was only found in the perfect active of eight verbs: ἀπόλλυμι, διαφθείρω, ἐγείρω, ἵστημι (+ compounds), πείθω, πλήσσω, προσβάλλω, ὑποστέλλω. These are examined in turn.

3.4.2. Lexical analysis

ἀπόλλυμι

Non-reducing uses of the PAS of ἀπόλλυμι are attested in all four of the authors in the corpus. This behaviour was found to be limited to the kappatic stem:[210]

> [175] ὁ μὲν Γράκχος καὶ ὁ Φλάκκος ἀπορούμενοι καὶ **τὸν καιρὸν** ὧν ἐβουλεύοντο
> διὰ τὸ φθάσαι τὴν ἐγχείρησιν **ἀπολωλεκότες** ἐς τὰς οἰκίας διέτρεχον...
> (App. *BC* 1.3.25)
>
> Gracchus and Flaccus did not know what to do and, **having lost the chance**
> of doing what they had planned because the attack had stolen their
> initiative, they ran back to their homes.

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[210] Parallels: Plb. 1.58.8, Plu. *Arist.*, App. *Hann.* 4.25, *Ill.* 4.24, Jos. *AJ* 12.392, Jos. *BJ* 4.577, 6.328, Plb. 3.45.1, 3.56.2, 3.64.8, 3.65.11, 3.77.6, and Plu. *Alc.* 36.1.

[176] θαυμάζω, φησίν, εἰ περὶ ἀνδρὸς ἀγνοεῖς εἰπεῖν τί γέγονεν, **ὃν** αὐτὸς
ἀπολώλεκας. (Jos. *AJ* 1.58)

[God] said, "I am amazed that you are not able to say what happened
concerning a man **whom** you yourself **have killed**."

In the discussion of ἀπόλλυμι at §3.3.2 above, it was noted that this verb has two senses,
'to destroy' and 'to lose'. These two senses were demonstrated with examples from
outside of the perfect system. However, it was shown the difference between the two
usages is primarily defined by the role played by the SUBJECT; the PATIENT role played
by the OBJECT is the same in both cases. The TRANSITIVE examples of the perfect active
of ἀπόλλυμι given above attest both senses of the verb. In example [175] the sense is 'to
lose', whereas in [176] the sense of ἀπόλλυμι is 'to destroy'.

Finally, note that there are many fewer examples of non-valency-reducing kappatic
stem forms than valency-reducing root stem forms, in the ratio 17:74.

διαφθείρω

As in the case of ἀπόλλυμι, non-valency-reducing uses of the perfect active stem of
διαφθείρω are attested in all four of the authors in the corpus. As in the case of
ἀπόλλυμι, this was found to be limited to the kappatic stem:[211]

[177] Ἀσδρούβαν δὲ... οὗ τὸν δεσπότην ὠμῶς **διεφθάρκει**, λαθὼν ἐν κυνηγεσίοις
ἀναιρεῖ. (App. *Hisp.* 2.8)

Hasdrubal, whose master **he had** ruthlessly **destroyed**, he killed secretly in
a hunt.

[178] καὶ τοὺς ἐκεῖ παροξύνας ἔλεγε πρὸς τὸν δῆμον ὡς Ἀλκιβιάδης **διέφθαρκε**
τὰ πράγματα καὶ τὰς ναῦς ἀπολώλεκεν... (Plu. *Alc.* 36.1)

And he stirred up the people by saying that Alcibiades had **brought their
affairs to ruin**, and had lost the ships...

It may be noteworthy that non-valency-reducing uses (i.e. kappatic stem forms) are
more frequent than the valency-reducing root stem forms in this verb, in the ratio 10:3.
This is the reverse of the situation noted in the case of ἀπόλλυμι.

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[211] Parallels: App. *Mith.* 15.97, App. *Syr.* 4.20, Jos. *AJ* 12.400, 17.142, Plb. 3.65.11, 3.69.14, 3.102.8, Plu. *Alc.*
36.1 and 39.5.

ἐγείρω

There is one non-reducing instance of ἐγείρω in the corpus, using a kappatic stem:

> [179] Ἡρώδης δὲ τόν τε Ματθίαν ἐπεπαύκει τῆς ἀρχιερωσύνης καὶ τὸν ἕτερον
> Ματθίαν, ὃς **ἐγηγέρκει** τὴν στάσιν, καὶ ἄνδρας ἐκ τῶν ἑταίρων αὐτοῦ
> ἔκαυσεν ζῶους. (Jos. *AJ* 17.167)
>
> Herod had removed Matthias from the high priesthood and the other
> Matthias, who **had stirred up** the revolt, as well as his comrades, he burned
> alive.

ἵστημι and compounds

There are four examples in the corpus of non-reducing uses of ἵστημι and its compounds. They involve ἵστημι and παρίστημι. Of the former there is one example:

> [180] νῦν οὖν εἰ μὲν φθάνεις **τὸν ἀνδριάντα ἑστακώς**, ἑστάτω. (Jos. *AJ* 18.301)
>
> So now, if you **have** already **set up the statue**, let it stand.

Of παρίστημι there are three examples, one of which is given here:[212]

> [181] τὸν δ' ὥσπερ ἀγωνιάσαντα, μὴ νόθος υἱὸς εἶναι δόξειεν Ἡρώδου… καὶ
> **τοσαῦτα** μὲν **παρεστακέναι θύματα** περὶ τῆς ἀρχῆς τῷ θεῷ… (Jos. *BJ*
> 2.89)
>
> But he, as though he were anxious not to appear to be an illegitimate son of
> Herod… **set up so many sacrifices** to God for his rule…

Note that in all non-reducing cases, the special stem ἑστακ-, and not ἑστηκ-/ἑστ-, is used.[213]

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[212] Parallels for παρεστακ-: Jos. *AJ* 16.98 and Plb. 3.94.7.

[213] Compare these TRANSITIVE usages with that given for the root stem of ὑφίστημι in the previous section.

πείθω

There are two examples of a non-reducing perfect active stem of this verb. The first is in Plutarch:

> [182] ὁρῶν δὲ Τολμίδην τὸν Τολμαίου… **πεπεικότα** τῶν ἐν ἡλικίᾳ **τοὺς ἀρίστους**
> καὶ **φιλοτιμοτάτους** ἐθελοντὶ στρατεύεσθαι… (Plu. *Per.* 18.2)
>
> And seeing Tolmides the son of Tolmaeus… of those who were of the right
> age **having persuaded the best** and **the most ambitious** to voluntarily
> take part in the campaign…

Here the SUBJECT Tolmides clearly plays an AGENT role to the men who are of the right age.

The second example is in Appian:

> [183] ἔπεσον δὲ καὶ τῶν χιλιάρχων τρεῖς οἳ τὸν στρατηγὸν μάλιστα **ἐπεπείκεσαν**
> ἐς τὴν μάχην. (App. *Pun*. 15.102)
>
> They fell, along with three of the centurions who **had** particularly
> **persuaded** the general to engage in the battle.

As in the case of ἀπόλλυμι and διαφθείρω, the perfect active stem used is not the root stem, but the kappatic stem.

πλήσσω

Only two perfect active forms of this verb are attested in the corpus. One is of the root stem, πεπληγ-, given above, and the other is the stem πεπληχ, given here:

> [184] ἐν μάχῃ τις ὅπου μὴ σίδηρος πληγεὶς παραχρῆμα μὲν ἀποθανὼν ἐκδικείσθω
> ταὐτὸν παθόντος τοῦ **πεπληχότος**. (Jos. *AJ* 4.277)
>
> In a fight if someone is struck by iron and immediately dies, retribution
> should fall on **the one who has done the striking** by suffering in the same
> way.

The participant labelled τοῦ πεπληχότος is the participant that must suffer the same punishment as the one who has died. It only makes sense to take the SUBJECT of πλήσσω as playing an AGENT role, the same role played by the SUBJECT in the equivalent non-perfect active construction. Again, then, as in the case of ἀπόλλυμι, διαφθείρω and πείθω, the non-reducing function is performed by a stem distinct from that used to perform the reducing function.

προσβάλλω

προσβάλλω constitutes an exception to the rule which has so far been followed, that the non-reducing function of the perfect is limited to a specific stem. In the previous section two examples were given of the stem προσβεβληκ- behaving in a valency-reducing way. However, the following example shows that the same stem is capable of performing both reducing and non-reducing functions:

> [185] **ταῦτα** γὰρ οὐκ οἶδ' ὅθεν συναγαγὼν ὥσπερ χολὴν **τἀνδρὶ προσβέβληκε**… (Plu. *Per.* 10.6)
>
> For these accusations **he has hurled** at the man, having dredged them up from I do not know where, as if it were bile.

Compare this with one of the valency-reducing examples:

> [186] … τὰς ὀγδοήκοντα Φοινίσσας τριήρεις, αἳ τῆς μάχης ἀπελείφθησαν, Ὕδρῳ **προσβεβληκέναι** πυθόμενος διὰ τάχους ἔπλευσεν… (Plu. *Cim.* 13.3)
>
> … [Cimon], having found out that the eighty Phoenician triremes, which had been left out of the battle, **had put in at Hydros**, quickly set sail…

ὑποστέλλω

The TRANSITIVE non-reducing use of the perfect active stem of this verb has already been discussed previously in the context of its labile transitivity (see exx. [76] and [77]). However, in the context of this discussion it is worth underlining the fact that, as in the case of προσβάλλω, the same perfect active stem is used in the non-reducing usage as in the reducing usage.

3.4.3. Analysis

3.4.3.1. General remarks

The overall distribution of non-reducing PASFs in verbs which otherwise demonstrate valency-reduction in the perfect active is summarised in the following table:

Table 15 - Non-valency-reducing uses of verbs with valency-reducing perfect active stems

Verb	Stem	Frequency
ἀπόλλυμι	ἀπολωλεκ-	17
διαφθείρω	διεφθαρκ-	10
ἐγείρω	ἐγηγηρκ-	1
ἵστημι	ἑστακ-	2
καθίστημι	καθεστακ-	2
παρίστημι	παρεστακ-	1
πείθω	πεπεικ-	2
πιστεύω	πεπιστευκ-	5
πλήσσω	πεπληχ-	1
προσβάλλω	προσβεβληκ-	1
ὑποστέλλω	ὑπεσταλκ-	1
Total		43

Comparing this table with Table 13, p. 110 above, which shows the valency-reducing uses of the perfect active stems, the following observations can be made:

1. The overall frequency of non-valency-reducing uses is much lower than the valency-reducing uses: 677 versus 43.
2. Many of the verbs with valency-reducing perfect active forms were not found to have non-valency-reducing forms within the corpus, specifically: ἀπαίρω, ἀπορρήγνυμι, ἐκφύω, ἐμβάλλω, ἐμφύω, καταπλήσσω, μεταβάλλω, παραβάλλω, παραρρήγνυμι, πήγνυμι, πτερόω and ῥήγνυμι.

3. For certain verbs for which non-reducing PASs were found to exist, specifically ἀπόλλυμι, διαφθείρω, ἵστημι, πείθω and πλήσσω, there is a complementary distribution in the function of different stems: the root stem is reserved for valency-reduction, while the kappatic stem is reserved for the non-reducing function.

4. Conversely, in the case of the remaining two verbs, προσβάλλω and ὑποστέλλω, the same perfect active stem is used both for the valency-reducing and the non-reducing function.

The following questions follow from these observations:

1. How significant is it that certain verbs have two separate stems denoting non-reducing and valency-reducing function respectively, e.g. ἀπόλλυμι, while certain others, e.g. ὑποστέλλω, may denote the two different functions with the same stem?

2. Of those verbs with only one perfect active stem attested in the corpus, how significant is it that two of them, ὑποστέλλω and προσβάλλω, are attested with both valency-reducing and non-valency-reducing usages, while the others are not?

3.4.3.2. Separation of function between root and kappatic/aspirated PAS in multi-PAS verbs

The full dataset with all instances of verbs with more than one stem found in the corpus is given at Appendix List 2. The quantity and nature of data provided in the present investigation allows for the application of statistical approaches, in the form of a chi-squared test. The question can in fact be asked two ways.

1. Given a larger corpus, what are the chances of finding the valency-reducing function performed by a kappatic stem, e.g. ἀπολωλεκ-, which appears, on the basis of the present corpus, to perform only a non-reducing role?

2. Given a larger corpus, what are the chances of finding the non-valency-reducing function being performed by a root stem, e.g. ἀπολωλ-, which appears, on the basis of the present corpus, to perform only a valency-reducing role?

If the answer to these questions is 'very unlikely', then the fact that other verbs, e.g. ὑποστέλλω, use the same stem to perform both functions is very interesting, while others, e.g. ἀπόλλυμι, use different stems. Conversely, if the answer to these questions is 'very likely', then it can be said not to be very significant that these two groups of verbs behave differently in this respect.

This question can be assessed using a chi-squared test, the aim of which is to test the independence of two categorical variables, namely the type of stem (whether root or kappatic/aspirated), and the capacity of the form to perform a valency-reducing function. For the purposes of the test, the null hypothesis is that there is no difference between the root stem, on the one hand, and the kappatic/aspirated stem of two-stem verbs, on the other, in terms of its capacity to perform a valency-reducing function. The following table gives the results of the chi-squared test. The expected frequencies and deviances are calculated according to the procedure outlined at §2.5.5. All calculated values are given to 3 significant figures.

Table 16 – χ² results for specialisation of the root ~ kappatic/aspirated stem for valency-reduction

Observed frequencies	Non-valency-reducing	Valency-reducing	Total
Root stem	36	0	36
Kappatic/aspirated stem	0	240	240
Total	36	240	276

Expected frequencies		
Root stem	4.70	31.3
Kappatic/aspirated stem	31.3	209

Deviances		
Root stem	202	30.3
Kappatic/aspirated stem	30.3	4.55

Total deviance (χ² statistic)	267 (3 s.f.)

The chi-squared statistic of 267 is much greater than the $p \leq 0.1\%$ critical value for the chi-squared distribution for one degree of freedom, 10.8. However, the expected frequency for non-reducing root stems is 4.70, lower than the threshold of 5 (see §2.5.6.2).[214] Nevertheless, there are no counterexamples within the corpus, and the expected frequency is very close to 5. The burden of proof is therefore heavily on anyone who wanted to assert that the there is no differentiation in function. It seems reasonable, therefore, to proceed, albeit tentatively, on the basis that the root stem, on the one hand, and the kappatic/aspirated stem on the other, function as separate valency-reducing and non-reducing stems.

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[214] My thanks to Robert Patterson for his advice in formulating conclusions from tests of statistical significance.

One should ask, however, why certain perfects, which have only a root stem, are not also attested with kappatic stems. Two explanations are possible:

1. A kappatic stem exists performing the non-reducing function, but it happens not to be attested in the present corpus.

2. The root stem performs both reducing and non-reducing functions, and it happens that no non-reducing instances are attested in the present corpus.

There is some evidence for the former situation in the case of πήγνυμι, which is attested with an aspirated stem in Aristonicus:[215]

> [187] οὐ δύναται δὲ ταχέως ἐληλυθέναι ἐπὶ τὴν Ῥόδον ὁ πρότερον μὲν ναῦς
>
> **πεπηχώς**... (Aristonicus *De signis Iliadis, Il.* 2.664)[216]
>
> The one who **had** previously **moored** his ships cannot have come quickly to Rhodes...

Here an aspirated stem of πήγνυμι is attested performing the non-valency-reducing role.

There is similar evidence for ἀνοίγνυμι:

> [188] καὶ **τὸ κεράμιον**
>
> **ἀνέῳχας**· ὄζεις, ἱερόσυλ', οἴνου πολύ. (Men. *Frag.* (Kock) 229.2)[217]
>
> And **you have opened the jar**; you smell, you temple-robber, very much of wine.

Conversely, there is evidence that the root stem of ἀναστρέφω can perform a non-reducing function in Cercidas, a third century BC poet:

> [189] τοὺς ζῶντας οὕτω, καὶ ἔτι μᾶλλον μισήσω,
>
> **ἀνέστροφαν** γὰρ τὴν ζόην ἡμῶν οὗτοι. (Cercidas, *Frag.* 17 col. 2, 30)[218]
>
> ... those who are living thus, still more I will hate, for they **have turned** our lives **upside down**.

---

[215] This stem is also attested in the grammarians, but the example in Aristonicus appears to be the only example in the Koine period of this stem in 'natural' usage, as attested in TLG.

[216] Text: Friedländer (1853).

[217] Text: Kock (1888).

[218] Text: Powell (1925).

In the case of other verbs, however, the evidence is inconclusive. For example, in the case of ῥήγνυμι and its compounds it has not been possible to identify either non-reducing uses of the root stem, or any kappatic/aspirated stem which could perform this function. Whether the attested root stem, or an unattested kappatic/aspirated stem, existed for this function in this period must, therefore, remain an open question at this point.[219]

To sumarise, two types of verb may be identified:

1. Verbs with two perfect active stems, one performing non-reducing, the other performing reducing function, e.g. ἀπόλλυμι, διαφθείρω.

2. Verbs with only one perfect active stem, able to perform both reducing and non-reducing functions, e.g. ἀναστρέφω.

There is possible evidence of a third type, where no separate non-reducing stem is attested, and where all the examples are valency-reducing, e.g. ῥήγνυμι, φύω. Whether or not this group in fact constitutes a third type, or whether it is simply chance that either no separate stem is attested, or no non-reducing use is attested, must remain an open question.

It is now time to discuss the other problem raised at §3.4.3.1, namely the apparent lack of non-reducing examples in verbs with only one perfect active stem. This will be dealt with in the following sub-section.

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[219] I have not been able to find any transitive examples of the perfect active of φύω. However, Wackernagel (1904, p. 7) suggests that there are examples in the Roman imperial period, although he gives no citations.

3.4.3.3. Lack of non-valency-reducing examples in verbs with one perfect active stem

The following table gives the frequencies of verbs with one stem in the perfect active and attested only as valency-reducing:

Table 17 - Verbs with valency-reducing perfect active stems, but without instances of non-reduction

Verb	Frequency of valency-reducing instances
ἀναστρέφω	2
ἀπαίρω	1
ἀπορρήγνυμι	3
διαρρήγνυμι	1
ἐκρήγνυμι	1
ἐμβάλλω	9
ἐνδίδωμι	1
ἐξαγριόω	2
ἐπιστρέφω	1
καταλύω	1
μεταβάλλω	1
παραρρήγνυμι	1
παρεμβάλλω	2
περιρρήγνυμι	1
πτερόω	1
ῥήγνυμι	1
συνασπίζω	3
TOTAL	32

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It is not possible to use a chi-squared test here because such a test needs at least two variables. In the present case, there is only one variable: the presence or absence of a valency-reducing instance. The other variable used previously, the nature of the stem, does not apply since, by definition, this set of verbs only have one perfect active stem. However, it is interesting to note that the vast majority of these verbs occur only a small number of times in the perfect active within the corpus.[220] On the face of it, it is reasonable to attribute the lack of non-reducing cases to the small number of examples. Given a bigger corpus, one might expect to find non-reducing instances.

Such a conclusion is supported by examples from outside the corpus, of perfect actives of verbs in this group performing non-reducing function:[221]

> [190] … δουλοπρεποῦς γὰρ καὶ σφόδρα ἀνελευθέρου ψυχῆς **τὰ ἐπιτηδεύματα μεταβεβληκυίας** εἰς ἀγριότητα καὶ θηρίων φύσιν. (Philo *De virtutibus* 87)[222]
>
> … for with a slavish and unfree soul **which has changed its ways** to savagery and a feral nature…

> [191] … Κορίνθιοι **καταλελυκότες** τὴν ἐν Συρακούσαις **τυραννίδα**, καὶ τὸν τύραννον ἐξεληλακότες, καλοῦσι Συρακουσίους καὶ τῶν ἄλλων Σικελιωτῶν τὸν βουλόμενον οἰκεῖν τὴν πόλιν ἐλευθέρους καὶ αὐτονόμους… (Plu. *Timoleon* 23.1f.)[223]
>
> … the Corinthians, **having dismantled the tyranny** in Syracusae, and having driven out the despot, called the Syracusans, as well as those of the Siceliots who wanted to, to live in the city free and independent…

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[220] The exception is ἐμβάλλω.

[221] Parallel: παραβέβληκας (Plu. *Quaestiones convivales* 735 c 9), where παραβάλλω carries the meaning 'to compare'.

[222] Text: Cohn (1906).

[223] Text: Perrin (1918).

The perfect active may very well perform a non-reducing function in causative COS verbs with only one perfect active stem. It follows from this, that valency-reduction may not be regarded as a function of the perfect active stem *per se*; given a large enough corpus, one should expect to find non-reducing instances of those stems not attested with them in the present corpus. Nevertheless, the high frequency of valency-reducing instances as compared with non-valency-reducing instances is noteworthy, and suggests a tendency for the perfect active to be found to be valency-reducing if at all possible. In order to pursue this, however, the distribution of perfect active stems must be compared with that of other active forms to establish to what extent this is a phenomenon which is peculiar to the perfect active stem.

3.4.4. Conclusion

This section has demonstrated that some verbs with valency-reducing PASFs also have non-valency-reducing PASFs. There are two groups. In the first, including verbs such as ἀπόλλυμι, two perfect active stems are attested: the non-valency-reducing function is performed by the kappatic/aspirated stem, while the root stem performs the valency-reducing function. In the second group, comprising the verbs προσβάλλω and ὑποστέλλω, valency-reducing and non-reducing functions are performed by the same stem. Such a hypothesis was confirmed by the presence outside the corpus of perfect actives from verbs with only one PAS performing a non-valency-reducing function.

A tendency was, however, found for the perfect active stem to be valency-reducing rather than non-reducing. To establish how significant an observation this is, valency-reduction outside of the perfect active system must be investigated. It is to this that I now turn.

3.5. Non-perfect active forms

3.5.1. Introduction

The present sub-section sets out to address two questions. First, certain verbs have dedicated reducing and non-reducing perfect active stems. Two explanations for this are *a priori* possible:

1. Dedicated valency-reducing/non-reducing perfect active stems are purely lexicalised fossils in certain verbs, and unpredictable on synchronic grounds.
2. The presence of dedicated valency-reducing/non-reducing perfect active forms is part of the verb system synchronically, and predictable based on the behaviour of participating verbs in other parts of the verbs system.

This sub-section aims to ascertain which of these explanations is correct.

Secondly, it has been noted that there is a strong tendency for the perfect active of causative COS verbs to be used in a valency-reducing way. Here again, two explanations are *a priori* possible. Preference for valency-reduction in the active is:

1. A feature of these verbs generally. There is nothing special about the perfect active stem, and the observation is therefore inconsequential for the question of the semantic value of the perfect active stem.
2. A feature of the perfect active stem specifically. In this case this behaviour could be highly significant for establishing the semantic content of the perfect active stem.

In §3.5.2 the verbs discussed previously at §3.3.2 and §3.4.2 are once again examined for the capacity of their non-perfect active forms to behave in a valency-reducing fashion. This is followed at §3.5.3 with an overall analysis of all relevant verbs, before conclusions are drawn at §3.5.4.

Forms included in this part of this investigation were imperfective and perfective stem forms of verbs with attested valency-reduction in the perfect active. In addition to infinitives (see §3.1.3) future forms were also excluded from quantitative parts of the investigation.

3.5.2. Lexical analysis

By definition, all perfects with valency-reducing PASFs have non-reducing non-perfect active forms. This was demonstrated for a number of verbs above at §3.3.2. It is yet to be established, however, to what extent these verbs also demonstrate valency-reduction outside the perfect active.

It turns out that three types of verbs can be distinguished:

1. Verbs with non-perfect active stems limited to non-reducing function;
2. Verbs with perfective active stems specialised for valency-reducing/non-reducing roles, but whose imperfective stem is limited to playing a non-reducing role;
3. Verbs with non-perfect active stems able to perform both valency-reducing and non-valency-reducing function.

In the paragraphs that follow I will illustrate each of these types.

3.5.2.1. Verbs with non-perfect active stems limited to non-reducing function

Verbs in this category include ἀνοίγνυμι, ἀπόλλυμι, διαφθείρω, πείθω, πλήσσω, καταπλήσσω and ῥήγνυμι. The non-perfect active forms of these verbs are not attested performing a valency-reducing function. For each of these verbs examples have been given §3.3.2 of non-perfect active forms playing a non-reducing role. However, for these verbs, unlike the perfect, the non-perfect active forms are not attested playing a valency-reducing function, even where an OBJECT complement is not supplied. Consider the following example of the imperfect active of ἀπόλλυμι:

[192] παίων γάρ, ὡς ἔοικε, τῇ κεφαλῇ **τοὺς ἐντυγχάνοντας** ὁ Τέρμερος **ἀπώλλυεν**. (Plu. *Thes.* 11.2) [224]

For striking, as it seems, **those whom he met** on the head, Termerus **would kill them**.

---

[224] Syntactically similar examples include Jos. *Vit.* 333. Jos. *AJ* 4.287 (χρησάμενος δὲ κἂν ἐλαχίστῳ μέρει τῶν πεπιστευμένων ἂν **ἀπολέσας** τύχῃ τὰ λοιπὰ πάντα ἃ ἔλαβεν ἀποδοῦναι κατεγνώσθω), although in these cases ἀπόλλυμι has the sense 'to lose'.

Here it is clear that τοὺς ἐντυγχάνοντας is first and foremost the OBJECT complement to παίων. However, it must also function as the OBJECT complement to ἀπώλλυεν, since Termarus is doing the killing, not being killed. The same may be paralleled for each of the verbs in this group:

[193] καὶ τῶν φυλάκων, ὥσπερ ἔθος ἦν, **ἀνοιξάντων**, οἱ μὲν συνεσελθόντες αὐτῷ τοὺς **ἀνοίξαντας** αὐτίκα διεχρῶντο... (App. *Hann.* 6.32)[225]

And when the guards, as was their custom **had opened** [the gates], those who had come with him straight away killed those who **had done the opening**...

[194] ὁ δὲ Λυκομήδης, εἴτε δείσας τὴν δόξαν τοῦ ἀνδρός, εἴτε τῷ Μενεσθεῖ χαριζόμενος, ἐπὶ τὰ ἄκρα τῆς χώρας ἀναγαγὼν αὐτόν, ὡς ἐκεῖθεν ἐπιδείξων τοὺς ἀγρούς, ὦσε κατὰ τῶν πετρῶν καὶ **διέφθειρεν**. (Plu. *Thes.* 35.4)[226]

Lycomedes, whether out of fear of the man, or doing a favour for Menestheus, led him up to the highest point of the land, so as to show him the fields, pushed him down the rocks and **killed** [him].

[195] ἔπειτ' ἀναβλέψαι μὲν εἰς τὴν δύσιν, θεάσασθαι δὲ τράγον ἀπ' αὐτῆς δι' ἀέρος φερόμενον συρράξαντα τῷ κριῷ καὶ τοῖς κέρασι **ῥήξαντα** δὶς καταβαλεῖν αὐτὸν ἐπὶ τὴν γῆν καὶ πατῆσαι. (Jos. *AJ* 10.270)[227]

[He said that] then he looked up towards the west, and that he saw a goat being carried from there through the air. The goat attacked the ram and **struck** [it] [lit. broke it] twice with his horns, throwing it on the ground and trampling it.

[196] ὡς δὲ **κατέπληξεν**, ἐς τὸ τῶν Διοσκούρων ἱερὸν παρῆλθε, τὸν Κίνναν ἐκτρεπόμενος. (App. *BC* 1.8.64) [228]

When he **had struck fear** [into them], he entered the temple of the Dioscouri, pushing out Cinna.

---

[225] cf. App. *BC* 2.19.138 (τίς... ἤνοιγε τὰ ταμιεῖα;).

[226] cf. App. *BC* 2.13.92 (Σαλούστιον Κρίσπον πεμφθέντα... διέφθειραν), Jos. *AJ* 16.45 (χρήματα... διαφθείροντες).

[227] cf. Jos. *BJ* 4.543 (ῥήξας τὸ τεῖχος). No parallels with the imperfective stem.

[228] cf. App. *BC* 2.16.116 (τοὺς μὲν ἥ τε ὄψις... κατέπλησσε), App. *BC* 4.2.8 (τὰς δὲ καταπλήξαντες).

[197] βοῦν τοῖς κέρασι **πλήττοντα** ὁ δεσπότης ἀποσφαττέτω. (Jos. *AJ* 4.281)[229]

A master should kill an ox which **strikes** with its horns.

[198] οὐ **πείθων** δ' ἐς οὐδέτερα ἐκ Γαλατίας ἤλαυνεν ἐπὶ τὸν Πομπήιον ἐς τὴν πατρίδα... (App. *BC* 1.0.4)[230]

[Caesar] not **managing to persuade** [Pompey] to either proposal, he marched against Pompey, into home territory...

3.5.2.2. Verbs with specialised valency-reducing/non-reducing perfective stems

The principal verbs in this category are ἵστημι (along with its compounds), ἐπιβαίνω and φύω (and its compounds). The root stem, where this is distinguishable from the sigmatic stem,[231] is always valency-reducing, while the sigmatic stem is non-reducing. In the case of ἵστημι and φύω, the imperfective stems of these verbs are always used in a non-reducing way. In the case of ἐπιβαίνω, the imperfective stem is always valency-reducing.

The aorist of ἐπιβαίνω may be used with valency-reducing sense, but only ever with the root stem:

[199] ὁ δὲ Πομπήιος ἐκ Λαρίσσης ὁμοίῳ δρόμῳ μέχρι θαλάσσης ἐπειχθεὶς σκάφους **ἐπέβη** σμικροῦ... (App. *BC* 2.12.83)

Pompey, driven from Larissa on the same course as far as the sea **embarked** on a small ship...

The imperfective stem is always valency-reducing:

[200] ὁρῶν δὲ καὶ τούτους ἀπογιγνώσκοντας ἑαυτῶν ἔδεισε περὶ ἐκδόσεως καὶ ἔφευγεν αὖθις, **ἐπιβαίνων** σκάφους. (App. *BC* 2.15.105)

Seeing that they were giving up on themselves he feared surrender, and fled immediately, **getting on** a ship.

The non-reducing sense provided by ἐπιβιβάζω and ἐπιβάσκω.[232]

---

[229] cf. App. *BC* 2.16.117 (πολλοὶ... ἀλλήλους ἔπληξαν), Jos. *AJ* 3.37 (ὁ Μωυσῆς πλήττει τῇ βακτηρίᾳ).

[230] cf. Jos. *AJ* 1.216 (ἔπειθεν τὸν Ἄβραμον), Jos. *AJ* 6.252 (ὑμᾶς ταῦτα πείσαντος).

[231] The third person plural indicative of the root stem is the same formally as the third person plural of the sigmatic stem, e.g. ἐπέβησαν, ἔστησαν. These must be distinguished through analysis of their syntax on a case by case basis.

[232] See LSJ *ad loc.* B. There appear to be no examples of these forms in the corpus.

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Reducing uses of ἵστημι are similarly well attested in the corpus.[233] However, as in the case of ἐπιβαίνω, this is only attested in the root stem of the perfective:

> [201] ἐπεὶ δ' οὖν εἰσήχθη πρὸς βασιλέα καὶ προσκυνήσας **ἔστη** σιωπῇ… (Plu. *Them.* 28.1)
>
> So when he was led to the King, he bowed and **stood** in silence…

The imperfective active stem is always non-reducing:[234]

> [202] **ἵστη** δὲ **πρώτους** μὲν **τοὺς ἐλέφαντας**… (App. *Pun.* 7.40)
>
> **He put the elephants first in line**…

Finally, φύω is also valency-reducing in the root stem:[235]

> [203] **ἔφυ** δὲ καὶ τὸ σῶμα μέγας τε καὶ εὔρωστος ἐς γῆρας πολύ… (App. *Pun.* 16.106)
>
> His body **was** both tall and he was strong up to a great age…

3.5.2.3. Verbs with labile non-perfect active stems

Verbs in this category include βάλλω (+ compounds), συνασπίζω, and ὑποστέλλω. Consider first συνασπίζω. An (imperfective) non-reducing example is given at [170] above. The following is a valency-reducing example:[236]

> [204] … ἅμα τῷ τὴν πρώτην διαβῆναι σημαίαν βραχέα ταύτης καταπειράσαντες οἱ τῶν Αἰτωλῶν ἱππεῖς, ἐν τῷ ταύτην τε μεῖναι **συνασπίσασαν**… ἀπεχώρουν πρὸς τὴν πόλιν. (Plb. 4.64.6f.)
>
> … at the same time as the first [company] crossed, the Aetolian horse attacked for a short time, while the first company remained, **their shields locked together**, and [so] they retreated to the city…

---

[233] As previously, ἵστημι is used to illustrate all compounds of ἵστημι.

[234] cf. [149].

[235] For the non-reducing use of the imperfective stem see n. 207.

[236] cf. Jos. *AJ* 5.50 (συνασπίσαντας αὐτοῖς), App. *BC* 4.3.14 (συνήσπιζον ἀλλήλοις).

It is not the case, however, that these verbs need be valency-reducing if there is no direct OBJECT complement overtly expressed for the verb in question. Consider the following example of ἐμβάλλω, where the SUBJECT plays an AGENT role, but with no overt OBJECT:[237]

> [205] ὁ δὲ δῆμος αὐτῶν τὰς οἰκίας διήρπαζε, καὶ τοὺς συμφρονήσαντας ὁ Ὀπίμιος συλλαβὼν ἐς τὴν φυλακὴν **ἐνέβαλέ** τε καὶ ἀποπνιγῆναι προσέταξε. (App. *BC* 1.3.26)
>
> The people began plundering their houses, and Opimius arrested the conspirators and **threw** them into the prison, and ordered them to be strangled.

ἐνέβαλε is clearly non-reducing here, since Opimius does not enter the prison. However, such a situation is not the norm. Indeed, compounds of βάλλω, including ἐμβάλλω, are frequently valency-reducing, as in the following case:

> [206] δρόμῳ δ' ἀπαύστῳ χρώμενος τὸν μὲν Εὐφράτην ὑπερῆλθεν ἡμέρᾳ μάλιστα τετάρτῃ, τρισὶ δ' ἄλλαις καθιστάμενος καὶ ὁπλίζων τοὺς συνόντας ἢ προσιόντας ἐς τὴν Χωτηνὴν Ἀρμενίαν **ἐνέβαλεν...** (App. *Mith.* 15.101)
>
> With a ceaseless advance he crossed the Euphrates on the fourth day, and in three more days, while establishing himself and arming those who were with him and coming to join him, **he invaded** Chotene Armenia...

Compare the use of μεταβάλλω. [137] gives a non-reducing example.[238] The following case, in which Josephus uses the aorist active of μεταβάλλω to describe Lot's wife turning into a pillar of salt, is non-reducing:[239]

> [207] ἡ δὲ Λώτου γυνὴ... εἰς στήλην ἁλῶν **μετέβαλεν**... (Jos. *AJ* 1.203)
>
> Lot's wife... **turned** into a pillar of salt...

---

[237] cf. Plu. *Alc.* 20.3 (τοὺς μὲν ὁπωσοῦν ἐπαιτιαθέντας ἐνέβαλλον ἀκρίτους εἰς τὸ δεσμωτήριον); App. *Mith.* 7.48 (Ζηνόβιον μὲν ἐς τὸ δεσμωτήριον ἐμβαλόντες ἔκτειναν).

[238] cf. App. *Hisp.* 14.85 (αὐτοὺς ἐς σωφροσύνην μετέβαλλεν).

[239] cf. App. *BC* 2.11.77 (ἡ μὲν ἐκκαίουσα καὶ τυφλοῦσα πάντας φιλοτιμία ἐσβέννυτο καὶ μετέβαλλεν ἐς δέος).

Similarly, many examples may be given of INTRANSITIVE valency-reducing use of προσβάλλω, which was also attested as labile in the perfect.[240] In many cases the verb carries the sense 'to attack', for example:[241]

> [208] **προσβάλωμεν** τοῖς πολεμίοις, ἔλεγε… (Jos. *AJ* 6.110)
>
> **Let us attack** the enemy, he said…

However, the valency-reducing use of the verb is not restricted to the sense 'to attack'; it may also be used in the sense 'to approach'. In the following example Plutarch uses this verb to describe the way in which the first news of Nicias' defeat at Syracuse:

> [209] ὁ δὲ κουρεὺς ἀκούσας, πρὶν ἄλλους πυνθάνεσθαι, δρόμῳ συντείνας εἰς τὸ
> ἄστυ καὶ **προσβαλὼν** τοῖς ἄρχουσιν εὐθὺς κατ' ἀγορὰν ἐνέβαλε τὸν λόγον.
> (Plu. *Nic.* 30.1)
>
> The barber, when he heard what had happened, before anyone else could
> find out, made haste to the lower town, and, **approaching** the archons,
> immediately set the news stirring in the market.

Finally consider the case of ὑποστέλλω, whose perfect active was shown to be labile at [76] and [77]. A non-reducing example of the perfective stem is given at [172]. The following is a valency-reducing example:

> [210] οἱ δὲ τῶν Αἰτωλῶν ἱππεῖς, διανύσαντες τὸ πεδίον, ἅμα τῷ συνάψαι τοῖς
> πεζοῖς αὐτοὶ μὲν ὑπὸ τὴν παρώρειαν **ὑποστείλαντες** ἔμενον… (Plb. 4.12.4)
>
> But when the Aetolian cavalry, having crossed the plain, met the infantry,
> they **headed off for refuge** under the hill and stayed there…

3.5.3. Quantitative Analysis

3.5.3.1. General remarks

From the foregoing analysis three groups of non-perfect active stems may be distinguished:

1. Verbs with non-perfect active stems limited to non-reducing function, e.g. ἀπόλλυμι.
2. Verbs with specialised valency-reducing/non-reducing stems, e.g. ἵστημι.

---

[240] For non-reducing examples, cf. [139], and also Jos. *BJ* 6.2 (λοιμώδη προσέβαλλεν ὀσμὴν).

[241] cf. App. *Hann.* 7.43 (τοῖς Καπυαίοις προσέβαλλον).

3. Verbs with labile non-perfect active stems, able to perform both valency-reducing and non-valency-reducing function, e.g. προσβάλλω.

It was not feasible to analyse every single instance of non-perfect active forms of the relevant verbs. Consequently a random sample was taken according to the principles laid out at §2.5.6 above.

3.5.3.2. Dedicated valency-reducing/non-reducing stems in the perfect

The question to address here is as follows. Certain verbs, such as ἵστημι, have dedicated reducing and non-reducing perfect active stems. Two explanations for this are *a priori* possible:

1. Dedicated valency-reducing/non-reducing perfect active stems are purely lexicalised fossils in certain verbs, and unpredictable on synchronic grounds.
2. The presence of dedicated valency-reducing/non-reducing perfect active forms is part of the verb system synchronically, and predictable based on the behaviour of participating verbs in other parts of the verbs system.

This sub-section sets out to determine which of these explanations is correct. That there could be a connection between the behaviour of verbs in the perfect and outside of it is suggested by the fact that ἵστημι has two stems in the aorist, one of which is valency-reducing, the other of which is non-reducing. However, this is not conclusive, since compounds of φύω as well as ἐπιβαίνω also have two stems in the aorist, but, at least in the present corpus, there is no evidence of the presence of two perfect stems.

To establish whether or not a connection does exist, a random sample of 200 non-perfect active forms was taken of verbs with valency-reducing perfect active stems. The verbs included in the dataset from which the random sample was chosen met the following criteria.

1. The verb must have only one stem in non-perfect active forms (i.e. verbs like ἵστημι were excluded).
2. At least one non-perfect active form within the corpus demonstrates a non-valency-reducing function.
3. The perfect active stem demonstrates valency-reduction.

The non-perfect active stems considered were the perfective and the imperfective. The future stem was not investigated. In addition, infinitives were excluded because of the difficulty of establishing categorically the identity of the SUBJECT in accusative and infinitive clauses in many cases (see §3.1.3).

The full dataset underlying this part of this investigation may be found at Appendix List 3. A summary of the results are given in the following table:

Table 18 - Frequency data giving valency-reduction of non-perfect active forms of verbs with valency-reducing PASFs

	Non-reducing	Reducing	Indeterminate[242]	TOTAL
ἀναστρέφω	1	9	0	10
ἀνοίγνυμι	7	0	0	7
ἀπαίρω	0	3	0	3
ἀπόλλυμι	3	0	0	3
ἀπορρήγνυμι	1	0	0	1
διαρρήγνυμι	1	0	0	1
διαφθείρω	36	0	0	36
ἐγείρω	7	0	0	7
ἐμβάλλω	8	18	0	26
ἐνδίδωμι	3	11	0	14
ἐπιστρέφω	4	5	0	9
καταλύω	6	1	0	7
καταπλήσσω	3	0	0	3
μεταβάλλω	4	3	0	7
παρεμβάλλω	0	1	0	1
πείθω	31	1	1	33
πήγνυμι	1	0	0	1
πιστεύω	0	14	0	14
πλήσσω	4	0	0	4
προσβάλλω	0	9	0	9
πτερόω	1	0	0	1
ῥήγνυμι	1	0	0	1
συνασπίζω	0	2	0	2
TOTAL	122	77	1	200

---

[242] Indeterminate examples, those in the third column, are those where it was judged not possible with certainty to identify whether or not the instance was valency-reducing.

Considering the examples from the first two columns only,[243] two groups can be identified from the above table:

1. Verbs demonstrating lability in their single non-perfect active stems:
2. Verbs not demonstrating lability in their single non-perfect active stems.

The question to establish is whether there may be said to be a relationship between the lability of one or more non-perfect active stems, and the presence of dedicated reducing/non-reducing active stems in the perfect. The following table gives the same data, grouped according to the number of active stems present in the perfect, minus the indeterminate cases:

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[243] See n. 242.

Table 19 - Frequency data giving valency-reduction of non-perfect active forms of verbs with valency-reducing PASFs, by number of stems in the perfect active

Number of perfect active stems	Lemma	Non-reducing	Reducing	TOTAL
	ῥήγνυμι	1	0	1
	διαρρήγνυμι	1	0	1
	καταλύω	6	1	7
	ἐμβάλλω	8	18	26
	μεταβάλλω	4	3	7
	ἀναστρέφω	1	9	10
	ἐνδίδωμι	3	11	14
	ἀπαίρω	0	3	3
	παρεμβάλλω	0	1	1
	πιστεύω	0	14	14
	ἐπιστρέφω	4	5	9
	ἀπορρήγνυμι	1	0	1
	προσβάλλω	0	9	9
	πτερόω	1	0	1
	συνασπίζω	0	2	2
1	SUBTOTAL	30	76	106
	ἀνοίγνυμι	7	0	7
	πήγνυμι	1	0	1
	ἐγείρω	7	0	7
	διαφθείρω	36	0	36
	πείθω	31	1	32
	πλήσσω	4	0	4
	καταπλήσσω	3	0	3
	ἀπόλλυμι	3	0	3
2	SUBTOTAL	92	1	93
TOTAL		122	77	199

It is striking that there are no examples of valency-reducing behaviour among the non-perfect active stems of verbs with two perfect active stems. This is strongly suggestive of a relationship between the verb system outside of the perfect, and the presence of specialised valency-reducing/non-reducing stems in the perfect active.

However, it is important to establish the chances of such a distribution being accidental. This is to be achieved, as before, by means of a chi-squared test. As before, the aim is to test the independence of two variables, this time the number of stems the verb has in the perfect, and the valency-reducing behaviour of its non-perfect examples. Here the null hypothesis is that verbs with two perfect active stems have an equal chance of showing lability in their non-perfect active stems as verbs with only a single perfect active stem. The results of the chi-squared are given in the following table, with the expected frequencies and deviances calculated as in the previous chi-squared test.

Table 20 – χ² test results of non-perfect active forms of verbs with valency-reducing PASFs by number of perfect active stems

Observed frequencies	Non-valency-reducing	Valency-reducing	Total
1 perfect active stem	30	76	106
2 perfect active stems	92	1	93
Total	122	77	199

Expected Frequencies		
1 perfect active stem	65.0	41.0
2 perfect active stems	57.0	36.0

Deviances		
1 perfect active stem	18.3	29.0
2 perfect active stems	20.9	33.0

Total deviance (χ² statistic)	101 (3 s.f.)

The chi-squared statistic of 101 is greater than the $p \leq 0.1\%$ critical value for the chi-squared distribution for one degree of freedom, 10.8. This means that, assuming that the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is less than 0.1%. Given that this value is very small, the null hypothesis at the 100-0.1% level is rejected. The lability of non-perfect active stems is highly correlated with the presence of a dedicated valency-reducing stem in the perfect active.

This finding strongly suggests that the presence of specialised valency-reducing/non-reducing stems in the perfect active is not the accidental residue of a former stage of the language, but is rather predictable based on purely synchronic considerations.

3.5.3.3. Ratio of reducing to non-reducing usages

I turn now to the observation that the ratio of non-reducing to reducing uses among verbs attested with valency-reduction with one active stem, is higher in the case of non-perfect active stems than is the case for perfect active stems. The full dataset may be found at Appendix List 4.[244] The following table gives a summary of the results.

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[244] The dash sign (-) in Appendix List 4 denotes that the transitivity of the respective instance was indeterminate. See n. 242.

Table 21 - Frequency data comparing valency-reducing behaviour of PASFs with that of non-perfect actives, of verbs with one stem in both the perfect and non-perfect actives

Perfect / Non-perfect	Lemma	Non-reducing		Reducing		Indeterminate	TOTAL
		Pres.	Aor.	Pres.	Aor.		
	ῥήγνυμι	0	6	0	0	0	6
	διαρρήγνυμι	1	5	0	0	0	6
	καταλύω	4	30	0	4	0	38
	ἐκρήγνυμι	0	1	0	0	0	1
	ἐμβάλλω	12	50	10	83	2	157
	μεταβάλλω	6	12	1	12	2	33
	ἀναστρέφω	4	1	23	26	3	57
	ἐνδίδωμι	11	8	27	28	10	84
	ἐξαγριόω	0	0	0	5	0	5
	ἀπαίρω	1	1	2	23	0	27
	παρεμβάλλω	1	12	0	6	0	19
	περιρρήγνυμι	0	1	0	0	0	1
	πιστεύω	2	9	58	42	1	112
	ἐπιστρέφω	13	11	10	8	0	42
	ἀπορρήγνυμι	3	6	0	0	0	9
	ὑποστέλλω	0	2	0	1	0	3
	προσβάλλω	2	5	18	38	1	64
	συνασπίζω	1	0	2	3	0	6
Non-perfect	SUBTOTAL	61	160	151	279	19	670
			221		430	19	670

	ῥήγνυμι	0	1	0	1
	διαρρήγνυμι	0	1	0	1
	καταλύω	0	1	0	1
	ἐμβάλλω	0	8	0	8
	μεταβάλλω	0	1	0	1
	ἀναστρέφω	0	2	0	2
	ἐνδίδωμι	0	1	0	1
	ἐξαγριόω	0	2	0	2
	ἀπαίρω	0	1	0	1
	παραρρήγνυμι	0	1	0	1
	παρεμβάλλω	0	1	0	1
	περιρρήγνυμι	0	1	0	1
	πιστεύω	4	22	0	26
	ἐπιστρέφω	0	1	0	1
	ἀπορρήγνυμι	0	2	0	2
	ὑποστέλλω	1	1	0	2
	προσβάλλω	1	1	0	2
	πτερόω	0	1	0	1
	συνασπίζω	0	2	0	2
Perfect	SUBTOTAL	6	51	0	57
TOTAL		228	480	19	727

The percentage of non-reducing examples among PASFs is $\frac{6}{57} \times 100 = 10.5\%$, while for present and aorist stems it is $\frac{61}{212} \times 100 = 28.8\%$ and $\frac{160}{439} \times 100 = 36.4\%$ respectively. This is to say that in stems showing valency-reduction, it appears to be much more likely that a perfect active stem will be valency-reducing than a non-perfect active form. It is important to establish if this difference is statistically significant. In this case the aim is to test the independence of the aspect stem (perfect or non-perfect) with respect to its valency-reducing behaviour. The null hypothesis is that non-perfect active and perfect active forms have an equal chance of behaving in a valency-reducing way. The results of the chi-squared test are given in the following table.

Table 22 - χ^2 test results for distribution of valency-reduction and non-reduction in perfect and non-perfect active stem forms

Observed frequencies	Non-valency-reducing	Valency-reducing	Total
Non-perfect	221	430	651
Perfect	6	51	57
Total	227	481	708

Expected Frequencies		
Non-perfect	209	442
Perfect	18	39

Deviances		
Non-perfect	0.664	0.314
Perfect	7.59	3.58

Total deviance (χ^2 statistic)	12.1 (3 s.f.)

The chi-squared statistic of 12.1 is great than the $p \leq 0.1\%$ critical value for the chi-squared distribution for one degree of freedom, 10.8. This means that, assuming that the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is less than 0.1%. Since this value is very low, the null hypothesis is rejected: PASFs of these verbs are more likely to be valency-reducing than their non-perfect counterparts.

Compare this with the results of a chi-squared test carried out on the perfective and imperfective-stem data. Here the equivalent null hypothesis is that aorist and present active stem forms have an equal chance of being valency-reducing.

Table 23 - χ² test results for distribution of valency-reduction and non-reduction in imperfective and perfective active stem forms

Observed frequencies	Non-valency-reducing	Valency-reducing	Total
Imperfective stem	61	151	212
Perfective stem	160	279	439
Total	221	430	651

Expected Frequencies		
Imperfective stem	72.0	140
Perfective stem	149	290

Deviances		
Imperfective stem	1.52	0.783
Perfective stem	0.735	0.378

Total deviance (χ² statistic)	3.42 (3 s.f.)

The chi-squared statistic of 3.42 is lower than the $p \leq 0.5\%$ critical value for the chi-squared distribution for one degree of freedom, 3.84. This means that, assuming that the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is greater than 5%. Since this value is higher than the threshold adopted for statistical significance, the null hypothesis is not rejected: perfective and imperfective active stems have an approximately equal chance of being valency-reducing.

3.5.4. Conclusion

The following table summarises the types of transitivity behaviour observed in the Greek perfect active:

Table 24 - Transitivity of perfect actives

	TRANSITIVE	Valency-reducing	Specialised forms for valency-reducing and non-valency-reducing
ἀγαπάω, πιστεύω, τρέχω, ποιέω, ἀναιρέω	Yes	No	-
ὑποστέλλω, παραβάλλω, ὁρμάω	Yes	Yes	No
ἀπόλλυμι, πήγνυμι, ἵστημι	Yes	Yes	Yes

This section has returned two major findings:

1. There is a strong link between the capacity of non-perfect active forms to behave in a valency-reducing way, and the presence of a dedicated non-reducing perfect active stem, such that if a verb has two perfect active stems, its non-perfect active forms do not reduce valency.

2. Among those stems showing a capacity for valency-reduction, it is much more likely to find valency-reducing perfect active forms than non-perfect forms.

Two further conclusions suggest themselves:

1. The presence of multiple active stems in the perfect is related to the treatment of labile transitivity elsewhere in the active system: if a verb is capable of labile transitivity outside the perfect, it will be capable of it in the perfect active. However, if a verb is not capable of labile transitivity outside of the perfect active, a dedicated form is required for such a function in the perfect active.

2. Something in the semantics of the perfect ties it strongly to the reducing reading of a form showing a capacity for labile transitivity.

3.6. Implications for post-Classical Greek

3.6.1. Introduction

This investigation has identified two groups of causative COS verbs:

1. Verbs exhibiting labile transitivity throughout the active paradigm, including the perfect active;
2. Verbs with specialised active forms with the capacity for valency-reduction, or without valency-reduction altogether.

Such a finding raises the following questions regarding post-Classical Greek:

1. Is there any systematic semantic consideration which accounts for the division into two types?
2. What is the place of the specialised perfect active stem within the verb system?

These questions will be addressed in turn.

3.6.2. Semantic grounds for distinguishing two kinds of state verbs

In order to see if there might be a systematic semantic difference beween the two types of verbs, it helps to place them next to each other:

Table 25 - Possible semantic grounds for distinguishing between valency-reducing and non-reducing active forms

	Lemma	Gloss	Type of COS
Specialised valency-reducing active forms	ἐπιβαίνω	'to put on board'	COL
	ἀνοίγνυμι	'to open'	CON
	ἀπόλλυμι	'to destroy; to lose'	CON
	διαφθείρω	'to destroy'	CON
	ἐγείρω	'to raise'	CON
	-ίστημι	'to set up'	CON
	πήγνυμι	'to fix; to freeze'	CON
	-πλήσσω	'to strike'	CON
	-ρήγνυμι	'to break off'	CON
	-φύω	'to generate, to produce'	CON
Full labile transitivity	ἀναστρέφω	'to turn back'	COL
	ἀπαίρω	'to remove'	COL
	ἐμβάλλω	'to throw in/at'	COL
	ἐνδίδωμι	'to give in'	COL
	ἐπιστρέφω	'to return'	COL
	παραβάλλω	'to put alongside'	COL
	προσβάλλω	'to put in/against'	COL
	ὑποστέλλω	'to send behind'	COL
	ἐξαγριόω	'to make angry'	CON
	καταλύω	'to disband'	CON
	μεταβάλλω	'to change'	CON
	πτερόω	'to furnish with feathers/wings'	CON
	συνασπίζω	'to form a *testudo*'	CON

It is tempting to see here partial semantic grounds for the distribution. Specifically, all but one of the verbs in the first group, those with either no or only partial labile transitivity, describe change of nature events (the exception being ἐπιβαίνω).[245] The opposite tendency, for full labile transitivity to occur with COL verbs, is less pronounced.

3.6.3. Place of the specialised valency-reducing perfect active stem within the verb system

I now turn to the place of the specialised valency-reducing perfect active stem in the rest of the active paradigm. I discuss and evaluate three possible explanations:

1. Labile transitivity
2. Lexicalisation
3. The stem forms as a semi-productive category

3.6.3.1. Labile transitivity

This investigation has found that while labile transitivity is the most likely explanation for valency-reduction in verbs with only one perfect active stem, the valency-reduction of specialised valency-reducing stems, such as those of ἀπόλλυμι, διαφθείρω and πείθω, should not be accounted for in this way. This is for three reasons:

1. These verbs do not demonstrate labile transitivity elsewhere in the active system.

2. At §3.3 it was shown that the PASFs of certain verbs, namely πήγνυμι and compounds of ἵστημι, collocated with an ADJUNCT phrase giving an AGENT participant. This was stated at §2.3.7 not to be consistent with labile transitivity, since ANTICAUSATIVES prototypically only allow the supplying of a CAUSE participant, and not an AGENT. It is striking, therefore, that the two verbs whose perfect actives permit an AGENT participant have dedicated valency-reducing stems, and is consistent with the view that those verbs with dedicated valency-reducing perfect active stems are not part of the labile transitivity of the active system, but are rather specialised valency-reducing forms.

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[245] Horizontal position is distinguished from vertical position to account for the presence of ἵστημι and ἀνοίγνυμι in the first group, which might be argued to describe changes of position.

3. Certain verbs with two perfect active stems show specialisation in meaning of the root stem. The verbs which particularly demonstrated this were πλήσσω and πείθω. πέπληγα meant 'I have been struck in my mind', whereas the other active forms always referred to a physical act of striking. πέποιθα does not appear to mean 'I have been persuaded', but rather the subtly different 'I am confident'. This shift in meaning is not compatible with a straightforward valency-reducing function, which might be expected to keep the 'meaning' intact, and merely rearrange the participants.

The behaviour of the root perfect active stem in verbs with two stems is therefore not able to be viewed as part of the wider development of labile transitivity in the active system. It is therefore worth considering what their place is within the verb system, since they appear to open up an opposition which does not exist elsewhere.

3.6.3.2. Lexicalisation

It is tempting to see these forms as lexicalised, i.e. as fossilised archaisms.[246] In favour of this view is the fact that not all the specialisation phenomena are present in the root perfect of every verb:

1. ἀπόλωλα and διέφθορα were demonstrated in valency-reducing senses of both 'to lose' and 'to destroy', and ἕστηκα 'to stand' is clearly a valency-reducing version of 'to set up'. However, although the *meaning* of these perfects appears to have shifted little from that attested elsewhere in the active system, they are able to have the AGENT participant specified by means of an ADJUNCT phrase.
2. πέπληγα and πέποιθα have specialised meanings which are not so susceptible of the expression of an AGENT: 'to be confident' is simply a state of being without the implication of any AGENCY; 'to be struck in mind' may have a cause, but, since it is mental, and therefore more indirect than the physical act of striking, does not require or allow an AGENT participant in the same way.

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[246] See Haug (2008, p. 300ff.).

If the root perfect active stem in its valency-reducing use had indeed become a lexicalised fossil one might also expect the following tendencies:

1. No new perfects of this kind to be produced.
2. This kind of form to become increasingly infrequent, surrendering to the morphologically 'regular' medio-passive.
3. Where these forms exist, to do so only in higher register documents written by the learned.

The problem with the lexicalisation/fossilisation thesis is exactly that the opposite of these phenomena is observed: new root perfect actives are produced, there is no indication that these forms are becoming less frequent, and where they exist they appear particularly in low register varieties.

3.6.3.3. A semi-productive category

It has been observed that certain root perfect actives become more common in the post-Classical period.[247] Indeed πέποιθα is very frequent in the New Testament, in many respects a low-register document, at least from the perspective of literary Greek. It even seems to be the case that new root perfects are generated in the post-Classical language.

There is some evidence that the grammarians regarded these forms as innovations and that in 'correct' written Greek their use was inappropriate:[248]

> [211] **ἀνέῳγεν** ἡ θύρα· σολοικισμός· χρὴ γὰρ λέγειν **ἀνέῳκται**. (Phrynichus *Eclogae* 128)[249]
>
> The door **ἀνέῳγεν**; solecism. For you should say 'the door **ἀνέῳκται**'.

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[247] Haug (2008, p. 300).

[248] cf. Luc. *Sol.* 8.

[249] Text: Fischer (1974).

Phrynichus also comments more than once on the INTRANSITIVE use of διέφθορα:[250]

> [212] **διέφθορεν** (Eupol. fr. 337)· οὐ <τὸ> διέφθαρται τοῦτο σημαίνει. διὸ καὶ
> ἁμαρτάνουσιν οἱ λέγοντες '⟦οὐ⟧ **διέφθορεν** ὁ παῖς', δέον διέφθαρται. τὸ δὲ
> **διέφθορε** τὸ διέφθαρκε σημαίνει. (Phrynichus *Praeparatio sophistica* 63)[251]
>
> **διέφθορεν** (Eupol. fr. 337): This does not mean διέφθαρται. Accordingly,
> those who say, 'The child ⟦οὐ⟧ **διέφθορεν**' are in error; they should say
> 'διέφθαρται'. **διέφθορε** means διέφθαρκε.
>
> [213] **διεφθορὸς** αἷμα· τῶν ἀμαθῶν τινες ἰατρῶν λέγουσιν οὕτω σολοικίζοντες,
> δέον λέγειν διεφθαρμένον αἷμα· τὸ γὰρ **διέφθορε** διέφθειρεν. (Phrynichus
> *Eclogae* 131)[252]
>
> **διεφθορὸς** blood: some of the uneducated doctors say this, committing a
> solecsism; they should say διεφθαρμένον blood. For **διέφθορε** is like
> διέφθειρε.

If the grammarians, the 'guardians' of the language, did not like this kind of usage, it is a strong indication that it was not they who were promoting it. Instead, such a response on the part of the grammarians suggests that the colloquial variety of the language was driving this use of the perfect active. This fits with the widespread use of the forms in the New Testament.

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[250] cf. Luc. *Sol.* 3.

[251] Text: de Borries (1911).

[252] Text: Fischer (1974).

So far evidence has been produced that these valency-reducing root perfects are productive in the post-Classical period. However, how might one describe the function of this category? At this point it is helpful to ask where the ancients themselves saw the root perfect active fitting into the verb system:

[214] διαθέσεις εἰσὶ τρεῖς, ἐνέργεια, πάθος, μεσότης· ἐνέργεια μὲν οἷον (49.) τύπτω, πάθος δὲ οἷον τύπτομαι, μεσότης δὲ ἡ ποτὲ μὲν ἐνέργειαν ποτὲ δὲ πάθος παριστᾶσα, οἷον **πέπηγα διέφθορα** ἐποιησάμην ἐγραψάμην. (Dionysius Thrax *Ars Grammatica,* 1.1.48f.)[253]

There are three diatheses: active, passive and middle; active is, for example, τύπτω; passive is, for example, τύπτομαι; middle sometimes gives active, and sometimes passive sense, as, for example, **πέπηγα, διέφθορα**, ἐποιησάμην and ἐγραψάμην.

Aelius Herodianus makes a similar assignation:[254]

[215] εἰ οὖν ἄρα ὁ ἐνεργητικὸς καὶ μέσος παρακείμενος οὔκ ἔχουσι τὴν μετοχὴν διὰ τοῦ ντ κλινομένην, εἰ καὶ ἔχουσιν αὐτὴν εἰς ς μετ' ὀξείας τάσεως οἷον **τετυφώς τετυφότος**, **τετυπώς τετυπότος**, δηλονότι οὐδὲ τὸ προστακτικὸν δύναται ἔχειν εἰς θι. (Aelius Herodianus *Περὶ ῥημάτων* 816.29)[255]

So if then the active and middle perfect do not have a participle in –ντ-, and if instead they have a participle in –ς with oxytone, like **τετυφώς τετυφότος, τετυπώς τετυπότος**, it is clear that it cannot have an imperative in –θι.

From the order of the designation ἐνεργητικός καὶ μέσος, Aelius Herodianus identifies the former term with τετυφώς, and the latter with τετυπώς.

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[253] Text: Uhlig (1883).

[254] cf. Περὶ ῥημάτων Part 3 Vol. 2 Pages 795, 819, 821, 822 ; Theodosius *Canones isagogici de flexione verborum* Vol. 1 Page 79. The spurious work of Theodosius *Περὶ γραμματικῆς* 146 and 164 makes a similar statement.

[255] Text: Lentz (1870).

The most explicit statement comes in the spurious work of Theodosius, the *Περὶ γραμματικῆς*:

> [216] ἔχεις παρακείμενον ἐνεργητικὸν τὸ **τέτυφα** καὶ παρακείμενον παθητικὸν
> τὸ **τέτυμμαι**· ἰδοὺ παρακείμενοι δύο· ἔχεις καὶ μέσον παρακείμενον τὸ
> **τέτυπα**· ἀλλ' οὗτος ὁ μέσος εἰ καὶ εἷς φαίνεται, ἀλλὰ δύο (147.) ἐστίν, διότι
> ποτὲ μὲν ἐνέργειαν, ποτὲ δὲ πάθος σημαίνει, διὸ καὶ μέσος καλεῖται· εἰ μὲν
> γὰρ εἴπω ἐγὼ **τέτυπα** τὸν δεῖνα, ἰδοὺ ἐνεργητικόν ἐστιν ἡ σημασία τοῦ
> **τέτυπα**· ἀντὶ γὰρ τοῦ ἔτυψα εἶπον· εἰ δὲ ἐγὼ **τέτυπα**[256] τοῦ δεῖνος,
> παθητικῶς εἶπον ἀντὶ τοῦ ἐτύφθην ὑπὸ τοῦ δεῖνος. Ἔχεις πάλιν
> ἐνεργητικὸν ὑπερσυντέλικον τὸ **ἐτετύφειν** καὶ παθητικὸν ὑπερσυντέλικον
> τὸ **ἐτετύμμην** καὶ μέσον ὑπερσυντέλικον τὸ **ἐτετύπειν**, ἀρκοῦν καὶ πρὸς
> ἐνέργειαν καὶ πάθος. (Theodosius *Περὶ γραμματικῆς* Page 146f.)[257]
>
> You have an active perfect **τέτυφα** and a passive perfect **τέτυμμαι**; so
> there are two. You also have a middle perfect **τέτυπα**; but this middle,
> though it seem to be one thing, is in fact two, because sometimes it has
> active, and sometimes it has passive significance, for which reason it is
> called 'middle'. For if I say, '**τέτυπα** the gentleman', the significance of
> **τέτυπα** is active; for I have said it instead of ἔτυψα. But if I say, '**τέτυπα**
> [by] the gentleman', I have used a passive, instead of, 'ἐτύφθην by the
> gentleman'. Then again, you have an active pluperfect, **ἐτετύφειν**, and a
> passive pluperfect, **ἐτετύμμην**, and a middle pluperfect, **ἐτετύπειν**,
> sufficing both for active and passive.

These statements by the grammarians all point in the same direction, that the root PAS was seen as performing a 'middle' function, which could function either in a non-reducing or reducing way.

It is not made clear by the grammarians, however, whether their affirmation that the perfect active stem of root perfects could perform both reducing and non-reducing functions was the case necessarily for all verbs, or merely that the root perfect was capable of performing both functions, but which function was performed was dependent upon the particular verb in question.

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[256] It is tempting to see the omission of ὑπό here by haplography.

[257] Text: Göttling (1822).

In any case, such an analysis is supported to some extent by my own analysis of the post-Classical data presented above. In the case of ἀνεστροφ- examples could be given both of valency-reducing and non-reducing usage. Whether this was the case for more verbs remains an open question.

The possibility that the root perfect active may have functioned as some kind of semi-productive middle raises the question of the relationship of this form to the medio-passive. That these valency-reducing perfect actives bore some structural relationship to the rest of the paradigm is indicated by the fact that they only exist in verbs where the other active forms could not behave in a valency-reducing way, or where there is a specialised valency-reducing stem in these other forms as well. Indeed, the perfect active is not the only paradigm to receive new middle forms in the post-Classical period. ἀνοίγνυμι also receives a new medio-passive form ἠνοίγην alongside the form in -θην. Previous to this it appears that this verb had only ἀνεῴχθην in the medio-passive.[258]

A full answer to this question will have to await an investigation into the transitivity of the perfect medio-passive stem. Nevertheless, the fact that these verbs are never reducing in the other active stems, or have dedicated valency-reducing stems, suggests that the lexical semantics of the verb do not in and of themselves sufficiently cover the middle notion required, and this had to be provided by some semi-productive derivational means.

3.6.4. The meaning of the perfect

In general the findings presented here show that the perfect active is not in itself an INTRANSITIVE or valency-reducing category, and, indeed, that even in the same lexical item it may perform both valency-reducing and non-reducing functions. Nevertheless, in causative COS verbs the perfect active stem has a much greater tendency to be valency-reducing than the other active forms of these verbs.

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[258] The only example in TLG of a specifically aorist middle form for this verb is the largely reconstructed ἀνοιξάμ[ε]νο[ι at Pind. *Frag.* 52i.73. Compare πύλην... ἥτις αὐτομάτη ἠνοίγη αὐτοῖς (*Acts* 12.10) with καὶ ἄλλο βιβλίον ἠνοίχθη (*Rev.* 20.12).

It was stated above at §2.4.4 that any formulation for the meaning of the perfect active cannot be so rigid as to ascribe a particular diathetical role to the perfect, whether INTRANSITIVE, ACTIVE TRANSITIVE, or PASSIVE, since it is attested in each of these. However, the formulation should provide parameters for predicting which of these will be carried in a given context. In terms of the findings from this chapter, this means that any formulation of the core value of the PAS should predict that the PAS of causative COS verbs tends more often to be valency-reducing than non-reducing. The core value of the perfect active should therefore be sought in terms of a category that is not transitivity, but which carries implications for it. This is to say the perfect active means something, *x*, which permits both valency-reducing and non-reducing readings, but prefers the former. A formulation for *x* cannot be found until the aspectual data are analysed. However, the behaviour observed suggests that *x* is a static category, i.e. one that is not concerned with (the cause of) change so much as some fixed notion concerning the event, so that is likely to be exploited to generate valency-reducing readings.

3.7. Transitivity of the Perfect active in the earlier history of Greek

The discussion in the previous section of lexicalisation and the productive use of the root perfect active stem inevitably raises the question of the diachronic development of the category. In the present section I turn to discussing the possible implications for the transitivity of the early Greek and Indo-European perfect. Such discussion is necessarily fraught with uncertainty and conjecture. The question should nevertheless be posed, and any implications this study might have for our understanding of the transitivity of the Indo-European perfect explored. It should be emphasised that what follows is not a stipulation of what must have been the case in the Indo-European and Early Greek period, but rather a possible scenario which the results of this investigation show, I believe, could have obtained.

3.7.1. Homer

As noted in the introduction, the Indo-European perfect is generally regarded as having been in origin an INTRANSITIVE category grammaticalising STATE, and associated in some way with the middle.[259] However, in such discussions, it is not always made clear exactly what is meant by intransitivity, for *a priori* there are two interpretations of the designation:

1. Valency-reducing, with the SUBJECT playing the semantic role of the OBJECT in an equivalent non-perfect active construction.
2. Non-reducing, with the semantic roles played by SUBJECT and OBJECT remaining unaltered, and simply denoting that no OBJECT complement is specified.

Both of these behaviours are clearly in evidence in the Homeric corpus:

> [217] ἣ δ᾽ ἐπέεσσι καθάπτετο θοῦρον Ἄρηα·
> μαινόμενε φρένας ἠλὲ **διέφθορας**· (*Il.* 15.127f.)
>
> But she rebuked furious Ares:
> 'Madman! Crazed of mind, **you are doomed**!

---

[259] See nn. 11 and 12.

[218] οἶσθα γὰρ ὡς κατὰ ἄστυ ἐέλμεθα, τηλόθι δ' ὕλη

ἀξέμεν ἐξ ὄρεος, μάλα δὲ Τρῶες **δεδίασιν**. (*Il.* 24.662f.)

For you know how we are trapped in the city, and how far the wood is to get

it from the mountain, and the Trojans **are very afraid**.

The first example is clearly valency-reducing. In the second example, the SUBJECT plays an active role, identical to that played were an OBJECT complement provided;[260] it is still the Trojans who would be fearing.[261] However, in Homer the perfect active stem is not *necessarily* either of these. First, οἶδα, a notable old perfect is very often TRANSITIVE in Homer: [262]

[219] θαρσήσας μάλα εἰπὲ θεοπρόπιον **ὅ τι οἶσθα·** (*Il.* 1.85)

Take courage and say **whatever** prophesy **you know**.

Furthermore, οἶδα is not alone. There are in fact numerous TRANSITIVE perfects in Homer:[263]

[220] ὦ πόποι ἦ δὴ **μυρί'** Ὀδυσσεὺς **ἐσθλὰ ἔοργε**

βουλάς τ' ἐξάρχων ἀγαθὰς πόλεμόν τε κορύσσων. (*Il.* 2.272f.)

Well indeed Odysseus **has** already **wrought ten thousand noble deeds**,

initiating good counsel and marshalling war.

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[260] cf. *Il.* 13.49 where the OBJECT complement is provided.

[261] The PAS of ἁνδάνω 'to please', ἐαδ-, is similar in that it never reduces valency with respect to its other active forms, e.g. *Il.* 9.173, *Od.* 18.422.

[262] Haug (2004, p. 396) points out that οἶδα is TRANSITIVE as far back as it is possible to reconstruct.

[263] Perfect active stems with clearly TRANSITIVE non-reducing function are: βεβιηκ- 'force' (*Il.* 10.145, 10.172, 16.22), βεβληκ- 'hit' (*Il.* 5.661, form βεβλήκειν, 8.270, *Od.* 22.275), βεβρωθ- 'devour' (*Il.* 4.35), βεβρωκ- 'devour' (*Il.* 22.94, *Od.* 22.403 with partitive OBJECT), δεδαηκ- 'learn' (*Od.* 2.61, 8.146), δεδα- 'learn' (*Od.* 17.519), δε(ι)δι- (*Il.* 7.196, 9.230, 13.49, 13.482, *Od.* 2.199, 17.188, 18.80 etc.), δε(ι)δοικ- (*Il.* 9.244, 12.249, 18.261, 24.435, *Od.* 9.279 etc.), ἐοργ- 'do, perform' (*Il.* 3.56f., 3.351, 5.175, 8.355, 9.320, 16.424, 21.399, 22.347 and *Od.* 22.318.), ἐρριγ- 'shudder at' (*Il.* 17.175), ἐδηδ- 'consume' (*Il.* 17.542), κεκαφη- 'breathing forth', κεκοπ- (*Od.* 18.335), λελογχ- 'obtain' (*Od.* 11.304), ὀπωπ- 'see' (*Il.* 2.799, 24.392, *Od.* 17.371, 21.94 etc.), πεπονθ- 'suffer', πεφρικ- 'fear' (*Il.* 24.775).

[221] ἀλλ᾽ ἔκ τοι ἐρέω καὶ ἐπὶ μέγαν ὅρκον ὀμοῦμαι·

ναὶ μὰ τόδε σκῆπτρον, τὸ μὲν οὔ ποτε φύλλα καὶ ὄζους

φύσει, ἐπεὶ δὴ πρῶτα **τομὴν** ἐν ὄρεσσι **λέλοιπεν**,

οὐδ᾽ ἀναθηλήσει... (*Il.* 1.233-6)

But I will speak forth to you and swear to a great oath; yes by this sceptre, which will no longer grow leaves or branches, from the time **it first left its stump**, nor will it sprout...

Such examples are usually seen as forerunners of the TRANSITIVE perfect which would later develop.[264] Against seeing these TRANSITIVE perfects as presaging the later development, however, at least in the case of ἔοργα, are the following considerations:

1. There are forms, such as ἔοργα, which are never attested in an INTRANSITIVE construction in Homer.

2. ἔοργα occurs nine times in the *Iliad*, and only once in the *Odyssey*; since the former is supposed to precede the latter, if the TRANSITIVE usage were genuinely a foretaste of the later situation, one might expect the distribution to be the other way round.

3. Many of the forms involved in the above examples, including ἔοργα and λέλοιπα, are clearly old, demonstrating both ablaut and a root stem.

Indeed, there are cases where the semantic roles do not change even when an OBJECT complement is not supplied:

[222] τοῦ δ' ἤδη μέλλουσι κύνες ταχέες τ' οἰωνοὶ

ῥινὸν ἀπ' ὀστεόφιν ἐρύσαι, ψυχὴ δὲ **λέλοιπεν**. (*Od.* 14.133f.)

Dogs and swift birds are already about to strip his flesh from his bones, and his soul **has departed**.

---

[264] cf. references at n. 14.

Contrast this with a case of the perfect medio-passive, where the valency is indeed reduced:

> [223] ἀλλ' ἴομεν· μάλα γὰρ νὺξ ἄνεται, ἐγγύθι δ' ἠώς,
>
> ἄστρα δὲ δὴ προβέβηκε, παροίχωκεν δὲ πλέων νὺξ
>
> τῶν δύο μοιράων, τριτάτη δ' ἔτι μοῖρα **λέλειπται**. (*Il.* 10.251-3)
>
> But let us go; night is coming to an end, dawn is near; the stars are
>
> advanced, and more than two watches of night have passed. The third **is left**
>
> still.

At [222], involving a perfect active, it is SUBJECT, the soul, ψυχή, which leaves; the semantic role played by this SUBJECT is exactly the same as at [221]. There the OBJECT denotes the entity which is left behind. By contrast, at [223], involving a perfect medio-passive, the SUBJECT denotes the entity which is left behind, the role played by the OBJECT in the former case.

Just as in the case of post-Classical Greek, it is important to establish which lexical items demonstrate valency-reduction in the perfect active. The following table gives a number of the perfect actives demonstrating valency-reducing behaviour:

Table 26 - Valency-reducing perfects in Homer

Present	Perfect	Example reference	Gloss
ἀραρίσκω	ἀρηρ-	*Od.* 2.342	'fit' ~ 'be fitted'
διδάσκω	δεδαηκ-	*Od.* 8.134	'teach' ~ 'learn'
διαφθείρω	διεφθορ-	*Il.* 15.128	'destroy' ~ 'be destroyed'
δύω	δεδυκ-	*Od.* 12.93	'cause to sink' ~ 'sink'
ἵστημι	ἑστα-	*Od.* 22.130	'set up' ~ 'stand'
κατερείπω	κατερηριπ-	*Il.* 14.55	'cast down' ~ 'be ruined'
ὄλλυμι	ὀλωλ-	*Il.* 10.186	'destroy' ~ 'be destroyed'
πείθω	πεποιθ-	*Il.* 15.267	'persuade' ~ 'be confident (in)'
πήγνυμι	πεπηγ-	*Il.* 3.135	'fix' ~ 'be fixed'
σήπω	σεσηπ-	*Il.* 2.135	'rot' ~ 'be rotten'

It is striking that all of these verbs in the present active describe causative changes of STATE. This is exactly the group of verbs which are found in post-Classical Greek to have the potential to be valency-reducing. Also, just as in the post-Classical language, those verbs which do not describe causative changes of STATE are not valency-reducing in Homer. This is the case even where an OBJECT complement is not overtly specified. Thus the event described by the verb λείπω does not, at least in principle, change the STATE of the OBJECT complement. ἔρδω, the present active of ἔοργα, describes an event which does not involve a change of STATE. Rather, the event which this verb describes brings the OBJECT complement into existence.

However, there are some differences between the Homeric and post-Classical situations:

1. Not all the valency-reducing perfect actives in the post-Classical language are attested as valency-reducing in Homer. Specifically, the perfects of πλήσσω and βάλλω are non-reducing in Homer:[265]

   [224] Ζεῦ πάτερ ἦ ῥά τί μοι κεχολώσεαι, αἴ κεν Ἄρηα

   λυγρῶς **πεπληγυῖα** μάχης ἐξαποδίωμαι; (*Il.* 5.762f.)

   Father Zeus, will you be angry with me, if **I** sorely **strike Ares** and chase him out of the battle?

   [225] ... Λαερτιάδην Ὀδυσῆα

   ῥάβδῳ **πεπληγυῖα** πάλιν ποίησε γέροντα... (*Od.* 16.455)

   ... [Athena] **struck** Odysseus, son of Laertes, and again made him an old man...

   [226] **τὸν** μὲν Μηριόνης ὅτε δὴ κατέμαρπτε διώκων

   βεβλήκει γλουτὸν κατὰ δεξιόν· (*Il.* 5.65f.)

   When Meriones had pursued and caught him, **he (had) struck** him on the right buttock.

2. There are no examples of labile transitivity in the perfect in Homer, where one stem is found to be both valency-reducing and non-reducing.

3. Those perfect active stems with reducing function are not paired with a separate non-reducing stem.

In Homer, therefore, there is a rule, whereby if a verb denotes a causative change of STATE, its perfect active stem is valency-reducing. However, if a verb does not denote a causative change of STATE, the perfect active stem behaves, in terms of the semantic roles played by the SUBJECT and OBJECT, in exactly the same way as the other active forms. One of the following hypotheses may serve as partial explanations for the observed phenomena:

---

[265] cf. *Od.* 10.319 (πεπληγυία); *Il.* 8.270 (βεβλήκοι); 4.108, 4.492, 5.73, 5.394, 12.401, 14.412, 17.606 (βεβλήκει); *Od.* 22.286 (βεβλήκει). No non-reducing examples of πεπληγ- could be found in Homer. Chantraine (1927, p. 15), however, doubts that these should really be counted as pluperfects of βάλλω.

1. The perfect active stem of causative COS verbs could be used in a non-valency-reducing way, but since the perfect of these verbs prefers reducing syntax, there happen to be none attested.

2. The causative change-of-state verb type is an innovative category in Homeric Greek; in origin these verbs simply denote change of STATE, and were monovalent. The perfect active of these verbs is simply the regular perfect from this monovalent use. Since the causative type is an innovation, causative perfects to go alongside the causative present and aorist active stems have not yet been generated.

The reality of the situation may be a combination of the two scenarios. Thus some of the verbs with apparently valency-reducing perfect actives do not have non-reducing forms attested in Homer, specifically δύω,[266] κατερείπω,[267] and σήπω.[268] It is therefore, at least *a priori*, possible that their causative semantics developed at a later point.[269]

Nevertheless labile transitivity is attested in Homer outside of the perfect system, at least in the case of βάλλω and ἀραρίσκω:[270]

[227] ἔστι δέ τις ποταμὸς Μινυήϊος εἰς ἅλα **βάλλων**

ἐγγύθεν Ἀρήνης… (*Il.* 11.722)

And there is a river, the Minueios, which **flows** into the sea near Arene…

---

[266] LSJ does not note any causative transitive examples of this verb in Homer; this sense appears always to be denoted by a compound.

[267] κατερείπω is only attested twice in Homer, once in the perfect active, and once in the aorist indicative active, where it is valency-reducing.

[268] σήπω is attested three times in Homer, once in the perfect active, once as σήπεται (*Il.* 2.135), and once as σαπήῃ (*Il.* 19.27), all valency-reducing.

[269] The non-perfect active causative forms of verbs exhibiting valency-reduction in the perfect active are, in most cases, derived formations, either via reduplication or suffix- or infix-ation, e.g. pres. ἀρ-αρ-ίσκ-ω, aor. ἄρ-αρ-ον; pres. δι-δά-σκ-ω, aor. δέ-δα-ον, (ἐ)-δί-δα-ξ-α; pres. ἵ-στη-μι < *si-steH$_2$-mi*, aor. (ἔ)-στη-σ-α; pres. πήγ-νυ-μι, aor.; aor. πέ-πιθ-ον; pres. –φθέ-ι-ρω. The derivation itself may not be particularly significant, since many verbs which do not describe changes of state also undergo such derivational processes, e.g. pres. τί-θη-μι, but root aor. ἔ-θη-ν. However, what may be significant is that the derived aorists are in many cases opposed to root formations which are valency-reducing: ἄρ-μενον, ἐ-δά-ην, (ἔ)-στην, (ἐ)-πάγ-ην , (ἐ)-πιθ-όμην.

[270] See LSJ *ad loc.* III.A.1.

[228] ἤτοι γὰρ τὰς πρῶτα ἴδον περὶ τέρμα **βαλούσας**,

νῦν δ᾽ οὔ πῃ δύναμαι ἰδέειν… (*Il.* 23.462f.)

For truly I saw the first [horses] **come round** the turnpost,

But now I cannot see them anywhere.

[229] ὡς δ᾽ ὅτε τοῖχον ἀνὴρ **ἀράρῃ** πυκινοῖσι λίθοισι

δώματος ὑψηλοῖο βίας ἀνέμων ἀλεείνων,

ὣς **ἄραρον** κόρυθές τε καὶ ἀσπίδες ὀμφαλόεσσαι. (*Il.* 16.212-4)

As when a man **fits** the wall of a tall house with close-fitting stones, as he

shuns the force of the winds, so the helmets and embodded shields **fitted**

together.

The third example, involving ἀραρίσκω, is particularly striking since non-reducing and reducing uses are exemplified in the space of three lines.

It is not possible to come to a final decision on the matter until further evidence comes to light. Suffice it to observe that the perfect active of causative COS verbs may exhibit valency-reduction in Homer, while the perfect of verbs outside of this category may not.

3.7.2. Classical Greek

So far it has been shown that the Homeric perfect active stem is sometimes valency-reducing, but that it need not be. Where the perfect active stem is valency-reducing, the other active forms describe a causative change of STATE. Where active forms other than the perfect do not describe a causative COS, the semantic role of the SUBJECT is exactly the same as that played by the SUBJECT of the other active forms; valency-reduction does not occur.

As in the post-Classical language, there are causative COS verbs with only one perfect active stem demonstrating valency-reduction:[271]

[230] ὁ δὲ Θράσυλος ἐκ τῆς Σάμου, ἐπειδὴ ἐπύθετο αὐτὸν ἐκ τῆς Μιλήτου

ἀπηρκότα, ἔπλει… (Thu. 8.100.1)

Thrasylos set sail from Samos, when he found out that he **had left** Miletus…

---

[271] Similar is ὑπερβεβλήκασι (Xen. *Hell.* 7.3.6) with the meaning 'to surpass'. To this can be added ἀποσέσηπα (Xen. *Anab.* 4.5.12), which, even though TRANSITIVE, is valency-reducing; ἐγρήγορα (Xen. *Anab.* 5.7.10).

In the case of εἰσβάλλω, however, the perfect active is not only valency-reducing but also labile:

[231] οἱ δ' ἐν τῇ Σικελίᾳ Ἀθηναῖοι τοῦ αὐτοῦ χειμῶνος ἔς τε τὴν Ἱμεραίαν

ἀπόβασιν ἐποιήσαντο ἐκ τῶν νεῶν μετὰ τῶν Σικελῶν τῶν ἄνωθεν

ἐσβεβληκότων ἐς τὰ ἔσχατα τῆς Ἱμεραίας... (Thu. 3.115.1)

The Athenians who were in Sicily that winter made a descent from the ships to Himeraia, along with the Siceloi who **had invaded** [lit. put into] the outer parts of Himeraia from the interior...

[232] ... ὥστε καὶ ἐλέχθη ὑπ' αὐτῶν ὡς οἱ Πελοποννήσιοι **φάρμακα**

ἐσβεβλήκοιεν ἐς τὰ φρέατα. (Thu. 2.48.2)

... so that it was also said by them that the Peloponnesians **had put poison** into the wells.

In these verbs, the observed valency-reduction and labile transitivity of the perfect active is accompanied, as it is in the post-Classical language, by labile transitivity throughout the active paradigm:

[233] ... ἐπειδὴ ἐκ τῆς Πύλου **ἀπῆραν** ἐς τὴν Σικελίαν ναυσὶν Ἀθηναίων,

ἀφικόμενοι ἐς Κέρκυραν ἐστράτευσαν μετὰ τῶν ἐκ τῆς πόλεως... (Thu. 4.46.1)

... when **they left** Pylos for Sicily with the Athenians' ships, having got to Corfu they advanced with those from the city...

[234] ... τίς δέ **νιν** ναυκληρία

ἐκ τῆσδ' **ἀπῆρε** χθονός; (Euripides *Helen* 1519f.)[272]

... what ship **took her** from this land?

[235] οὗτος δὲ Πριηνέας τε εἷλε ἐς Μίλητόν τε **ἐσέβαλε·** (Hdt. 1.15)

This man both took Priene and **invaded** Miletus.

[236] **ἐσέβαλε** μέν νυν **στρατιὴν** καὶ οὗτος, ἐπείτε ἦρξε, ἔς τε Μίλητον καὶ ἐς

Σμύρνην... (Hdt. 1.14)

So he too **took his army** against Miletus and Smyrna...

---

[272] Text: Diggle (1994).

Given this, it seems reasonable to attribute labile transitivity in the perfect active to the capacity of these verbs for labile transitivity, rather than see it as a characteristic of the perfect active *per se*.

There are, furthermore, causative COS verbs with labile transitivity attested throughout the paradigm, whose labile transitivity is not attested in the post-Classical language. Compare the following examples:

> [237] ἐγὼ τήνδε τὴν χώρην ὤμοισι τοῖσι ἐμοῖσι ἐκτησάμην. ὅστις δὲ καὶ ὀκόθεν
> ἐστί, ἐνθαῦτα μὲν οὐ δηλοῖ, ἑτέρωθι δὲ **δεδήλωκε**. (Hdt. 2.106.4)
>
> "I have obtained this land by [the strength of] my own shoulders." Who he
> is, and where he is from, is not shown here, but **has been made clear**
> elsewhere.

> [238] φαίνεται γὰρ ναυσί τε πλείσταις αὐτὸς ἀφικόμενος καὶ Ἀρκάσι
> προσπαρασχών, ὡς Ὅμηρος **τοῦτο δεδήλωκεν**, εἴ τῳ ἱκανὸς τεκμηριῶσαι.
> (Thu. 1.9.4)
>
> For it is clear from the fact that he arrived with very many ships and that he
> had provided a navy for the Arcadians, **which** Homer **has made clear**, if he
> is deemed a suitable witness.

In the first example, Herodotus quotes an inscription found on statues he takes to be those of Sesostris. Here there is no available SUBJECT in context except the ὅστις clause, making the valency-reducing reading the only plausible interpretation. In the second example, however, there is both an explicit SUBJECT and explicit OBJECT.[273]

As in the case of COL verbs, this labile transitivity in the same PASF is paralleled outside of the perfect active system:

> [239] κατὰ ταῦτα δὲ τὰ ἔπεα καὶ τόδε [τὸ χωρίον] οὐκ ἥκιστα ἀλλὰ μάλιστα
> **δηλοῖ** ὅτι οὐκ Ὁμήρου τὰ Κύπρια ἔπεά ἐστι ἀλλ᾽ ἄλλου τινός· (Hdt. 2.117)
>
> According to these words and this passage **it is** in no small way **clear** that
> the Cypria are not the words of Homer but of someone else.

---

[273] There is one further example of δεδήλωκα in the Classical historians, at Thu. 1.10.4, which could be taken either way.

δηλόω is all the more interesting since, although the perfect active of this verb is much more common in the post-Classical language than in the Classical, it is never, at least in my corpus, attested as valency-reducing, even where an OBJECT complement is not provided:

> [240] … ὑπὲρ ὧν ἐν τῇ προτέρᾳ βύβλῳ **δεδηλώκαμεν**. (Plb. 4.37.4)
>
> **We have clarified** regarding these matters in the previous book.

Also as in the post-Classical language, there are causative COS verbs with specialised valency-reducing and non-reducing perfect active stems. However, not all the COS verbs which have specialised non-reducing and reducing perfect active stems in the post-Classical language are attested with both stems in the Classical period. Thus ἵστημι, πλήσσω and διαφθείρω are only attested with one perfect stem. Indeed, two verbs, namely διαφθείρω[274] and πλήσσω[275], which in the post-Classical language have valency-reducing perfect active stems, are non-reducing in the perfect in the Classical period:

> [241] καὶ νὴ Δί' ἀνδρεῖόν γε πάνυ νομίζομεν,
>
> ὃς ἂν **πεπλήγῃ τὸν πατέρα** νεοττὸς ὤν. (Aristophanes *Aves* 1349f.)[276]
>
> And by Zeus we consider him courageous, **who has struck his father** while still a chick.

> [242] μέλλων γὰρ ἀεὶ δρᾶν τι **τὰς οὔσας** τέ μου
>
> καὶ **τὰς ἀπούσας ἐλπίδας διέφθορεν**. (Sophocles *Electra* 305f.)[277]
>
> For, by his intending always to do something, **he has destroyed** both **the hopes I have** and **those that I do not**.

---

[274] Haug (2008, p. 302) notes that this stem is TRANSITIVE in Classical Greek, see e.g. Eurippides *Hippolytus* 1014, *Iphigenia in Tauris* 719, Cratinus *Frag.* (Kock) 292, Eupolis *Frag.* (Kock) 337, Aristophanes *Frag.* (Kock) 490.1. However, at Eurippides *Medea* 349 διέφθορα comes a lot closer to a non-reducing sense.

[275] This is the only example of the perfect active of this verb in the Classical period, according to TLG.

[276] Text: Wilson (2007).

[277] Text: Lloyd-Jones & Wilson (1990 repr. 1992).

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In these it is clear that the SUBJECT plays an AGENT role, while the OBJECT plays that of PATIENT, which is clearly the reverse of the situation seen for the root stem in the post-Classical language.[278]

Nevertheless, at least two verbs are attested with specialised reducing and non-reducing stems, namely ἀπόλλυμι and πείθω. Compare the following examples:

[243] ... βοῶντας... ὅτι αἰ τῶν Ἀθηναίων νῆες **ἀπολώλασιν** ἅπασαι. (Xen. *Hell*. 1.6.36)

... shouting that the Athenians' ships **had** all **been lost**.

[244] μαθὼν δὲ ὡς μάτην **ἀπολωλεκὼς** εἴη **τὸν ἀδελφεόν**, ἀπέκλαιε Σμέρδιν. (Hdt. 3.64.2)

When he learned that **he had lost his brother** in vain, he mourned deeply for Smerdis.

[245] τοὺς δὲ ἄλλους ἄνδρας τοὺς ἐξέδοσαν οἱ Θηβαῖοι, οἳ μὲν ἐδόκεον ἀντιλογίης τε κυρήσειν καὶ δὴ χρήμασι **ἐπεποίθεσαν** διωθέεσθαι. (Hdt. 9.88.1)

The other men whom the Thebans had given up, some thought they would have the right to challenge [the charge of treason], and indeed **were confident** that they would escape it through bribery.

[246] καί τινες ἐτόλμων λέγειν ὡς ὁ Ξενοφῶν βουλόμενος τὸ χωρίον οἰκίσαι **πέπεικε τὸν μάντιν** λέγειν... (Xen. *Anab.* 6.4.14)

And some dared to say that Xenophon, wanting to settle the area, **had persuaded the seer** to say...

As in the post-Classical language, however, there is no evidence for these verbs exhibiting valency-reduction outside of the perfect active.

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[278] There are other potential cases, but each in their way ambiguous or inconclusive. Thus **τὸ κρανίον |** παίσας **κατέαγα**. (Eurippides *Cyclops* 683f.) could well be interpreted as valency-reducing if τὸ κρανίον is taken as the OBJECT of κατέαγα, cf. Fr. *je me suis cassé la tête*. οὐδεὶς γὰρ ἐδέχετ' οὐδ' **ἀνεῴγει** μοι **θύραν**. (Pherecrates, *Frag.* (Meineke) 6) is also ambiguous, since although ἀνεῴγει is clearly a pluperfect indicative active, a variant has it as ἀνεῴγε, which could in principle be taken either as a perfect or an imperfect.

3.7.3. Overview of diachronic developments

To summarise, the following patterns of development have been observed. Verbs which demonstrate change in their transitivity relations are italicised.

Table 27 - Diachronic relationship between perfect and non-perfect active stems

Imperfective and perfective active	Perfect active	Homer	Classical	Post-Classical
Non-valency-reducing	No perfect	*ἀνοίγνυμι*	*ἀνοίγνυμι*	
	Non-reducing	*διαφθείρω* *λείπω*	*διαφθείρω* *λείπω*	*δηλόω*[279] *λείπω*
	Multiple stem			*διαφθείρω*
Single stem labile	Non-reducing only	*βάλλω*		
	Single stem labile		*-βάλλω* *δηλόω*	*-βάλλω*
Multiple stem	Valency-reducing only	*ἵστημι* *φύω*	*φύω*	*φύω*
	Multiple stem		*ἵστημι*	*ἵστημι* *ἀνοίγνυμι*

1. λείπω type:
    a. All periods: active forms non-reducing.
2. βάλλω type:
    a. Homer: present and aorist active stems labile, perfect non-reducing.
    b. Classical: all active stems labile.
    c. Post-Classical: all active stems labile.
3. δηλόω type:
    a. Homer: (no evidence).
    b. Classical: all active stems labile.

---

[279] See n. 280.

     c. Post-Classical: all active stems non-reducing.[280]

4. φύω type (also ἐπιβαίνω):

     a. All periods: separate reducing and non-reducing present and aorist active stems, perfect valency-reducing.

5. ἵστημι type:

     a. Homer: separate reducing and non-reducing present and aorist active stems, perfect valency-reducing.

     b. Classical: separate reducing and non-reducing present and aorist active stems, perfect valency-reducing.

     c. Post-Classical: separate reducing and non-reducing present, aorist and perfect active stems.

6. διαφθείρω type (also πλήσσω and ἀπόλλυμι):

     a. Homer: all active stems non-valency-reducing.

     b. Classical: all active stems non-valency-reducing.

     c. Post-Classical: active stems non-valency-reducing except perfect which develops a valency-reducing stem.

Note first that in all periods, as it was for the corpus for this investigation, the only verbs which have valency-reducing active forms describe causative COS events. Thus λείπω has non-reducing active forms in all periods, including Homer.

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[280] I have not been able to conduct an exhaustive analysis on my corpus. However, LSJ does not list any valency-reducing instances after the Classical period, and I have not come across any in my corpus.

Secondly, it is clear from the enumeration here that there is no one diachronic direction of development for causative COS verbs in terms of labile transitivity. In particular, verbs with active stems capable of valency-reduction, including the perfect, are both first attested (e.g. ὑποστέλλω, ἀνοίγνυμι, διαφθείρω) and lost (e.g. δηλόω)[281] in post-Classical Greek. However, there may be said to be a general trend towards verbs having active stems with capacity for valency-reduction: διαφθείρω and πλήσσω develop a valency-reducing perfect active stem in the post-Classical language, and ἵστημι extends the separation of stems, which already existed in the perfective, to the perfect. By contrast, there are no causative COS verbs, to my knowledge, which in Homeric and Classical periods had valency-reducing perfect active stems which lose them in post-Classical Greek. This said, there is a general trend towards being able to express valency-reduction in the perfect.

3.7.4. Contribution to scholarship on transitivity in the history of Greek

The main purpose of investigating labile transitivity in post-Classical Greek is to help solve the perfect problem. However, it is worth pausing to consider the implications for scholarship on transitivity in Greek:

1. It was suggested at §3.2.2 that ANTICAUSATIVE begins in post-Classical Greek to be denoted by means of ACTIVE morphology. However, it is clear from the present investigation that, at least for historical writers in the post-Classical period, by no means all causative COS verbs have participated in this development. That the change is not universal is also clear from Labidas' investigation.[282] However, the impression given there is of verbs optionally entering in and out of the valency-reducing group. By contrast the present investigation has found two well defined groups, a valency-reducing one and a non-reducing one.

2. At §3.7.1 it was noted that labile transitivity is attested in Homer for βάλλω and ἀραρίσκω.

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[281] See n. 280.

[282] Labidas (2009, p. 116ff.).

The first discrepancy may well partly be a question of register: Labidas' investigation concerns, in principle, the whole of the Greek corpus, including low register varieties, whereas the present investigation is limited to the high register standardised language of historical writers. However, this is not necessarily the only reason for the discrepancy. In particular, some verbs which are asserted by Labidas to undergo this kind of development, but which show no evidence of it in the present corpus, are questionably valency-reducing in Labidas' own data. A key example of the expansion of the ACTIVE ANTICAUSTIVE type for Labidas is ἀνοίγνυμι.[283] The following is the only example given of its valency-reducing use:

> [247] οὕτως οὐκ ἀνοίγει τὸ στόμα αὐτοῦ (*Acts* 8.32)
>
> … so his mouth does not open…

This passage is itself a quotation from the Old Greek translation of the Hebrew Bible, from Isaiah 53.7. Placing it in its original context is illuminating:

> [248] καὶ αὐτὸς διὰ τὸ κακῶσθαι **οὐκ ἀνοίγει τὸ στόμα·**
> ὡς πρόβατον ἐπὶ σφαγὴν ἤχθη
> καὶ ὡς ἀμνὸς ἐναντίον τοῦ κείραντος αὐτὸν ἄφωνος,
> οὕτως **οὐκ ἀνοίγει τὸ στόμα** αὐτοῦ. (*Isaiah* 53.7)[284]
>
> And he, on account of his maltreatment, **does not open his mouth**.
> As a sheep for the slaughter he was led
> and as a lamb before his shearer he was mute,
> so **he does not open** his **mouth** / his **mouth does not open**.

The sequence οὐκ ἀνοίγει τὸ στόμα occurs twice. It is the second instance that is quoted in the NT and that Labidas quotes. Yet in the first instance the only available interpretation is as non-reducing, since the SUBJECT is overtly specified in αὐτὸς. Furthermore, the second occurrence of this sequence certainly admits of the same non-reducing interpretation, since στόμα is neuter. This instance is therefore shaky evidence to use for a theory of growing labile transitivity in the history of Greek.

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[283] Labidas (Labidas, 2009, p. 113).

[284] Text: Rahlfs (1935).

The second discrepancy is more problematic clearly sits at odds with a narrative placing the denotation of ANTICAUSATIVE by the ACTIVE only in the later history of Greek.[285] It suggests, rather, that labile transitivity is a feature of the causative COS type throughout the attested history of Greek.

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[285] These examples are not mentioned by Labidas (2009, p. 65ff.) in his discussion of the Homeric situation.

3.8. Conclusion

To sum up, the foregoing investigation into the development of valency-reduction in active, in particular perfect, forms in Greek has concluded the following:

1. In all periods, including Homer, the valency-reducing INTRANSITIVE perfect is not all-pervasive, but is limited to verbs which may be regarded as describing causative COS events.

2. Verbs describing events not involving a change of STATE do not show valency-reduction in the perfect in any period.

3. Valency-reducing PASs are both created (e.g. ἀνέῳγα) and lost (e.g. δεδήλωκα) throughout the history of Greek.

These findings challenge the prevailing view regarding the origins of the Greek perfect, that in origin it is an INTRANSITIVE STATIVE category. Furthermore, they challenge any narrative which suggests there is a universal development of the perfect active from such INTRANSITIVE STATIVE function to TRANSITIVE and ACTIVE.

Non-perfect actives divide into three groups: labile actives, specialised reducing/non-reducing actives, and non-reducing actives. Contrary to what has been suggested by Labidas, there is evidence of such a tripartite distinction throughout the history of Greek from Homer.

With respect specifically to post-Classical Greek, it was found that:

1. Valency-reduction in the perfect is only attested in verbs describing causative COS events.

2. Valency-reduction is not limited to the perfect active, with several verbs, including βάλλω (plus compounds) and ὑποστέλλω demonstrating full labile transitivity throughout the active paradigm, including the perfect.

3. Some verbs, e.g. διαφθείρω, have special valency-reducing perfect active stems.

4. Among causative COS verbs there was found to be a greater tendency for the perfect to be valency-reducing than its other active forms, where valency-reducing forms are found.

In terms of the meaning of the perfect active in the post-Classical period, no answer can be given until the aspectual data is analysed. However, the meaning of the perfect active must be framed in terms of a static category, which is *a priori* likely to be exploited in the case of causative COS verbs to give valency-reducing readings.

Chapter 4. Aspect

4.1. Introduction

It was observed at §2.4.3 above that the aspectual problem posed by the Greek perfect active stem is inextricably bound up with the transitivity problem. At a minimal level, this is because the same PASF may be valency-reducing, and so describe a (RESULTANT) STATE of the SUBJECT, or non-valency-reducing, in which case it presents an experience of the SUBJECT, i.e. functioning as an ANTERIOR. Because an answer to the aspectual problem is predicated on an answer to the transitivity question it was necessary to find an answer to this question first, before moving on to tackle the aspectual problem directly. In Chapter 3 it was found that:

1. Valency-reduction is attested only in verbs describing causative COS events.
2. Valency-reduction is not limited to the perfect active, with several verbs, including βάλλω (and compounds) and ὑποστέλλω, demonstrating full labile transitivity throughout the active paradigm, including the perfect.
3. Some verbs, e.g. διαφθείρω, have special valency-reducing perfect active stems.

From this, and from the framework outlined in Chapter 2, it follows that the perfect active stem of the following types of verb should in principle describe, or at least be capable of describing, events with a STATE (sub-)event in which the SUBJECT participates:

1. Fully labile causative COS verbs in their valency-reducing use, e.g. προσβάλλω and ὑποστέλλω.
2. Causative COS verbs with specialised valency-reducing perfect active stems e.g. ἵστημι and διαφθείρω.
3. Monovalent COS verbs, e.g. βαίνω.
4. Activity verbs coerced into unaccusative, i.e. COS, readings, e.g. τρέχω.
5. Pure state verbs e.g. βασιλεύω.

Likewise the perfect active stem of the following types of verb should be able to describe the RESULTANT STATE of the OBJECT participant, specifically:

1. Fully labile causative COS verbs in the non-reducing use of the perfect active stem, e.g. ὑπέσταλκα + OBJECT participant.
2. Non-reducing perfect active stem of causative COS verbs, e.g. ἕστακα.
3. Perfects of accusative verbs, e.g. πεποίηκα.

Before an investigation of the aspect of the perfect actives of the verbs of these different groups can be undertaken, it is necessary to identify Greek verbs with the aspect and transitivity characteristics belonging to each of the categories identified above. This will be carried out through an assessment of the aspectual character of the present (henceforth imperfective) and aorist (henceforth perfective) stems. Once this has been achieved, the aim of the present chapter is to examine the aspect of the perfect active stems belonging to these aspect/transitivity categories.

4.2. Aspect classes

As outlined in the introduction, two viewpoint aspects are widely recognised in the world's languages, IMPERFECTIVE and PERFECTIVE. I quote here again Smith's definition of the two:[286]

> The main semantic difference among aspectual viewpoints is in how much of a situation they make visible. Perfective viewpoints focus a situation in its entirety, including endpoints; Imperfective viewpoints focus an interval that excludes endpoints…

It is the aim of this section to use these aspectual distinctions to construct lexical aspectual categories on which the analysis of the aspectual contribution of Greek perfect active will be made. Four verb classes will be established:

1. State: a verb describing an event in which the SUBJECT undergoes no change during the course of the event.

2. Change-of-state (COS): a verb in which the SUBJECT describes a telic event in which the SUBJECT participates and changes STATE as a part of the event.

3. Accusative: a verb describing a telic event in which the SUBJECT does not enter a new STATE.

4. Activity: a verb describing a dynamic event in which the SUBJECT participates, but is atelic, i.e. there is no progress towards a goal described by the verb in its event schema.

It has been made clear previously that causative COS verbs differ aspectually according to whether or not they are valency-reducing. Specifically, in their valency-reducing use they have been observed to behave as COS verbs, whereas in their non-reducing uses they can be expected to behave as accusative verbs. Accordingly, as the COS and accusative types are discussed, the relevant use of causative COS verbs will be illustrated. In situations where the particular usage of a given COS verb is important to make clear, unaccusative COS forms will be termed COS, while non-reducing causative COS forms will be termed accusative COS.

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[286] Smith (1997, p. 62).

4.2.1. Imperfective

For all Greek verbs the imperfective (i.e. present stem forms) may present an event as ongoing without reference to its endpoints.[287]

4.2.1.1. State

State verbs in the imperfective active stem describe situations which are ongoing at reference time and do not denote any change in that STATE. State verbs may either describe mental STATES, situations or offices of state. Mental state verbs include verbs such as ἀγαπάω 'to love, be content', σπουδάζω 'to be eager, to be content' and στέργω 'to love':[288]

> [249] Δημήτριος ὁ Φαληρεύς, ὃς ἦν ἐπὶ τῶν βιβλιοθηκῶν τοῦ βασιλέως, **σπουδάζων** εἰ δυνατὸν εἴη πάντα τὰ κατὰ τὴν οἰκουμένην συναγαγεῖν βιβλία... (Jos. *AJ* 12.12)
>
> Demetrius Phalerius, who was in charge of the king's library, and **who was eager**, if it was possible, to collect all the books in the world...

> [250] ... ἤρξατο λέγειν, ὅτι... **στέργει** καὶ **ἀγαπᾷ** τὴν ὑπ' αὐτῷ δουλείαν καὶ τοῖς παροῦσιν [ἥδεται πράγμασιν]. (Jos. *AJ* 8.4)
>
> ... he began to say that... he **loved** and **was content with** serving under him and was pleased with the current situation.

Office-of-state verbs include βασιλεύω 'to rule, be king', στρατηγέω 'to be general' and ὑπατεύω 'to be consul':[289]

> [251] ἐκβαλὼν δὲ τοὺς Ἰεβουσαίους ἐκ τῆς ἄκρας καὶ αὐτὸς ἀνοικοδομήσας τὰ Ἱεροσόλυμα πόλιν αὐτὴν Δαυίδου προσηγόρευσε, καὶ τὸν ἅπαντα χρόνον ἐν αὐτῇ διέτριβε **βασιλεύων**. (Jos. *AJ* 7.65)
>
> When he had driven the Jebusites out of the citadel and he himself had rebuilt Jerusalem, he called it the City of David, and spent his whole time **as king** there.

---

[287] This is not to say that the imperfective *always* performs this function, notably in the case of the historic present. See McKay (1965, p. 5).

[288] cf. ἀγαπᾷ (App. *BC* 3.8.62) and ἐλπίζω (App. *Mith.* 8.55).

[289] cf. στρατηγεῖ (Jos. *BJ* 5.121), ὑπατεύων (App. *BC* 1.7.55).

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Finally, situation verbs include κινδυνεύω 'to be in danger', as well as μένω and its compounds:[290]

> [252] ... οὐκ ἔφη λείψειν τὴν τάξιν, ἀλλ' αὐτόθι **μένων** μετὰ τῶν ἐαυτοῦ λοχιτῶν ὑποστήσεσθαι Μαρδόνιον. (Plu. *Arist.* 17.2)
>
> ... he said that he would not leave his post, but **remaining** there with his own comrades he would endure Mardonius.

> [253] Δανίηλος δ᾽ ἀκούσας, ὅτι προσέταξε πάντας τοὺς σοφοὺς ὁ βασιλεὺς ἀποθανεῖν, ἐν τούτοις δὲ καὶ αὐτὸν μετὰ τῶν συγγενῶν **κινδυνεύειν**, πρόσεισιν Ἀριόχῃ τῷ τὴν ἐπὶ τῶν σωματοφυλάκων τοῦ βασιλέως ἀρχὴν πεπιστευμένῳ. (Jos. *AJ* 10.197)
>
> Daniel, hearing that the king has ordered that all of the wise men should die, and that in this both he and his kinsmen **were in danger**, he went unto Arioch, the man who had been put in charge of the king's bodyguard.

4.2.1.2. Change-of-state

Causative COS verbs have already been identified and discussed in the previous chapter. This section, therefore, will be restricted to identifying non-causative COS verbs. The imperfective stem of a COS verb presents a COS event in progress, in which the SUBJECT participant is presented as changing STATE. Furthermore, the goal of that event, namely the change of STATE, is not presented as having been attained. The valency-reducing use of a causative COS verb can be expected to behave in the same manner as a non-causative COS verb, and this will be demonstrated in footnotes.

Non-causative COS

Consider the following examples:[291]

> [254] οὔτε δὲ τοῖς ὑποκρήμνοις ἐφίστασθαι διὰ τὴν βίαν ἐδύναντο τοῦ πνεύματος μηδὲν ἐδραῖον ἔχοντες, οὔτε τοὺς **προσβαίνοντας** καθορᾶν. (Jos. *BJ* 4.77)
>
> Nor were they able to stand on the steep parts because of the force of the wind, since they had nothing secure [to hold on to], nor were they able to see those who **were approaching**.

---

[290] cf. διαμένει (Jos. *BJ* 2.425).

[291] cf. συνέθεον προβαίνοντι at App. *Ill.* 4.18.

[255] … τραπέντες οἱ περὶ τὸν Νικόλαον **ἔφευγον** προτροπάδην ἅπαντες. κατὰ δὲ τὴν φυγὴν ἔπεσον μὲν αὐτῶν εἰς δισχιλίους, ζωγρίᾳ δ᾽ ἐάλωσαν οὐκ ἐλάττους τούτων· (Plb. 5.69.9)

… Nicolaos' men all turned and **started fleeing** headlong. During their flight about two hundred men fell, and no fewer than this were taken captive.

In both of these the change of location denoted by the imperfective can be seen to be in progress. In the first example the observers need to see those who are in the process of approaching: it is no good seeing them when they have already approached, since then it will be too late. In the second example, the goal of the 'fleeing' event is a position out of reach of those who are pursuing.

Valency-reducing causative COS

As expected, the valency-reducing uses of causative COS verbs behave in the same way as monovalent COS verbs. Since, as established in Chapter 3, certain causative COS verbs do not have reducing active forms outside the perfect, the following examples are middle:

[256] … ὁ μὲν μάντις ἀνέτεμε τὸ ἱερεῖον, τοῦ δ᾽ αἵματος τὸ **πηγνύμενον** ἤδη μύρμηκες πολλοὶ λαμβάνοντες κατὰ μικρὸν ἔφερον πρὸς τὸν Κίμωνα… (Plu. *Cim.* 18.4)

… the seer cut up the victim, and a great number of ants, taking the bit of the blood that **was** already **congealing**, little by little brought it to Cimon…

[257] τὸ μὲν οὖν πρῶτον μετὰ τοῦ κονιορτοῦ καπνὸς **ἠγείρετο** βαθὺς πνιγομένου τῷ πταίσματι τοῦ πυρός, τῆς δὲ θλιβούσης ὕλης διαβιβρωσκομένης ἤδη φανερὰ φλὸξ ἐρρήγνυτο. (Jos. *BJ* 5.471)

At first thick smoke **started to rise** with the dust, as the fire was covered by the fall, but when the wood was compressed as it was being consumed, already a clear flame began to break out.

In these examples it is clear that the imperfective denotes a change in progress, which has not yet reached its terminal point, the change of STATE. Thus in the first example the goal of the 'congealing' event is 'being fully congealed'. In the second example the goal of the 'rising' event is for all the smoke to be in the air. However, in neither case is the goal presented as reached: the blood is only the part that is 'starting to congeal', thus presumably making it tractable for the ants, without it being so hard that they could not take it. In the second the smoke is still being produced, thus not all the smoke can be said to have reached its goal of being in the air.

4.2.1.3. Accusative

Non-COS

Accusative verbs are those whose active forms describe an event in which the SUBJECT participant does not change STATE, but where the OBJECT may enter a STATE, though it is not obliged to do so. All accusative verbs are terminative. The following types of accusative verbs can be identified:

1. Terminative accomplishment verbs where the SUBJECT participant does not change STATE, e.g. ποιέω 'to make', δίδωμι 'to give', νικάω 'to defeat', but where the OBJECT participant is brought into a new or RESULTANT STATE.

2. Declarative verbs e.g. (προ)λέγω 'to say (previously)', δηλόω 'to make clear', ἱστορέω 'to record'.

3. Verbs describing perception events where the SUBJECT is affected by the OBJECT STIMULUS participant, but does not change STATE, e.g. ἀκούω 'to hear'.

In all these verb types, the imperfective stem denotes an event in progress towards its termination, but one where the change does not end in the SUBJECT participant entering a STATE of any kind.

Consider the accusative accomplishment verb φυτεύω 'to plant':

> [258] ἐκεῖνοι μὲν γάρ, ὡς λέγεται, πραγματευόμενοι τοὺς πολίτας ἀποσπάσαι τῆς
> θαλάττης καὶ συνεθίσαι ζῆν μὴ πλέοντας, ἀλλὰ τὴν χώραν **φυτεύοντας**,
> τὸν περὶ τῆς Ἀθηνᾶς διέδοσαν λόγον... (Plu. *Them*. 19.3)
>
> For they, so it is said, while labouring to draw the people away from the sea
> and to accustom them to live not by sailing, but by **planting** the land, told
> the story about Athena...

The field is presented as being in the process of being planted. The goal of the event is the complete planting of the field.[292]

The following example involves the declarative verb ἱστορέω:

> [259] Κλεόδημος δέ φησιν ὁ προφήτης ὁ καὶ Μάλχος **ἱστορῶν** τὰ περὶ Ἰουδαίων, καθὼς καὶ Μωυσῆς ἱστόρησεν ὁ νομοθέτης αὐτῶν, ὅτι ἐκ τῆς Κατούρας Ἀβράμῳ ἐγένοντο παῖδες ἱκανοί. (Jos. *AJ* 1.240)
>
> Kleodemos the prophet says, as well as Malchos, **while he is relating** the Jewish affairs, just as Moses their lawgiver has related, that Abraham had several children by Katoura.

ἱστορῶν here describes an event which terminates when all the Jewish affairs have been related. However, this particular incident comes amid that relation, and so the imperfective is used. The SUBJECT is not envisaged changing STATE as part of this, however.

Finally, the following examples involve the perception verbs πάσχω 'to suffer', ἀκούω 'to hear' and ὁράω 'to see':[293]

> [260] … εἶπε κατὰ τοῦ Κλεομένους τὸν ἄρτι ῥηθέντα λόγον, θεωρῶν δὲ τὸν Σωσίβιον ἡδέως **ἀκούοντα**, πᾶσαν ἐξέθετο τὴν προϋπάρχουσαν ἑαυτῷ πρὸς τὸν Κλεομένην διαφοράν. (Plb. 5.37.11f.)
>
> He told the story, which I have recently related, against Kleomenes. Seeing that Sosibius was gladly **listening to** [the story], he told of the former disagreement he had had with Kleomenes.

> [261] φιλίαν τε Ῥωμαίοις προφέροντες οὐκ ἐλεεῖτε ἀκρίτους ἐπὶ θανάτῳ καὶ δημεύσει προγραφομένους, ἀλλ' ὑποκρίνεσθε πεύσεσθαι τῆς βουλῆς τῆς ταῦτα **πασχούσης** καὶ οὐδὲ ἀμύνειν ἑαυτῇ πω δυναμένης. (App. *BC* 4.9.69)
>
> Though you come offering friendship with the Romans you have no pity for those who are condemned to death without trial, and proscribed with confiscation of property, but you pretend to learn from the Senate that **is suffering** these things and is not yet able to defend itself.

In each of these examples the event is presented by the imperfective as in progress.[294]

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[292] For the definition of a COS event, as opposed to a RESULTANT STATE, see above §2.3.6 and §2.3.7.

[293] cf. ὁρῶσα at Jos. *AJ* 20.49. cf. 'activity' perception verbs where the SUBJECT plays a more active role, as in 'to watch', 'to listen to' etc.

Non-reducing causative COS

The non-reducing uses of causative COS verbs can be regarded as behaving as accusative verbs, since their SUBJECT participant does not change STATE, e.g.:

> [262] ... μόσχον τε θύομεν καὶ κριὸν καὶ ἄρνας ἑπτά, ὑπὲρ δὲ ἁμαρτημάτων
> παραιτήσεως ἔριφον. καὶ ταῦτα μὲν Ἑβραίοις τὰς σκηνὰς **πηγνύουσιν**
> ἐπιτελεῖν ἐστι πάτριον. (Jos. *AJ* 3.247)
>
> "... and we sacrifice a bull, a ram and seven sheep, and for the pardon of sins,
> a kid. And it is the custom of the Jews to perform this **while fixing down**
> their tents."

In this example πηγνύουσιν presents an event in progress where the SUBJECT participant brings about a change of STATE in the OBJECT participant: the Jews are fixing their tents.

4.2.1.4. Activity

Activity verbs differ from both COS and accusative verbs in that the action denoted by them is not directed towards an endpoint, i.e. they are non-terminative. The imperfective therefore simply describes the activity in process:[295]

> [263] ... καὶ κατὰ λιθοστρώτου **τρέχων** ὑπολισθάνει, πεσὼν δὲ ὕπτιος μετὰ
> μεγίστου τῆς πανοπλίας ἤχου τοὺς φεύγοντας ἐπιστρέφει. (Jos. *BJ* 6.85)
>
> ... and **as he was running** over the pavement he slipped, and in falling on
> his back, with a great clang of his armour, he caused those who were fleeing
> to turn.

> [264] ... σὺν εἰρωνείᾳ σφόδρα ὁ Μάριος **ἐπιμειδιῶν** εἶπεν οὐκ εἶναι φυγάσιν
> εἰσόδους. (App. *BC* 1.8.70)
>
> ... with great irony Marius, **smiling**, said that there was no way in for
> fugitives...

---

[294] These events are not directed towards a RESULTANT STATE for the OBJECT participant in the same way as those described by accusative COS or other accomplishment verbs. It might, therefore, be suggeted that these verbs are like state verbs. However, they are unlike state verbs in that although the SUBJECT is not the initiator of the event, the SUBJECT is still affected in a dynamic way.

[295] cf. χορεύων (Jos. *AJ* 7.358).

4.2.2. Perfective

According to Smith's definition, the perfective is said to focus on a situation (i.e. event) in its entirety, including its endpoints. If this definition holds in Greek, one would expect to find that, in a series of events described by perfective forms, no event overlaps temporally with another.

4.2.2.1. State (ἀγαπάω, μένω, βασιλεύω, στρατηγέω, κινδυνεύω, ἔχω)

State verbs comprise verbs describing mental STATES (e.g. πιστεύω, ἀγαπάω), offices of state (e.g. βασιλεύω, στρατηγέω) or situations (e.g. μένω, κινδυνεύω, ἔχω). The perfective of these verbs may describe the following:

1. The STATE initiated at a specific point, and is assumed to hold during the course of any subsequent events described by perfectives.
2. The STATE held at some particular point in the past, and ceases to hold before the start of subsequent events described with perfectives.

STATE initiated prior to reference time

In several instances the perfective denotes entry into the STATE denoted by the verb: [296]

> [265] ὁ μὲν οὖν Ῥωμαίοις καὶ Καρχηδονίοις συστὰς περὶ Σικελίας πόλεμος ἐπὶ
> τοιούτοις καὶ τοιοῦτον **ἔσχε** τὸ τέλος... (Plb. 1.63.4)
>
> The war which had started between the Romans and the Carthaginians
> concerning Sicily, **reached** such an end on these conditions...

> [266] λέγω δὴ **θαρσήσας** ἤδη διὰ τὴν τῶν προτεθέντων συντέλειαν, ὅτι μηδεὶς ἂν
> ἕτερος ἠδυνήθη θελήσας μήτε Ἰουδαῖος μήτε ἀλλόφυλος τὴν πραγματείαν
> ταύτην οὕτως ἀκριβῶς εἰς Ἕλληνας ἐξενεγκεῖν. (Jos. *AJ* 20.263)
>
> Indeed, I say, already **having taken courage** on account of the completion
> of what I set out to do, since no one else could have described these matters
> so accurately for Greeks even if he wanted to, whether he were a Jew or
> from some other tribe.

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[296] Parallels: ἐβασίλευσεν (Jos. *AJ* 9.260), βασιλεύσας (Jos. *AJ* 6.322).

In the first example the war goes from the STATE of not having an end, to having an end. In the second example θαρσήσας collocates with ἤδη, and, furthermore, the occasion for the courage is given in the διά phrase.

STATE terminated prior to reference time

Finally, the perfective of state verbs may be used where the relevant STATE terminates before the onset of the immediately subsequent event described using a perfective. Consider the following examples of mental state verbs:

> [267] οἱ γὰρ ἐν Καισαρείᾳ Ἰουδαῖοι, συναγωγὴν ἔχοντες παρὰ χωρίον, οὗ
> δεσπότης ἦν τις Ἕλλην Καισαρεύς, **πολλάκις** μὲν κτήσασθαι τὸν τόπον
> **ἐσπούδασαν** τιμὴν πολλαπλασίονα τῆς ἀξίας διδόντες. (Jos. *BJ* 2.285)
>
> For the Jews in Caesarea who had a synagogue near the place where the
> owner was a certain Caesarean Greek, had **on several occasions been
> eager** to acquire the place, offering a price many times greater than its
> value.

Here it is clear that the event of 'being eager' has terminated at least once, since it collocates with the adverb πολλάκις. Parallels may also be found for βασιλεύω:

> [268] ἐβίω δ' ὀκτὼ ἢ ἐννέα ἐπὶ τοῖς ἐξήκοντα ἔτεσι, καὶ τούτων ἑπτὰ καὶ
> πεντήκοντα ἔτεσιν **ἐβασίλευσεν**. (App. *Mith*. 16.111)
>
> Mithridates lived sixty-eight or sixty-nine years, and **he was king** for fifty-
> seven of these.

In this example the life of Mithridates is being summed up. The STATE is seen as terminated at reference time, as is made clear by the first part of the sentence, which gives the extent of his life.[297]

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[297] cf. βασιλεύσαντος (Plb. 2.44.2).

In state verbs, therefore, it is possible to say that the perfective stem may imply that the endpoint of a STATE event has been reached, but need not do so. There are, however, at least three state verbs, κινδυνεύω, στρατηγέω and ὑπατεύω, whose perfective forms *always* present the whole event, including its termination point. The following example is of στρατηγέω:

> [269] ... Σκιπίωνα τὸν Νασικᾶν ἐπίκλην, ἐπεπόμφεσαν, υἱὸν μὲν ὄντα Γναίου
> Σκιπίωνος τοῦ **στρατηγήσαντος** ἐν Ἰβηρίᾳ καὶ ἐν αὐτῇ πεσόντος... (App.
> *Hann.* 9.56)
>
> ... they had sent namely Scipio Nasica, who was the son of Gn. Scipio, who
> **had served as general** in Iberia and had fallen there.

Here it is clear that at reference time the SUBJECT is no longer general: Gn. Scipio is described as having died in Spain, and therefore cannot be general at reference time, the point where his son is sent. Furthermore, the event described using στρατηγήσαντος is non-overlapping with πέσοντος, since the latter necessitates his generalship coming to an end, i.e.:

| στρατηγήσαντο	πεσόντος		ἐπεπόμφεσαν
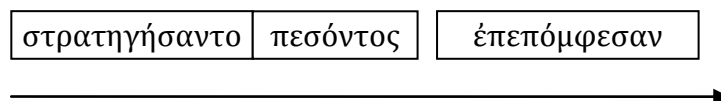
The following example is similar:

> [270] διαπλεύσαντες δὲ ὁ μὲν ἐς Βροῦτον, ὁ δ' ἐς Πομπήιον, ὁ μὲν τῷ Πομπηίῳ
> συγκατῆλθεν, ὁ δὲ **ἐστρατήγησε** τῷ Βρούτῳ Βιθυνίας καὶ Βρούτου
> πεσόντος Ἀντωνίῳ παραδοὺς Βιθυνίαν **κατήχθη**. (App. *BC* 4.6.46)
>
> Having set sail, the one for Brutus, the other for Pompey, the former
> returned from exile with Pompey, the other **served as general** for Brutus
> over Bithynia, and when Brutus fell, having handed the province over to
> Antony, **was brought back**.

Robert Crellin

Here Brutus is described as taking command of Bithynia, and then as surrendering it to Antony.[298] Here there are two aorist indicatives, related in a non-overlapping way as follows:

ἐστρατήγησε	κατήχθη

→
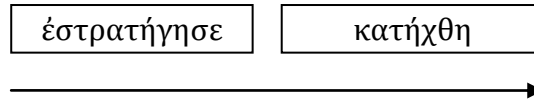
κατήχθη is in turn related to two events described by the two perfective participles πεσόντος and παραδούς as follows:

πεσόντος	παραδούς	κατήχθη

→
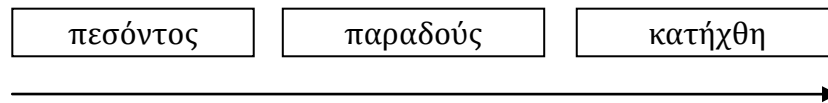
ὑπατεύω functions in the same way:[299]

> [271] ... ἧκε πρὸς τὴν γυναῖκα καὶ ὑπ' αὐτῆς ἐκρύπτετο ἐπὶ διπλῆς ὀροφῆς μεταξύ, μέχρι τινὲς αὐτὸν ἐρρύσαντο παρὰ τῶν προγραψάντων καὶ ὕστερον ἐπὶ εἰρήνης **ὑπάτευσεν**. (App. *BC* 4.6.44)

> [Lucretius] came to the woman and was hidden by her on the double roof in between, until some people came and rescued him from those who had proscribed him; he later **served as consul** during the peace.

---

[298] In total there are 7 non-negativised indicatives or particpial aorist forms of this verb attested in the corpus, and in all cases the state clearly terminated at a point prior to reference time. The examples are App. *Pun.* 11.74, where the Carthaginian Hasdrubal, general in the war against Massanassus (στρατηγήσαντι τοῦδε τοῦ πρὸς Μασσανάσσην πολέμου) is put to death for his failure, App. *Mith.* 17.118 and 121, where Pompey described from the perspective of the writer Appian as τὸν στρατηγήσαντα during the Mithridatic War, Plu. *Lys.* 16.1, where Lysander sends back the wealth he had obtained in Athens via Gylippus, who is described as τοῦ στρατηγήσαντος περὶ Σικελίαν: the context is clear that he is no longer serving as general in Sicily; Plu. *Nic.* 8.1, where Cleon is described as having brought home as prisoners of war having served admirably as general alongside Demosthenes (στρατηγήσας ἄριστα μετὰ Δημοσθένους). At *Nic.* 16.3 and *Nic.* 17.1 στρατηγέω is used in a different sense, namely 'to show generalship'. Jos. *AJ* 7.197 uses στρατηγέω in another sense, specifically, 'to plot so as to achieve'.

[299] cf. ὑπατεύσαντος at App. *BC* 1.2.17 which collocates with δίς, indicating that the state must have terminated at least once.

Gracchus' father was consul in 177 and 163 BC, but the events described here took place in 133.[300] The second example describes the consulship of Lucretius. The perfective is used in a narrative sequence, the reference time being that of the narrator, living more than two centuries after the events he is describing.

Now let us consider state verbs where indicating situations of limited duration in which the SUBJECT finds him or herself. The principal representative of this type of verb in the present corpus is κινδυνεύω 'to be at risk':[301]

> [272] ἐν δὲ Τεκτοσάγαις τε καὶ Τρόκμοις **ἐκινδύνευσε** μὲν ἐξ ἐνέδρας, καὶ
> **ἔφυγεν**. (App. *Syr.* 7.42)
>
> Among both the Tectosagi and the Trocmi he **came into danger** through ambush, but **escaped**.

Here the termination of the STATE is made clear by the specification ἔφυγεν.

ἐκινδύνευσε	ἔφυγεν

---
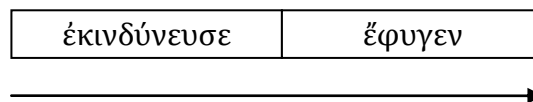
[300] Parallel: ὑπατεύσαντος (App. *BC* 1.7.61) collocating with ἑξάκις.

[301] Altogether, there are fourteen examples of aorist indicatives of κινδυνεύω in the present corpus. Of these four are found in counterfactual conditional clauses, leaving ten non-modal uses. Thirteen perfective participles were also found. No examples were found where it is clear that the state 'being in danger' does not terminate before the start of the next event. The examples are as follows: App. *Mith.* 8.56 (participle with πολλάκις), *Syr.* 7.42, Jos. *AJ* 4.188 (indicative with πλεονάκις), 5.33 (participle: here the precise ordering of events is not clear), 5.174 (participle with non-overlapping event described by the main verb), 7.5 (participle with πολλάκις), 7.270 (participle with non-overlapping event described by the main verb) Jos. *AJ* 11.184 (indicative not overlapping with other events in context, summarising the plight of the Jewish people at the time of Esther), 11.275 (indicative summarising the experience of men who are appointed to official positions by their friends), Jos. *BJ* 5.97 (participle with non-overlapping event described by the main verb), 5.438 (participle with non-overlapping event described by the main verb), Jos. *Vit.* 14 (participle with non-overlapping event described by the main verb), 416 (indicative with πολλάκις), Plb. 1.2.2 (indicative with ὁσάκις and implied τοσάκις), 1.28.6 (participle: here the precise ordering of events is not clear), 1.38.9 (indicative with non-overlapping event described by the next main verb), 1.65.4 (indicative summarising the experience of the Carthaginians in dealing with their own revolt), 2.9.6 (indicative describing a non-overlapping event with that described by the next indicative), 2.28.10 (participle with non-overlapping event described by the main verb) and 4.12.6 (indicative limited by the *for a time* phrase πολὺν... χρόνον). All of these are found in narrative contexts and in all cases the STATE does not continue up to reference time, namely the time of the writer Josephus.

Given that the perfective of στρατηγέω and κινδυνεύω behave differently from other state verbs, I propose to divide the state verb group into two types: non-terminative state verbs, including πιστεύω and βασιλεύω, where the perfective does not necessarily present the event as having terminated, and terminative state verbs where the perfective always presents the event as having terminated.

Such a distinction between terminative and non-terminative state verbs is not arbitrary. κινδυνεύω and στρατηγέω differ from other state verbs, such as βασιλεύω and ἀγαπάω, in that they denote STATES with non-arbitrary endpoints. 'Being a general' is determined by the length of a battle, or the length of a fixed term of office; it has a natural endpoint. Similarly, 'being in danger' may last only as long as danger is present. By contrast, 'loving someone', 'ruling', 'being eager' etc. are all STATES without natural expiry; the length of their duration is unknowable, even to the SUBJECT. This is not to say that they will never cease, but merely that the point of their ceasing is unpredictable.

μένω and compounds

μένω and its compounds represent a special case of state verb, in that the meaning of the verb itself implies that the object has already started to be in the position in which it is found at reference time. Consequently, it is not expected that perfective examples meaning 'having started to remain' will be found, since this would be oxymoronic. However, it is possible to find examples both where the STATE of remaining continues up to reference time, and where it has ceased prior to it:

> [273] καὶ οὗτοι μὲν ἑπτὰ γενεὰς **διέμειναν** θεὸν ἡγούμενοι δεσπότην εἶναι τῶν ὅλων καὶ πάντα πρὸς ἀρετὴν ἀποβλέποντες, εἶτα προϊόντος χρόνου μεταβάλλονται πρὸς τὸ χεῖρον ἐκ τῶν πατρίων ἐθισμῶν... (Jos. *AJ* 1.72)
>
> And [the Israelites] **continued** to consider God as the Lord of all for seven generations, paying attention to everything in regard to virtue; then with the passage of time **they made a change** for the worse, [and departed from] the ways of their forefathers'...

> [274] ἡ δὲ στεφάνη, εἰς ἣν τὸν θεὸν Μωυσῆς ἔγραψε, μία ἦν καὶ **διέμεινεν** ἄχρι τῆσδε τῆς ἡμέρας... (Jos. *AJ* 8.93)
>
> The crown, on which Moses wrote, was one and **has remained** up to the present day.

In the first example, the period of the Israelites' obedience does not overlap with the period of their departure from their forefathers' ways. However, in the second it is clear that it remains 'up to the present day'.

Because the perfective of these verbs does not necessitate the interpretation that the event has terminated prior to reference time, I place them in the non-terminative state verb category.

4.2.2.2. Change-of-state

Non-causative COS

COS verbs behave differently from both accusative verbs and state verbs. Unlike state verbs, the perfective stem always denotes that an event has terminated, specifically that the change of STATE terminated prior to reference time. However, the new STATE once reached is always assumed to hold for the next event described:[302]

> [275] ὄχλου δὲ πολλοῦ συνδραμόντος **ἀναβὰς** ἐπὶ τὸν τοῦ κήρυκος λίθον ἐν ᾠδῇ **διεξῆλθε** τὴν ἐλεγείαν... (Plu. *Sol*. 8.2)
>
> When a large crowd had rushed together, **having climbed** onto the stone of the herald, **he performed** the elegy...

In the first example Solon goes up on to the platform, and his new STATE is assumed to hold for the next event, denoted by διεξῆλθε. This may be represented diagrammatically:
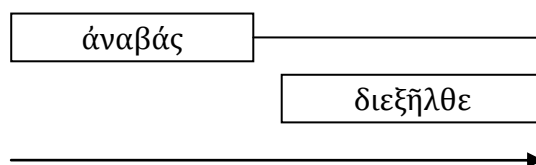

Valency-reducing causative COS

The valency-reducing instances of causative COS verbs behave in exactly the same way as monovalent COS verbs:

> [276] ἡ μὲν οὖν Εἰρώμου φιλία καὶ Σολόμωνος ἀπὸ τούτων ἔτι μᾶλλον **ηὔξησε** καὶ
> διαμένειν **ὤμοσαν** εἰς ἅπαν. ὁ δὲ βασιλεὺς **ἐπέταξε** παντὶ τῷ λαῷ φόρον
> ἐργάτας τρισμυρίους... (Jos. *AJ* 8.58)
>
> So the friendship between Hiram and Solomon **grew** even more from this,
> and **they swore** that it would remain forever. And the king **ordered** that a
> tax be laid on the whole people of thirty thousand labourers...

Here it is clear that the newly strengthened friendship between Solomon and Hiram is the context for the next two events which are described with aorists, namely their swearing of allegiance and the order to generate a workforce:
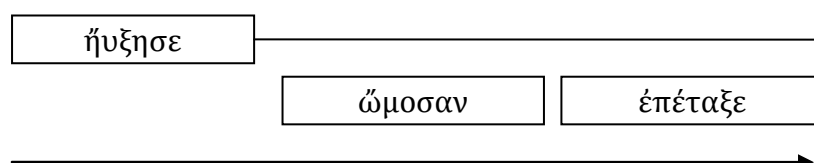
The fact that the perfective stem of these verbs asserts that the change of STATE has taken place before the next event is described indicates that these verbs are terminative. This is to be expected, since a change of STATE necessarily carries with it the expectation of an endpoint, namely the STATE being reached. However, in another sense, the perfectives of these verbs also describe a non-terminative event, since a new STATE has been entered into which does not carry with it the expectation of a naturally occurring endpoint; it simply cannot be predicted, for example, how long the newly strengthened friendship between Hiram and Solomon will continue in that STATE. These verbs, therefore, are in different senses both terminative and non-terminative: they describe telic events which usher in atelic STATE.

Notice that the kind of behaviour witnessed here is not unique to INTRANSITIVE valency-reducing COS verbs. TRANSITIVE valency-reducing causative COS verbs may also behave in this way, if the SUBJECT changes STATE during the course of the event:

[277] ... τά τ᾽ ὅπλα ἀνέλαβον καὶ **τὸν χάρακα περιστεφανώσαντες**, μή τις

ἔφοδος αὐτοῖς γένοιτο νύκτωρ, τοτὲ μὲν ὅπλων κτύπον **ἐποίουν** ἀθρόοι...

(Dion. Hal. *Antiquitates Romanae* 8.66.2)

... and they took up their weapons and, **having surrounded the camp**, lest

an attack come upon them during the night, proceeded all together **to make**

a loud noise with their weapons...

Here the SUBJECT participants change STATE, specifically location, in that they surround the camp, and, in their new location of being around the camp begin making a noise with their weapons.

4.2.2.3. Accusative

Non-COS

Perfectives of the following verbs types are included in this category:

1. Declarative verbs e.g. (προ-)λέγω 'to say (previously)', δηλόω 'to make clear', ἱστορέω 'to record'.
2. Terminative accomplishment verbs where the SUBJECT participant does not change STATE, e.g. ποιέω 'to make', δίδωμι 'to give', νικάω 'to defeat'.
3. Verbs describing perception events where the SUBJECT is affected by the OBJECT STIMULUS participant, but does not change STATE, e.g. ἀκούω 'to hear'.

The simplest case, where the perfective always presents the whole event, including its endpoints, is that of terminative accomplishment verbs. Consider the following example involving the perfective stems of the verbs ποιέω and δίδωμι:

[278] ἡσθεὶς οὖν ὁ Κῦρος ἐπὶ τῇ φιλοτιμίᾳ τοῦ ἀνδρὸς μυρίους αὐτῷ δαρεικοὺς

ἔδωκεν, ἐξ ὧν ἐπιμετρήσας τὸν ὀβολὸν τοῖς ναύταις καὶ λαμπρυνάμενος

ὀλίγῳ χρόνῳ τὰς ναῦς τῶν πολεμίων κενὰς **ἐποίησεν**. (Plu. *Lys.* 4.4)

So Cyrus, pleased with the ambition of the man, **gave** him ten thousand

darics, out of which, having given an obol to the sailors and, having gained

their respect in a short time, he **emptied** the ships of the enemy.

Here two events are described by indicative perfective verb forms: Cyrus giving a large amount of money to someone (ἔδωκεν), and that person subsequently emptying the enemies' ships (ἐποίησεν). The event described using the first perfective form necessarily precedes the event described using the second perfective form.

ἔδωκεν	ἐποίησεν

⟶
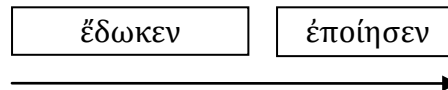
In the foregoing example the event described using the first perfective indicative occurs prior to the event described using the second indicative. However, the events need not be taken to have occurred in the order of the verbs which describe them. Consider the following example:

> [279] ... διὰ τὴν τοῦ παρόντος ἀρετὴν **ἔγνω** καὶ τότε βασιλέα καθιστᾶν Ἰουδαίων
>
> ὃν **πρότερον** αὐτὸς **ἐποίησεν** τετράρχην. (Jos. *BJ* 1.282)
>
> ... on account of [Herod's] virtue [Antony] **decided** at that time to make him
>
> king of the Jews, whom **he had** himself previously **made** tetrarch.

Here the event described using the second perfective form (ἐποίησεν) necessarily precedes the event described using the first perfective form (ἔγνω). The anteriority of the event described using ἐποίησεν is dictated by the adverb πρότερον, which measures the event described using ἐποίησεν relative to the event described using ἔγνω.

ἐποίησεν	ἔγνω

⟶
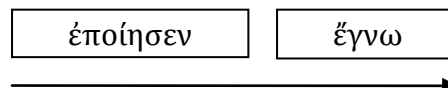
The non-overlapping presentation of events in the perfective is not limited to the indicative. It may also be seen in the participle. However, perfective participles do not locate the occurrence of the event they describe relative to speaker time, but rather to the event described using the indicative verb in the sentence. Consider again the following example:

> [280] ἡσθεὶς οὖν ὁ Κῦρος ἐπὶ τῇ φιλοτιμίᾳ τοῦ ἀνδρὸς μυρίους αὐτῷ δαρεικοὺς **ἔδωκεν**, ἐξ ὧν **ἐπιμετρήσας** τὸν ὀβολὸν τοῖς ναύταις καὶ λαμπρυνάμενος ὀλίγῳ χρόνῳ τὰς ναῦς τῶν πολεμίων κενὰς **ἐποίησεν**. (Plu. *Lys.* 4.4)
>
> So Cyrus, glad of the ambition of the man, **gave** him ten thousand darics, out of which, **having given an obol** to the sailors and, with the renown thus won, he soon **emptied** the ships of the enemy.

ἐπιμετρήσας describes an event which, including its termination point, necessarily occurs prior to the event described using ἐποίησεν. Likewise the event described using ἔδωκεν must precede both of these two events.

It is possible for the perfective of accusative verbs to describe overlapping events. Consider the following example:

> [281] τοῦτο τὸ πάθος πρὸς καιρὸν μὲν Ῥωμαίοις **ἐνεποίησεν** ἀθυμίαν, πρὸς δὲ τὸ μέλλον ὅμως ἀπαρακλήτους **κατεσκεύασεν**... (Jos. *BJ* 6.190)
>
> This experience **made** the Romans **lose heart** for a time, and it **made** them inconsolable for the future...

ἐνεποίησαν
κατεσκεύασεν

$\longrightarrow$
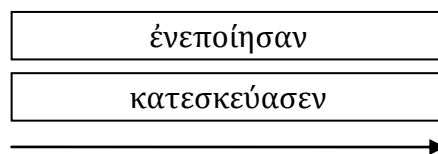
However, this example does not describe two independent but simultaneous events. Rather, they present the same event in different ways. It follows, therefore, that the events thus described are coextensive.

Perception verbs, such as πάσχω 'to suffer', ἀκούω 'to hear', behave in a very similar way; these verbs in the perfective always assert that the event terminated prior to reference time:[303]

> [282] ταῦτ' **ἀκούσαντες** οἱ τρεῖς ἄνδρες οὗτοι παραχρῆμα **ἐκδραμόντες** καὶ διὰ
> μέσου τοῦ τῶν πολεμίων ὁρμήσαντες στρατοπέδου ἦκον εἰς Βηθλεέμην...
> (Jos. *AJ* 7.313)
>
> **When they heard** this, these three men immediately **ran out** and, making a
> start through the middle of the enemy camp, arrived in Bethlehem...

It is clear that the 'hearing' event precedes in its entirety the 'running out' event described using ἐκδραμόντες, as well as that described by ἦκεν.

Perfectives of these verbs share with those of terminative state verbs the characteristic that they do not describe partially overlapping events; the events they describe are always telic. This follows, since, as in the case of terminative state verbs, accomplishment verbs describe events with a natural termination point, namely when the result point of the event is reached. Where an unbounded frame is provided for events described by these verbs, they are taken to occur at some point within this frame:

> [283] **μειδιῶντες** δὲ ἐν ταῖς ἀλγηδόσιν καὶ κατειρωνευόμενοι τῶν τὰς βασάνους
> προσφερόντων εὔθυμοι τὰς ψυχὰς **ἠφίεσαν** ὡς πάλιν κομιούμενοι. (Jos. *BJ*
> 2.153)
>
> Rather, [the Jews], **smiling** in their pains and despising the torture of those
> who were bringing them, gladly **gave up** their souls in order to gain them
> again.

Non-reducing causative COS

Non-reducing uses of causative COS verbs behave exactly as other accusative verbs:

> [284] παρὰ δὲ τοὺς ἱππεῖς ἐν μετώπῳ τοὺς Κρῆτας **ἔστησε**: τούτοις δ' ἐξῆς ἔταξε
> τοὺς ἀπὸ τῆς Ἑλλάδος μισθοφόρους... (Plb. 5.82.10)
>
> **He stood** the Cretan cavalry on the front-line and to these he added the
> mercenaries from Greece.

---

[303] cf. ἔπαθεν and φησί (Plb. 2.59.5).

Here it is clear that the two events described by ἔστησε and ἔταξε are non-overlapping. In this respect causative COS perfectives behave aspectually in exactly the same way as the non-causative COS perfectives discussed in the previous section.

Likewise, compare the following examples involving the verb παρεμβάλλω:

[285] τῶν δὲ μισθοφόρων **τοὺς** μὲν ἐπὶ τὸ δεξιὸν κέρας **παρενέβαλεν**, τοὺς δ' εὐκινητοτάτους ὁμοῦ τοῖς ἱππεῦσιν ἑκατέρου τοῦ κέρατος **προέστησεν**. (Plb. 1.33.7)

Some of the mercenaries **he placed** along the right wing, but those who were most agile he put together in front of the cavalry of each wing.

This example describes a causative COS event, where the SUBJECT, does not change STATE. Consequently the events described by παρενέβαλεν and προέστησεν are non-overlapping.

4.2.2.4. Activity

The perfective of activity verbs may present an event either as discrete with respect to another event described with another perfective, or simultaneous with that event. In the following the two events described by perfectives are non-overlapping:

[286] ὁ δὲ **ἐπεμειδίασε** καὶ Πειθαγόραν αὐτὸν **ἤρετο**, ὅ τι λέγοι τὸ σημεῖον... (App. *BC* 2.21.152)

But he **smiled** and **asked** Peithagoras himself what the sign meant...

In the following example, by contrast, the perfective describes an event which is simultaneous with another:

[287] καὶ ὁ Γρᾶτος **μειδιάσας ἐπισπᾶται** τῆς δεξιᾶς, καί παῦσαι, φησίν, μικρολογούμενος περὶ τῆς σωτηρίας δέον σε μεγαλοφρονεῖσθαι περὶ τῆς ἡγεμονίας... (Jos. *AJ* 19.219)

And Gratus **smiled**, **took** [Claudius] by the (right) hand, and said, "Stop these lowly thoughts of your own safety, when you should be thinking bigger, about taking the empire...

Consider the following diagrammatic representation:

μειδιάσας
ἐπισπᾶται

$\longrightarrow$
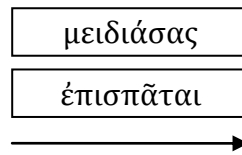
This sense differs from that of the imperfective, in that the latter may describe an event which extends beyond or before that described with a perfective:

> [288] **μειδιῶντες** δὲ ἐν ταῖς ἀλγηδόσιν καὶ κατειρωνευόμενοι τῶν τὰς βασάνους προσφερόντων εὔθυμοι τὰς ψυχὰς **ἠφίεσαν** ὡς πάλιν κομιούμενοι. (Jos. *BJ* 2.153)
>
> Rather, [the Jews], **smiling** in their pains and despising the torture of those who were bringing them, gladly **gave up** their souls in order to gain them again.
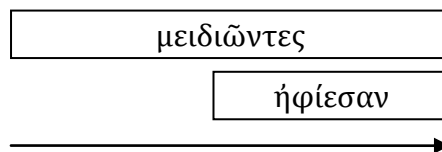
Here the point is that the Jews are smiling all the way through their ordeals, which includes the moment of their passing:

μειδιῶντες

ἠφίεσαν

$\longrightarrow$

The same distinction can be seen between the perfective and imperfectives of ἐμβλέπω:

> [289] ... μέγα τε σχετλιάσας καὶ τοῖς δακρύουσιν **ἀτενὲς ἐμβλέψας** ἧ πλεῖστον, **εἶπεν**, ἐψεύσθην νομίζων ἀνδράσιν ἀγαθοῖς τῶν ὑπὲρ τῆς ἐλευθερίας ἀγώνων συναρεῖσθαι, ζῆν καλῶς ἢ τεθνάναι διεγνωκόσιν. (Jos. *BJ* 7.341)
>
> ... and having complained bitterly, **looking directly** at those who were weeping he **said**, "I was deeply mistaken thinking that I would help brave men in their fight for freedom, when in fact they have decided to live well rather than die."

> [290] ἣ δ' **ἐμβλέποντος** τἀδελφοῦ **φυράσασα** τὸ ἄλευρον καὶ **πλάσασα** κολλυρίδας καὶ **τηγανίσασα προσήνεγκεν** αὐτῷ. (Jos. *AJ* 7.167)
>
> But she, **while** her brother **was looking on**, **mixed** the flour and **made** loaves of bread and, **once she had fried** them, **brought** them to him.

In the first case the speaking event is simultaneous and coextensive with the looking event, while in the second case, the imperfective denotes a certain period, within which certain events marked with perfectives take place:

ἐμβλέψας
εἶπεν

———————————→

ἐμβλέποντος			
φυράσασα	πλάσασα	τηγανίσασα	προσήνεγκε

———————————————————→
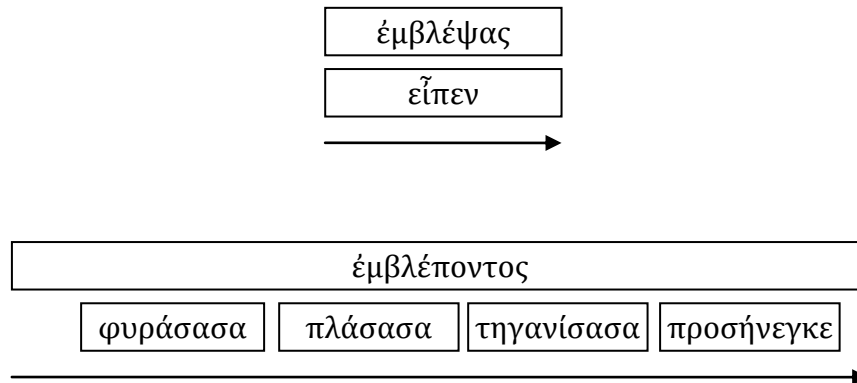
It seems then that the purpose of the perfective of activity verbs is to describe the manner in which another perfectively described action was carried out, while the purpose of the imperfective is to give a time interval in which one or more perfective events were carried out.

It is on rare occasions possible for activity verbs to describe partially overlapping events, but in these cases the event described is in fact a change of STATE. Consider the following use of the verb χάσκω, 'to yawn, to gape':

> [291] ... ὁ Μωυσῆς πλήττει τῇ βακτηρίᾳ, καὶ **χανούσης** ἐξέβλυσεν ὕδωρ πολὺ καὶ διαυγέστατον. (Jos. *AJ* 3.37)
>
> ... Moses struck [the rock] with his staff, and **when it opened**, a large
> quantity of the clearest water gushed out.

χανούσης here comes to mean 'having opened', thus describing a COS event. The RESULTANT STATE thus overlaps with the subsequent event:[304]

χανούσης	————————→

	ἐξέβλυσεν

———————————————→

---
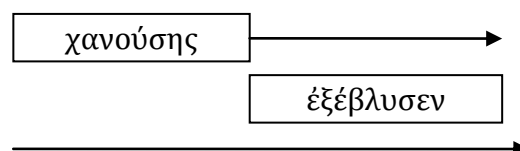
[304] ῥέω 'to flow' has a similar change-of-state sense when it has the meaning 'to be in flood'; see Nicolaos (*Frag.* 3).

4.2.3. Verbs crossing categories

Some verbs do not clearly belong exclusively to one particular group, either because they are attested in different senses which cross the boundaries between the classes (e.g. γιγνώσκω or κάμνω), or because they evidence a TRANSITIVE usage conveying a change-of-state, but an INTRANSITIVE one denoting a STATE (e.g. πιστεύω). They have in common, however, the capacity to denote COS events. In terms of the quantitative analysis, therefore, they will be treated as COS verbs.

γιγνώσκω

In both the imperfective and the perfective stems this verb exemplifies both state and COS uses. In the former sense it may mean 'to know', while in the latter it may mean either 1) 'to perceive', i.e. 'to come to know', or 2) 'to decide'. The COS sense is exemplified in the following examples, the first with the sense 'to decide', the second with the sense 'to perceive':

> [292] πῶς δ' αὐτὸς Ἀντώνιος, εἴ τι τοιοῦτον **ἐγίγνωσκε**, τὰ ἐνέχυρα τὰ νῦν ὄντα
> πρὸ τοῦ βουλευτηρίου κατέλιπεν ἡμῖν; (App. *BC* 3.8.58)
>
> How is it possible that Antony, if he **was considering** some such thing [as
> an invasion], left with us the hostages that are now before the Senate?

> [293] δύο δὲ τῶν ἑλῶν ὄντων δύο ἦσαν οἱ πόλεμοι, τῇ διόδῳ εἰργόμενοι μὴ
> **γινώσκειν** τὰ ἀλλήλων. (App. *BC* 3.9.67)
>
> There were two battles over the two marshes which were there, each
> prevented from **perceiving** the other by the passage.

These are imperfectives, and thus denote the COS event in progress.

In other instances, however, γιγνώσκω clearly functions as a state verb with the meaning 'to know'. Accordingly, in this sense the imperfective denotes the existence of the STATE:[305]

> [294] πρὸς δὲ τοῦτον τὸν λόγον ὑπὸ πολλῶν εἰρημένον ἀντιτασσόμενος ὁ
> Φαληρεὺς Δημήτριος ἐν τῷ Σωκράτει χωρίον Φαληροῖ φησι **γινώσκειν**
> Ἀριστείδου γενόμενον... (Plu. *Arist.* 1.2)
>
> But contrary to this story, which is told by many, Demetrius of Phalerum in
> 'Socrates,' says **he knows** an estate at Phalerum which was once Aristides'...

---

[305] Parallels: Plb. 3.64.3, App. *BC* 2.12.85.

Both the meaning 'to know' and meaning 'to decide' are attested also in the perfective stem, denoting entry into the STATE. The following two example gives the COS sense, 'to decide':[306]

> [295] ἐκεῖνος δὲ τὸ μὲν πρῶτον **ἔγνω** τὴν στρατιὰν ἱδρύσας ἐπὶ λόφου
>
> **περιμένειν** τὸν Παυσανίαν (Plu. *Lys.* 28.3)
>
> But he **decided** first, having set his army on a hill, **to await** Pausanias.

Of the sense 'to know' the following may be considered an example, the first marking entry into the STATE, the second merely the STATE of knowing: [307]

> [296] ὡς δὲ τῷ Νικίᾳ προσελάσαντες ἔφραζον οἱ Συρακούσιοι καὶ πέμψας ἱππέας
>
> **ἔγνω** τὴν ἐκείνου τοῦ στρατεύματος ἅλωσιν… (Plu. *Nic.* 27.2)
>
> When the Syracusans drove up to Nicias and told him [what had happened],
> he sent cavalrymen and **made certain** of the capture of Demonsthenes'
> force…

πιστεύω

πιστεύω is attested both in a STATE sense and in an accusative COS, i.e. causative, sense. The STATE sense, namely 'to believe', is clear in the following example:[308]

> [297] … κολάσεως ὑμῖν ἔδει, ἐπεὶ δὲ ἐκόντες **πιστεύομεν** ὑμᾶς κατὰ ἀνάγκην τάδε
>
> πεποιηκέναι… (App. *BC* 5.1.5)
>
> … you deserved punishment, since **we** willingly **believe** that you did these
> things out of necessity…

---

[306] Parallel: ἔγνωσαν (App. *BC* 1.5.38). I have not so far been able to find an example of the COS sense 'to perceive' in the perfective stem.

[307] cf. Plu. *Nic.* 6.5, Plb. 3.75.3.

[308] cf. the same sense in the imperfective at Jos. *AJ* 20.31.

In the perfective, the STATE sense of πιστεύω behaves as the perfective of any state verb, with its capacity to denote entrance into the STATE described by the verb:

> [298] νυκτὸς δ' ἄφνω δόξης γενομένης, ὅτι δύο τέλη Καίσαρος, τό τε Ἄρειον καὶ τὸ τέταρτον, μεταθοῖτο ἐς τὴν πόλιν ὡς δι' ἐνέδρας ἐπὶ τὴν πατρίδα ἐπαχθέντα, οἱ στρατηγοὶ καὶ ἡ βουλὴ πάμπαν ἀταλαιπώρως **ἐπίστευσαν**, καίπερ ὄντος ἐγγυτάτω τοῦ στρατοῦ. (App. *BC* 3.13.93)
>
> During the night there was a rumour that two of Caesar's legions, the Martian and the Fourth, had changed sides over to that of the Republic, on the grounds that it was through trickery that they had been led against their country. The generals and the Senate unquestioningly **put their trust** in this report, even though the army was very near.

By contrast, the accusative COS sense of πιστεύω is 'to entrust':[309]

> [299] οὗτός ἐστιν ὁ παραινῶν ἐμοί ποτε φυλάττεσθαι ζῶντα Ἀλέξανδρον καὶ μὴ πᾶσιν **πιστεύειν** τὸ σῶμα. (Jos. *BJ* 1.627)
>
> This is the man who at one time was persuading me to guard Alexander's body while he was alive, and not to **entrust** the body to all and sundry.

Note that this is not a straightforward case of labile transitivity, since in that case the imperfective stem should still denote a COS event, whereas the examples quoted above clearly denote unchanging STATE events.

κάμνω

This verb is usually understood to mean 'to toil, to labour', as in the following example, and as such might be classed as an activity verb:

> [300] καὶ οἱ μὲν ἐπὶ τρεῖς ἡμέρας σκυλεύοντες **ἔκαμον**· τοσοῦτον ἦν τὸ τῶν ἀνῃρημένων πλῆθος. (Jos. *AJ* 9.15)
>
> And they **toiled** for three days despoiling the enemy; for there was such a great multitude of the slain.

---

[309] Parallel (in the perfective): Jos. *AJ* 10.135.

Yet when construed with an OBJECT complement this verb can yield a sense akin to 'to suffer, to experience':

> [301] ... καὶ προσκαλεσάμενος Μουκιανὸν ἅμα τοῖς ἄλλοις ἡγεμόσι καὶ φίλοις
> πρῶτον μὲν αὐτοῦ τὸ δραστήριον ἐκδιηγεῖτο καὶ **ὅσα** περὶ τοῖς Ἰωταπάτοις
> δι' αὐτὸν **ἔκαμον**... (Jos. *BJ* 4.624)
>
> ... calling Moucianos to him, along with his other leaders and friends, he first
> told them the deed, and **all** that **he had been through** in [the siege of]
> Jotapata.

In yet other situations this verb frequently appears to assume a natural endpoint, namely of 'being tired', yielding a COS sense:[310]

> [302] μάλιστα δ' ἐν ταῖς ἑορταῖς ἐκεκράγει: καὶ τοῦτ' ἐφ'ἑπτὰ ἔτη καὶ μῆνας πέντε
> εἴρων οὔτ' ἤμβλυνεν τὴν φωνὴν οὔτ' **ἔκαμεν**, μέχρις οὗ κατὰ τὴν
> πολιορκίαν ἔργα τῆς κληδόνος ἰδὼν ἀνεπαύσατο. (Jos. *BJ* 6.308)
>
> He would make this cry particularly during the festivals: and making these
> announcements for seven years and five months he did not dim his voice or
> **give up**, until, seeing the events of his testimony he ceased.

4.2.4. Defective verbs

A number of verbs attested in the perfect or pluperfect are not attested in either or both of the imperfect and perfective stems. Key verbs in this category are the following:

Table 28 - Defective verbs

Perfect	Gloss	Imperfective	Perfective
δέδοικα / δέδια	I fear / am afraid	-	ἔδεισα
ἔωθα	I am accustomed	-	-
ἔοικε	it is fitting/ like	-	-
οἶδα and compounds	I know	-	εἶδον
κράζω	I cry (out)	-	ἔκραγον

---

[310] cf. ἔκαμον (Jos. *AJ* 8.102) with the sense 'to tire'.

Because of the limited attestation of these verbs in the other aspects it is harder to establish the aspectual character of the verb. Because of this these verbs will be grouped in a class of their own labelled 'defective'. Since the full paradigm does not exist, the aspectual character of their perfect and pluperfect forms will be assessed on their own merits in the following section.

4.2.5. Conclusions

This section has identified the following lexical aspectual categories:

1. State verbs, describing the STATE of the SUBJECT. These verbs may be subdivided into terminative and non-terminative:
    a. Terminative e.g. στρατηγέω 'to be general': Verbs describing the STATE of the SUBJECT where the STATE is temporary in that it has a natural termination point.
    b. Non-terminative, e.g. βασιλεύω 'to be king' and ἀγαπάω 'to love, to be content': Verbs describing the STATE of the SUBJECT where the STATE is assumed to hold barring a further event which brings it to termination.
2. Change-of-state, e.g. βαίνω as well as valency-reducing causative COS e.g. ἔστην from ἵστημι: Verbs describing a change in STATE of the SUBJECT; the STATE once reached is assumed to hold unless a further event causes it to terminate.
3. Accusative, e.g. ποιέω, ἀκούω as well as non-reducing causative COS e.g. ἔστησα from ἵστημι: Verbs describing events where the SUBJECT does not change STATE, but effects some change on another object, or has some change brought about on it via some STIMULUS which does not change its STATE. These verbs do not describe a change-of-state for the SUBJECT, and therefore are seen as terminating without the need for a further event.
4. Activity, e.g. τρέχω 'to run' and μειδιάω 'to smile': Verbs denoting an action in which the SUBJECT participates, but which do not in themselves describe an event which is directed towards an endpoint. Direction may however be added by means of an adjunct.

Note that causative COS verbs, as established in Chapter 3, may show valency-reduction, regularly in the case of COL verbs, and sporadically in the case of other COS verbs. In valency-reducing instances of causative COS verbs, the participant in SUBJECT position is presented as changing STATE during the course of the event. These therefore behave as COS verbs, such as βαίνω. By contrast, non-valency-reducing instances of causative COS verbs do not, as a rule, entail the SUBJECT entering a STATE during the course of the event. Consequently, there is no RESULTANT STATE to overlap with a consequent event. The following table summarises the distinctions:

Table 29 - Greek verbs according to semantic class

Lexical aspectual class	Sub-class	Example verb	Permanent STATE for SUBJECT
State	Terminative	στρατηγέω, κινδυνεύω	No
	Non-terminative	ἀγαπάω, βασιλεύω	Yes
Change-of-state	Non-causative COS	ἔρχομαι, βαίνω	Yes
	Valency-reducing causative COS	ἵστημι, πήγνυμι	Yes
Accusative	Non-COS	δηλόω, ποιέω; ἀκούω, πάσχω	No
	Non-reducing causative COS	ἵστημι, πήγνυμι	No
Activity	Activity	τρέχω, μειδιάω	No

Having identified these four categories, I will now turn to examining how the perfect active stem of verbs in each of these categories behaves.

4.3. The perfect active according to aspectual category

In this section perfect actives are divided into the semantic groups determined in the previous sections. The aim is to see how the perfect active stem differs in its assertion regarding endpoints according to these aspectual categories.

4.3.1. State

4.3.1.1. Introduction

A state verb is defined as any verb whose present active describes the STATE of the SUBJECT. In the previous section state verbs were divided into two types, terminative and non-terminative, according to whether or not the endpoint of the event is set arbitrarily or not. In the case of terminative state verbs, the STATE is never seen to hold at reference time. By contrast, in the case of non-terminative state verbs, the STATE is sometimes seen to hold at reference time, but this need not be the case. The perfect active stems of these verbs will now be examined.

4.3.1.2. PURE STATE

In a number of cases there is no discernable reference to any period prior to reference time. This usage is particularly frequent in mental state verbs:[311]

> [303] ἀναστὰς δὲ μετ' αὐτὸν Ζαμβρίας ἀλλὰ σὺ μέν, εἶπεν, ὦ Μωυσῆ, χρῶ νόμοις
> οἷς αὐτὸς **ἐσπούδακας** ἐκ τῆς τούτων εὐηθείας τὸ βέβαιον αὐτοῖς
> παρεσχημένος. (Jos. *AJ* 4.145)
>
> Standing up after him Zambrias said, "Moses, you are using laws, for which
> **you yourself are zealous**, and have provided certainty for these people on
> account of their simplicity.

---

[311] Parallels: ἐσπούδακε (Jos. *AJ* 8.202), ἐσπουδάκεσαν (App. *Ib.* 15.92), ἐσπουδάκει (Jos. *AJ* 1.265); λελυσσηκόσιν (Jos. *BJ* 4.371), λελυσσηκότων (Jos. *BJ* 2.213); μεμηνέναι (Plu. *Alc.* 17.4), μεμηνόσιν (App. *BC* 1.3.24), μεμηνότα (Jos. *AJ* 10.119), μεμηνότας (Jos. *AJ* 1.116), μεμηνότες (Jos. *BJ* 1.352, *AJ* 14.480), μεμηνότι (App. *BC* 1.7.61) etc.; ἠγνοηκώς (Plb. 3.80.4); τεθαρρηκότι (Jos. *AJ* 18.334).

[304] ... πρὸς δὲ τὸ γενομένης ὀργῆς ἢ διαβολῆς ἢ στάσεως διδάξαι καὶ πραῦναι καὶ μεταθεῖναι **τοὺς ἠγνοηκότας** ὁλοσχερῶς ἀστοχοῦσιν. (Plb. 1.67.5)

... but when anger, or slander, or insurrection actually occur, [the Carthaginians] completely fail to teach, or calm down, or change **those who are ignorant**.

In the first example Moses is said to administer laws for which he is zealous. This statement only makes sense if he is still zealous at the time when he is administering the laws. In the second example, the people who fail to be corrected by the Carthaginians must be ignorant at reference time. However, this kind of behaviour is not limited to verbs describing mental STATE:

[305] ἐπεὶ δ' ἐντὸς ἦν τοῦ βασιλείου, τὰς μὲν ἐπ' εὐθείας ὁδοὺς λείπει, καθ' ἃς διεστήκεσαν τῶν δούλων οἱ θεραπεύοντες αὐτὸν καὶ προῄεσαν οἱ περὶ τὸν Κλαύδιον· τρέπεται δὲ κατὰ στενωπὸν **ἠρεμηκότα** καὶ... (Jos. *AJ* 19.104)

When he was inside the palace, he left the straight passages, in which his tending slaves stood at intervals, and along which Claudius' men had gone. Instead he turned down an **empty** narrow corridor and...

[306] τῶν δ' ἱερέων καὶ διπλασίονα τὴν ἁγνείαν ἐποίησε· τούτων τε γὰρ αὐτοὺς ὁμοίως τοῖς ἄλλοις εἴργει καὶ προσέτι γαμεῖν τὰς **ἡταιρηκυίας** ἐκώλυσε... (Jos. *AJ* 3.276)

[Moses] required a double level of purity for priests: these he gave the same restrictions as laid out above, and in addition forbade them from marrying **prostitutes**...

The first example is striking since it describes a corridor, an inanimate fixed object. It is hard to see the perfect active as anything other than describing a PURE STATE. In the second example, involving the perfect active of ἑταιρέω 'to act as a prostitute', the point is that the priests should not marry people who were prostitutes, not specifically ex-prostitutes, although these may well have been included in this set. The perfect in these two cases appears therefore to describe a STATE holding at reference time.

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Indeed, that PAST REFERENCE is not required of the perfect of state verbs is shown by their capacity to occur as complements to control verbs:[312]

> [307] ὁ μὲν γὰρ Ὑρκανὸς ἐπιεικείᾳ τρόπου καὶ τότε καὶ τὸν ἄλλον χρόνον οὐκ
> ἠξίου πολυπραγμονεῖν οὐδὲ νεωτέρων ἅπτεσθαι, **συγχωρῶν** τῇ τύχῃ πᾶν
> τὸ δι' ἐκείνης γινόμενον **ἠγαπηκέναι**. (Jos. *AJ* 15.165)
>
> For Hyrcanus by his gentle nature both at that time and previously he did
> not think it right to meddle or to take part in any rebellion, **consenting** with
> fate **to be content**[313] with everything that would happen through her.

However, the phenomenon is not limited to mental state verbs. An important example of this is the following:

> [308] Θαυμάσειε δ' ἄν τις τῶν ἀνθρώπων τὴν πρὸς ἡμᾶς ἀπέχθειαν, ἣν ὡς
> ἐκφαυλιζόντων ἡμῶν τὸ θεῖον ὅπερ αὐτοὶ σέβειν προῄρηνται
> **διατετελέκασιν ἐσχηκότες**. (Jos. *AJ* 3.179)
>
> Someone might wonder at the hostility men show us, which, on the grounds
> of us disparaging the god which they have chosen to honour, **they have
> continued to hold**.

Here, the perfect active participle ἐσχηκότες plays a complement role to the verb διατελέω (also perfect), meaning 'to continue'. This parallels the canonical use of διατελέω, whereby a complementary participle conveys the action which is being continued.[314]

---

[312] Where past-referring perfect infinitives are used as complements in modal constructions the past they refer to is contingent. ... ἐκάκιζόν τε τοὺς ἐπιδιώξαντας ὡς ἐμποδίσαντας αὐτοῖς τὴν ὁδὸν δυναμένοις ἤδη *προκεκοφέναι*. (Jos. *AJ* 2.133) '... and [Benjamin's brothers] reproached those who had pursued him as they had delayed their journey, when they could already *have made some progress*.' The following were the only parallels found: γεγονέναι (Jos. *AJ* 2.72, 19.128), ἀπολωλέναι complement to ὀφειλούσης (Jos. *AJ* 7.270).

[313] For this meaning of ἀγαπάω see LSJ *ad loc.* III.

[314] In this example ἐσχηκότες is translated construed with a perfect in English, 'have continued'. But 'continue', being a control verb in English, cannot be construed with a perfect infinitive: *... which they have continued to have held. ἐσχηκότες appears, at least to an English speaker, therefore, to function as a present participle. διατελέω appears to behave in a similar way in Greek. There are a total of 102 instances of the active form of διατελέω attested in the corpus. In 91 of these, the vast majority, the verb takes a participial complement, indicating the action which is being continued. In all but two cases where the verb takes a participial complement, it is the present participle which is used. This is the case

The example at [308] may be parallel by other cases where implication of any event taking place prior to reference time is far from evident: [315]

> [309] ἥ τε Μαριάμμη τὸν μὲν ἔρωτα τοῦ βασιλέως ὑπόκρισιν ἄλλως καὶ πρὸς τὸ συμφέρον αὑτῷ γινομένην ἀπάτην ὑπελάμβανεν, ἤχθετο δὲ τῷ μηδ' εἰ πάσχοι τι δεινὸν ἐκεῖνος **ἐλπίδα** τοῦ βιώσεσθαι δι' αὐτὸν **ἐσχηκέναι**... (Jos. *AJ* 15.204)
>
> And Mariam suspected that the love of the king was fake, and was a deception made for his own advantage, and she was annoyed by the fact that she did not **have the hope** of living through him if something should happen to him...

This may also be seen in the INTRANSITIVE use of ἔχω:

> [310] ταῦτα δὲ αἱ γυναῖκες ἀνέφερον τῷ βασιλεῖ διαγελῶσαι τὴν ἀσχημοσύνην, Ἡρώδης δὲ καὶ παρὰ τοῦ Φερώρα προσεπυνθάνετο καὶ τηρεῖν ἠξίου παρὰ τὸ δεῖπνον, πῶς τὰ πρὸς ἀλλήλους **ἐσχήκασιν**. (Jos. *AJ* 16.223)
>
> These matters the women related to the king, mocking the lack of form; but Herod made additional enquiries with Pheroras, and asked him to watch at dinner, how matters **hold** between them.

From the fact that Herod is making a request of Pheroras, it cannot be that ἐσχήκασιν carries any PAST REFERENCE, since at that point Pheroras cannot have carried out the task.

---

regardless of the aspect of διατελέω itself. The choice of the present participle is entirely to be expected given the semantics of διατελέω: 'to continue' is semantically concerned with the ongoing nature of an activity, rather than its endpoints. The two examples where non-present participles are used are also instructive in this regard: πεπεισμένοι διατελοίημεν (Jos. *AJ* 8.108) and ἑστὼς διετέλει (Jos. *AJ* 6.2). Both of these involve perfect participles where there is a clearly defined resultant state, and, at least in the case of ἑστώς, a verb whose perfect is well known to be able to lose any reference to an event occurring prior to reference time. In the light of these pieces of evidence, it seems overwhelmingly likely that Josephus saw the functioning of ἐσχηκότες at [308] as in some way parallel to a present participle, i.e. without the implication of any event occurring prior to reference time, and with the entire focus being on the continuance on the RESULTANT STATE.

[315] Parallel: ἔσχηκεν (Jos. *AJ* 15.325).

Lack of any prior event may be made explicit with the collocation of adverbs such as εὐθύς:

> [311] καὶ τὸ μὲν φάρμακον **εὐθὺς ἐσπουδακότι** ζητεῖν οὐχ εὑρέθη. (Jos. *AJ* 16.254)
>
> And though he **immediately set about eagerly** to find a poison, none was found.

Where sequences of events are described, the perfect of a state verb in its PURE STATE function is used to provide a context for other events, much as an imperfective might. Consider the following diagrammatic representation of example of [304]:
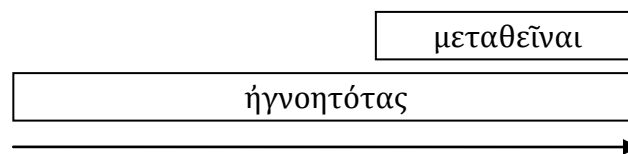
4.3.1.3. CONTINUED STATE

Frequently the perfect active of state verbs denotes that the STATE in question holds at reference time, and has done so for a period before reference time. This is common in μένω and its compounds:

> [312] ἐπὶ γὰρ τὴν προϋπάρχουσαν χιόνα καὶ **διαμεμενηκυῖαν ἐκ τοῦ πρότερον χειμῶνος** ἄρτι τῆς ἐπ' ἔτους πεπτωκυίας, ταύτην μὲν εὐδιάκοπτον εἶναι συνέβαινε... (Plb. 3.55.1)
>
> For on top of the snow which **had remained from the previous winter**, that from the present year had just fallen, and this, so it happened, was easy to cut through...

> [313] ἐπεὶ τοίνυν οὕτως φρονεῖς, ὦ Πετρώνιε, φασὶν οἱ Ἰουδαῖοι, ὡς μὴ ἂν ἐπιστολὰς τὰς Γαΐου παρελθεῖν, οὐδ' ἂν αὐτοὶ παραβαίημεν τοῦ νόμου τὴν προαγόρευσιν θεοῦ πεισθέντες ἀρετῇ καὶ προγόνων πόνοις τῶν ἡμετέρων **εἰς νῦν ἀπαράβατοι μεμενηκότες**... (Jos. *AJ* 18.266)
>
> ... since then you think this way, Petronius, the Jews say, that they would not leave the letters of Gaius unheeded, nor would we transgress the proclamation of the law of God, since we persuaded by the virtue and sufferings of our forefathers, **have remained to this moment** guiltless of transgressing it...

It can also be seen in the case of other state verbs:[316]

[314] Ἀντίοχος ὁ Σελεύκου τοῦ Ἀντιόχου, Σύρων καὶ Βαβυλωνίων καὶ ἑτέρων

ἐθνῶν βασιλεύς, ἕκτος δὲ ἀπὸ Σελεύκου τοῦ μετ' Ἀλέξανδρον Ἀσίας τῆς περὶ

Εὐφράτην **βεβασιλευκότος**... καὶ μικρὸν οὐδὲν ἐνθυμούμενος

Ἑλλησποντίους ἐπῄει... (App. *Syr.* 1.1)

Antiochus, the son of Seleucus of Antioch, king of the Syrians, the
Babylonians and other peoples, the sixth **to have ruled** Asia around the
Euphrates after Seleucus, who came after Alexander... and thinking nothing
small, **he invaded** the Hellespontines...

[315] καὶ οἱ Μετοῦλοι τό τε χῶμα νυκτὸς καὶ ἡμέρας ἐκτρέχοντες ἠνώχλουν καὶ

τοὺς ἄνδρας ἀπὸ τοῦ τείχους μηχαναῖς κατεπόνουν, ἃς **ἐσχήκεσαν** ἐκ τοῦ

πολέμου, ὃν Δέκμος Βροῦτος ἐνταῦθα ἐπολέμησεν Ἀντωνίῳ τε καὶ τῷ

Σεβαστῷ. (App. *Ill.* 54)

And the Metuli, running out during the night and during the day, heaved the
mound out of the way and began wearing the men away from the wall with
siege weapons, which **they had obtained** from the war, which Decimus
Brutus had fought there against both Antony and Augustus.

---

[316] ἠκληρηκότων (Plb. 1.7.4) is probably another example.

It is possible to find mental state verbs describing CONTINUED STATE, although this is much rarer than in the case of other state verbs:[317]

> [316] συνέβαινε γὰρ κατ᾽ ἐκείνους τοὺς καιροὺς Δημήτριον τὸν Φάριον,
> ἐπιλελησμένον μὲν τῶν προγεγονότων εἰς αὑτὸν εὐεργετημάτων ὑπὸ
> Ῥωμαίων, **καταπεφρονηκότα** δὲ **πρότερον** μὲν διὰ τὸν ἀπὸ Γαλατῶν τότε
> δὲ διὰ τὸν ἀπὸ Καρχηδονίων φόβον περιεστῶτα Ῥωμαίους, πάσας δ᾽
> ἔχοντα τὰς ἐλπίδας ἐν τῇ Μακεδόνων οἰκίᾳ διὰ τὸ συμπεπολεμηκέναι καὶ
> μετεσχηκέναι τῶν πρὸς Κλεομένη κινδύνων Ἀντιγόνῳ, **πορθεῖν** μὲν καὶ
> καταστρέφεσθαι τὰς κατὰ τὴν Ἰλλυρίδα πόλεις τὰς ὑπὸ Ῥωμαίους
> ταττομένας... (Plb. 3.16.2f.)

> For it happened at about that time that Demetrius of Pharos, forgetting the
> deeds of goodwill the Romans had accorded him, **having previously**
> **despised** the Romans on account of the fear that surrounded them from the
> Celts and the Carthaginians, putting all his hope in the house of Macedon
> because they had fought alongside Antigonus and had partaken in the
> danger against Kleomenes, **began sacking** and destroying the cities in
> Illyria which were under Roman rule...

Here it is clear that Demetrios starts despising the Romans prior to reference time, but that this despising continues up to reference time.

In examples involving narratives describing sequences of events, such as the previous case, the perfect provides the context for another event, in this case that described using πορθεῖν:

The same may be said for examples [314] and [315] above.

---

[317] That the perfect of this verb may be used in contexts where it is not clear that temporal depth is implied may be seen at Dinarchus *In Demosthenem* 104.8.

Some verbs, such as (δια)μένω, have a predisposition towards a CONTINUED STATE reading in their perfect active stems, while others, such as mental state verbs, tend not to carry it. This is almost certainly due to the inherent implication of duration in verbs like διαμένω. Yet the capacity to denote CONTINUED STATE should not be regarded as a unique property of the perfect. Indeed, the imperfective stem may similarly denote CONTINUED STATE:

> [317] οὐδέ γε λαθεῖν ἐκπλεύσαντα ἐνεδέχετο, τοσαύτῃ φρουρᾷ κεκλεισμένου τοῦ
>   λιμένος καὶ τῶν ἄλλων ἐξόδων, ὅσην καὶ νῦν ἔτι διαμένουσαν ἔγνωμεν ἡμεῖς
>   **ἐπιδημοῦντες** τῇ Ἀλεξανδρείᾳ **πολὺν χρόνον**... (Posidonius Frag. (Theiler)
>   13 quoted in Strabo *Geographica* 2.3.5)
>
>   Nor was it possible to sail out unseen, since the harbour was shut off by the
>   guard, which we know is still the case, as **we have lived** in Alexandria **a
>   long time**.

> [318] διαφέρει δὲ τοσοῦτον ὅτι ἐνταῦθα μὲν οἱ φιλομαθοῦντες ἐπιχώριοι πάντες
>   εἰσί, ξένοι δ' οὐκ **ἐπιδημοῦσι** ῥαδίως·
>
>   [The city of Tarsus] is so different [from other cities] because all of the locals
>   love learning, and foreigners **do not live** here easily.

In the first example PAST REFERENCE is specified by the πολὺν χρόνον ADJUNCT phrase. The second example, however, simply refers to a state of affairs ongoing at reference time, with no particular implication of temporal depth. Compare also the following example involving διαμένω:

> [319] Ἱερεμίας δὲ ὁ προφήτης ἐπικήδειον αὐτοῦ συνέταξε μέλος [θρηνητικόν], ὃ
>   καὶ μέχρι νῦν **διαμένει**. (Jos. *AJ* 10.78)
>
>   Jeremiah the prophet composed a funeral lament for him, which **remains** to
>   the present.

In practice διαμένω here comes very close to the sense of μεμενηκότες in Jos. *AJ* 18.266 quoted above.

It seems, therefore, that CONTINUED STATE is a reasonable interpretation of state verb perfect actives. However, this should not be regarded as a usage unique to the perfect, and the predisposition of a given perfect active stem towards being read as a CONTINUED STATE is at least in part related to the kind of STATE which is denoted.

4.3.1.4. ANTERIOR

Perfect active stems of terminative state verbs make up a large number of perfect active stems of state verbs denoting STATES which terminated prior to reference time. Perfect active stems from these verbs were never found to assert that the respective STATE holds at reference time. In total there are nine examples of the perfect active stem of terminative state verbs attested in the corpus. Examples from each verb will be analysed in turn.

The clearest case, where the STATE described by the verb clearly does not hold at reference time, is the following:

> [320] Θουράνιος δὲ **οὐ στρατηγῶν** μὲν **ἔτι**, ἀλλ' **ἐστρατηγηκώς**... τοὺς
> λοχαγοὺς ἠξίου τὴν σφαγὴν ἐπισχεῖν οἱ πρὸς ὀλίγον... (App. *BC* 4.4.18)
>
> Thourianios, who was **no longer praetor**, but **had formerly served as
> such**, asked the captains to hold off his death for a short period...

Here there is an explicit equation between the present stem and the perfect whereby οὐ στρατηγῶν = ἐστρατηγηκώς. There is an explicit contrast between the imperfective and the perfect.

Further instances of the PAS of this verb behave in the same way. In the next example there is a contrast between the imperfective and the PAS, only on this occasion it is with the pluperfect:

> [321] Μετέλλω δὲ ἤστην υἱός τε καὶ πατήρ· καὶ αὐτοῖν ὁ μὲν πατὴρ **στρατηγῶν**
> Ἀντωνίῳ περὶ Ἄκτιον αἰχμάλωτος ἑάλω καὶ ἠγνοεῖτο, ὁ δὲ υἱὸς τῷ Καίσαρι
> συνεστρατεύετο καὶ **ἐστρατηγήκει** καὶ ὅδε περὶ τὸ Ἄκτιον. (App. *BC*
> 4.6.42)
>
> There were two Metelli, both father and son: and of them the father, **while
> serving as a general** for Antony, was caught and was unrecognisable, but
> the son served under Octavian, **and had been a general** too at Actium.

The reference time of the present participle στρατηγῶν is set by the event described using ἑάλω. This is to say that while he was a general for Antony, he was caught. By contrast, the reference time of the pluperfect indicative ἐστρατηγήκει is set at the narrative time set by the events which follow this passage, in which the younger Metellus intercedes to Octavian on his father's behalf. At this point he was still a soldier (συνεστρατεύετο) but he was not general at Actium (ἐστρατηγήκει περὶ τὸ Ἄκτιον) because the battle of Actium is over at reference time; the perfect stem of στρατηγέω here describes a STATE which is terminated at reference time.[318]

The same kind of behaviour may be seen in the case of the one example of the perfect active stem of ὑπατεύω in the corpus:

> [322] τότε δὲ Σουλπίκιον **δημαρχοῦντα ἔτι** καὶ σὺν αὐτῷ Μάριον, **ἑξάκις**
> **ὑπατευκότα**... εἰς ἀπόστασιν πολεμίους Ῥωμαίων ἐψήφιστο εἶναι... τά τε
> ὄντα αὐτοῖς δεδήμευτο. (App. *BC* 1.7.60)

> It was voted that Sulpicius, **who was still a tribune**, and with him Marius,
> **who had been six times a consul**... were enemies of the Romans in the
> revolt... And their property was seized by the state.

Here not only does the perfect active participle ὑπατευκότα collocate with the adverb ἑξάκις, which implies that the STATE has terminated at least five times prior to reference time, but it is also clear that Marius is not consul at reference time, since it is decided that he should be brought to the consuls (ἀγάγειν ἐπὶ τοὺς ὑπάτους), thereby implying that he is not consul at reference time.

However, it is not terminative state verbs alone whose perfect active stems are permitted to denote STATES which terminated prior to reference time. In fact, for state verbs in general the situation is comparable to that seen in the perfective stem, where it was found not to be a requirement that the STATE denoted by the verb continue to hold at reference time, if it is clear from the context that the STATE cannot hold. In the following example, it is clear that the SUBJECT is not king (i.e. οὐ βασιλεύει) at reference time, since he has died (τελευτήσας):

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[318] Parallels: App. *BC* 1.14.121 (where it is clear that the STATE does not hold at reference time because the verb is collocated with a κατά + acc. phrase denoting the period of time during which the STATE did indeed hold).

> [323] ἀλλ' ἔφθη πρὶν ὑψῶσαι τὸ ἔργον **τελευτήσας** ἐν Καισαρείᾳ,
>
> **βεβασιλευκὼς** μὲν **ἔτη τρία**, πρότερον δὲ τῶν τετραρχιῶν τρισὶν ἑτέροις
>
> ἔτεσιν ἀφηγησάμενος. (Jos. *BJ* 2.219)
>
> But [Agrippa] **died** in Caesarea before he could raise [the wall]; **he had**
>
> **reigned three years**, having previously ruled his tetrarchies the other three
>
> years.

Similarly, the city Μυττίστρατον οὐχ ὑπομένει at reference time, since it has been taken (ἔλαβον):

> [324] ... εἷλον δὲ καὶ τὸ Μυττίστρατον, **πολλοὺς χρόνους ὑπομεμενηκὸς** τὴν
>
> πολιορκίαν διὰ τὴν ὀχυρότητα τοῦ τόπου. (Plb. 1.24.11)
>
> And they took Myttistratus, **which had withstood the siege for many**
>
> **years** on account of the strength of the place.

Notice that in both of these cases the verb phrase is modified by a *for α time* expression, which bounds the event temporally. Yet temporal bounding of the event is not limited to such adjuncts, if other elements in the context make it clear that the event must be bounded. In the next example the perfect participle clearly describes a series of rulers of Syria who cannot all be ruling at the same time:[319]

> [325] τοσάδε μὲν δὴ καὶ περὶ Μακεδόνων τῶν Συρίας **βεβασιλευκότων** εἶχον
>
> εἰπεῖν ὡς ἐν ἀλλοτρίᾳ συγγραφῇ. (App. *Syr.* 11.70)
>
> I had as much to say about the situation regarding the Macedonians **who**
>
> **had ruled** Syria, as in the other history.

However, unlike the examples discussed of situation state verbs, mental state verbs are not attested in the corpus with a *for α time* expression bounding the event at its terminal point. Whether this is purely due to chance is hard to tell.

In cases where state verbs are used with ANTERIOR reference in narrative, they are used to describe non-overlapping events. In terms of the sequencing of events, therefore, in this use the perfect is akin to the use of perfective participles. Consider the following diagrammatic representation of example [324]:

---

[319] cf. τῶν πρὸ αὐτοῦ τὴν Ἑβραίων ἀρχὴν ἐσχηκότων (Jos. *AJ* 8.190) and τὴν αὐτὴν τάξιν ἐσχηκώς (Jos. *Vit.* 397).

ὑπομεμενηκὸς	εἶλον
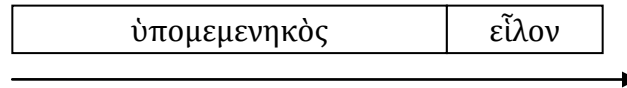
4.3.1.5. Conclusion

The foregoing analysis has shown that terminative state verbs differ from non-terminative state verbs in the behaviour of their perfects in the following way: the perfect of temporary state verbs in all cases asserts that the relevant STATE has terminated prior to reference time, while the perfect of non-terminative state verbs may imply this, but is also capable of implying that the relevant STATE still holds at reference time.

4.3.2. Unaccusative change-of-state

4.3.2.1. Introduction

Change-of-state verbs denote spontaneous changes of nature, e.g. γίγνομαι, as well as changes of location, such as ἔρχομαι and χωρέω. The imperfective may describe this change in progress, while the perfective describes the change as bounded. The present section addresses the semantics of the perfect. The following uses have been found:

1. Perfect actives which imply that a COS event involving the SUBJECT has terminated prior to reference time, and the SUBJECT's new STATE holds at reference time.
2. Perfect actives where the perfect cannot refer to an event occurring prior to reference time, and the PASF refers exclusively to the STATE of the SUBJECT which holds at reference time;
3. Perfect actives where the RESULTANT STATE no longer holds at reference time.

It was shown in Chapter 3 that verbs with valency-reducing perfect active stems belong to the causative COS type. When used in this way they describe an event in which the SUBJECT undergoes a COS. However, not all COS verbs show lability. In what follows, the valency-reducing instances of causative COS verbs will be treated along with monovalent COS verbs.

4.3.2.2. RESULTATIVE

For both change-of-nature and change-of-location verbs it is possible to find examples which imply the termination of the relevant COS event. This is not unexpected in COL verbs, as in the following examples:

> [326] οὐ θαρρήσας δὲ τοῦτο ποιεῖν **ἀνακεχωρηκὼς** ἐστρατοπέδευε τῆς
> Ζακάνθης ἐν τοῖς πρὸς θάλατταν μέρεσιν. (Plb. 3.98.5)
>
> Not having the courage to do this, **he withdrew** and encamped in the parts
> of Zakanthe that are near the sea.

> [327] ὁ δὲ Πομπήιος οὐ πρότερον, ἀλλὰ νῦν Ἀντωνίῳ θαρρῶν **ἐπιβέβηκε** τῆς
> παραλίου. (App. *BC* 5.7.62)
>
> And Pompey, while not having done so previously, has now, encouraged by
> Antony, **set foot** on the shore.

In these examples it is clear that the perfects ἀνακεχωρηκὼς and ἐπιβέβηκε refer to the culmination of COL events.[320] In the first the SUBJECT is clearly envisaged as going from a position of not being withdrawn to being withdrawn. In the second Pompey is clearly envisaged as changing location from not being on the shore, to being on it. In terms of the temporal sequencing of multiple events, these perfects describe RESULTANT STATES which overlap with subsequent events, as shown in the following diagrammatic representation of [326]:
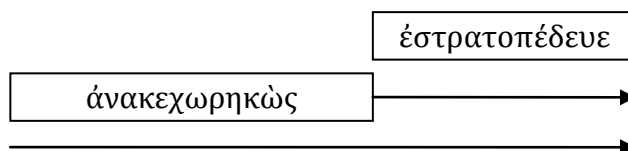
CON verbs may similarly be used in this way:

> [328] ... καὶ γὰρ τὰ τῆς ὀργῆς ὑπὸ τοῦ χρόνου **λελωφήκει**, πρὸς τοῦτο μᾶλλον
> αὐτὸν Ἰώαβος ὁ ἀρχιστράτηγος παρώρμησε. (Jos. *AJ* 7.181)
>
> For since his anger **had subsided** with time, Joab his chief general
> encouraged [David] all the more with [his plan].

Culmination is directly implied also in mental CON verbs such as (δια)γιγνώσκω 'to decide', as well as CON verbs such as γίγνομαι 'to become':

---

[320] [327] is in direct speech.

[329] ... ἡ δὲ βουλὴ **πάλαι διεγνωκυῖα** πολεμῆσαι καὶ προφάσεις ἐρεσχηλοῦσα

ὧδε ἀπεκρίνατο, Καρχηδονίους οὔπω Ῥωμαίοις ἱκανῶς ἀπολογήσασθαι.

(App. *Pun.* 11.74)

... the Senate, **having decided long ago** to go to war, and finding their

excuses weak, replied thus, that the Carthaginians had not yet sufficiently

defended themselves.

[330] οὐδέν μοι χρεία πλειόνων ἔτι λόγων, οἵ με θαρσοῖεν, εἰ δὴ καὶ σοὶ ταῦτα

δοκεῖ, γνώμης τε τῆς αὐτῆς **κοινωνοὶ** καὶ **πρότερον** ἢ συνελθεῖν

γεγόναμεν. (Jos. *AJ* 19.55)

I have no need of yet more words to encourage me, if you are in agreement;

we came to be of the same mind even **before** we met.

In the first example γιγνώσκω is used in its COS sense 'to decide' and collocates with the
adverb πάλαι, indicating that the COS event occurred a long time prior to reference
time.[321] In the second example the point at which the two came to be of the same mind
is expressly asserted to be prior to reference time by means of the adverb πρότερον.

The use of the perfect here is not unexpected. Strikingly, however, culmination is also
implied in perfects which are traditionally seen as archaisms with stative-only
semantics:[322]

[331] μηδενὸς δὲ τῶν ἀπὸ τῆς γῆς εὐποροῦντες διὰ τὴν ἐρημίαν πεφυραμένοις

τοῖς ἀλεύροις καὶ **πεπηγόσι** μόνον **ὑπὸ βραχείας θερμότητος** τοῖς ἀπ'

αὐτῶν ἄρτοις διετρέφοντο, καὶ τούτοις ἐπὶ τριάκονθ' ἡμέρας ἐχρήσαντο.

(Jos. *AJ* 2.316)

And since they were furnished with nothing from the land on account of its

desolation, they were nourished with loaves made from kneaded flour

hardened under a low heat, and they made use of these for thirty days.

---

[321] Parallels: Jos. *BJ* 7.323 (διεγνωκυῖα collocating with πάλαι), Plu. *Nic.* 30.1 (ἐγνωκότων collocating with
ἤδη), and App. *Mith.* 8.57 (ἐγνωκώς collocating with πρὸ πολλοῦ).

[322] Parallel: διεφθορὸς with ἤδη (Jos. *AJ* 5.207).

> [332] ὅτε καὶ τὸ μνημονευόμενον εἶπεν, ὡς πρώην μὲν ἦν εὐμαρέστερον αὐτοῖς τὸ
> κωλῦσαι τὴν τυραννίδα συνισταμένην, νῦν δὲ μεῖζόν ἐστι καὶ λαμπρότερον
> ἐκκόψαι καὶ ἀνελεῖν συνεστῶσαν ἤδη καὶ **πεφυκυῖαν**. (Plu. *Sol.* 30.5)
>
> This was when he uttered the saying, that while it was easier to hinder the
> tyranny earlier while it was being established, in the present situation it was
> a greater and more noble task to fell and kill it now it was already
> established and was **full-grown**.

In the first example, a COS event prior to reference time is clearly implied through the
ADJUNCT ὑπό + gen. phrase denoting how the STATE came about. The second example
involves the verb πέφυκα, which is traditionally regarded as not capable of referring to
an event terminating prior to reference time, but rather as limited to the sense 'to be by
nature'. In this example, however, two options are presented in dealing with tyranny,
namely to prevent it as it was starting (συνισταμένην), or to cut it down when it was
full-grown (πεφυκυῖαν). An event is therefore presented, whereby πεφυκυῖαν describes
the RESULTANT STATE. The metaphor clearly presents tyranny as a plant or tree;
plants grow spontaneously, and so get themselves into the STATE of being full-grown.

4.3.2.3. PURE STATE

The perfect does not imply the termination of a COS event prior to reference time in the
following circumstances:

1. Where the SUBJECT is not capable of undergoing the change of STATE in
   question.
2. Where the context describes a fixed situation existing at reference time, with no
   reference to how that situation might have at one time arisen.
3. Where the SUBJECT enters the new STATE at reference time.

I will exemplify each of these in turn.

SUBJECT cannot participate in a COS event

In a small number of instances it is clear that the SUBJECT cannot ever have changed STATE, and that the role of the perfect is to denote a PURE STATE:

> [333] ἡ δὲ Τεύτα πάνυ μετ' ὀλίγων εἰς τὸν Ῥίζονα διεσώθη, **πολισμάτιον** εὖ πρὸς
> ὀχυρότητα κατεσκευασμένον, **ἀνακεχωρηκὸς** μὲν ἀπὸ τῆς θαλάττης, ἐπ'
> αὐτῷ δὲ κείμενον τῷ Ῥίζονι ποταμῷ. (Plb. 2.11.16)
>
> Teuta escaped with a few men to Rhizon, **a small town** well-built with
> respect to strength, **withdrawn** from the sea, lying on the Rhizon river itself.

The verb in question, ἀναχωρέω, 'to withdraw', 'to move back', is a change-of-location verb. However, in this example, the SUBJECT is a town. It is very clear, therefore, that the town itself can never have 'withdrawn'. Rather, the perfect must refer to the STATE of the town at reference time, i.e. 'at some distance from the sea'.

In the following examples, the perfect describes a generic type, 'asphalt' and 'tunic' respectively, not a specific entity, 'an item of asphalt' or 'a particular tunic':

> [334] τῷ γὰρ ὕδατι τὴν διὰ τῶν πλεγμάτων ἀποφράττειν εἴσοδον ἡ **ἄσφαλτος**
> πέφυκεν… (Jos. *AJ* 2.221)
>
> For **asphalt** is by nature able to prevent water entering through the
> wickerwork…

> [335] ἔστι δ' ὁ χιτὼν οὗτος οὐκ ἐκ δυοῖν περιτμημάτων, ὥστε ῥαπτὸς ἐπὶ τῶν
> ὤμων εἶναι καὶ τῶν παρὰ πλευράν, φάρσος δ' ἓν ἐπίμηκες ὑφασμένον
> σχιστὸν ἔχει βροχωτῆρα πλάγιον, ἀλλὰ κατὰ μῆκος **ἐρρωγότα** πρός τε τὸ
> στέρνον καὶ μέσον τὸ μετάφρενον. (Jos. *AJ* 3.161)
>
> This tunic is not made of two pieces, so that it is sewn at the shoulders and
> at the side, but it is one long woven garment and has a space cut for the neck
> along the side, but **is separated** length-wise at both the breast and in the
> middle of the back.

In the first example it is clear that it is the general ability of asphalt to keep out water that is being described, and not any prior occurring event by which asphalt came to have this ability. The second example describes the making of a χίτων *in general*: ἐρρωγότα does not refer to a particular event of breaking or tearing, but the point is rather that wherever you find this garment, it *is torn*.

Context describes a fixed situation

More frequent are cases where a COS event must, logically, have terminated at some point prior to reference time, but the context shows no interest in this. This use of the perfect is frequent in descriptions of locations:[323]

> [336] ἐν δὲ Δελφοῖς Παλλάδιον ἔστηκε χρυσοῦν ἐπὶ φοίνικος χαλκοῦ **βεβηκός**, ἀνάθημα τῆς πόλεως ἀπὸ τῶν Μηδικῶν ἀριστείων. (Plu. *Nic.* 13.3)
>
> And in Delphi there stands a statue of Pallas, which **has been set** on a bronze date palm, a votive offering of the city [of Athens] from the spoils of the Persian wars.

Here, although in principle such an event must have taken place at some point in order for the Παλλάδιον to be where it is, the point of the passage is to describe the situation as it is found at reference time.

However, this kind of lack of interest in the culmination of a COS event is not limited to descriptions of fixed situations. It may also occur in descriptions of individuals or mobile entities:

> [337] καὶ οὐχ ἡ θάλασσα μόνη τοῖς ἐς αὐτὴν ἐσελθοῦσιν καὶ ὅσοι τῶν νεῶν **ἐπεβεβήκεσαν ἔτι**, ἀλλὰ καὶ ἡ γῆ τοῦ κλύδωνος οὐχ ἧσσον ἦν ἀπορωτέρα... (App. *BC* 5.10.90)
>
> And not only was the sea alone [impassable] for those who had come, as well as for those **who were still on board** the ships, but also the land was not less impassable than the surf...

In this example the perfect of ἐπιβαίνω collocates with ἔτι, suggesting that the focus the description of the event is entirely on the RESULTANT STATE, and not on the event which led to it.[324]

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[323] cf. πεπηγός at Plu. *Thes.* 1.1, where the perfect is used to describe a sea on a map. Parallel is the example at Plu. *Them*. 8.2, [11], given in the Introduction.

[324] Note the infelicity of the equivalent sentence in English with a perfect: '*Those who had still gone on board the ships.' Parallels with COS perfects collocating with ἔτι are: ἀφεστηκός at Jos. *BJ* 7.252, πεφυκώς at App. *BC* 4.14.109, κατεπεπλήγεσαν at App. *BC* 5.6.58, περιεστῶτας at App. *Hann.* 8.51, συνέστηκε at App. *Mith.* 8.52, *BC* 2.1.6, 3.9.69, 4.16.129, Plu. *Nic.* 28.4, Jos. *BJ* 5.426.

Strikingly the transitivity of the verb is not a factor, if the SUBJECT changes STATE during the course of the event:[325]

> [338] ψαλίδες δὲ ἐμπεποίηνται συνεχεῖς καταγωγαὶ τοῖς ναυτίλοις, τὸ δὲ πρὸ
> αὐτῶν ἀπόβασις πλατεῖα κύκλῳ **περιεστεφάνωκεν** τὸν πάντα λιμένα,
> περίπατος τοῖς ἐθέλουσιν ἥδιστος. (Jos. *AJ* 15.337)
>
> Continuous arches have been built as shelters for the sailors. In front of
> them a broad landing area **surrounds** the entire harbour round in a circle,
> which for those who are so inclined is a most pleasant walk.
>
> [339] ἥ τε πόλις αὐτὴ Καισάρεια καλεῖται καλλίστης καὶ τῆς ὕλης καὶ τῆς
> κατασκευῆς τετυχηκυῖα. τὰ δ᾽ ὑπ᾽ αὐτὴν ὑπόνομοί τε καὶ λαῦραι
> πραγματείαν οὐκ ἐλάττω τῶν ὑπερῳκοδομημένων ἔχουσαι. τούτων αἱ μὲν
> κατὰ σύμμετρα διαστήματα φέρουσιν εἰς τὸν λιμένα καὶ τὴν θάλατταν, μία
> δ' ἐγκαρσία πάσας **ὑπέζωκεν**... (Jos. *AJ* 15.339f.)
>
> And the city itself is called Caesarea, built of the finest wood and
> construction. The vaults and passages under it had no less workmanship
> than those built above. Of these passages some go equal distances to the
> harbour and the sea, but one **surrounds** all of them running obliquely...

Indeed, there are a number of examples involving the clearly possessive COS verbs λαμβάνω and τυγχάνω where it is not at all obvious that there any implication of an event terminating prior to reference time:[326]

> [340] συνιδοῦσαι δ' οὕτως αὐτὸν ἔχοντα πρὸς τὴν Μαριάμμην ἥτε ἀδελφὴ καὶ ἡ
> μήτηρ **κάλλιστον** ᾠήθησαν **τὸν καιρὸν** τοῦ πρὸς ἐκείνην μίσους
> **εἰληφέναι** καὶ διελάλουν οὐ μικρῶς παροξύνουσαι τὸν Ἡρώδην διαβολαῖς
> μῖσος ὁμοῦ καὶ ζηλοτυπίαν ἐμποιεῖν δυνησομέναις. (Jos. *AJ* 15.213)
>
> Perceiving that [Herod] was so disposed towards Mariamne, his sister and
> mother considered they **had the best opportunity** [to realise] their hatred
> towards her, and talked with him provoking him to no small degree with
> slander that would engender both hatred and jealousy.

---

[325] Parallels: πεπληρωκότα describing ἐγκέφαλον (Plb. *Per.* 6.2), ἀπολέλοιπεν describing ἡ φύσις τῆς Χαναναίων γῆς (Jos. *AJ* 5.77f.), ὑφεστώς at [105] above and περιερρώγασι at [169] above.

[326] Parallel is εἰληφέναι at Jos. *BJ* 5.545. This behaviour is strikingly similar to the behaviour of 'got(ten)' in English, in e.g. 'I've got(ten) a house'.

[341] Ἴσακος δέ, πατρὸς γὰρ ἦν οἵου **τετυχηκότα** γενναῖον ἔδει τὸ φρόνημα εἶναι, δέχεται πρὸς ἡδονὴν τοὺς λόγους… (Jos. *AJ* 1.232)

And Isaac, for **having** a father like his he had to have a noble disposition, welcomed these words with joy…

In narratives, perfect active stems of this kind tend to behave in aspectual terms as imperfective participles, providing the context for some other action:

[342] … καὶ νεανίσκου τινὸς **ἐστῶτος πυθόμενος** τίς εἴη καὶ **μαθὼν** ὡς Ἀμαληκίτης ἐστὶ **παρεκάλεσεν** ἐπερείσαντα τὴν ῥομφαίαν διὰ τὸ μὴ ταῖς χερσὶν αὐτὸν δύνασθαι παρασχεῖν αὐτῷ τελευτὴν ὁποίαν αὐτὸς βούλεται. (Jos. *AJ* 6.371)

… and **asking** some young man **who was standing by** who he was, and **finding out** that he was an Amalekite, [Saul's armour-bearer] **urged** the young man to drive his sword into him, since he was incapable of doing it with his own hands, and give him the death he wanted.

[343] ἐπεὶ δ' ὁ Καῖσαρ περιοδεύσας τὸν ἱππόδρομον **λαμβάνει** τὸν Ἀγρίππαν **ἐστηκότα**, καὶ μὴν δή, φησίν, Μάκρων, τοῦτον εἶπον δεθῆναι.. (Jos. *AJ* 18.190)

When Caesar had conducted a tour of the hippodrome, **he found** Agrippa standing, and **said**, "This is certainly the man I said to be bound."

These two examples may be presented diagrammatically as follows:
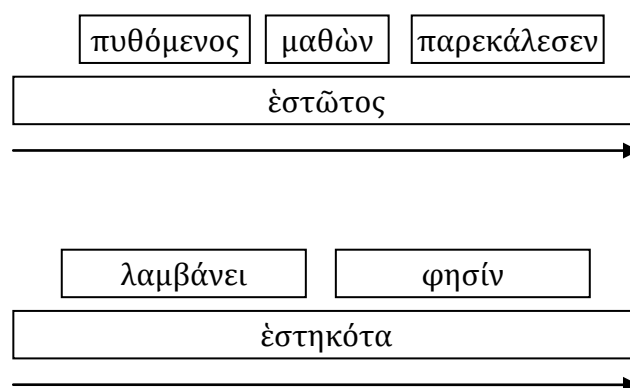
SUBJECT changes STATE at reference time

Finally, there is no implication of a COS event terminating prior to reference time, when the COS event takes place at reference time:[327]

> [344] τῶν οὖν κρίκων ἀσθενῶν ὄντων κατ' αὐτοὺς ἐνεγκεῖν τὸ βάρος τῶν λίθων ἑτέρους δύο κρίκους μείζονας τῇ πέζῃ τοῦ ἐσσήνου ἧπερ ἀνήκει πρὸς τὸν τράχηλον **ἐμβεβηκότας** τῷ ὑφάσματι ποιοῦσι... (Jos. *AJ* 3.170)
>
> So though the rings are too weak to support the weight of the stones on their own, they make two other, larger, rings **attached** to the garment, for the edge of the breastplate where it touches the neck...
>
> [345] καὶ γὰρ ἔτι μᾶλλον **γεγόνει πρόθυμος** πρὸς τὴν ἄφιξιν τὴν παρὰ τὸν βασιλέα τοῦ πρεσβευτοῦ προτρεψαμένου καὶ παρορμήσαντος εἰς Αἴγυπτον ἐλθεῖν... (Jos. *AJ* 12.166)
>
> For **he became** yet more **eager** for the ambassador's arrival with the king, since he had urged and encouraged him to go to Egypt...

In the first example, the agents, the SUBJECT of ποιοῦσι, bring about the RESULTANT STATE immediately. Rather, the cause must be implied to be prior to the STATE in order for there to be the implication of an event terminating prior to reference time.

The fact that the change-of-state occurs at reference time is often made explicit by means of the adverbial εὐθύς, as in the following examples:[328]

> [346] τοὺς δ' **εὐθέως** φρίκη καὶ παρέκστασις ᾔρει καὶ παρὰ τὴν ὄψιν **ἐπεπήγεσαν**. ἡ δ' ἐμόν, ἔφη, τοῦτο τέκνον γνήσιον καὶ τὸ ἔργον ἐμόν. (Jos. *BJ* 6.210)
>
> A fear and amazement immediately took them, and at the sight **they froze (with fear)**. She said, 'This is my own child, and this is my own doing.'
>
> [347] ὁ δὲ Νικίας **εὐθὺς** αὐτὸς καὶ παρὰ φύσιν ὑπὸ τῆς ἐν τῷ παρόντι ῥώμης καὶ τύχης **ἀνατεθαρρηκώς**... (Plu. *Nic.* 18.6)
>
> But Nicias himself, immediately and unnaturally **encouraged** by his strength and good fortune in the present situation...

---

[327] This is known in traditional grammars as the 'pluperfect of immediate occurrence' e.g. Smyth (1920, pp. 435, § 1953).

[328] Parallels: ἐγεγόνει with εὐθύς (Jos. *AJ* 15.150, 15.198 and 16.358). cf. also ἔστηκεν with εὐθύς (Dio Chrysostom *Orations* 31.9).

The first passage describes a situation immediately before which a woman kills and eats her own child. The reaction of those who witness this is then described using a pluperfect. Here there is no event which could be regarded as preceding the STATE of fear. Rather, the STATE of fear begins immediately, at reference time, as indicated by the collocation of ἐπεπήγεσαν with εὐθέως. In the second passage, while θαρρέω functions as a state verb, meaning 'be of good courage', ἀναθαρρέω functions as a change-of-state verb, meaning 'to regain courage'. Here again, the STATE initiates at reference time, as demanded by εὐθύς.

Another context in which it is very common to find this kind of perfect in control contexts which, by their nature, are not compatible with PAST REFERENCE:[329]

> [348] ... πολιορκήσειν ἠπείλει καὶ τὰς πόλεις αὐτῶν ἀναστήσειν: τὴν δ' αἵρεσιν ἐπ' αὐτοῖς εἶναι, πότερόν ποτε βραχύ τι τοῦ σώματος ἀποτεμεῖν **θέλουσιν** ἢ παντάπασιν **ἀπολωλέναι**. (Jos. *AJ* 6.71)
>
> ... the king of the Ammonites threatened to displace their cities; they had a choice, whether they **wanted** them to cut off a small part of their bodies [i.e. endure mutilation] or **to be destroyed** altogether.

> [349] **ἱκετεύω**, πάτερ, ἔφη, μηδέν μου **προκατεγνωκέναι**, παρασχεῖν δέ μοι τὰς ἀκοὰς ἀκεραίους εἰς τὴν ἀπολογίαν: ἀποδείξω γὰρ ἐμαυτὸν καθαρόν, ἂν σὺ θέλῃς. (Jos. *BJ* 1.621)
>
> **I beseech** you, father, in no way **to prejudge** me, but give your full attention to my defence, for I will show myself to be pure, if you will.

---

[329] Parallels: ἀπολωλέναι (Jos. *AJ* 17.3), complement to καλῶς εἶχεν; προσκεχηκέναι, complement to ἀναγκαζώμεθα (Plb. 4.42.7); τεθνάναι, complement to κελεύσῃ, (Jos. *AJ* 6.149); numerous instances of ἑστάναι including (App. *BC* 2.11.81), complement to κήρυγμα; several instances of compounds of ἑστάναι including προεστάναι, complement to δύναται, (Jos. *AJ* 6.35).

Finally, it is possible to find imperatives or optatives indicating a wish, which do not carry PAST REFERENCE, but rather declare a desire for the relevant STATE to hold:

[350] νῦν οὖν εἰ μὲν φθάνεις τὸν ἀνδριάντα ἑστακώς, **ἑστάτω**. (Jos. *AJ* 18.301)

So now, if you have already set up the statue, **let it stand**.

[351] ... **τεθναίης**, εἶπεν, ἄνερ, ἢ πονηρὸν δοῦλον κοίτην μιᾶναι τὴν σὴν θελήσαντα κόλασον... (Jos. *AJ* 2.55)

He said, "**May you die**, man, or punish the evil slave who wanted to defile your marriage bed."

4.3.2.4. ANTERIOR

In some cases the RESULTANT STATE is clearly assumed to have terminated prior to reference time. Consider the following examples:[330]

[352] ... διαφυγῆς μοι γενομένης τῶνδε τῶν δεσμῶν οὐκ ἂν βραδύνοιμι ἐλευθερίαν εἰσπρασσόμενός σοι παρὰ Γαΐου, ὃς καὶ δεσμώτῃ μοι γενομένῳ διακονεῖσθαι καθάπερ ἐν **τῷ πρότερον καθεστηκότι** σχήματι τῆς περὶ ἐμὲ ἀξιώσεως οὐκ ἐνέλιπες. (Jos. *AJ* 18.193)

... when I escape these shackles, I will not be slow in getting you freedom from Gaius, you who did not fail to minister to me when I was a prisoner, just as if I was in the state of dignity in which **I had formerly been established**...

[353] ... τέλος αὐτοῦ πάντες, ἐν οἷς καὶ Μάρκος καὶ Γνάιος, ἔπεσον, οἱ **τὸ πρότερον ἔτος** ὕπατοι **γεγονότες**, ἄνδρες ἀγαθοὶ καὶ τῆς Ῥώμης ἄξιοι γενόμενοι κατὰ τὸν κίνδυνον. (Plb. 3.116.11)

... finally all who fell there, among whom were Marcus and Gnaeus, **who had been** consuls **for the preceding year**, were good men and had been worthy of Rome in battle.

---

[330] cf. παραγεγονέναι (Plb. 4.2.2), complement to συμβαίνει, describing eyewitness testimony, where the SUBJECT is clearly not present at reference time. There are also some borderline cases, such as Jos. *Vit.* 427: μετὰ ταῦτα ἠγαγόμην γυναῖκα *κατῳκηκυῖαν* μὲν ἐν Κρήτῃ... 'After this I married a women *from* Crete...' Is the point that she was from Crete, or that she was in Crete at the point of the marriage?

In the first example it is clear that the RESULTANT STATE of the 'establishing' event does not hold, since at reference time the individual whose STATE is referred to is in prison, and it is clearly his pre-prison STATE that he is describing. In the second example γεγονότες collocates with a *for a time* expression which, what is more, is temporally located in the year prior to that being referred to at reference time. The necessary conclusion, therefore, is that the COS event and the RESULTANT STATE terminated prior to reference time:

γεγονότες	ἔπεσον
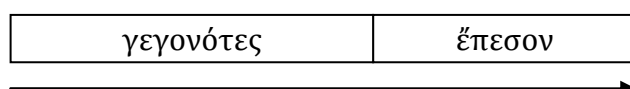
The same phenomena can be seen in the next examples involving the possessive COS verbs λαμβάνω and τυγχάνω: [331]

> [354] ὧν εἷς μὲν ἦν Γάιος Λυτάτιος ὁ τὴν ὕπατον ἀρχὴν **εἰληφώς**, οἱ δὲ δύο τὴν ἐξαπέλεκυν. (Plb. 3.40.9)
>
> Of these one was C. Lutatius, who had [previously] **held** the consulship, the other two the praetorship.

> [355] ταραχθέντας δὲ ὑπὸ τῆς ἀδοκήτου τῶν ἱππέων ἐφόδου καὶ τὴν αἰτίαν πυθομένους δι' ἣν ἐπ' ἄνδρας ἐληλύθασιν, οἳ **μικρὸν ἔμπροσθεν** τιμῆς καὶ ξενίας **τετυχήκασιν** αὐτῶν παρὰ τοῦ δεσπότου, κακίστους ἀπεκάλουν... (Jos. *AJ* 2.128)
>
> Surprised by the unexpected approach of the men on horseback and asking the reason why they had come for men, who a little earlier **had obtained** their honour and hospitality, [Joseph's brothers] disparaged the men who had come for them...

With reference to the first example, according to Shuckburgh's translation (Shuckburgh, 1889), the consuls in this year were Publius Cornelius Scipio and Tiberius Sempronius Longus. This is to say that C. Lutatius could not have been consul at reference time. C. Lutatius Catulus was consul in 242 BC, while his son C. Lutatius Catulus was consul in 220 BC with L. Veturius Philo. In the second example it is clear that the SUBJECT participants do not still have the honour and hospitality, since they are now being violently accosted by the same people.

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[331] Parallel: εἴληφα (Plb. 3.32.7).

In the indicative it might be suggested that the perfect behaves in this way because it is being treated as a historic present. However, there are occasions where the perfect occurs in non-narrative asides by the author, or where the perfect occurs amidst a series of aorists, cases where such an explanation is not satisfactory:[332]

> [356] τούτοις **ἐπίστευσεν** Ἡρώδης καί τινα παραμυθίαν τῆς προπετείας **εἴληφεν** ἐν τοῖς κακοῖς ὑπὸ τῶν χειρόνων κολακευόμενος. καὶ τὸ μὲν φάρμακον εὐθὺς ἐσπουδακότι ζητεῖν οὐχ **εὑρέθη**. (Jos. *AJ* 16.254)
>
> Herod **trusted** this and **took** some consolation for his rashness flattering himself in the evils. And though he **immediately set about eagerly** to find a poison, none was found.

> [357] κοινὸν δέ πως αὐτῶν καὶ τὸ ἀτελὲς **γέγονε** τῆς στρατηγίας, ἑκατέρου μὲν συντρίψαντος, οὐδετέρου δὲ καταλύσαντος τὸν ἀνταγωνιστήν. (Plu. *Cim.* 3.3)
>
> The incompleteness of their two careers **had** a common cause; while both wore down their principal enemy, neither managed to break him.

The first example describes a narrative sequence, and εἴληφεν finds itself in amongst a series of aorists. It is clear that Herod is no longer in the RESULTANT STATE described at the time when Josephus was writing. The second example case from Plutarch may be considered to be of the same kind. Plutarch is comparing the careers of the Greek general Cimon and the Roman Lucullus, and uses the term γέγονε to describe the carreer of the two. Yet Cimon was clearly long dead at the time of writing, and Lucullus had been dead for nearly one hundred years. Their careers are therefore long since over, and cannot therefore be said to be a participant in anything at reference time.

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[332] cf. γέγονε at Plu. *Cim.* 4.2, describing the final resting place and deme membership of Thucydides, who was clearly long-dead before the time of Plutarch.

4.3.2.5. Conclusion

The perfect of COS verbs, i.e. verbs describing events in which the SUBJECT changes STATE, have been found capable of referring either a) to a STATE arising from the culmination of a COS event, b) a STATE which holds at reference time or c) a COS event and RESULTANT STATE which terminated prior to reference time. This situation is epitomised in the following pair of examples involving γίγνομαι coming from the first book of Josephus' *Antiquities*:

> [358] Μαθουσάλας δὲ Ἀνώχου παῖς κατὰ ἔτος αὐτῷ **γεγονὼς** πέμπτον καὶ
> ἐξηκοστὸν καὶ ἑκατοστὸν Λάμεχον υἱὸν ἔσχε περὶ ἔτη **γεγονὼς** ἑπτὰ καὶ
> ὀγδοήκοντα καὶ ἑκατόν… (Jos. *AJ* 1.83)

> Methuselah, the son of Enoch, **born** when Enoch was in his one hundred and
> sixty-fifth year, had a son, Lamech, **when he was** about one hundred and
> eighty-five years old…

> [359] ἤδη τοίνυν τοὺς ἐντευξομένους τοῖς βιβλίοις παρακαλῶ τὴν γνώμην θεῷ
> προσανέχειν καὶ δοκιμάζειν τὸν ἡμέτερον νομοθέτην, εἰ τήν τε φύσιν ἀξίως
> αὐτοῦ κατενόησε καὶ τῇ δυνάμει πρεπούσας ἀεὶ τὰς πράξεις ἀνατέθεικε
> πάσης καθαρὸν τὸν περὶ αὐτοῦ φυλάξας λόγον τῆς παρ᾽ ἄλλοις ἀσχήμονος
> μυθολογίας: καίτοι γε ὅσον ἐπὶ μήκει χρόνου καὶ παλαιότητι πολλὴν εἶχεν
> ἄδειαν ψευδῶν πλασμάτων: **γέγονε** γὰρ πρὸ ἐτῶν δισχιλίων, ἐφ' ὅσον
> πλῆθος αἰῶνος οὐδ' αὐτῶν οἱ ποιηταὶ τὰς γενέσεις τῶν θεῶν, μήτι γε τὰς
> τῶν ἀνθρώπων πράξεις ἢ τοὺς νόμους ἀνενεγκεῖν ἐτόλμησαν. (Jos. *AJ* 1.16)

> So I urge those who read these books to turn their minds to God and to put
> our lawgiver to the test, to see if he rightly discerned his nature, and has
> always related his deeds in a way that befits his power, keeping the word
> pure of all unseemly mythology about Him from other places. And yet, on
> account of the length of time [ago that he lived] and his antiquity, he had
> great licence for fiction. For **he lived** two thousand years ago, a time so far
> back that not even the poets have dared either to relate the generations of
> their gods, nor the deeds of men for it.

In the first passage γεγονώς is used in two different ways in the space of a line: describing Methuselah the first γεγονώς is used to describe the event in which he was born, with the weak RESULTANT STATE notion of 'being alive', whereas the second is used to describe his age at the time of Lamech's birth, with the interest entirely in the RESULTANT STATE. In the second passage even the RESULTANT STATE is dramatically weakened, in that Moses is clearly not alive at reference time, with him explicitly stated to have been born/lived two thousand years previously.[333]

4.3.3. Accusative

Accusative PASFs describe events which do not result in a change of STATE for the SUBJECT. However, they may describe events which either generate a brand new STATE, where there was not one before, e.g. in the creation of some new participant, or a change of STATE in the OBJECT participant.

These PASFs may arise from the following types of verb:

1. Accomplishment verbs where the SUBJECT participant does not change STATE, e.g. ποιέω 'to make', νικάω 'to defeat'.
2. Declarative verbs e.g. (προ)λέγω 'to say (previously)', δηλόω 'to make clear', ἱστορέω 'to record'.
3. Verbs describing perception events where the SUBJECT is affected by the OBJECT STIMULUS participant, but does not change STATE, e.g. ἀκούω 'to hear'.

Because, as has been demonstrated, non-reducing uses of causative COS verbs behave as accusative verbs, these will be treated in this section as a fourth type:

4. Causative COS verbs in their non-reducing use, e.g. (καθ)ίστημι 'to set up', πείθω 'to persuade'.

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[333] It could be argued that Josephus is liable to refer to Moses as if he were still alive in his role as law-giver, since the law still holds. cf. Jos. *AJ* 3.285 where Jos. uses the present ἀναγκάζει to describe Moses' laws on selling.

Declarative verbs frequently occurring in the perfect and pluperfect are (προ)λέγω 'to say (previously)', δηλόω 'to make clear', ἱστορέω 'to record', γράφω 'to write'. These point the reader to that act of declaration. This most frequently occurs in parentheses in subordinate clauses referring the reader either to some other writer or to an earlier point in the writer's own work:[334]

> [360] εἰ δὲ καὶ μετὰ τὴν ἐν Πλαταιαῖς μάχην ἦρξεν, ὡς αὐτὸς ὁ Δημήτριος **γέγραφε**, καὶ πάνυ πιθανόν ἐστιν... (Plu. *Arist.* 1.8)
>
> If it began after the battle of Plataea, as Demetrius himself **has written**, then it is most probable that...

Sometimes the use of εἴρηκα comes close to that of a narrative tense, especially where the author is clearly dead at reference time:[335]

> [361] ... τοῦτο μὲν οὖν καὶ **Ἀριστοτέλης ὁ φιλόσοφος εἴρηκεν**, ὁ δ' Εὐριπίδης... (Plu. *Thes.* 3.2)
>
> ... Therefore, this is what **Aristotle the philosopher (has) said**, but Euripides...

Accomplishment PASFs, where causative COS or not also describing an event terminated prior to reference time:[336]

> [362] οἱ δὲ ἄνδρες οἱ πεμφθέντες, δέκα δὲ ἦσαν, περιοδεύσαντες καὶ τιμησάμενοι τὴν γῆν ἐν ἑβδόμῳ μηνὶ παρῆσαν πρὸς αὐτὸν εἰς Σιλοῦντα πόλιν, ἔνθα τὴν σκηνὴν **ἐστάκεσαν**. (Jos. *AJ* 5.79)
>
> The men who had been sent out (there were ten), once they had made a tour of the land, and made an assessment of it, returned in the seventh month to Shiloh, where **they had set up** the tabernacle.

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[334] cf. Jos. *AJ* 13.347 (προείρηκα), Plu. *Thes.* 36.3 (ἱστόρηκε), *Alc.* 13.5 (εἴρηκε).

[335] Jos. *AJ* 8.149 may be parallel.

[336] Parallels with accusative COS PASFs: ἑστακώς (Jos. *AJ* 18.301), καθεστάκει (Jos. *AJ* 9.114), καθεστάκειν (Jos. *Vit.* 89). Parallels with accusative non-COS PASFs: ἐγεγράφει (i.e. a letter, Jos. *Vit.* 271), πεποίηκεν (Jos. *BJ* 2.182).

[363] προῆλθον δὲ τοὺς Ῥωμαίους διώκοντες μέχρι Ἀντιπατρίδος. ἔπειθ' ὡς οὐ κατελάμβανον, ὑποστρέφοντες τάς τε μηχανὰς ᾖρον καὶ τοὺς νεκροὺς ἐσύλων τήν τε ἀπολειφθεῖσαν λείαν συνῆγον καὶ μετὰ παιάνων εἰς τὴν μητρόπολιν ἐπαλινδρόμουν... τῶν δὲ Ῥωμαίων καὶ τῶν συμμάχων πεζοὺς μὲν πεντακισχιλίους καὶ τριακοσίους **ἀνῃρηκότες**, ἱππεῖς δὲ ὀγδοήκοντα καὶ τετρακοσίους. (Jos. *BJ* 2.555)

They advanced pursuing the Romans as far as Antipatris. Then, when they could not find them, they turned round and took their siege weapons, stripped the bodies, gathered the plunder that had been left, and ran back to the mother city, but of the Romans and their allies **they had killed** fifteen thousand three hundred of the infantry, as well as four hundred and eighty of the cavalry.

In these examples the SUBJECT participants may be regarded as participants at reference time, even if the OBJECT complements are not. However, it is not a requirement for the SUBJECT to be a living participant at reference time, as the following example shows:

[364] δοκεῖ δὲ καὶ τὸν νόθον ἐκ ταύτης τεκνῶσαι, περὶ οὗ **πεποίηκεν** Εὔπολις ἐν Δήμοις αὐτὸν μὲν οὕτως ἐρωτῶντα... (Plu. *Per.* 24.6)

He seems to have sired the bastard from this woman. About him Eupolis, in the Demoi, **has made** him ask the following question...

I have not found accusative perfects describing events which must be interpreted as in process at reference time. Even where adverbials such as νῦν 'now' are used, it is clear that this should be translated as 'just now'. In the following example Josephus has been describing a dinner party, where a certain guest, Hyrcanus, has a pile of bones before him, while the other guests do not. When asked why this is so, he is said to have replied as follows:

> [365] τοὺς μὲν γὰρ κύνας τὰ ὀστᾶ σὺν τοῖς κρέασιν κατεσθίειν, ὥσπερ οὗτοι πρὸς τοὺς κατακειμένους ἐπιβλέπων, ὅτι μηθὲν ἔμπροσθεν αὐτῶν ἔκειτο, οἱ δὲ ἄνθρωποι τὸ κρέας ἐσθίουσιν, τὰ δ' ὀστᾶ ῥίπτουσιν, ὅπερ ἄνθρωπος ὢν κἀγὼ νῦν **πεποίηκα**. (Jos. *AJ* 12.214)
>
> It is for dogs to eat the bones along with the meat, just as these here, to judge looking at the fellow diners, because they have nothing in front of them. Men, however, eat the meat, but throw away the bones, as **I have just done**.

Because there is a pile of bones in front of Hyrcanus, along with the fact that he is talking, and, therefore, probably not eating, it is clear that he is describing an event which has recently terminated, rather than an event which is in progress.

In terms of the temporal sequencing of events, accusative perfects are used to describe non-overlapping events:

> [366] ... ἀλλ' ὡς ἐπὶ πᾶσιν ἐκείνοις ἀκριβῶς πεφυλαγμένοις **νενικηκὼς** τοὺς πολεμίους οἴκαδε πρὸς αὐτὸν **ὑπέστρεψε** χαίρων ἐπὶ τοῖς κατωρθωμένοις. (Jos. *AJ* 6.141)
>
> ... but Saul, as he had kept exactly everything [the prophet had told him to do], **having defeated** his enemies, he returned home rejoicing at what had been done.

νενικηκὼς	ὑπέστρεψε
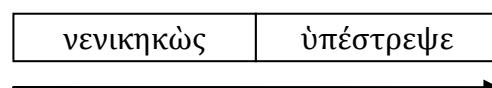
This is to be expected given the function of accusative PASFs of describing events terminating prior to reference time.

When a perfect is used in relation to an event presented as imperfective, i.e. without endpoints, reference time is not tied down to a specific point, but to a period. In these situations, the perfect may be used to describe a particular event occurring within this context:

[367] Ἀνιλαῖος δὲ καὶ ὅσον περὶ αὐτὸν ἦν συνεστηκὸς ἐπὶ τῆς ὕλης **ἐπανεχώρουν** φυγῇ μεγάλην νίκης τῆς ἐπ' αὐτοῖς **χαρὰν** Μιθριδάτῃ **παρεσχηκότες**. (Jos. *AJ* 18.366)

So Anilaios and those who stood firm around him, **started fleeing** to a wood, thereby **giving** great joy to Mithridates since he had won against them.

$$\boxed{\text{ἐπανεχώρουν}}$$
$$\boxed{\text{παρεσχηκότες}}$$
$$\longrightarrow$$
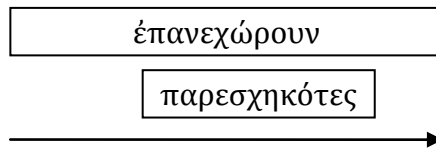
[368] Ἀννίβας μὲν οὖν τοιαύτην ἐκ τοῦ Φαλέρνου ποιησάμενος τὴν ἔξοδον, λοιπὸν ἤδη στρατοπεδεύων ἀσφαλῶς **κατεσκέπτετο** καὶ **προυνοεῖτο** περὶ τῆς χειμασίας ποῦ καὶ πῶς ποιήσεται, **μέγαν φόβον καὶ πολλὴν ἀπορίαν παρεστακὼς** ταῖς πόλεσι καὶ τοῖς κατὰ τὴν Ἰταλίαν ἀνθρώποις. (Plb. 3.94.7)

So once Hannibal had made his departure from the Falernian plain, **he began reconnoitring** for a place to set up camp and making provision for the winter, **putting** the cities and population of Italy **in a state of terror** and great difficulty.

$$\boxed{\text{κατεσκέπτετο \& προυνοεῖτο}}$$
$$\boxed{\text{παρεστακὼς}}$$
$$\longrightarrow$$
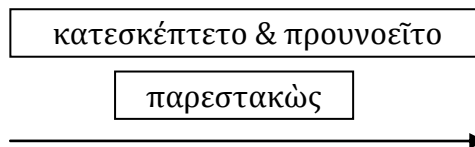
The key point is that the events described by παρεσχηκότες and παρεστακώς do not provide an indefinite context in which some other event occurs; the events they describe occur within the unbounded time-frame provided by ἐπανεχώρουν and κατεσκέπτετο etc. In this accusative perfects differ from other perfect types, which, as has already been demonstrated, are able to provide such an unbounded context. This use is parallel to that of accusative perfectives given above, for example ἠφίεσαν at [283], where the perfective denotes the occurrence of an event within the unbounded frame provided by an imperfective.

To sum up, where the event described by an accusative PASF is measured with respect to a point reference time, it carries ANTERIOR PAST REFERENCE with respect to this reference time. Where the event is not measured with respect to a point reference time, but rather is presented as occurring within an unbounded frame provided, for example, by an imperfective, an accusative PASF perfect is used to describe an event occurring at some point within that period. This contrasts with state and COS PASFs which may carry either ANTERIOR PAST REFERENCE, PURE STATE or RESULTATIVE readings, with the added possibility in the case of PASFs from state verbs of denoting CONTINUED STATE.

4.3.4. Activity

PASFs of activity verbs are poorly attested in the corpus. Compounds of τρέχω 'to run' are attested, but in each case these are coerced into unaccusative, i.e. COL, readings:[337]

> [369] ἐπυνθάνετο γὰρ εἰς τὸν Στράτον **συνδεδραμηκέναι** τῶν Αἰτωλῶν πεζοὺς
>   μὲν εἰς τρισχιλίους, ἱππεῖς δὲ περὶ τετρακοσίους, Κρῆτας δ' εἰς
>   πεντακοσίους. (Plb. 5.14.1)
>
> For he learned that up to three hundred Aetolian infantry, four hundred
> horse and around five hundred Cretans, **had run together** to Stratus...

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[337] Parallels: συνδεδραμηκότων (Plb. 4.75.5) where the meaning is 'having run together', i.e. having gathered; συνδεδραμηκότων (Plb. 5.71.9) where the new location is given by means of an εἰς + acc. phrase; ἐπιδεδραμηκότα (Plb. 5.108.2) where the meaning is 'having overrun'.

There are other activity verbs whose perfects have a different character, but still describe a STATE holding at reference time:

[370] οὔτε γὰρ τῶν ὀρῶν τὸ μέγεθος οὔτε τῶν ποταμῶν τὸ βάθος **τοῖς ἀρετὴν ἠσκηκόσιν** ἐμποδὼν στήσεσθαι πρὸς τὰ ἔργα καὶ ταῦτα τοῦ θεοῦ συμπροθυμουμένου καὶ ὑπερμαχοῦντος αὐτῶν. (Jos. *AJ* 3.309)

For [said Joshua and Caleb] neither the size of the mountains nor the depth of the rivers would impede **men of virtue** in respect of these deeds, when God was zealous [in helping them] and fighting for them.

This example is striking as it appears to describe a PURE STATE, i.e. 'people who are practisers of virtue', i.e. 'the virtuous'. There is no detectable PAST REFERENCE. The question is not whether or not they had practised virtue in the past, but whether or not they were virtuous in the moment, the moment when the Israelites were about to enter the promised land.[338]

However, it is also possible to find the perfect of activity verbs used to describe events which have clearly terminated prior to reference time:[339]

[371] ἐπιεικέστατος δὲ καὶ παρὰ τοῖς μυθογράφοις ὁ περὶ τούτων τῶν πεδίων λέγεται λόγος: προσαγορεύεται δὲ καὶ ταῦτα Φλεγραῖα, καθάπερ καὶ ἕτερα τῶν ἐπιφανῶν πεδίων: θεούς γε μὴν μάλιστα περὶ τούτων εἰκὸς **ἠρικέναι** διὰ τὸ κάλλος καὶ τὴν ἀρετὴν αὐτῶν. (Plb. 3.91.7)

A very reasonable story with the mythographers is this one, concerning these plains. For they are called Phlegraean, just as other remarkable plains. It is very reasonable that the gods **should have quarrelled** on account of their beauty and fertility.

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[338] A parallel for these examples exists in Dio Chrysostom 11.95.6, where the perfect participle ἐρρυηκότος describes a river 'in flood'.

[339] Parallel to these are δεδράμηκα... δρόμον (Menander *Frag.* 71) and τῶν [χίλ]ια δεδραμηκότων στάδια (Philodemus *Περὶ ὀργῆς* 182.8.35 – 40). An ambiguous example which might be considered parallel is πεπομπευκώς at Jos. *BJ* 7.154, describing the defeated Jewish general Simon being led in procession.

From the evidence available in the corpus, the perfect active of activity verbs is seen to behave as the perfect of non-terminative state verbs; it is capable of denoting all of the following: a (STATE) event holding at reference time without carrying PAST REFERENCE, a RESULTANT STATE, and an event having terminated prior to reference time with no RESULTANT STATE, i.e. an ANTERIOR. This is to be expected: activity verbs, just as non-terminative state verbs, such as 'to love', and 'to rule', have arbitrarily set endpoints. A running event will last as long as the SUBJECT runs. How long the running event lasts, however, cannot be predicted by any outside observer, and possibly not even by the SUBJECT.[340]

4.3.5. Verbs crossing categories

4.3.5.1. γιγνώσκω

In the analysis of the use of the imperfective and perfective stems this verb was found in three senses: the STATE sense 'to know', and COS senses 'to perceive, to come to know' and 'to decide'.

First the COS sense 'to decide' is frequently attested. In some cases the notion of the COS event terminating prior to reference time is stronger than others:

> [372] ἐκβαλὼν δ' ἀνάγκην ἐπέθηκας τοῖς παροῦσι Ῥωμαίων κατάγειν αὐτόν, καὶ
> καταγόμενον κωλύων σὺ τὸν πόλεμον ἐξῆψας, **ἐγνωκὼς** μὲν οὕτω **πρὸ**
> **πολλοῦ**... (App. *Mith*. 8.57)
>
> When you exiled him you placed on the Romans who were present the
> necessity of reinstating him, and when you prevented him from coming back
> you kindled the war, **having determined** so long ago...

---

[340] A runner may think he can run a mile, but in fact be incapable of running that far.

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[373] οἱ δὲ Καρχηδόνιοι πυθόμενοι σῖτον πολὺν ἐς ἐμπόριόν τι ὑπὸ Ἀννίβου σεσωρεῦσθαι, ὀλκάδας ἐπ' αὐτὸν ἐξέπεμπον καὶ ναῦς μακράς, **ἐγνωκότες**, εἰ τὸν σῖτον λάβοιεν, ἐκστρατεῦσαι καὶ ὑπομεῖναι πᾶν ὅ τι ἂν ἡ τύχη κρίνῃ, μᾶλλον ἢ Ῥωμαίοις δουλεύειν ἑκόντες. (App. *Pun.* 9.56)

The Carthaginians, when they learned that a great deal of corn had been stockpiled by Hannibal, they sent trading vessels to him and long ships, **having decided / being determined**, if they took the corn, to march out and endure whatever chance determined, rather than willingly become slaves to Rome.

In the first example it is explicitly stated that the decision was reached long before reference time. In the second example, however, this is far less obvious; while it admits such an interpretation, it does not require it, as my translation shows.

The senses 'to know' (STATE) and 'to come to know' (COS) are also attested in the perfect active stem. Here too the examples are ambiguous between asserting any event having taken place prior to reference time. Consider the following examples:[341]

[374] παραλιπὼν οὖν ἡμέρας δύο καὶ μηδὲν **ἐγνωκέναι** προσποιησάμενος, πέμψας πρὸς τοὺς Τιβεριεῖς συνεβούλευον αὐτοῖς τὰ ὅπλα καταθεμένοις ἀπολύειν τοὺς ἀνθρώπους εἰς τὴν ἑαυτῶν. (Jos. *Vit.* 319)

So I did nothing for two days, and pretending not **to know / have been told** anything, I sent to the Tiberians, advising them to put down their arms, and to release their men and let them go home.

[375] ἐπιλεξάμενος δ' αὐτῶν πεντήκοντα ὁ Σκιπίων ἐς θρίαμβον, τοὺς λοιποὺς ἀπέδοτο, καὶ τὴν πόλιν κατέσκαψε δύο μὲν τάσδε πόλεις δυσμαχωτάτας ἑλὼν στρατηγὸς ὅδε Ῥωμαίων, Καρχηδόνα μὲν... Νομαντίαν δὲ σμικράν τε καὶ ὀλιγάνθρωπον, οὔπω τι Ῥωμαίων περὶ αὐτῆς **ἐγνωκότων**... (App. *Hisp.* 15.98)

Scipio, having selected fifty of them for his triumph, sold the rest and razed the city [of Nomantia]. This Roman general thus took two unconquerable cities: Carthage on the one hand... and on the other Nomantia, a small city with a small population, though the Romans **did** not yet **know / had** not yet **been informed** about this capture.

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[341] cf. ἐπεγνώκαμεν (Jos. *AJ* 9.46) and ἐγνωκέναι (Jos. *AJ* 7.94).

These ambiguities are thoroughly in keeping with what has been established so far in the investigation regarding the aspect of the perfect active stem of state/COS verb forms: both have been found capable of denoting entry into a STATE prior to reference time, or simply of denoting a STATE holding at reference time. Accordingly, the COS and STATE senses of γιγνώσκω, should amount to the same range of uses in the perfect, namely between 'to have found out' and 'to know' in the one case, and between 'to have decided' and 'to be decided' on the other.

4.3.5.2. πιστεύω

In the analysis of the imperfective and perfective stems of this verb, it was found that it had the accusative COS sense 'to entrust', as well as the STATE sense 'to trust, to believe'. In the perfect active stem this verb is only attested in Josephus,[342] and is attested in both its accusative COS sense and its STATE sense. The following example is of its accusative COS sense:[343]

> [376] γράφει δὲ πρὸς ἐμὲ ταῦτα δηλῶν Λευίς, ᾧ τὴν φυλακὴν **πεπιστεύκειν**. (Jos. *Vit.* 319)
>
> Levi, to whom **I had entrusted** the guard, wrote to me telling me about
> these matters.

Strikingly this sense may be used even in the absence of any OBJECT complement in the surrounding context:

> [377] παρακαταθήκην δὲ ὥσπερ ἱερόν τι καὶ θεῖον χρῆμα ὁ παραλαβὼν φυλακῆς
> ἀξιούτω, καὶ μηδεὶς ἀποστερῆσαι θρασυνθείη τὸν **πεπιστευκότα** μήτ' ἀνὴρ
> μήτε γυνή... (Jos. *AJ* 4.285)
>
> Let the one who receives anything as a deposit for safe-keeping consider it a
> holy and divine thing, and let no one dare to deprive **the one who has**
> **entrusted it**, neither man nor woman...

In both of these examples there is a clear reference to an event of entrusting terminating prior to reference time. This is in keeping with the observed behaviour of other accusative COS PASFs.

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[342] The perfect active of πιστεύω is only attested in Josephus. Other examples where the perfect describes a STATE which clearly holds at reference time include Jos. *AJ* 3.44, 3.203, 3.309, 4.60, 4.285, 6.263, 8.279, 12.304, 13.122, 16.190, 16.251, 17.217, 18.211, 18.312, 19.138, 20.48, 20.55, Jos. *BJ* 7.66.

[343] Parallel: Jos. *AJ* 20.63.

However, in its STATE sense, the perfect active stem of πιστεύω appears to lose this reference to an event occurring prior to reference time:

[378] τὰ γὰρ βιβλία, ὅσα δὴ συγγραψάμενος καταλέλοιπεν, ἀναγινώσκεται παρ' ἡμῖν ἔτι καὶ νῦν καὶ **πεπιστεύκαμεν** ἐξ αὐτῶν, ὅτι Δανίηλος ὡμίλει τῷ θεῷ. (Jos. *AJ* 10.267)

For the books, which he wrote and has left behind, are still read by us even now, and **we believe** from them that Daniel spoke with God.

In this example Josephus is explaining his own belief at reference time that Daniel spoke with God.

Indeed, the use of the perfect active infinitive in an IDC construction confirms that the form need not carry PAST REFERENCE:

[379] διὸ καὶ ὁ προφήτης Ἰερεμίας πρὸς αὐτὸν ἐλθὼν πολλάκις ἐμαρτύρατο **κελεύων** τὰς μὲν ἄλλας ἀσεβείας καὶ παρανομίας καταλιπεῖν, προνοεῖν δὲ τοῦ δικαίου, καὶ μήτε τοῖς ἡγεμόσι τῷ εἶναι ἐν αὐτοῖς πονηροὺς προσανέχειν μήτε τοῖς ψευδοπροφήταις ἀπατῶσιν αὐτὸν **πεπιστευκέναι**...(Jos. *AJ* 10.104)

For this reason the prophet Jeremiah came to him often and prophesied, **ordering** him to forsake his previous ungodliness and law-breaking, to pay heed to justice, and neither to rely on the leaders on the grounds that there were miscreants among them, nor **to put his trust** in the false prophets who were deceiving him...

The fact that the accusative COS sense carries a strong anteriority, while in the STATE sense this is far less obvious, is again in keeping with what has been found so far in the analysis of the perfect active stem, and supports the thesis that where the SUBJECT participant enters or holds a STATE as part of the event schema of the verb, there is no necessary implication of the termination or continuing of any event prior to reference time.

4.3.5.3. κάμνω

In the analysis of perfectives and imperfectives, κάμνω was found sometimes to describe an activity event, sometimes a perception event, and sometimes a COS event: 'to toil', 'to suffer' and 'to become tired' respectively. The use of the perfect active stem reflects two of these, namely 'to become tired' and 'to suffer', given in this order in the following examples:

> [380] Τότε μὲν οὖν ὁ βασιλεύς, ὀψία γὰρ ἦν, δειπνοποιεῖσθαι κελεύει τοὺς
> στρατιώτας, αὐτὸς δέ, **ἐκεκμήκει** γάρ, εἰσελθὼν εἴς τι δωμάτιον περὶ
> λουτρὸν ἦν. (Jos. *AJ* 14.462)
>
> So then the king, for it was late, commanded the soldiers to make dinner. He,
> on the other hand, as **he was tired**, went into his room and set about having
> a bath.

> [381] ὡς οὖν ἀγωνοθέται τῆς μάχης χρήσασθε μὲν ὡς ἐλάττοσι πολὺ πλείονες,
> καταφρονεῖτε δὲ ὡς ἡττημένων νενικηκότες καὶ γερόντων νέοι καὶ **πολλὰ**
> **κεκμηκότων** ἀκμῆτες ἄνδρες... (App. *BC* 2.11.72)
>
> So as arbiters of the battle, treat them as those who are more numerous
> those who are fewer, and despise them as victors do those who are
> vanquished, as young men do old men, and as fresh men do **those who have**
> **been through much**...

Notice in the first example, with κάμνω in the sense 'to become tired', that the point is simply that the king was tired, not that he had done anything particular to make him tired. This is in keeping with the findings earlier, that a COS form may refer to the STATE alone.

The second example is more complicated. It appears at one level to behave as a perception non-COS verb, such as πάσχω, 'to suffer'. Yet it is not clear that the SUBJECT does not change STATE: the point seems to be that a fresh soldier can despise one that 'has been through much' because he is worn out, and is therefore in not such a good condition to fight. Nevertheless, this STATE is predicated on past experience, an experience which is communicated by means of the OBJECT complement. It is probably best to see this instance, therefore, as an instance of the COS sense, with the OBJECT complement simply giving the grounds of the present STATE.

4.3.6. Defective

It was noted in the previous section that a number of verbs attested in the perfect or pluperfect are not attested in either or both of the imperfective and perfective stems. Verbs in this category were found to be δέδοικα/δέδια, ἔοικα, ἔωθα, οἶδα (plus compounds) and κέκραγα (plus compounds). With the exception of κέκραγα, the perfects and pluperfects of these verbs denote STATES holding at reference time, with little detectable reference to any event or situation holding prior to reference time:

[382] τίνα δ', εἶπεν ὁ Ἀρτάβανος, Ἑλλήνων ἀφῖχθαί σε φῶμεν; οὐ γὰρ ἰδιώτῃ τὴν γνώμην **ἔοικας**. (Plu. *Them.* 27.5)

Artabanus asked, "And whom of the Greeks shall we say has arrived. For **you do not appear** to be like a private individual in your intention."

[383] γενομένων δὲ τῶν σπονδῶν ἀπήγγειλε τὴν τοῦ Αἰγέως τελευτήν. οἱ δὲ σὺν κλαυθμῷ καὶ θορύβῳ σπεύδοντες ἀνέβαινον εἰς τὴν πόλιν. ὅθεν **καὶ νῦν** ἐν τοῖς ὠσχοφορίοις στεφανοῦσθαι μὲν οὐ τὸν κήρυκα λέγουσιν, ἀλλὰ τὸ κηρύκειον, ἐπιφωνεῖν δὲ ἐν ταῖς σπονδαῖς, Ἐλελεῦ, Ἰού, Ἰού, τοὺς παρόντας: ὧν τὸ μὲν σπεύδοντες ἀναφωνεῖν καὶ παιωνίζοντες **εἰώθασι**, τὸ δὲ ἐκπλήξεως καὶ ταραχῆς ἐστι. (Plu. *Thes.* 22.3)

When the drink offerings had been performed, he announced the death of Aegeus. And they hurried up to the city, crying and wailing. It is because of this that here **even now** they say that in the vine-branch procession it is not the herald who wears a garland, but the herald's wand, and that those present cry during the drink offering, "Eleleu, Iou, Iou," Of which the first **they are accustomed** to utter hurriedly as a paean, the second is with surprise and consternation.

[384] ἀλλ' **οἴδασιν** Ῥωμαῖοι τοῦτό γε. καλὸν ἐν πολέμῳ θνήσκειν, ἀλλὰ πολέμου νόμῳ, τουτέστιν ὑπὸ τῶν κρατούντων. (Jos. *BJ* 3.363)

But the Romans **know** this much: it is good to die in war, and by the custom of war, that is to say, at the hands of the winners.

[385] ἐπεὶ οὖν τὴν μᾶζαν φὴ|ς ἰδεῖν τὰς σκηνὰς ἡμῶν ἀνατρέπουσαν, **δέδια** μὴ θεὸς Γεδεῶνι τὴν καθ' ἡμῶν νίκην ἐπινένευκε. (Jos. *AJ* 5.221)

So since you say that you saw the barley overturning the tents, **I am afraid** lest God has turned the battle against us in Gideon's favour.

Notice that in the example with εἰώθασι it parallels the clearly stative ἐστί. Indeed, there is one example in the corpus where εἴωθα collocates with ἔτι, which places the focus of the temporal reference on the STATE holding at reference time: [344]

> [386] συνέδραμον γὰρ σπουδῇ, τὸ ἔργον ἅπαντες ἐπειγόμενοι καταλαβεῖν, σημεῖά τε φέροντες ἐπίχρυσα καὶ ὅπλα ἐπὶ σφίσι περιάργυρα, οἷς **ἔτι νῦν** ἐς τὰς πομπὰς **εἰώθασι** χρῆσθαι. (App. *BC* 1.12.106)
>
> They eagerly ran together, everyone pressing on to arrive at the event, carrying gold-plated standards and weapons set in silver about their person, which **they are still accustomed** to use for processions.

Similarly, in the case of δέδια/δέδοικα the fact that no event or event termination need be implied as having taken place prior to reference time is made clear by their ready construction with control verbs:[345]

> [387] ὁ δὲ Πόπλιος, διασαφηθέντος αὐτῷ παρεῖναι τοὺς ὑπεναντίους, τὰ μὲν ἀπιστῶν διὰ τὸ τάχος τῆς παρουσίας, τὰ δὲ **βουλόμενος εἰδέναι** τὴν ἀκρίβειαν, αὐτὸς μὲν ἀνελάμβανε τὰς δυνάμεις ἐκ τοῦ πλοῦ... (Plb. 3.41.8)
>
> Publius, having been told that the enemy were present, both disbelieving it on account of the speed of their arrival, and **wanting to know** the truth, took his forces out of the boat himself...

> [388] ... ἀμφὶ δεκάτην ὥραν αὐτοὺς κατὰ σπουδὴν συναγαγὼν ἔφη τὸν δῆμον **ἐσπουδακότα** περὶ τὸν νόμον **δεδιέναι**... (App. *BC* 1.4.30)
>
> ... gathering them together in haste around the tenth hour he told them that the people were zealous **in their fear** of the law...

---

[344] Similar is the collocation of εἰώθασι with ἀεί at App. *Hisp.* 9.46.

[345] Parallels for εἰδέναι in this use: Plb. 2.23.9 (construed with σπουδάζοντες), 1.46.4 (with βουλομένοις), 3.41.8 (with βουλόμενος), 4.38.12 (with βουλόμεθα), Jos. *AJ* 1.325 (with βουλόμενος), 11.283 (with βούλομαι). A parallel for this use of δεδιέναι / δεδοικέναι is Plu. *Arist.* 6.3 (construed with ἐοίκασι).

Nevertheless, these two verbs are compatible with the implication that the STATE has held and been entered into prior to reference time, as shown by the possibility of their collocation with ἤδη:

> [389] χαλεπαίνοντος δὲ τοῦ βαρβάρου καὶ βασιλεῖ γράψειν φήσαντος ἐπιστολήν, φοβηθεὶς ὁ Θεμιστοκλῆς εἰς τὴν γυναικωνῖτιν κατέφυγε καὶ τὰς παλλακίδας αὐτοῦ θεραπεύσας χρήμασιν ἐκεῖνόν τε κατεπράϋνε τῆς ὀργῆς καὶ πρὸς τὰ ἄλλα παρεῖχεν ἑαυτὸν εὐλαβέστερον, **ἤδη** καὶ τὸν φθόνον τῶν βαρβάρων **δεδοικώς**. (Plu. *Them.* 31.2)
>
> When the barbarian grew angry and threatened to write a letter to the King of Persia, Themistocles was afraid and ran down to the women's apartments and bribed the concubines, thereby calming [the barbarian] from his anger, and he presented himself cautious in regard to the other matters, for he **was now afraid** of ill-will of the barbarians.

> [390] ... καὶ περὶ τοῦ θείου πεπιστεύκασιν, ὅτι πᾶσι τοῖς γινομένοις ἐν τῷ βίῳ πάρεστι καὶ οὐ τὰ ἔργα μόνον ὁρᾷ τὰ πραττόμενα, ἀλλὰ καὶ τὰς διανοίας **ἤδη** σαφῶς **οἶδεν**, ἀφ' ὧν μέλλει ταῦτα ἔσεσθαι... (Jos. *AJ* 6.263)
>
> ... and they believe about the Divine, that he is present in all the happenings in life, and that he not only sees what is done, but also that he **already** clearly **knows** the thoughts, out of which the deeds will arise.

Indeed, in at least one instance the STATE described is assumed to have ceased prior to reference time:

> [391] ταῦτα τοῖς περὶ τὸν Ἐπιφανῆ πυθομένοις, **πρότερον** σφόδρα περὶ τοῦ πατρὸς **δεδιόσιν** ἀνείθησαν αἰ ψυχαὶ μεγάλης καὶ δυσδιαθέτου φροντίδος. (Jos. *BJ* 7.241)
>
> When they heard this about Epiphanes, though **previously they had been** much **afraid** concerning their father, their souls were freed of troubling and difficult concerns.

Although this is the only clear example in the corpus of one of these verbs in the perfect stem describing a STATE which terminated prior to reference time, given the previously proven, albeit rare, capacity for the perfect and pluperfects of state and COS verbs to describe STATES of this kind, the burden of proof should be on demonstrating that the other perfects and pluperfects of the defective class cannot be used in this way.

To sum up, these verbs in the perfect and pluperfect behave in much the same manner as state and change-of-state verbs, in that they may describe STATES which either initiated prior to reference time and hold at reference time, simply hold at reference time, or terminated prior to reference time.

4.3.7. Noise

Noise verbs make up a large part of the problematic group of so-called 'intensive' perfects.[346] The only example of perfects of the noise-verb class in my corpus is κέκραγα.[347] This verb is also defective, in that it is not attested with an imperfective stem in the corpus.[348] The perfect active stem of κράζω is frequently used to denote an atelic activity event, as in the following example:

> [392] ἐν δὲ τῇ εἰρκτῇ τυγχάνων ὁ προφήτης Ἰερεμίας οὐχ ἡσύχαζεν, ἀλλ'
> **ἐκεκράγει** καὶ **ἐκήρυσσε** παραινῶν τῷ πλήθει δέξασθαι τὸν Βαβυλώνιον
> ἀνοίξαντας τὰς πύλας... (Jos. *AJ* 10.117)
>
> Even though he was in prison, Jeremiah did not keep quiet, but **shouted** and
> **preached**, urging the people to accept the Babylonians by opening the
> gates...

Notice that ἐκεκράγει is coordinated with ἐκήρυσσε; in aspectual terms it is hard to tell the difference between them. It is even possible for κέκραγα to introduce direct speech:[349]

---

[346] See §1.2.

[347] Although κέκραγα is the only 'noise' perfect active stem attested in the corpus, there are at least two examples in Plutarch of τέτριγα demonstrating identical behaviour, namely at *Marius* 19.9 and at *De sera numinis vindicta* 567e3.

[348] See §4.2.4.

[349] This is the only example in the corpus.

[393] οὐδὲ τοῦ Σκιπίωνος αὐτοὺς ἐπιθέοντός τε καὶ παρακαλοῦντος μετετίθεντο,

μέχρι τὸν ἵππον Σκιπίων τῷ παιδὶ παραδούς, καὶ παρά τινος ἀσπίδα λαβών,

ἐξέδραμεν ὡς εἶχε μόνος ἐς τὸ μεταίχμιον, **κεκραγώς**, "ἐπικουρεῖτε, ὦ

Ῥωμαῖοι, κινδυνεύοντι ὑμῶν τῷ Σκιπίωνι." (App. *Hisp.* 5.27)

Nor, even though Scipio was running towards them and cheering them on, did [the infantry] make an attack until Scipio giving his horse to a boy, and taking a shield from someone, he ran out, just as he was, into the space between the armies, **crying out**, "Romans, help your Scipio in danger!"

Whether, however, there is any past reference in this example, is hard to tell. In at least one case, however, it appears to denote something more static:

[394] ὃν μόνος μάλιστα μὴ γενέσθαι διεκώλυσεν ὁ Ἀλκιβιάδης, οὐ μόνον πείθων

καὶ διδάσκων τὸ πλῆθος, ἀλλὰ καὶ καθ' ἕνα τοὺς μὲν ἀντιβολῶν, τῶν δ'

ἐπιλαμβανόμενος. συνέπραττε δ' αὐτῷ καὶ Θρασύβουλος ὁ Στειριεὺς ἅμα

παρὼν καὶ **κεκραγώς**... (Plu. *Alc.* 26.5f.)

This [war] Alcibiades alone prevented from happening, not only by persuading and educating the multitude, but also by entreating some, and taking hold of others. Thrasyboulus of Steiris assisted him too, by accompanying him and **doing the shouting**...

The point here is that Steireus had a particular job, which was to 'do the shouting'. While not a STATE, as such, it is perceptibly less dynamic as an idea than that seen in the other examples.

It is difficult to know how to assess the evidence from κράζω. The fact that this is a defective verb leaves lexicalisation open as an option for accounting for its apparently dynamic behaviour. This is not entirely satisfactory, however, since it amounts essentially to special pleading. Given the preceding discussion, however, another explanation is open: in terms of event structure noise events are atelic, like atelic STATES and ACTIVITIES: they have an unpredictable endpoint because the duration is set arbitrarily by the person or animal emitting the noise. One should expect, therefore, the perfect form of a noise verb, should it exist, to behave as the perfects of state and activity verbs in admitting the possibility of a reference-time only reading, even if this cannot in most cases be viewed as a STATE.

4.3.8. Conclusion

In lexical terms, the critical factor in determining whether a given verb will have a PASF carrying PAST REFERENCE[350] is whether or not the SUBJECT participates in an atelic STATE (sub-)event.[351] However, the matter is not finally determined at the lexical level. The precise circumstances under which PAST REFERENCE will be carried by a given PASF are as follows:

1. If the verb does not describe atelic STATE (sub-)events in which the SUBJECT may participate, e.g. ποιέω, ἀκούω and στρατηγέω.

2. If the verb describes a causative COS event, but has a specialised non-reducing stem of verbs, e.g. ἔστακα from ἵστημι.

3. If the verb describes a causative COS event, but has only one PAS, which may be used in a non-reducing way, e.g. ὑποστέλλω.

Conversely in the following circumstances PAST REFERENCE in the form of resultativity or anteriority will be optional:

1. If the verb describes a non-causative COS event, e.g. ἐπιβαίνω.

2. If the verb describes a causative COS event, and has a specialised valency-reducing stem, e.g. ἔστηκα from ἵστημι.

3. If the verb describes a COS event where both the SUBJECT and OBJECT participate in COS (sub-)events, e.g. ὑποζώννυμι or λαμβάνω.

For non-terminativive state and COS PASFs with optional PAST REFERENCE, it has not been possible to define precise rules according to which past reference was carried. However, PAST REFERENCE was not found in the following situations:

1. The SUBJECT participant was inanimate and fixed.[352]

2. The (RESULTANT) STATE was referenced immediately, e.g. in a narrative sequence.[353]

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[350] Or PERFECTIVE, where there is not a clear reference point, as at [367] and [368].

[351] In the case of activity verbs the question is whether the event is compatible with being coerced into a (RESULTANT) STATE, as in the case of συνδεδράμηκα.

[352] e.g. COS PASFs ἀνακεχωρηκός describing πολισμάτιον (Plb. 2.11.16, [333]), περιεσταφάνωκεν describing ἀπόβασις (Jos. *AJ* 15.337, [338]), ὑπέζωκεν describing ἐγκαρσία (Jos. *AJ* 15.339f., [339]); state verb perfect ἠρημηκότα describing στενωπόν (Jos. *AJ* 19.104, [305]).

[353] See examples at §4.3.2.3 under 'SUBJECT changes STATE at reference time'.

3. The perfect active was used in a control construction,[354] to expressing a command through an imperative,[355] or to expressing a wish with an optative[356];

4. The adverb ἔτι collocated with the verb.[357]

Conversely, PAST REFERENCE was carried in the following situations, namely if:

1. Direct reference was made to the period prior to reference time, e.g. by means of an adverbial expression;

2. The means by which the (RESULTANT) STATE came about was given in an ADJUNCT phrase.

The perfect actives of activity verbs were seen to be capable of either ANTERIOR or (RESULTANT) STATE reading. In this they pattern much as state/COS perfects. No activity verb was attested with a dynamic reading, although this was seen in the case of the one noise-verb perfect in the corpus, κέκραγα.

4.3.9. Implications for post-Classical Greek

Analysis of the transitivity data did not permit a full formulation of the semantics of the form. However, it was noted, based on the preference of the PAS of causative COS verbs for valency-reducing readings, that the meaning must be formulated in terms of a static category, one not concerned with (the cause of) change so much as some fixed notion concerning the event. The evidence presented above supports this: where the event schema of a verb permits the SUBJECT to participate in an atelic STATE (sub-)event, it is this STATE that is denoted by the PAS, to the exclusion of any reference to any event or prior circumstance which might have brought this STATE about or preceded it. It is only where a verb does not describe such an atelic STATE (sub-)event that the PAS may not denote a STATE. With the exception of κέκραγα, the PAS may not denote a dynamic process such as an ACTIVITY.

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[354] e.g. state verb perfect ἠγαπηκέναι complement to συγχωρῶν (Jos. *AJ* 15.165, [307]); πεπιστευκέναι, complement to κελεύων (Jos. *AJ* 10.104, [379]); COS PASFs ἀπολωλέναι (Jos. *AJ* 6.71, [348]), and προκατεγνωκέναι, complement to ἱκετεύω (Jos. *BJ* 1.621, [349]).

[355] ἑστάτω (Jos. *AJ* 18.301, [350]).

[356] τεθναίης (Jos. *AJ* 2.55, [351]).

[357] e.g. ἐπεβεβήκεσαν (App. *BC* 5.10.90, [337]).

4.4. Quantitative analysis

4.4.1. Introduction

It was noted in the introduction that discussions of the aspectual character of the perfect and pluperfect in Greek are frequently based on a small number of examples. However, in many cases these examples can be read and translated in more than one way, giving the academic discussion a rather subjective feel. In the present section, therefore, I wish to test the findings that have been presented on the basis of discussion of a number of examples in context against a set of empirical criteria. This is made possible in the present investigation by the very large quantity of data which it has been possible to analyse.

The first set of criteria involve temporal adverbs. Specifically I will be interested in:

1. Collocation with temporal adverbials denoting that in some way the event described does not hold at reference time, adverbs which I will term 'anterior adverbs', e.g. English 'previously'.

2. Collocation with temporal adverbs denoting that the event still holds at reference time, e.g. English 'still'.

Given the system laid out above, the following behaviour might be expected. Perfects of all aspectual types should be permitted to collocate with anterior adverbials, since all types of perfects have been shown to be compatible with ANTERIOR interpretation. However, state/COS PASFs should occur less frequently with anterior adverbials, since they may refer to a situation holding at reference time without reference to how it arose. By contrast, adverbials such as 'still', which assert that the situation described by the verb holds at reference time, should collocate only with state/COS PASFs, since only these are capable of denoting a STATE for the SUBJECT which holds at reference time.

The second set of criteria concern clause-type collocation. It was noted above[358] that COS PASFs may reference a new STATE entered by the SUBJECT immediately, behaving in much the same way as an aorist might in a narrative sequence. The following was given as an example of this kind of use, repeated here:

---

[358] See §4.3.2.3 under 'SUBJECT changes STATE at reference time'.

[395] τοὺς δ' **εὐθέως** φρίκη καὶ παρέκστασις ᾔρει καὶ παρὰ τὴν ὄψιν

ἐπεπήγεσαν. ἡ δ' ἐμόν, ἔφη, τοῦτο τέκνον γνήσιον καὶ τὸ ἔργον ἐμόν. (Jos. *BJ* 6.210)

A fear and amazement immediately took them, and at the sight **they froze (with fear)**. She said, 'This is my own child, and this is my own doing.'

Since this kind of behaviour was not seen for accusative perfects, it should be that COS PASFs verbs occur much more frequently in main clauses than accusative PASFs, which might be expected to prefer subordinate clauses.

The third set of criteria concern the behaviour of the infinitive, specifically its ability to occur as a complement to control verbs, e.g. 'want', 'desire' etc.,[359] or in IDC constructions. The value of this test is that both of these constructions there is limited or no possibility of reference to an event occurring or terminating prior to reference time, since they imply that the SUBJECT has control over whether or not the event takes place in an implied future time. Consider the following examples:

[396] ὡς δὲ τοῖς ὅρκοις αὐτὴν **ἔπεισε μὴ δεδιέναι**, κελεύει τὴν Σαμουήλου ψυχὴν

ἀναγαγεῖν αὐτῷ. (Jos. *AJ* 6.332)

When **he persuaded** her by oaths **not to fear**, she ordered Samuel's soul to come up to him.

[397] καὶ τὸν μὲν τόπον ἐκεῖνον προσαγορεύει θεοῦ στρατόπεδον, **βουλόμενος**

δὲ **εἰδέναι**, τί ὁ ἀδελφὸς αὐτοῦ φρονεῖ... (Jos. *AJ* 1.325)

And he called that place the camp of God, **wanting to know** what his brother thought...

---

[359] Constructions included here are ποιέω introducing a causative construction (e.g. App. *BC* 2.11.81), ἀνάγκη 'it is necessary' (e.g. App. *BC* 2.18.128), ἀναγκάζομαι 'I am forced' (e.g. Plb. 4.42.7), ἔοικα 'it is like me to' (e.g. Plu. *Arist.* 6.3), δέδια 'I fear to' (e.g. App. *BC* 4.3.14), δύναμαι 'I am able' (e.g. App. *Syr.* 6.30), βούλομαι 'I want' (e.g. Jos. *AJ* 1.325), θέλω (e.g. Jos. *AJ* 6.71), ὀφείλω 'I should' (e.g. Jos. *AJ* 7.270), συγχωρέω 'I concede' (Jos. *AJ* 15.165), συνείθισμαι 'I am accustomed' (e.g. Jos. *AJ* 16.158), αἱρέομαι 'I choose' (e.g. Jos. *BJ* 3.137), διαγιγνώσκω 'I decide' (e.g. Jos. *BJ* 7.341), and σπουδάζω 'I am eager' (e.g. Plb. 2.23.9).

In these examples the perfect infinitive is dependent either on a verb introducing an IDC or a control verb, and in neither is their any conceivable reference to an event occurring prior to reference time, since the futurity/modality inherent in the construction denies the possibility of such an interpretation. To the extent, therefore, that the perfect infinitive active of a given verb is capable of occurring in such constructions, it is capable of being used to describe a STATE without any reference to a prior event or situation.

It is the purpose of this section, therefore, to test the hypotheses put forward regarding the behaviour of the perfect of different aspectual classes of different verbs using these empirical criteria.

4.4.2. Dataset

The dataset used for this part of the investigation comprises PASFs of verbs occurring in the perfect active stem ten or more times in the corpus. The reasons for limiting the lexical items in this way are as follows:

1. Such a threshold covers two-thirds of the perfect and pluperfect forms in the corpus in a non-prejudicial way.
2. The concern of this part of the investigation is not the inclusion of every form, but rather that each verb is assigned to the correct category. This is most easily achieved when there are several examples of the verb in the corpus to compare. The best available window on to the frequency of occurrence of a given lexical item in the context of the present investigation is the number of occurrences of the perfect and pluperfect, since there were not the resources to check the parsing of all other verb forms in the corpus.

It might be suggested that a decision to select perfects and pluperfects on the basis of their frequency of occurrence might skew the results. However, a pilot study conducted on a broader selection of lexical items indicated that the conclusions are not affected. The lexical items used are given in the following table.

Table 30 - Groups for perfect stems whose verbs occur at least 10 times in the corpus

Group	Perfect active stem
(Unassigned)[360]	πεπολεμηκ-
(Unassigned)	τετολμηκ-
Accusative	ἀκηκο-
Accusative	ἀνῃρηκ-
Accusative	ἀπεσταλκ-
Accusative	ἀπολωλεκ-
Accusative	γεγεννηκ-
Accusative	γεγραφ-
Accusative	δεδηλωκ-
Accusative	δεδρακ-
Accusative	δεδωκ-
Accusative	διεφθαρκ-
Accusative	εἴρηκ-[361]
Accusative	ἑστακ-
Accusative	ἑωρακ-
Accusative	ἱστορηκ-
Accusative	καθεστακ-
Accusative	καταλελοιπ-
Accusative	κατειληφ-
Accusative	νενικηκ-
Accusative	παρεστακ-
Accusative	παρεσχηκ-
Accusative	πεπεικ-
Accusative	πεπιστευκ-[362]

---

[360] It was not clear to which category πολεμέω and τολμάω should be assigned.

[361] This is listed under the lemma ἐρῶ in the appendix.

Accusative	πεποιηκ-
Accusative	πεπομφ-
Accusative	πεπονθ-
Accusative	πεπραχ-
Accusative	προειρηκ-
COS	ἀπεγνωκ-
COS	ἀπειληφ-
COS	ἀπολελοιπ-
COS	ἀπολωλ-
COS	ἀφεστηκ- / ἀπεστ-
COS	γεγον-
COS	διαβεβηκ-
COS	διαπεφευγ-
COS	διεγνωκ-
COS	διεληλυθ-
COS	διεστηκ- / διεστ-
COS	διεφθορ-
COS	ἑαλωκ-
COS	ἔγνωκ-
COS	εἴληφ-
COS	ἐκπεπτωκ-
COS	ἐληλυθ-
COS	ἐμπεπτωκ-
COS	ἐνεστηκ- / ἐνεστ-
COS	ἐξεληλυθ-

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[362] πιστεύω was the only causative COS verb with a single perfect active stem to occur more than ten times in the perfect active in the corpus. Non-reducing instances are assigned to the accusative category, while reducing instances are assigned to the COS category.

COS	ἑστηκ- / ἑστ-
COS	ἐστρατοπεδευκ-
COS	ἐφεστηκ- / ἐφεστ-
COS	καθεστηκ- / καθεστ-
COS	καταπεπληγ-
COS	κεκμηκ-
COS	κεκρατηκ-
COS	μεμαθηκ-
COS	παραγεγον-
COS	παρειληφ-
COS	παρεληλυθ-
COS	παρεστηκ- / παρεστ-
COS	πεπιστευκ-
COS	πεποιθ-
COS	πεπτωκ-
COS	περιεστηκ- / παρεστ-
COS	πεφευγ-
COS	πεφυκ-
COS	προγεγον-
COS	προειληφ-
COS	προεληλυθ-
COS	προεστηκ- / προεστ-
COS	προσκεχώρηκ-
COS	συμβεβηκ-
COS	συμπεφευγ-
COS	συνεγνωκ-
COS	συνεληλυθ-
COS	συνεστηκ- / συνεστ-

COS	τεθνηκ- / τεθνε-
COS	τετελευκ-
COS	τετυχηκ- / τετευχ-
COS	ὡρμηκ-
Defective State	δεδοικ- / δεδι-
Defective State	ἐοικ-
Defective State	ἐωθ-
Defective State	οἰδ-
Defective State	προοιδ-
Defective State	συνοιδ-
Noise	κεκραγ-
State	ἐσπουδακ-
State	ἐσχηκ-
State	ἠξιωκ-
State	λεληθ-
State	μεμην-
State	τεθαρρηκ-
State	ὑπειληφ-

4.4.3. Collocation with anterior adverbs

4.4.3.1. Method

All PASFs of verbs occurring in the perfect active stem more than ten times were examined for collocation with anterior adverbial expressions. This was achieved using an automatic search in Microsoft Access for anterior adverbials (listed below) occurring in the context of the form in question.[363] Those adverbials identified as modifying the verb were ascribed to that form as a collocation. The totals were counted for the different semantic groups identified above. In cases where it could be argued that the same anterior adverbial modifies two PASFs, the anterior adverbial was counted to the nearest PASF.

The anterior adverbs used for the purpose of this part of the investigation were as follows. All imply that the event described occurred at least once and terminated prior to reference time. The first set consists of adverbs broadly equating to English 'formerly' or 'previously', namely:

1. ἀνώτερον
2. ἔμπροσθεν
3. πάλαι
4. πρότερον
5. πρόσθεν
6. πρὸ τοῦ
7. πρὸ + gen. temporal phrase
8. τῇ προτέρᾳ phrase, where temporal[364]
9. ἐχθές

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[363] This includes infinitives. Given the complementary distribution of root and kappatic/aspirated stems with respect to transitivity identified at §3.4.3.2, the ambiguity of transitivity owing to the form being an infinitive affected only the categorisation of πιστεύω; this is the only verb labile in the PAS analysed in this part of the investigation (see n. 362). There was only one potentially ambiguous instance of the perfect active infinitive of πιστεύω, at Jos. *AJ* 20.63. In context, the most likely interpretation is as non-reducing, and this is the way it is taken.

[364] Excludes instances where the dative phrase is instrumental, e.g. τῇ προτέρᾳ νίκῃ τεθαρρηκότες (Jos. *BJ* 1.367).

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With accusative perfects, whether from declarative,[365] accomplishment,[366] or perception verbs,[367] these simply assert that the event took place and terminated prior to reference time:

> [398] ἐδίδασκε δὲ αὐτούς, ὡς ἂν αἱ θυσίαι τῷ θεῷ μᾶλλον κεχαρισμέναι
>
> γένοιντο… ὡς καὶ **πρότερον δεδήλωκα**. (Jos. *AJ* 4.311)
>
> He taught them, so that sacrifices might be more pleasing to God… as **I have formerly related**.

> [399] ταῦτα εἰπὼν κελεύει δῆσαι τὸν Ἀγρίππαν **λελυκὼς πρότερον** αὐτὸν
>
> φυλακήν τε ἀκριβεστέραν αὐτοῦ ἢ πρότερον καθίσταται. (Jos. *AJ* 18.233)
>
> Saying this he gave the order to bind Agrippa, though **he had previously released him**, and he put a surer guard round him than he had previously.

> [400] ὑπαντᾷ δ' αὐτοῖς ὁ πατὴρ θρηνοῦσι λυπούμενος καὶ παρ' ἐλπίδας ὁρῶν οὓς
>
> **ἀκηκόει μικρὸν ἔμπροσθεν** ἀπολωλότας. (Jos. *AJ* 7.179)
>
> Their father met them as they were wailing, upset at seeing beyond hope those whom **he had but a little before heard** had been lost.

With state or COS PASFs, an anterior adverbial may denote either that the COS event or the RESULTANT STATE terminated prior to reference time:

> [401] ὅτι δ' Ἁμίλκας πλεῖστα μὲν συνεβάλετο πρὸς τὴν σύστασιν τοῦ δευτέρου
>
> πολέμου, καίπερ **τετελευτηκὼς ἔτεσι δέκα πρότερον** τῆς καταρχῆς
>
> αὐτοῦ, πολλὰ μὲν ἂν εὕροι τις εἰς τοῦτο. (Plb. 3.10.7)
>
> About the fact that Hamilcar had contributed a lot to the coming about of the second war, **though he had died ten years before its beginning**, you can find a lot of information.

---

[365] Parallels: Jos. *AJ* 5.89 (δεδηλώκαμεν with πρότερον), 6.1 (προειρήκαμεν with μικρὸν ἔμπροσθεν), Plb. 3.107.10 (εἰρήκαμεν with πρότερον), 5.21.9 (εἰρήκαμεν with πρότερον), 5.31.6 (δεδηλώκαμεν with πρότερον) and 5.40.6 (εἰρήκαμεν with πρότερον).

[366] Parallels: App. *Pun.* 9.57 (ἐδεδράκει with πρότερον), Plb. 4.55.5 (ἐξαπεστάλκεισαν with πρότερον), Plu. *Per.* 37.2 (εἰσενηνόχει with πρότερον).

[367] cf. Jos. *Vit.* 392 (πεπόνθεισαν with πρὸ τοῦ πολέμου).

[402] ... διαφυγῆς μοι γενομένης τῶνδε τῶν δεσμῶν οὐκ ἂν βραδύνοιμι

ἐλευθερίαν εἰσπρασσόμενός σοι παρὰ Γαΐου, ὃς καὶ δεσμώτη μοι γενομένῳ

διακονεῖσθαι καθάπερ ἐν **τῷ πρότερον καθεστηκότι** σχήματι τῆς περὶ ἐμὲ

ἀξιώσεως οὐκ ἐνέλιπες. (Jos. *AJ* 18.193)

... when I escape these shackles, I will not be slow in getting you freedom

from Gaius, you who did not fail to minister to me when I was a prisoner,

just as if I was in the state of dignity in which I **had formerly been**

established...

In the first example πρότερον refers to the event of Hamilcar's death, and the RESULTANT STATE of his being dead of course holds forever after that. In the second example (already quoted in the discussion of COS perfects) both the obtaining event and the RESULTANT STATE do not hold at reference time, and are marked as being in the past by πρότερον.

The second group of anterior adverbs consists of those translating roughly to English 'recently'. This group includes the following adverbials:

1. προσφάτως
2. νεωστί

These behave much in the manner of 'previously'-type adverbs in referring to an event which terminated prior to reference time. In the case of COS PASFs[368] the adverbial may denote either that a COS event occurred prior to reference time, or the STATE itself held prior to reference time:

[403] ... ὃς ἐπέμφθη μὲν εἰς Συρίαν ἀπὸ Ἀρμενίας ὑπὸ Πομπηίου Μάγνου

πολεμοῦντος πρὸς Τιγράνην, παραγενόμενος δὲ εἰς Δαμασκὸν **ἑαλωκυῖαν**

προσφάτως ὑπὸ Μετέλλου καὶ Λολλίου καὶ τούτους μεταστήσας... (App.

Mith. 15.97)

He was send to Syria from Armenia by Pompey the Great who was fighting

against Tigranes. When he got to Damascus, **which had recently been**

taken by Metellus and Lollius, he replaced them.

---

[368] There are no examples of state verbs occurring with 'recently'-type adverbials.

[404] ἦν δὲ τὰ πλεῖστα τῶν λεγομένων πρὸς τοῦτον τείνοντα τὸν νοῦν, τὸν ὑπὲρ

τῶν νεωστὶ γεγονότων συμπτωμάτων. (Plb. 3.108.3)

Most of what he said was regarding the reason for the defeats which **had recently happened**.

The first example, involving the COS perfect ἐάλωκα, describes a change of STATE event, 'being captured', as having recently happened, and it is clear that the STATE still holds at reference time. However, in the second example the RESULTANT STATE can be argued no longer to hold at reference time.

The third kind of anterior adverb translate English 'often'. These imply that the event initiated and terminated at least twice prior to reference time:

[405] Ῥωμαῖοι δὲ **πλεονάκις** αὐτῶν **παρακηκοότες** τότε πρεσβευτὰς

ἐξαπέστειλαν τοὺς ἐπισκεψομένους ὑπὲρ τῶν προσπιπτόντων. (Plb. 3.15.2)

The Romans, having **often disregarded** [the embassies sent by Saguntum], at that time sent commissioners to survey what was going on.

[406] ἀλλ' ἡ τῶν ἐθισμῶν διαφορὰ καὶ τότε καὶ **πολλάκις** ἤδη **σέσωκε** τὰ

Ῥωμαίων πράγματα. (Plb. 1.17.11)

But their difference in customs **has saved** the Romans, both then and **many times** since.

COS PASFs may also be used with these adverbials, as the following example shows, although this is the only example in the corpus:

[407] ὃ δὴ καὶ πολλοῖς καὶ **πολλάκις** ἤδη παραίτιον **γέγονε** τῆς ἀπωλείας. (Plb. 5.75.2)

This **has often been the cause** for many of their demise.

4.4.3.2. Data and analysis

The hypothesis to be tested is that accusative PASFs should occur more frequently with anterior adverbs than their state/COS counterparts. The full dataset may be found at Appendix List 5.[369] The following table gives the breakdown for the occurrence of anterior adverbs with perfects and pluperfects from the different categories.

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[369] The dash sign (-) in Appendix List 5 denotes that the instance of the perfect/pluperfect does not collocate with a relevant adverb.

Table 31 - Frequency of collocation of anterior adverb with PASFs

	-	Anterior	TOTAL	% Anterior
Accusative inc. caus. COS	697	40	737	5.43
State	129	2	131	1.53
COS	2397	42	2439	1.72
Defective State	1088	7	1095	0.64
Noise	24	0	24	0
Unassigned	32	0	32	0
TOTAL / Average	4367	91	4458	2.04

From this it is immediately apparent that anterior adverbs occur with all categories except the one noise verb κράζω. Furthermore, it is striking that the percentage of occurrence of accusative PASFs, 5.43%, is noticeably higher than the average for the whole dataset, 2.04%. On the face of it, this provides evidence that, in accordance with the hypothesis, accusative PASFs do indeed occur proportionately more frequently with anterior adverbs than types where a (new) STATE for the SUBJECT forms part of the event schema.

Before this conclusion is reached, however, it is important to check whether the proportionate difference between accusative PASFs and state/COS PASFs is statistically significant. The results of the chi-squared test can be seen in the following table.[370] The two variables whose independence is being tested are the presence or not of an anterior adverb, and whether or not the perfect stem is accusative. Here the null hypothesis is that accusative PASFs behave in exactly the same manner as other perfect indicatives in respect to the relative proportion of their collocation with anterior adverbial expressions.

---

[370] Because the hypothesis does not concern noise PASFs, this set is excluded. Also excluded as the two unassigned verbs, πολεμέω and τολμάω.

Table 32 - χ² test results for collocations of anterior adverbs with PASFs

Observed frequencies	-	Anterior	Total
Accusative	697	40	737
State/COS	3614	51	3665
Total	4311	91	4402

Expected frequencies		
Accusative	722	15.2
State/COS	3590	75.8

Deviances		
Accusative	0.816	38.6
State/COS	0.164	7.77

Total Deviance (χ² statistic)	47.4 (3 s.f.)

The chi-squared statistic of 47.4 is greater than the $p \leq 0.1\%$ critical value for the chi-squared distribution for one degree of freedom, 10.8. Given the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is less than 0.1%. The null hypothesis at the 100-0.1% level is therefore rejected, and the difference between the groups may be regarded as statistically significant.

4.4.4. Collocation with ἔτι

4.4.4.1. Method

The adverb ἔτι denotes that the state of affairs described by the verb continues to be ongoing at reference time. As such, it is in principle a very useful test for whether or not an event described by a perfect is presented as ongoing at reference time. Furthermore, the English equivalent of ἔτι, the adverb 'still', is not compatible with anteriority. Accordingly, 'still' does not collocate with the English perfect, but is compatible with RESULTATIVES and PURE STATES:

[408] The door is still closed.

[409] *I have still made the door.

If ἔτι may be said to be like the English 'still' in this respect, it should not collocate with anterior PASFs such as πεποίηκα. Rather it should be restricted to PASFs describing a (RESULTANT) STATE (sub-)event for the SUBJECT, such as ἔστηκα.

4.4.4.2. Data and analysis

Only eleven examples of perfects were found in the sample collocating with ἔτι. These may also be found at Appendix List 5. One of these has been given already as part of the preceding discussion.[371] Further examples are given here:[372]

[410] ἐπὶ δὲ τῆς Ἰουδαίας Βάσσου τελευτήσαντος Φλάυιος Σίλβας διαδέχεται τὴν ἡγεμονίαν, καὶ τὴν μὲν ἄλλην ὁρῶν ἅπασαν τῷ πολέμῳ κεχειρωμένην, ἓν δὲ μόνον **ἔτι** φρούριον **ἀφεστηκός**, ἐστράτευσεν ἐπὶ τοῦτο πᾶσαν τὴν ἐν τοῖς τόποις δύναμιν συναγαγών: καλεῖται δὲ τὸ φρούριον Μασάδα. (Jos. *BJ* 7.252)

When Bassus died Flavius Silvas received control of Judaea, and seeing almost all of the land conquered by war, while one fort was **still in revolt**, he marched to this [fort] bringing with him all his forces. And the fort is called Masada.

[411] ἀφῄρητο δὲ τὴν ὄψιν τοῦ ἔργου τοὺς πολεμίους ὁ **πεφυκὼς ἔτι** δόναξ ἀμφὶ τῇ διόδῳ. (App. *BC* 4.14.109)

The reeds **which were still growing** at the edge of the road stood in the way of the enemy seeing what [Antony] was doing.

The following table gives the results for the collocation of ἔτι by type of perfect active stem:

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[371] ἐώθασι collocating with ἔτι and νῦν (App. *BC* 1.12.106, [386]).

[372] The other examples include: κατεπεπλήγεσαν (App. *BC* 5.6.58), περιεστῶτας (App. *Hann.* 8.51), συνέστηκε (App. *Mith.* 8.52), συνεστώσης (Plu. *Nic.* 28.4 and App. *BC* 2.1.6 and 3.9.69), συνεστῶσι (App. *BC* 4.16.129) and συνεστῶτες (Jos. *BJ* 5.426). ἔτι collocates particularly frequently with the perfect of συνίστημι.

Table 33 - Frequency of collocation of ἔτι with PASFs

	-	ἔτι	Total	%
Accusative inc. caus. COS	737	0	737	0
State	131	0	131	0
COS	2429	10	2439	0.41
Defective	1094	1	1095	0.09
κράζω	24	0	24	0
Unassigned	32	0	32	0
TOTAL / Avergage	4447	11	4458	0.25

It is striking that ἔτι is only attested collocating with COS (specifically unaccusative CON) and defective PASFs. Significantly, there are no examples of ἔτι collocating with accusative PASFs. As previously, however, it is important to test the statistical significance of this finding.

The next table gives the results of the chi-squared test, where the two variables whose independence is being tested are the collocation with ἔτι, and whether or not the PASF is accusative. The null-hypothesis is that accusative and state/COS PASFs do not differ in their collocation with ἔτι.

Table 34 - χ² test results for collocations of ἔτι with PASFs

Observed frequencies	-	ἔτι	Total
Accusative	737	0	737
State/COS	3654	11	3665
Total	4391	11	4455
Expected frequencies			
Accusative	735	1.84	
State/COS	3660	9.16	
Deviances			
Accusative	0.002	0.977	
State/COS	0.000	0.197	
Total deviance (χ² statistic)		1.18 (3 s.f.)	

The chi-squared statistic of 1.18 is lower than the $p \leq 5\%$ critical value for the chi-squared distribution for one degree of freedom, 3.84. Furthermore, the expected frequency for the collocation of accusative PASFs with ἔτι is lower than 5. On both of these counts, therefore, the null hypothesis is therefore not rejected.

Nevertheless, this is not to say that the null-hypothesis has been proved. Rather, there has not been enough evidence to disprove it. Therefore, with a larger dataset it might well be possible to prove the association of ἔτι with state/COS PASFs.

4.4.5. Collocation of the indicative in main clauses

4.4.5.1. Method

If a form makes no reference to an event which might have taken place prior to reference time, it is reasonable to hypothesise that it is more likely to occur in main clauses than subordinate clauses. This is because the purpose of the latter is to relate the events which constitute the concern of the principal train of thought in a narrative or argument to other events or thoughts which are temporally or logically prior to those of the main narrative.

The hypothesis put forward in this investigation is that state/COS PASFs are free in respect to whether or not they make reference to any time period prior to reference time, while non-change-of-state verbs are not free in this respect, and always refer to the time period prior to reference time. If this hypothesis is correct, one should expect to see state/COS PASFs occurring more readily in main clauses than is the case with their accusative counterparts.

4.4.5.2. Data and analysis: perfect

The full dataset may be found at Appendix List 6.[373] The following table gives the breakdown for the proportion of occurrences in main and subordinate clauses:

Table 35 - Frequency data for the occurrence of perfect indicative actives in main and subordinate clauses

	Subordinate	Main	TOTAL	% Main
Accusative inc. caus. COS	179	89	268	33.21
State	19	9	28	32.14
COS	158	113	271	41.70
Defective	107	113	220	51.36
Noise	0	0	0	-
Unassigned	2	4	6	66.67
TOTAL / Average	465	328	793	41.36

Accusative PASFs have α lower percentage of occurrence in main clauses, 33.21, than all but one of the other groups. This is also nearly 10% below the average for the whole dataset, 41.70%. This finding broadly conforms with the hypothesis that accusative PASFs should have a preference for subordinate clauses compared state/COS PASFs.[374]

As with the examination of anterior adverbs, however, it is necessary to test the likelihood of this occurring by chance by means of a chi-squared test. The following table gives the results of such a test. The two variables are the nature of the clause in which the PASF occurs (whether subordinate or main), and the type of PASF (whether accusative or state/COS). The null hypothesis is that indicative accusative PASFs behave in exactly the same manner as other perfect indicatives in respect to the relative proportion of their occurrence in main clauses.

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[373] The dash sign (-) in Appendix List 6 denotes that the clause type association in the respective instance was not clear.

[374] The exception to this is the state verb group, where a marginally lower percentage is seen. Since the total number of instances of verbs from this category, this is probably due to chance.

Table 36 – χ² test result for the occurrence of perfect indicative actives in main and subordinate clauses

Observed frequencies	Subordinate	Main	Total
Accusative	179	89	268
State/COS	284	235	519
Total	463	324	787

Expected frequencies		
Accusative	158	110
State/COS	305	214

Deviances		
Accusative	2.75	3.93
State/COS	1.40	2.03

Total deviance (χ² statistic)	10.1 (3 s.f.)

The χ² statistic of 10.1 is greater than the threshold of 6.64 for $p \leq 1\%$. Therefore, the null hypothesis is rejected at the 100-1% level; the difference between the groups may be regarded as statistically significant.

4.4.5.3. Data and analysis: pluperfect

The full dataset may be found at Appendix List 7. The following table gives the distribution of pluperfects according to lexical type:

Table 37 - Frequency data for the occurrence of pluperfect indicative actives in main and subordinate clauses

	Subordinate	Main	TOTAL	% Main
Accusative inc. caus. COS	84	48	132	36.36
State	7	7	14	50.00
COS	103	232	335	69.25
Defective State	41	104	145	71.72
Noise	0	12	12	100.00
Unassigned	0	0	0	-
TOTAL / Average	235	403	638	63.17

Here there is a greater difference between state/COS PASFs and their accusative counterparts than was observed in the case of the perfect. There the proportion of main clause occurrence for the accusative group was 33%, compared to between 42% to 50% for defective state/COS PASFs. In the case of pluperfects, by contrast, although the percentage is higher for accusative PASFs, namely 36%, the proportion of main-clause collocation for state/COS PASFs is consistently between 50% and 75%.

The following table gives the results of the chi-squared test carried out on the above data. The variables being compared are the same as in the last case. The null hypothesis in this case is that accusative PASFs behave in exactly the same manner as other PASFs in the pluperfect with respect to the relative proportion of their occurrence in main clauses.

Table 38 – χ² test result for the occurrence of pluperfect indicative actives in main and subordinate clauses

Observed frequencies	Subordinate	Main	Total
Accusative	84	48	132
State/COS	151	343	494
Total	235	391	626
Expected frequencies			
Accusative	49.6	82.4	
State/COS	185	309	
Deviances			
Accusative	23.3	14.0	
State/COS	6.21	3.73	
χ² statistic			47.2 (3 s.f.)

The chi-squared statistic of 47.2 is greater than the $p \leq 0.1\%$ critical value for the chi-squared distribution for one degree of freedom, 10.8. Given the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is less than 0.1%. The null hypothesis at the 100-0.1% level is therefore rejected, and the difference between the groups may be regarded as statistically significant.

4.4.6. Control verbs

4.4.6.1. Method

Since the futurity/modality inherent in control[375] and IDC constructions is generally incompatible with the event described using the infinitive complement having already occurred, if accusative PASFs always carry ANTERIOR reference, it should be the case these perfects occur much less frequently in such constructions than their state/COS counterparts.

4.4.6.2. Data and analysis

The full dataset for this part of the investigation is given at Appendix List 8. The following table gives the frequency of occurrence of the perfect infinitives of the different verb groups with control constructions:

Table 39 - Frequency data for the occurrence of perfect infinitive actives in control verb / IDC constructions

	[-control]/[-IDC]	[+control]/[+IDC]	Total	% [+control]/[+IDC]
Accusative inc. caus. COS	83	1	84	1.19
State	10	0	10	0.00
COS	246	23	269	8.55
Defective State	87	19	106	17.92
Noise	1	0	1	0.00
Unassigned	6	0	6	0.00
TOTAL / Average	433	43	476	9.03

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[375] For the verbs taken to introduce control constructions see n. 359.

This table shows that control and IDC constructions occur almost exclusively with perfects of verbs with a (new) STATE of the SUBJECT forming part of the event schema. The one apparent exception is the following:

[412] ὁ δ᾽ ὥσπερ τοῖς ζηλωταῖς ὑπὲρ εὐνοίας ὀμόσας καὶ οὐ κατ᾽ αὐτῶν,
παρελθὼν εἴσω καὶ καταστὰς εἰς μέσους πολλάκις μὲν ἔφη κινδυνεῦσαι δι᾽
αὐτούς, ἵνα μηδὲν ἀγνοήσωσι τῶν ἀπορρήτων, ὅσα κατ᾽ αὐτῶν οἱ περὶ τὸν
Ἄνανον ἐβουλεύσαντο· νῦν δὲ τὸν μέγιστον ἀναρριπτεῖν κίνδυνον σὺν
πᾶσιν αὐτοῖς, εἰ μή τις προσγένοιτο βοήθεια δαιμόνιος. οὐ γὰρ ἔτι μέλλειν
Ἄνανον, ἀλλὰ **πείσαντα** μὲν τὸν δῆμον **πεπομφέναι** πρέσβεις πρὸς
Οὐεσπασιανόν, ἵν᾽ ἐλθὼν κατὰ τάχος παραλάβῃ τὴν πόλιν, ἀγνείαν δὲ
παρηγγελκέναι κατ᾽ αὐτῶν εἰς τὴν ἑξῆς ἡμέραν, ἵν᾽ ἢ κατὰ θρησκείαν
εἰσελθόντες ἢ καὶ βιασάμενοι συμμίξωσιν αὐτοῖς... (Jos. *BJ* 4.216-8)

But now this John, as if his oath had been made to the zealots, and for confirmation of his good-will to them, and not against them, went into the temple, and stood in the midst of them, and spake as follows: That he had run many hazards on their accounts, and in order to let them know of every thing that was secretly contrived against them by Ananus and his party; but that both he and they should be cast into the most imminent danger, unless some providential assistance were afforded them; for that Ananus made no longer delay, but had **prevailed** with the people **to send** ambassadors to Vespasian, to invite him to come presently and take the city; and that he had appointed a fast for the next day against them, that they might obtain admission into the temple on a religious account, or gain it by force, and fight with them there; (Whiston, 1895)

Whiston has taken this as a case of an IDC, as shown by his translation. However, this is not the only way of translating the text. It is noteworthy that πεπομφέναι is paralleled by παρηγγελκέναι further down. In the light of this, it seems more plausible to take this as an infinitive of indirect speech, with πείσαντα as a circumstantial participle. I would therefore alter the translation of the passage at issue as follows:

[413] οὐ γὰρ ἔτι μέλλειν Ἄνανον, ἀλλὰ πείσαντα μὲν τὸν δῆμον **πεπομφέναι**
πρέσβεις πρὸς Οὐεσπασιανόν, ἵν᾽ ἐλθὼν κατὰ τάχος παραλάβῃ τὴν πόλιν,
ἁγνείαν δὲ παρηγγελκέναι κατ᾽ αὐτῶν εἰς τὴν ἐξῆς ἡμέραν, ἵν᾽ ἢ κατὰ
θρησκείαν εἰσελθόντες ἢ καὶ βιασάμενοι συμμίξωσιν αὐτοῖς... (Jos. *BJ* 4.218)

... for [he said] that Ananus made no longer delay, but having **prevailed**
with the people **he had sent** ambassadors to Vespasian, to invite him to
come presently and take the city; and that he had appointed a fast for the
next day against them, that they might obtain admission into the temple on
a religious account, or gain it by force, and fight with them there;

If this treatment of the passage is accepted, there are no examples that I can find of accusative perfect active stem infinitives occurring as complements to control verbs. This reinterpretation seems all the more likely in the light of the bigger picture presented here.

Again, however, as previously, it is important to establish the likelihood that this distribution might have occurred by chance. The following table gives the results of the chi-squared test result, where the variables compared are the type of construction ([+control], [-control]) and the type of PASF. The null-hypothesis is that accusative PASFs behave in exactly the same way as all other perfects with respect to occurrence in modal and IDC constructions.

Table 40 – χ² test result for the occurrence of perfect infinitive actives in control verb / IDC constructions

Observed frequencies	[-control] / [-IDC]	[+control] / [+IDC]	Total
Accusative	83	1	84
State/COS	343	42	385
Total	426	43	469
Expected frequencies			
Accusative	76.2	7.70	
State/COS	350	35.3	
Deviances			
Accusative	0.504	5.00	
State/COS	0.110	1.09	
Total deviance (χ² statistic)		6.70 (3 s.f.)	

The chi-squared statistic of 6.70 is greater than the $p \leq 1\%$ critical value for the chi-squared distribution for one degree of freedom, 6.64. Given that the criteria for the application of the chi-squared test are met (see §2.5.6), the general probability of seeing a chi-squared statistic of this value is less than 1%. The null hypothesis at the 100-1% level is therefore rejected, and the difference between the groups may be regarded as statistically significant.

4.4.7. Conclusion

The aim of this section was to test by means of quantitative criteria the hypothesis that accusative PASFs may, from a statistical point of view, be regarded as originating in a different population from their state/COS counterparts. With the exception of collocation with ἔτι, all of the quantitative criteria used to test the hypothesis confirmed this hypothesis. The data concerning collocation with ἔτι pointed in the same direction, but was not sufficiently strong to support or confirm the hypothesis.

4.5. The semantics of the Greek perfect active stem in the Hellenistic and Roman periods

4.5.1. A SUBJECT-oriented aspectual form

It is now time to bring together the full findings of this investigation and give a formulation for the semantics of the perfect active stem. Note that it will not be possible to give a complete account of the function of the perfect. A full account, including the functional as well as the semantic contribution of the perfect active stem, will require a proper analysis of pragmatic factors, whereas the present investigation has focused entirely on truth conditional questions. However, an assessment of what, in truth-conditional terms, the perfect may and may not allow is a vital first step to describing its function fully, and some suggestions will be made in this direction.

The following summarises the available range of meanings of the perfect active stem:

1. Transitivity: The perfect active stem may be:
    a. TRANSITIVE non-reducing;
    b. INTRANSITIVE non-reducing;
    c. TRANSITIVE valency-reducing;
    d. INTRANSITIVE valency-reducing.

   Nevertheless, in lexical items demonstrating labile transitivity, the perfect active stem demonstrates a preference for INTRANSITIVE valency-reducing usage.

2. Aspect: The perfect active stem may, for all lexical aspectual types of verb, denote:
    a. The STATE of the SUBJECT at reference time.
    b. ANTERIOR, denoting the situation pertaining to the SUBJECT after the event described by the verb has terminated.

   However, PASFs where the SUBJECT does not participate in a STATE (sub-)event are restricted to PAST REFERENCE in the form of anteriority. By contrast, PASFs where the SUBJECT does participate in a STATE (sub-)event demonstrate a preference for RESULTATIVE or PURE STATE readings, although ANTERIOR readings are not excluded.

It is striking not only that the perfect active can clearly have such a wide range of functions in the Hellenistic and Roman periods, but also that this range is productive according to lexical aspectual type. This is contrary to the view held by many scholars particularly of post-Classical Greek.[376] Accordingly, an account of the semantic and functional contribution of the perfect active stem must be sufficiently flexible to take account both of the wide range of potential uses as well as the tendency towards intransitivty. The essential problem with the existing analyses of the semantics of the Greek perfect is that they are not flexible in this way; they account for some but not all of the attested uses of the perfect.[377]

Any proposition regarding the semantics of the perfect must state what is held in common in all attested uses of the form. In Chapter 3 it was noted that the meaning of the PAS must be formulated in terms of a static category, in order to account for the preference of the INTRANSITIVE readings of causative COS verbs. The findings, regarding aspect, from the present chapter also point in this direction: only a static category could account for the fact that the perfect, with only one, possibly lexicalised, exception, never presents an event as dynamic and in progress. Furthermore, this static category must be tied directly to the SUBJECT, since the determining factor in the aspect denoted by the perfect was found to be whether or not the SUBJECT can participate in atelic (sub-)event according to the event structure of the verb.

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[376] It is common to see in particular the pure state readings of the perfect as vestiges of a former system. So Fanning (1990, p. 112 n. 74) and Evans (2001, p. 42).

[377] See §§1.2 and 1.3 above.

In the light of these observations, I propose that the perfect active stem denotes:

> [414] A property of the SUBJECT at reference time as a function of the event described by the lexical verb having run to some terminal point.

> [415] If the verb is terminative, this termination point is the predetermined endpoint of the event. If the verb is not terminative, or if an atelic (i.e. STATE) sub-event is described for the SUBJECT participant, this termination point is either arbitrarily set, or assumed to be a RESULTANT STATE.

To refer to this I will use the shorthand 'SUBJECT property meaning' of the perfect.[378] I believe that this is capable of providing an explanation for the varied and disparate phenomena observed in what has preceded. Specifically, a form whose role is to present the event described by its verb as an attribute of the SUBJECT participant should be expected to behave in the following ways according to the two principal groups of verbs identified:

1. For perfect active forms of verbs describing a STATE (sub-)event in which the SUBJECT participates, i.e. COS perfect actives, such as καθέστηκα, and perfects actives of state verbs, e.g. ἐσπούδακα, there should *a priori* be three options regarding the interpretation of the property of the SUBJECT; the aspectual nature of the perfect, i.e. mediating the event as a property of the SUBJECT, permits the selective presentation of the different subevents, since what is really being presented is the SUBJECT, not an event:

   a. As with accusative PASFs, the perfect denotes the property following from all (sub-)events described by the verb having terminated, i.e. ANTERIOR.

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[378] This definition is similar both to Smith's definition of the semantics of the semantic contribution of the English perfect, as well as Ruipérez' definition of the semantic contribution of the Classical Greek perfect. Smith (1997, p. 107) defines the contribution of the English perfect as follows: 'Present Perfect sentences ascribe to their subjects a property that results from their participation in the prior situation.' (Recall that Smith calls 'situation' what we call 'event.') Ruipérez defines the role of the perfect as follows (1954, p. 65): 'El tema de perfecto posee un valor único en el sistema de la "langue", definido como consideración del contenido verbal después de su término…' The definition provided here for the perfect in the Koine is more specific than that of Ruipérez in the matter of the terminal point; whereas, according to Ruipérez, the Classical Greek perfect can rely on the event structure of the verb to determine the endpoint, the Koine perfect has the power to impose an arbitrary terminal point where the event described is atelic.

b. The perfect denotes, as a property of the SUBJECT, the STATE of the SUBJECT following from the termination of the first, i.e. non-STATE, subevent holding at reference time for the SUBJECT, i.e. a RESULTATIVE.

c. The perfect denotes, as a property of the SUBJECT, the STATE of the SUBJECT at reference time, without reference to any event which might have brought that STATE about.

These three readings are illustrated in the following diagrams:
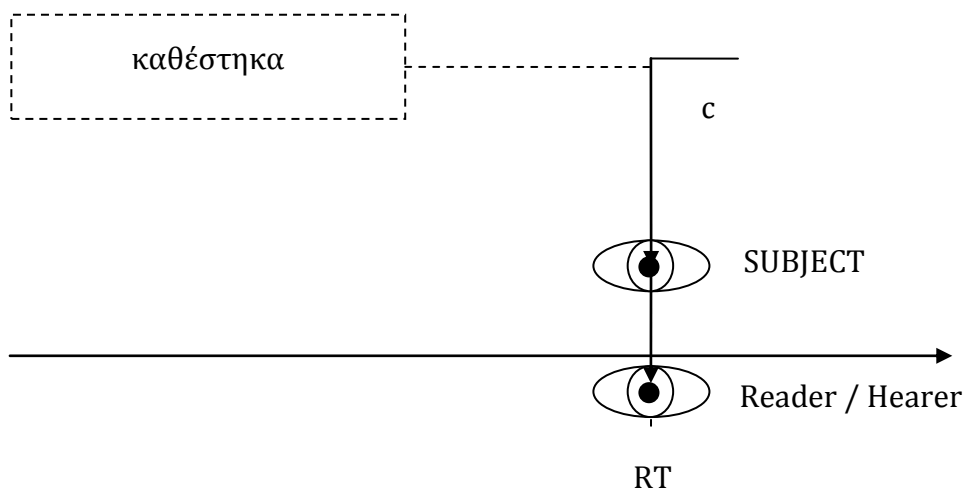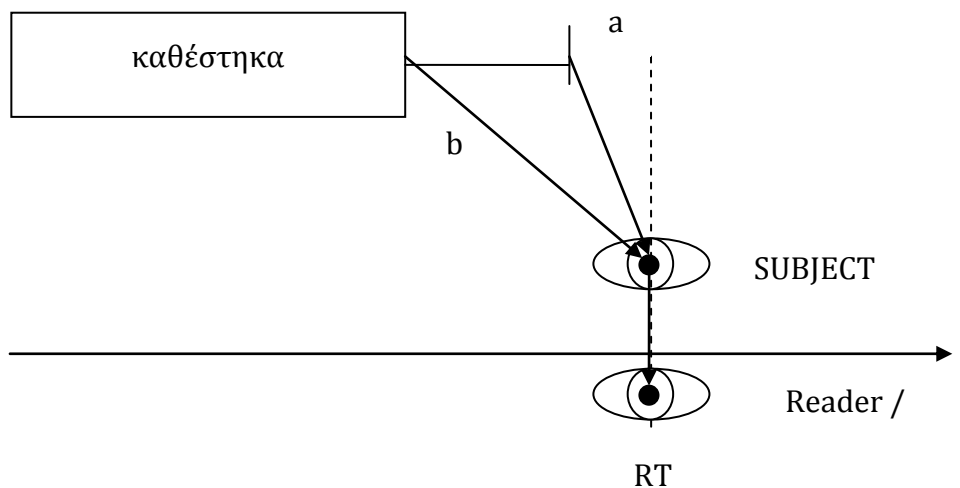
2. By contrast, a perfect active stem whose forms only describe an event in which the SUBJECT acts on an OBJECT participant, and in which the SUBJECT does not change STATE, e.g. πεποίηκα or ἕστακα (as opposed to ἕστηκα), will only have one of these interpretations available: ANTERIOR. This is because the property of the SUBJECT denoted by the perfect is predicated upon the termination of an event in which, by definition, the SUBJECT has not entered a new STATE. Since that event has terminated, the perfect must carry PAST REFERENCE; any attribute belonging to the SUBJECT in these circumstances is predicated on an already terminated (and therefore past) event. This reading is illustrated in the following diagram:
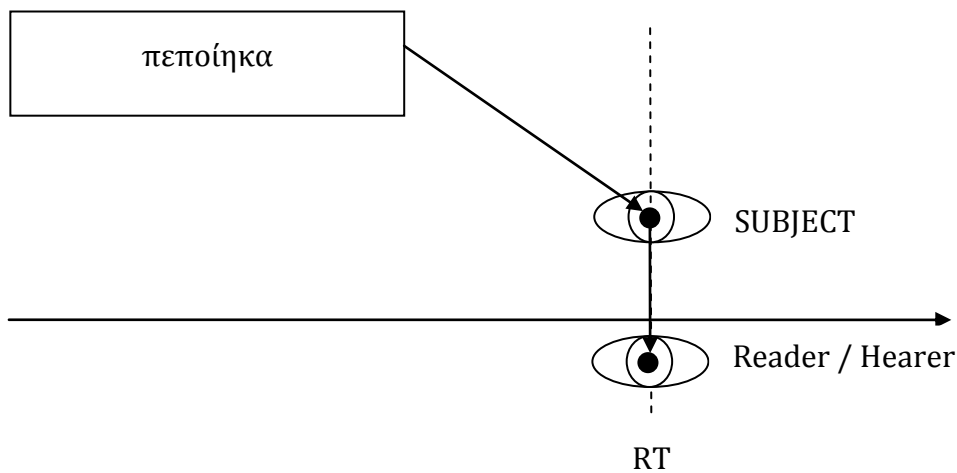
3. The perfect active of activity verbs may be interpreted in one of two ways:

   a. As an ANTERIOR, where the event described is presented as a experiential property of the SUBJECT;

   b. As a STATE, where the 'activity' is presented as an atelic RESULTANT or PURE STATE.

In both cases the event can be viewed as having run to termination: in the first as having run to termination in the past, and no longer holding; in the second, as having run to termination to a RESULTANT STATE.

The SUBJECT property meaning of the perfect is able to account for the observed distribution of the perfect active stems in state/COS verbs. Specifically:

1. In the active of causative COS verbs, such as ἀπόλλυμι, where the SUBJECT is capable of participating in a STATE sub-event, it is reasonable to suppose that the most likely property that the speaker/writer will want to assert of the SUBJECT is that of the SUBJECT being in the (RESULTANT) STATE, i.e. 'I am lost'.[379] Only relatively more rarely will the speaker/writer want to assert of the SUBJECT the more abstract property of having been responsible for causing some other participant to change STATE, namely 'I have caused something to be lost'. Unless one particularly wants to attach responsibility or blame to the SUBJECT, one is more likely to use a simple past in this case.

2. In a similar way, perfect active stems of state verbs, e.g. ἐσπούδακα, and COS perfect stem forms, e.g. καθέστηκα, are more likely to assert of the SUBJECT the property of 'being in a (RESULTANT) STATE', than the less immediately obvious (at least to any observers) property of 'having had the experience of being in a certain STATE'.

The SUBJECT property meaning of the perfect is also able to account for some of the meanings or implications which have at various points been associated with the perfect in Greek. Specifically, a form whose role is to mediate the event to the reader hearer as a property of the SUBJECT is likely to be highly useful in contexts where the writer/speaker wishes to:

1. Attribute responsibility or guilt to the SUBJECT, since the event would be presented as not only having been participated in by, but also an attribute of, the SUBJECT.

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[379] Hapselmath's formulation, in the context of a discussion of the Homeric perfect, comes close to this: 'The resultative characterizes the state of its subject in terms of an event that led to that state. Such a characterization only makes sense if the event has had some effect on the resultative subject, because otherwise it would not be a very useful description (one would have to know the subject's history from another source). The most affected participation of an event is generally the patient, so it is quite natural that the patient becomes the subject of the resultative, no matter whether it is the subject of an intransitive verb or the direct object of a transitive verb.' However, what this formulation does not account for is why the perfect active of certain verbs such as ῥέζω is never valency-reducing.

2. Relate a prior event to the moment of speaking, since relating an event as a property of the SUBJECT is a very efficient means of bringing the event directly into the situation pertaining at reference time.

4.5.2. The perfect's difference from the present and the aorist

There are situations where the perfect appears to overlap with the other aspectual forms, the imperfective and the perfective. It is therefore good to set out in what way the perfect in fact differs from these in places where they appears to overlap.

Where the perfect denotes PURE STATE, it can appear to carry the same value as the imperfective. In what way might the two be said to differ? It is striking that the group of verbs where this question becomes most acute are those describing mental STATE:

[416] Ὀθλία δ' ἡ Ἀχάβου θυγάτηρ ἀκούσασα τήν τ' Ἰωράμου τἀδελφοῦ τελευτὴν καὶ τὴν Ὀχοζία τοῦ παιδὸς καὶ τοῦ γένους τῶν βασιλέων τὴν ἀπώλειαν **ἐσπούδαζε** μηδένα τῶν ἐκ τοῦ Δαυίδου καταλιπεῖν οἴκου, πᾶν δ' ἐξαφανίσαι τὸ γένος, ὡς ἂν μηδὲ εἷς ἐξ αὐτοῦ βασιλεὺς ἔτι γένοιτο. (Jos. *AJ* 9.140)

When Othlia, the daughter of Ahab, heard both of the death of Joram his brother, and of Ahaziah her son, and of the destruction of the house of the kings, **she made haste** to leave none of the house of David alive, but to wipe out the line, so that not one of the family could still become king.

[417] Ἀναστὰς δὲ μετ' αὐτὸν Ζαμβρίας ἀλλὰ σὺ μέν, εἶπεν, ὦ Μωυσῆ, χρῶ νόμοις οἷς αὐτὸς **ἐσπούδακας** ἐκ τῆς τούτων εὐηθείας τὸ βέβαιον αὐτοῖς παρεσχημένος. (Jos. *AJ* 4.145)

Standing up after him Zambrias said, "Moses, you are using laws, for which **you yourself are zealous**, and have provided certainty for these people on account of their simplicity.

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However, it is possible to discern differences between the two. It was Vendler who pointed out that verbs describing mental events often have two readings: as a process and as a STATE.[380] He compares the following examples:

[418] He is thinking about Jones.

[419] He thinks that Jones is a rascal.

He points out that it is only possible to use the first sentence while the SUBJECT is awake, while the second may be used whether the SUBJECT is awake or asleep. I wish to suggest that a similar difference may underlie the difference in Greek between the present and perfect active stems of certain state verbs.[381] In the first example the imperfective is more dynamic, i.e. not just a mental zeal, but associated with particular actions, namely wiping out the line of David. In the second, however, the perfect is more static, expressing an attribute of Moses, which would not change whether Moses were awake or asleep. The same distinction can be observed in the following pair of examples involving the verb λυσσάω 'to rage; to be mad':

[420] ... ἅμα δὲ τούτοις ἀνδριάντας καὶ πᾶσαν δὴ τὴν τοιαύτην κατασκευὴν λυμαίνεσθαι, πῶς οὐκ ἂν εἴποι τις εἶναι τρόπου καὶ θυμοῦ **λυττῶντος** ἔργον; (Plb. 5.11.4)

... and along with these to deface statues and all such property, and would people say that this was not the work of the way and mind of **one who was raging**?

[421] ὥστε χρῆναι... θεατὰς μᾶλλον αὐτοὺς ἀποκαθῆσθαι τῶν κινδύνων ἢ θανατῶσιν ἀνθρώποις καὶ **λελυσσηκόσιν** κατ' ἀλλήλων χεῖρα μίσγειν. (Jos. *BJ* 4.371)

... so that it was necessary to establish them as spectators of the battle, or for murderous and **deranged** men to bring their hands against each other.

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[380] Vendler (1957, p. 152f.).

[381] McKay (1965, p. 6) makes a similar suggestion.

The first example, with the present, directly links the verb λυττῶντος with action, ἔργον. The second, by contrast, talks about λελυσσηκόσιν as a class of people, not necessarily linked with outrageous acts.[382]

I address next the question of the difference between the perfect and the perfective. On the face of it, the perfect and the perfective have a lot in common. In particular, both may be used to describe events taking place prior to reference time, and this is often the focus of discussion of the difference(s) between the two. However, the criteria used in the present investigation open up the possibility of assessing their differences beyond this. In particular:

1. As was demonstrated at §3.5.3.3, in causative COS verbs with one stem for both the perfect and non-perfect active forms, perfects are much more likely to be INTRANSITIVE than non-perfect forms. By contrast, there was no demonstrable difference in the distribution between aorist and present actives.

2. It was shown at §4.4.6.2 that accusative perfects are extremely unlikely to occur in IDC or control constructions. This is patently not the case for aorists, where accusative instances are easy to find in such constructions:

[422] Φίλιππον δὲ οὐχ ὁρῶ σοι παρόντα, **δυνατὸν** ἐν τῷδε τῷ πολέμῳ ῥοπήν, ὁποτέρωσε προσθοῖτο, **ποιῆσαι**. (App. *Syr.* 3.14)

I do not see Philip with you, when he would be able **to turn the tide** in this battle, wherever he was put in.

Both these differences can be explained in terms of the way events are presented: the perfective may be said to be event-oriented, while the perfect is SUBJECT-oriented: the perfect presents an event as a property of the SUBJECT, while the aorist presents the event *per se*. This difference in the core values of the two accounts for the differences as follows:

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[382] It should be acknowledged, however, that this account is not capable of differentiating κέκραγα from κράζω, since the former I have shown occurring in clearly dynamic contexts. Therefore, if this is not simply a lexicalised fossil, more research will need to be carried in order to integrate this perfect into the system. For the intractability of the perfects of noise verbs cf. Haspelmath (1992, p. 208f.).

1. As shown in the previous section, a SUBJECT-oriented aspectual form is more likely to denote a concrete property of the SUBJECT, the reaching of a new STATE, than the abstract property of having caused another entity to change STATE. For an event-oriented form this does not follow.

2. An aspectual form whose role is to present an event as a property of the SUBJECT, i.e. the perfect, should, in most circumstances, only be able to do this when the event has occurred in the past relative to reference time. By contrast, an event-oriented form, such as the perfective, is not restricted in this way, so long as the event may be conceived of as bounded.

4.6. The perfect active stem in Homer and its diachronic development

It is not possible to make a full assessment here of the aspect of the perfect active stem in the Homeric and Classical periods. However, in this section I set out to apply the aspect and transitivity categories used in the present investigation to the Homeric data, as representing the maximally different variety of Greek that one can examine in depth. It will be seen that this approach yields results which are strikingly consistent with those emerging from post-Classical Greek.

As in post-Classical Greek, COS verbs frequently carry RESULTATIVE force in the perfect:[383]

> [423] πυνθανόμην Ἰθάκης γε καὶ ἐν Κρήτῃ εὐρείῃ,
> τηλοῦ ὑπὲρ πόντου: νῦν δ' **εἰλήλουθα** καὶ αὐτὸς
> χρήμασι σὺν τοίσδεσσι... (*Od*. 13.256ff.)

> I learned of Ithaca, even in broad Crete, so far over the water. But now **I have arrived** with these possessions.

Similarly, COS PASFs can be TRANSITIVE. Yet the perfect still carries RESULTATIVE force if the SUBJECT is presented as being in a new STATE:[384]

> [424] καί σε προφρονέως κέλομαι Τρώεσσι μάχεσθαι:
> ἀλλά σευ ἢ κάματος πολυᾶϊξ γυῖα **δέδυκεν**
> ἤ νύ σέ που δέος ἴσχει ἀκήριον... (*Il*. 5.809-11)

> And I bid you to fight eagerly against the Trojans.
> But either swift weariness **has entered** your limbs
> or perhaps a spritless fear holds you back.

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[383] cf. ἐμβεβαῶτα (*Il*. 5.199), ἐπεμβεβαώς (*Il*. 9.582).

[384] cf. also *Il*. 9.239.

Furthermore, when COS verbs are used to describe fixed entities which cannot conceivably participate in an event other than a STATE, PAST REFERENCE is lost and they convey PURE STATE. κεύθω 'to hide (something)' describes an event where both the SUBJECT and the OBJECT change STATE: the hidden OBJECT participant becomes part of the hiding SUBJECT participant.[385] In the following example the perfect active κέκευθε loses all PAST REFERENCE and simply describes what the SUBJECT, a city, 'contains':

> [425] εἰ δέ κεν...
>
>> καί οἱ ὑπόσχωμαι Ἑλένην καὶ κτήμαθ᾽ ἅμ᾽ αὐτῇ,
>>
>> πάντα μάλ' ὅσσά τ' Ἀλέξανδρος κοίλης ἐνὶ νηυσὶν
>>
>> ἠγάγετο Τροίηνδ', ἥ τ' ἔπλετο νείκεος ἀρχή,
>>
>> δωσέμεν Ἀτρεΐδῃσιν ἄγειν, ἅμα δ' ἀμφὶς Ἀχαιοῖς
>>
>> ἄλλ' ἀποδάσσεσθαι ὅσα τε πτόλις ἥδε **κέκευθε**. (*Il.* 22.111, 114ff.)
>
> Suppose… I promise to give to the sons of Atreus, and the Achaeans Helen and her the possessions with her, everything that Alexander had carried off to Troy in his hollow ships, along with her who was the beginning of the quarrel and to divide up all this city **contains**.

In some cases the RESULTATIVE reading is stretched, with a great deal of the focus falling on the culminating COS event that brought about the RESULTANT STATE:[386]

> [426] ... ἠὼς δέ μοί ἐστιν
>
>> ἥδε δυωδεκάτη, ὅτ' ἐς Ἴλιον **εἰλήλουθα**
>>
>> πολλὰ παθών... (*Il.* 21.80ff.)
>
> … this is now the twelfth morning since **I arrived** in Ilium, having suffered many things...

On occasion the length of time the RESULTANT STATE has held is given by means of a *for a time* expression:[387]

> [427] ἐννῆμαρ δὴ νεῖκος ἐν ἀθανάτοισιν **ὄρωρεν**... (Il. 24.107)
>
> **There has been strife** among the gods for nine days…

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[385] e.g. *Od.* 3.16 cited in LSJ *ad loc*.

[386] cf. the parallel cases at *Od.* 14.137, quoted by Perel'muter (1988, p. 282), and *Il.* 21.156.

[387] βεβίηκεν at *Il.* 10.145 is another possible example, although it may be better to take this as a transitive COS verb, since the SUBJECT could be argued to enter a new STATE.

There are no examples in Homer, that I can find, of an ANTERIOR reading of the perfect active, i.e. where the STATE described does not hold at reference time. The ANTERIOR reading of the perfect is, however, abundantly attested in accusative PASFs:[388]

[428] ὣς εἰπὼν ἐς δίφρον ἐλὼν ἔναρα βροτόεντα

θῆκ', ἂν δ' αὐτὸς ἔβαινε πόδας καὶ χεῖρας ὕπερθεν

αἱματόεις ὥς τίς τε λέων κατὰ ταῦρον **ἐδηδώς**. (*Il.* 17.542)

So saying he put the bloody spoil into his chariot

and he himself went up, his hands and feet bloody

from above, just as a lion who **has devoured** a bull.

Note also the following case of the perfect active of λείπω, which verges on an 'aoristic' usage:

[429] ἀλλ' ἔκ τοι ἐρέω καὶ ἐπὶ μέγαν ὅρκον ὀμοῦμαι·

ναὶ μὰ τόδε σκῆπτρον, τὸ μὲν οὔ ποτε φύλλα καὶ ὅζους

φύσει, ἐπεὶ δὴ πρῶτα τομὴν ἐν ὄρεσσι **λέλοιπεν**,

οὐδ' ἀναθηλήσει... (*Il.* 1.233-6)

But I will speak forth to you and swear to a great oath; yes by this sceptre, which will no longer grow leaves or branches, from the time **it first left** its stump, nor will it sprout...

It is striking that INTRANSITIVE examples of λέλοιπα also exist, e.g.:[389]

[430] τοῦ δ' ἤδη μέλλουσι κύνες ταχέες τ' οἰωνοὶ

ῥινὸν ἀπ' ὀστεόφιν ἐρύσαι, ψυχὴ δὲ **λέλοιπεν**· (*Od.* 14.133f.)

Dogs and swift birds are already about to tear his flesh from his bones, and

his soul **has departed**.

However, it is crucial to observe that, although λέλοιπεν here is INTRANSITIVE, it is not valency-reducing: the role played by the SUBJECT is the same as it would play were the OBJECT complement to be expressed.

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[388] Other parallel cases with this verb include *Il.* 10.172, 16.22.

[389] Murray in his translation appears to read this as a transitive example with unexpressed OBJECT. Chantraine, however, translates λέλοιπεν without an OBJECT: 'Et l'âme s'en est allé.'

Like post-Classical Greek is the behaviour of perception verbs in which the SUBJECT does not change STATE. These naturally lead to ANTERIOR readings.[390] Consider the following example involving the perfect ὄπωπα:[391]

[431] ἀλλ᾽ **οὔ πω** τοιόνδε τοσόνδε τε λαὸν **ὄπωπα**. (*Il.* 2.799)

I have never yet seen an army of such a kind or so big.

The PASFs of activity verbs function in much the same way as they do in post-Classical Greek, in that they may express the STATE of the SUBJECT. However, in all instances that I could find, these are never RESULTATIVES, but rather PURE STATES. In other words, it does not seem to have been possible to coerce an activity verb into describing a COS event, at least in the perfect:[392]

[432] Αἰολίην δ᾽ ἐς νῆσον ἀφικόμεθ᾽: ἔνθα δ᾽ ἔναιεν

Αἴολος Ἱπποτάδης, φίλος ἀθανάτοισι θεοῖσιν,

πλωτῇ ἐνὶ νήσῳ: πᾶσαν δέ τέ μιν πέρι τεῖχος

χάλκεον ἄρρηκτον, λισσὴ δ᾽ **ἀναδέδρομε** πέτρη. (*Od.* 10.1ff.)

We arrived at the Aeolian island, where Aeolus the son of Hippotus lived. He was a friend of the immortal gods, on his floating island. Round the whole of it was an impregnable bronze wall, and a sheer rock cliff **ran up** the side.

This use of the perfect active of ἀναδέδρομε may be said to be parallel to the perfect active of ἀσκέω given at [370], which also conveyed a PURE STATE meaning.

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[390] Chantraine (1927, p. 11). Chantraine, trying to save the stative interpretation, translates as follows: 'Je n'ai pas dans mes souvenirs la vue d'une armée aussi belle ni aussi nombreuse.' The problem with this translation is that it does not attempt to translate οὔ πω.

[391] Chantraine (1927, p. 11).

[392] cf. *Od.* 6.45 with ἐπιδέδρομεν describing the atmosphere at Olympus, and also the same form at 20.357, where it describes the situation at the palace at Ithaca. cf. too σμερδάλεον… δέδορκεν at *Il.* 22.93-5, used of a snake in the meaning 'looks fiersome'. Analysing δέρκομαι as an activity verb provides a framework for understanding the apparently PURE STATE semantics of the perfect.

The principle difference, therefore, between the PAS in post-Classical Greek and that in Homer is as follows:

1. State/COS PASFs are not capable of ANTERIOR interpretation, but only RESULTATIVE or PURE STATE.
2. The perfect actives of activity verbs are capable of PURE STATE interpretation, and not RESULTANT STATE.

Furthermore, given that the accusative PASFs never describe a STATE of the SUBJECT, it is hard to agree that the function of the perfect in Homer is essentially to describe the STATE of the SUBJECT. Rather, a 'core meaning' of the perfect must be found which enables PURE STATE / RESULTATIVE readings in state/COS verbs, PURE STATE readings of perfects from activity verbs, and ANTERIOR readings of perfects of accusative verbs. I would like to propose that the 'core meaning' of the perfect in Homer is not that far from its core meaning in post-Classical Greek. This is to say that the perfect active in Homer fundamentally conveys:

> [433] A property of the SUBJECT at reference time as a function of the event
> described by the lexical verb having run to termination.

Although very similar, this definition is subtly different from that given for the post-Classical perfect: there the perfect denotes a property of the SUBJECT where the event has run *to some terminal point*, allowing for arbitrary boundedness. The Homeric perfect, however, is not capable of imposing an arbitrary bound on atelic events. Consequently state/COS PASFs always denote unbounded (sub-)events.

In the case of accusative verbs, however, the perfect appears to behave within the verb system much as it does in later Greek. In the following example the perfect of ῥέζω contrasts with its own aorist. In this passage, the Greek camp comments on Odysseus' quenching of Thersites:

> [434] ὢ πόποι ἦ δὴ μυρί' Ὀδυσσεὺς ἐσθλὰ **ἔοργε**
>
> βουλάς τ' ἐξάρχων ἀγαθὰς πόλεμόν τε κορύσσων:
>
> νῦν δὲ τόδε μέγ' ἄριστον ἐν Ἀργείοισιν **ἔρεξεν**,
>
> ὃς τὸν λωβητῆρα ἐπεσβόλον ἔσχ᾽ ἀγοράων. (*Il.* 2.271-75)
>
> Well indeed Odysseus **has** already **wrought** ten thousand noble deeds, by initiating good counsel and marshalling war. But just now **he did** something amazing among the Argives by stopping this scurrilous slanderer from speaking.

The point being made by the perfect is that Odysseus is a person who has good past deeds associated with him. The aorist, by contrast, is focusing on one particular deed that he has recently performed. In other words, the perfect is presenting the event described by ἔσθλα ἔοργε as a property of Odysseus, while τόδε... ἄριστον... ἔρεξεν presents a particular event as being the best.

The capacity for the perfect and pluperfect forms to impose an arbitrary bound on atelic (sub-)events may be seen as a crucial step towards the ability of the perfect to act as a narrative simple past, and for the pluperfect to act as an ANTERIOR in all circumstances. This is a necessary first step towards any merging of the perfect active system with the aorist. Therefore, while relatively few truly 'aoristic' perfects have been identified in the course of this investigation, the conditions necessary for the subsequent merger have been shown to be in place by this point, in contrast to the situation seen in the Homeric corpus.

It is worth considering the process of change in a bit more detail. To judge from the data provided by Ruipérez and Haug, the Classical Greek perfect active behaves much as the Homeric perfect in its lack of capacity to impose bounds on atelic (sub-)events.[393] This would suggest that the crucial change took place at some point between the Classical and post-Classical periods. What could have motivated such a change? The fundamental difference between the Homeric and post-Classical Greek perfect active is the following. In Homer in COS verbs the attribute of the SUBJECT is limited to an attribute which currently holds for the SUBJECT, while in post-Classical Greek, this attribute may be interpreted more broadly to include any attribute which has at some point held for the SUBJECT, regardless of whether or not it holds at reference time. As such, the process is one of grammaticalisation, whereby the core value of an item is interpreted at an increasingly abstract level until it performs a purely functional role. The subsequent development of the Greek perfect to parity of value with the aorist continues this grammaticalisation process.

To sum up, the present account challenges the prevailing understanding of the presence of ANTERIOR perfect actives in Homer. These ANTERIOR perfects are usually seen as harbingers of a later state of affairs. However, considerable evidence has here been provided that anteriority in Homer is in fact predictable along lexical lines, and that the overall function and sense of the perfect is not that far from that which is attested in post-Classical Greek. The differences that do exist I have attributed to the Homeric perfect's lack of capacity to impose an arbitrary bound on an atelic (sub-)event, a restriction which I have shown not to exist in post-Classical Greek. This in turn I have linked to the subsequent merging of the perfect active with the aorist, and its later complete loss.

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[393] Haug (2004, p. 408f.), Ruipérez (1954, p. 59f.).

Chapter 5. Conclusion

The aims of the present investigation, as set out in the introduction, and as refined in Chapter 2 were as follows. To establish the circumstances under which the perfect and pluperfect active:

1. Carry PAST REFERENCE either as ANTERIOR, RESULTATIVE or CONTINUED STATE, and under what circumstances they denote PURE STATE.
2. Reduce the valency of the verb from which they are derived, rendering PASSIVE-like semantics.
3. To consider what underlying semantics might regularly produce such outcomes.

In addition, an answer was sought to the question of the so-called 'aoristic' perfect, and whether there are specific early signs of its later merger and loss.

Because the aspect of the perfect and pluperfect active was found to be affected by transitivity, the second problem was addressed first. In Chapter 3 it was discovered that valency-reduction occurs only in verbs describing COS events. Furthermore, in a number of verbs, e.g. συνασπίζω, valency-reduction was not restricted to the perfect active system, but was found to be a feature of all active forms. Indeed, in two of these verbs, notably προσβάλλω and ὑποστέλλω, the same perfect active stem was used in both valency-reducing and non-reducing senses. However, in other verbs, e.g. φύω, valency-reduction outside the perfect was found to be restricted to specialised forms. A number of verbs in this category, such as ἵστημι, ἀπόλλυμι and διαφθείρω, possessed complementary valency-reducing and non-reducing perfect active stems. An investigation into the Classical and Homeric periods of the language confirmed that, just as in post-Classical Greek, valency-reducing perfect active stems were restricted to causative change-of-state verbs, a finding which challenges existing notions that the perfect originates in a fundamentally INTRANSITIVE or valency-reducing category. Nevertheless, while both the ὑποστέλλω-type (i.e. one stem used for both valency-reducing and non-reducing senses) and ἀπόλλυμι-type (i.e. two parallel stems covering valency-reducing and non-reducing senses) valency-reducing perfect actives were

attested in the Classical period, in Homer the perfects of causative COS verbs were found, almost without exception,[394] to be valency-reducing.

Having established the circumstances under which the perfect active stem reduces valency, it was possible to assess the aspectual problem. It was found that the perfects of state verbs, e.g. ἐσπούδακα, βεβασίλευκα, along with those of monovalent COS verbs, such as βέβηκα, or valency-reducing causative COS verbs, e.g. πέπηγα, were capable of being used to denote PURE STATE, RESULTATIVE or ANTERIOR, according to the context. By contrast, accusative perfects, e.g. πεποίηκα, including non-reducing perfect active stems of causative COS verbs, e.g. ἀπολώλεκα or ἕστακα, were found almost without exception to denote ANTERIOR. Activity verbs, where these were attested in the perfect, were found to be capable either of ANTERIOR, RESULTANT STATE or PURE STATE interpretation, just as state and COS-verbs.

The split between verbs whose active forms describe events where the SUBJECT takes part in a change of STATE, on the one hand, against those, on the other, describing events where the SUBJECT participant never changes STATE, was confirmed through four quantitative collocation tests, confirming that the division is statistically significant.

On the basis of these findings the question of the perfect active's core value in post-Classical Greek was addressed. It was proposed that the perfect active stem denotes a property of the SUBJECT at reference time as a function of the event described by the lexical verb having run to termination. Crucially, this was shown to account for the division between accusative PASFs, on the one hand, and state/COS/activity PASFs on the other; the former were never able to present the terminated event as anything other than an experience of the SUBJECT, i.e. ANTERIOR, while the latter could present the terminated event as a (RESULTANT) STATE of the SUBJECT, without particular regard to any prior situation which might have pertained for the SUBJECT.

In the final section the findings made on the basis of the post-Classical data were tested against the Homeric data. A split along exactly the same lines as that seen in post-Classical Greek was revealed, with accusative PASFs denoting ANTERIOR, and state/COS/activity PASFs RESULTANT or PURE STATE. The principal difference between the Homeric usage and that found in post-Classical Greek was that, in the

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[394] The one exception was found to be βάλλω, whose perfect active stem was found to be non-reducing in the instances where it occurs.

latter, state/COS/activity PASFs are capable of ANTERIOR interpretation, while in the former they are not. This was accounted for by supposing the perfect active stem in Homer is not capable of arbitrarily bounding atelic events. Consequently any verb describing an event with a STATE (i.e. atelic) (sub-)event for the SUBJECT participant does not have ANTERIOR as a possible interpretation. In post-Classical Greek, by contrast, this rule was relaxed, and the SUBJECT property meaning of the perfect interpreted more broadly to include situations not pertaining at reference time.

As well as these purely linguistic aims, this investigation set out to use considerably more data than has previously been brought to the question of the Greek perfect, and to treat this data in a statistically rigorous fashion. This was made possible through the vast improvements in technology which have put far more tools at the disposal of the ancient-Greek researcher. It is hoped that future investigations harnessing this technology in similar and improved ways will shed yet more light on the problem of the Greek perfect, and the verb system as a whole, in both the post-Classical and other periods.

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