

Inceptives in Ancient Greek*

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In this paper I examine two “inceptive” constructions in Ancient Greek, one built with the imperfect (type εἰς τὸν ἀγρὸν εἰσελθόντες ἐπόνουσαν “Having entered the field, they began to work”) and one with the aorist (type ἡ Μυρρίνη ἐδάκρυσε “Myrrhine burst into tears”). After a review of the relevant grammatical and linguistic literature on inceptives, I observe a near-complementary distribution of the two constructions in Greek, with the aorist occurring only to state-like predicates (such as ‘be king’ or ‘cry’) and the imperfect occurring elsewhere (mostly to activity predicates, such as ‘work’). I then present a formal semantic analysis that can properly account for the observed distribution, working within the assumption that the (post-Homeric) Greek imperfect and aorist align more or less with what in the typological literature on tense-aspect systems are referred to respectively as imperfective and perfective aspect.

1. Introduction

The terms “inchoative imperfect” and the “ingressive aorist” (or similar) are met with in various handbooks, particularly Schwyzler and Debrunner (1950:277), Kühner and Gerth (1898:155–7), and Smyth (1956:426, 430), though opinions about their nature and, indeed, existence vary considerably. To simplify the terminology, I will label the “ingressive” and the “inchoative” together here as *inceptive*, referring to a verb of either tense that in some context means “began to be/do *x*,”

* Versions of this paper were presented in 2019 at Ludwig-Maximilians-Universität München (summer colloquium), UiT The Arctic University of Norway (summer school and workshop), and the 31st Annual UCLA Indo-European Conference. I am grateful to the organizers and attendees of these events and to the following people for their helpful comments and discussion at various stages of the development of this paper: Olav Hackstein, Chiara Bozzone, Ryan Sandell, Östen Dahl, Stephen Dickey, Laura Janda, Ashwini Deo, Benjamin Fortson, Timothy Stowell, Denys Cennet-Planchard, the faculty and students of the Program in Indo-European Studies at UCLA, and the editors of this volume. Final responsibility is, of course, my own.

where x is the lexical meaning of the verb. I give an example of each in (1) and (2).¹

(1) Aorist inceptive

ἀνεἴλε τε δὴ τὸ χρηστήριον καὶ **ἐβασίλευσε** οὕτω Γύγης (Hdt. 1.13.2).

The oracle did so ordain; and Gyges thus **became king** (ex. and tr. Rijksbaron 2002:20).

(2) Imperfect inceptive

οἱ δὲ ὡς οὐκ εἰδότες ἐπειρώτων τὸ λεγόμενον, ἐπειρόμενοι δὲ ἐξέμαθον πᾶν τὸ ἐόν, ὥστε ἐν θώματι γενόμενοι **ἐπορεύοντο** τὴν ταχίστην διώκοντες (Hdt. 9.11.3).

And as they had not been aware of [the Spartan expedition], [the Athenian envoys] questioned them further, and by their questioning they found out the whole truth, such that, having fallen into amazement, they **got going**, pursuing the swiftest (route).

And so, we have two (potentially competing) constructions for conveying inceptive meaning in the past: the aorist and the imperfect. It is surprising that two interpretations so close in meaning are possible by means of two supposedly contrastive verb forms. Though the inceptive aorist (\approx “perfective” aspect) has been much discussed in the literature, I know of no comparable account of the inceptive imperfect/present, nor of any systematic treatment of the two phenomena side by side.

2. Claims

Despite the attempts of some to explain them away, the “ingressive” and “inchoative” are both real and valid interpretations of the aorist and imperfect, respectively. However, the traditional denotation assigned to the “imperfective” aspect in the semantic literature is insufficient to account for the inceptive imperfect (i.e., it predicts that such an interpretation should not be possible). Likewise, the basic semantics of the aorist cannot readily handle the inceptive reading. Further, previous scholarship on this topic has missed an important generalization: the two inceptive constructions are in near-complementary distribution at both the lexical and the syntactic level. This distribution can best be accounted for by a revised under-

1 In all numbered examples, the verb form at issue is in boldface, while underlining indicates other information relevant to its interpretation. All translations are mine unless otherwise noted.

standing of imperfective aspect to accommodate the inceptive imperfect and by adopting a coercion analysis along the lines of Bary and Egg 2012 to account for the inceptive aorist, which ensures that the aorist is sensitive to predicate type (i.e., “event structure” or “Aktionsart”), while the imperfect is not. I thus account for the observed distribution of inceptives in the Greek data and, at the same time, reconcile the notion of inceptive with the formal denotations of perfective and imperfective aspect.

3. Inceptives in the Greek grammatical literature

3.1. *Inceptive imperfect*

Schwyzler and Debrunner (1950:277) see no reason to suppose an inceptive imperfect. They reason that translating such examples as “was already in the process of doing *x*” rather than “began to do *x*” is sufficient,² claiming that this is just a “stilistisch prägnanten Gebrauch des gewöhnlichen Imperfekts.” Rijksbaron (2002:17–8) calls this usage “immediative” to avoid stressing the relevance of the initial stage of action, which he views as arising by implication only (similarly Emde Boas et al. 2019:429–30), in contrast to the “ingressive” aorist and lexical inchoatives (e.g., ἄρχω ‘begin’).³

Yet there are many examples that cannot be so handled, where the context strongly suggests truly inceptive meaning, as in (2) above. In this example, the Athenians’ action of moving cannot precede their amazement, since there is a causal relation between their amazement and their movement. So this cannot mean “they were already underway #when they fell into amazement” (cf. the treatments of Schwyzler and Debrunner [1950:277] and Rijksbaron [2002:17–8] just mentioned). In addition, (2) cannot be dismissed as the so-called “distributive” or “pluractional” use of the imperfect, as illustrated by similar examples with the same verb in the singular, shown in (3).

(3) Imperfect inceptive, singular verb

τοσόνδε εἰπὼν ἐπορεύετο ὅτι ἤδε ἡ ἡμέρα τοῖς Ἑλλησι μεγάλων κακῶν ἄρξει
(Thuc. 2.12.3).

2 Rijksbaron (2002:18) has a similar view: “(No sooner had he [done *x*] than) he was [doing *y*],” suggesting that “[w]e are placed ... right in the middle of the state of affairs.”

3 Rijksbaron’s (2002:21) claim that the inceptive imperfect is “predominantly found with stative predicates” is falsified by his own examples, which are all activity verbs of motion (ibid.:17).

Having said the following, (namely) that this day would be the beginning of great misfortunes for the Greeks, he **set out**.

Further, even if the inceptive imperfect is a “stylistic” usage, the very fact that the imperfect is compatible with it is telling and should be taken seriously. This is, after all, what we mean when we speak of a “reading” of an aspectual category: some interpretation within the semantic range of a particular morphological form that is available in certain contexts and/or with certain kinds of predicates. Stylistic usage may be taken to be a pragmatic elicitation of a particular interpretation, but the semantics must nevertheless be compatible with this interpretation in order for it to be available at all. So there is no reason to discount the inceptive as any less “legitimate” than any other reading or usage of the imperfect (despite Rijksbaron 2002:18), however one wishes to conceive of it.

3.2. *Inceptive aorist*

Goodwin (1889:24), Smyth (1956:430), and Rijksbaron (2002:20–1) say that the inceptive aorist is restricted to states and “conditions” (see §5 below), which are mostly denominative, sigmatic aorists, as seen in (4).

(4) First aorist (non-exhaustive list)

• βασιλεύω	‘be king, reign’	→ ἐβασίλευσα	‘became king’
• βλέπω	‘see’	→ ἔβλεψα	‘cast a glance’
• ἐρῶ	‘love’	→ ἠράσθην	‘fell in love’
• θαρρῶ	‘be courageous’	→ ἐθάρρησα	‘worked up courage’
• νοσῶ	‘be ill’	→ ἐνόσησα	‘fell ill’
• σιγῶ	‘be silent’	→ ἐσίγησα	‘fell silent’

There is, however, a handful of asigmatic aorists as well, shown in (5).

(5) Second aorist

• αἰσθάνομαι	‘perceive’	→ ἠσθόμην	‘became aware’
• ἔχω	‘have, hold, keep’	→ ἔσχον	‘took hold of, got’
• ἵσταμαι	‘stand’	→ ἔστην	‘took position, halted’

In a statement directly opposite to his claims about the inceptive imperfect, Rijksbaron (2002:20–1) says that the inceptive aorist “explicitly denotes the initial stage” of a state, while “the state itself is referred to only implicitly.” Kühner and Gerth (1898:155–7), similarly, view the inceptive use of the aorist as no different in kind from its other uses, stating a fact simply and without regard to duration. They seem to view any notion of a continued state or condition following the initial

entrance into that state or condition as a kind of implicature. However, their description of the action as being “condensed” or “compressed” (*zusammengedrängten*) is telling, though there is as yet no explanation as to how this compression comes about and why it is virtually restricted to state predicates. This implicitly resembles a coercion analysis.

An important observation of Kühner and Gerth’s (1898:155–7) is that one and the same aorist form can receive not only inceptive but also complexive interpretation, depending on context, where a state predicate is interpreted as entirely bounded in the past (of the type ἐβασίλευσα ‘was king, reigned’). Therefore, the aorist stem applied to a state predicate does *not* guarantee an inceptive interpretation. Context matters, as well as situation type.

The evidence thus demands an explanation that (a) treats the inceptive aorist as something special that arises only when the aorist is combined with certain types of predicates (type ἐβασίλευσα ‘became king’, e.g., ten years ago), while (b) still allowing for a more basic interpretation (“complexive”) in which the predicate is simply bounded in its entirety (type ἐβασίλευσα ‘reigned’, e.g., for ten years). Following Bary and Egg (2012), the choice between complexive and inceptive interpretation to state predicates in the aorist will be attributed to the “Duration Principle” (see §6 below), such that inceptive coercion is triggered only by the proper contexts. The inceptive aorist is thus sensitive to both predicate type and context, whereas the inceptive imperfect emerges from context alone.

4. Inceptives in the formal semantic and typological literature

4.1. Defining aspect

Denotations of aspectual markers typically rely on notions of “assertion time” (t_A) and “eventuality time” (t_E).⁴ Assertion time (t_A) is the interval about which some claim is made, with respect to which the run-time of the eventuality (t_E) is said to hold and may be assessed as either true or false. The traditional “neo-Reichenbachian” denotations of the perfective and imperfective aspect (found, e.g., in Klein 1994:108) are given in (6).

4 “Eventuality” standardly refers to states and events taken together (Bach 1981, 1986). Assertion time (Demirdache and Uribe-Etxebarria 2000) is also known as “topic time” (Klein 1994:36–58) and “reference time” (Reichenbach 1947), though precise notions vary (cf. Ramchand 2018:106–7).

(6) Common denotations of perfective and imperfective aspect

- a. PERFECTIVE ASPECT:
- $t_A \supseteq t_E$

The assertion time interval **includes** the span of eventuality time.

- b. IMPERFECTIVE ASPECT:
- $t_A \subset t_E$

The assertion time interval **is properly included in** the span of eventuality time.

In Greek, the aorist is traditionally identified with the perfective aspect, while the present and imperfect are said to express imperfective aspect (e.g., Ö. Dahl 1985: 81–4, Bary and Egg 2012).

4.2. *Inceptive perfective (aorist)*

Comrie (1976:19–20) describes “inceptive” as a reading of the perfective aspect but not the imperfective. The view that the inceptive interpretation is something peculiar to the perfective aspect (to the exclusion of the imperfective) has become more or less standard, followed, for example, by E. Dahl (2010:75–6) and Bary and Egg (2012). Moens and Steedman (1988:24) provide the following example for English:

- (7)
- When Pete came in, I **knew** that something was wrong.*
- (where
- knew*
- \approx
- “realized”)

Bary and Egg (2012:123–4) seek to explain the inceptive interpretation of the aorist in Greek as emerging from the avoidance of an impending mismatch between the selection restriction of the aorist (for bounded predicates) and the unboundedness of certain arguments that it may take, particularly states. They capture this with a “coercion operator” called INGR, which forces an inceptive reading for state predicates in the aorist that occur with a sufficiently brief assertion time interval. I will ultimately adopt their analysis and will explain it in more detail below (§6).

4.3. *Inceptive imperfective (imperfect/present)*

By contrast, little is said in the semantics literature about the inceptive interpretation of imperfective aspect.⁵ Nevertheless, its existence is assured by robust occurrence across languages, being found not only in Greek but also in Latin (Ernout

5 A notable exception is Hedin 2000:250–2, with reference to Russian and Greek (classical and modern).

and Thomas 1964:221–2), Slavic (Dickey 1999), and Hittite (Hoffner and Melchert 2008:322). The main problem here is that the traditional denotation of the imperfective aspect ($t_A \subset t_E$) cannot account for the inceptive interpretation at all, since t_E is obliged to properly include t_A , as shown in Figure 1 (t_S represents “speech time,” the moment/interval at which the utterance is made, which in the case of the past tense is preceded by t_A).

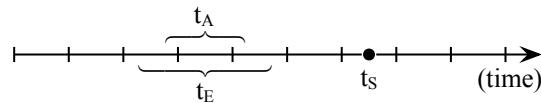
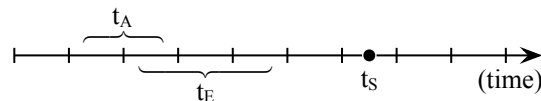


Fig. 1. Imperfective aspect, past tense

But the inceptive imperfect, as in (8), requires a structure something like that in Figure 2, where t_A at least partially precedes t_E (such that t_A contains the “left edge” of t_E).

- (8) *ἐπειδὴ δὲ καιρὸς ἦν, τῇ μὲν προτέρᾳ πρὸς τὰ τεῖχη τῶν Ἀθηναίων προσέβαλλον* (Thuc. 7.51.2).

And when the time was right, they began attacking/proceeded to attack the (battle-)lines of the Athenians on the first day [details of the attack follow] (ex. Smyth 1956:426).



When the time was right (t_A), they attacked_[IPF] (t_E).

Fig. 2. Inceptive interpretation (past tense)

To solve this problem, I will propose a revised version of the imperfective aspect (§6). But first I provide a closer look at the data (§5).

5. Data

The data for my study, which were manually culled, come from 105 examples of inceptives (73 imperfect and 32 aorist) culled from 2 archaic and 10 classical texts.⁶

6 Text samples: Homer (*Iliad* 1, 2, 7, 18; *Odyssey* 11, 12, 13, 21, 24), Aeschylus (*Libation Bearers*), Sophocles (*Electra*), Euripides (*Electra*), Herodotus (9), Thucydides (2, 7), Gorgias (*Encomium of Helen*), Aristophanes (*Frogs*), Lysias (1), Isocrates (*Helen*), Plato (*Ion*).

Inceptives of both kinds are quotable from nearly every major author of every period and genre.⁷ An example of the inceptive aorist in Homer is (9).

- (9) Homeric inceptive aorist: state predicate

ὦς ἔφατ', ἔδδεισεν δὲ βοῶπις πότνια Ἥρη (Hom. *Il.* 1.568).

Thus he spoke, and ox-eyed queen Hera **was seized with fear**.

The inceptive imperfect is exemplified in (10).

- (10) Homeric inceptive imperfect: activity predicate

ἀντάρ ἐπει παύσαντο πόνου τετύκοντό τε δαῖτα,
δαίνοντ', οὐδέ τι θυμὸς ἐδεύετο δαιτὸς ἔϊσης (Hom. *Il.* 1.467–8 = 2.430–1,
7.319–20).

Then, when they had ceased from their labor and had the meal ready, they **feasted/started feasting**, and their heart(s) did not lack anything of an equal feast.

The relative scarcity of inceptives in Homer (cf. n.7 above) accords with the proposal of Hollenbaugh (2018 and forthcoming) that the Homeric verbal system does not yet make a categorical contrast between perfective and imperfective aspect.⁸ In addition, the Homeric data is in line with the more general observation that the inceptive aorist is restricted to states and conditions while the inceptive imperfect is not.

All verbs that attest an inceptive imperfect in my data are given in the Appendix (§8, (29)–(32)), sorted by situation type (i.e., activity, state/condition, accomplishment, and achievement). As mentioned above, there are no secure examples of an inceptive aorist to an event predicate (i.e., activity, accomplishment, or achievement). All examples of the inceptive aorist are built to state or condition predicates. Most examples are genuine states, as in (1) and (9) above and (14)

7 The inceptive use of the aorist is plausibly attested already in Mycenaean *jo-o-po-ro* 'they are hereby indebted' (MY Ge 602). This interpretation is based on my analysis of Myc. *o-/jo-* as having a "performative" function, which will be developed elsewhere. Wackernagel (1926–8 [2009]:224) and Jacobsohn (1933:308–9) suggest that the inceptive use of the aorist may be an innovation of Greek, as it is infrequent in Homer relative to the occurrence of the inceptive imperfect and virtually absent in Vedic Sanskrit (but cf. E. Dahl 2010:293–6 with some possible examples).

8 By the time of the Koine, by contrast, the inceptive is an extremely common use of the imperfect (see Wallace 2006, with copious examples and references), which persists into Modern Greek (Hedin 2000:250–52, Robertson 1923:885).

below. A handful of examples involve *conditions*, a term I borrow from Goodwin (1889:24) and define as unaccusative (i.e., non-agentive) processes that pattern in many respects with states. Conditions, like states, have an experiencer subject⁹ but, like activities, involve some non-terminal processual action, repeated or sustained. An example is δακρῦώ ‘weep (for)’ in (11).

(11) Aorist inceptive: condition and state predicates

τὸν μὲν ἐγὼ δάκρυσσα_[CONDITION] ἰδὼν ἐλέησα_[STATE] τε θυμῷ (Hom. *Od.* 11.55 = 11.395).

Having seen him I **wept** [i.e., **started weeping**]_[CONDITION] and I **took pity**_[STATE] at heart.

By contrast, unergative processes (i.e., activities) have agentive subjects and invariably employ the imperfect for inceptive meaning in Greek. Unaccusativity is a necessary condition for use of the aorist inceptive, ruling out activities, though it is not a sufficient one. The predicate must also be “unbounded,” to rule out accomplishments and achievements—hence the need for the notion of conditions.

In contrast to the aorist, the imperfect inceptive occurs with every situation type, though most often activities (e.g., (12) and (14) below; (2) and (3) above).¹⁰ At times we are explicitly told that the activity begins to take place only after some other event, as in (12). Here, in addition, the purpose clause indicates that the event had not yet ceased at the relevant assertion time of the narrative.

(12) Imperfect inceptive: activity predicates

μετὰ δὲ τὸ δεῖπνον τὸ παιδίον ἐβόα καὶ ἐδυσκόλαιεν ... καὶ ἐγὼ τὴν γυναῖκα ἀπιέναι ἐκέλευον καὶ δοῦναι τῷ παιδίῳ τὸν τιθόν, ἵνα παύσῃται κλάου (Lys. 1.11–2).

And after dinner the baby **started crying** and **being fussy** ... and [so] I bade my wife go away and give her breast to the baby, to stop it from crying.

For accomplishment predicates, which have an activity-like preparatory phase that culminates in an inherent endpoint, the imperfect focuses on the activity necessary to bring about the culmination of the event as a whole, as in (13).

9 However, it is not enough to say that *all* verbs with experiencer subjects will allow inceptives in the aorist, since achievements may also have experiencer subjects (e.g., θνήσκω ‘die’) and do not attest inceptive aorists. Hence, the inceptive aorist is restricted only to states and conditions.

10 Less often accomplishments (13), states/conditions (14)–(15), and achievements (16)–(18) (perhaps also (8) above).

- (13) Imperfect inceptive: accomplishment predicate

καὶ λαβῶν μόσχου πόδα,
 λευκὰς ἐγύμνου σάρκας ἐκτείνων χέρα·
 θᾶσσον δὲ βύρσαν ἐξέδειρεν ἢ δρομεὺς
 δισσοὺς διαύλους ἵππιος διήνυσε (E. *El.* 822–5).

And having grabbed the calf's hoof,
 he **started stripping (bare)** the white flesh, stretching out his hand,
 and flayed the hide more swiftly than a horse racer
 finishes a two-lap course.

The inceptive imperfect is often preceded by an aorist temporal clause, as in (10) above, or aorist participle, as in (14) below (also (2), (3), (11), and (13) above and (17) below), whereas the inceptive aorist is most often *in* a dependent clause or takes the form of a participle itself (e.g., (20) below). Often the inceptive imperfect is found in conjunction with an aorist, as in (14), which supports the change-of-state reading for the imperfect.

- (14) Inceptive aorist (state predicate) and imperfect (activity predicate)

ἔπειτα πολλῷ θορύβῳ ... ἐφοβήθησαν^[AOR] καὶ τραπόμενοι ἔφευγον^[IPF] διὰ τῆς πόλεως (Thuc. 2.4.1–2).

Thereupon, with much alarm ... they **got scared**^[AOR] and, having turned tail, they **took to flight**^[IPF] through the city.

Like the aorist, the inceptive imperfect may sometimes occur in a temporal clause, especially to state predicates, as in (15).

- (15) Imperfect inceptive (state predicate) in temporal clause

ἡ δ' ἐν δόμοις ἔμεινεν Ἥλέκτρα πατρός,
 ταύτην ἐπειδὴ θαλερὸς εἶχ' ἥβης χρόνος,
 μνηστῆρες ἦτον Ἑλλάδος πρῶτοι χθονός (E. *El.* 20–1).

Electra, meanwhile, had been staying in the house of her father,
 [and,] when the blooming time of youth **came upon** [lit. **took hold of**] her,
 the foremost suitors of the Greek country were/started asking for (her).

Achievement predicates do not often admit of purely inceptive interpretation. A possible example is (16) ((8) above may be a further example), though this could be pluractional.

- (16) Imperfect inceptive(?): achievement predicate

ἄμα δὲ τὸ τεῖχος σφι, τὸ ἐν τῷ Ἴσθμῳ ἐτείχεον, καὶ ἤδη ἐπάλξις ἐλάμβανε (Hdt. 9.7.9).

And at the same time the wall which they were building in the Isthmus **was even then getting/starting to get** its battlements.

Typically, however, achievement predicates in such contexts receive either a pluractional (17) or conative (18) interpretation.

- (17) Pluractional imperfect inceptive: achievement predicate

λόγχας δὲ θέντες δεσπότου φρουρήματα
 δμῶες πρὸς ἔργον πάντες **ἔσαν** χέρας (E. *El.* 798–9).

And the slaves who formed the master's bodyguard, having laid aside their spears, all **started applying** their hands to the work.

- (18) Conative imperfect: achievement predicate

καὶ γὰρ δὴ καὶ Μελάμπους τῶν ἐν Ἀργεῖ γυναικῶν μανεισέων, ὥς μιν οἱ Ἀργεῖοι **ἐμισθοῦντο** ἐκ Πύλου παῦσαι τὰς σφετέρας γυναῖκας τῆς νόσου, μισθὸν προετίνατο τῆς βασιλείης τὸ ἥμισυ (Hdt. 9.34.1)

For it was also the case that Melampus, when the women in Argos had gone mad, such that the Argives **sought to hire** him from Pylos to relieve their women of their disease, demanded [lit. 'proposed'] as payment half of their kingship.

The present indicative is also found with inceptive meaning, especially when used in a narrative or in a generic-habitual sense, as in (19).

- (19) Present inceptive: state predicate (generic-habitual)

τῷ δὲ ὑπερβάλλοντι αὐτῶν φθονοῦντες ἤδη καὶ **ἀπιστοῦσιν** (Thuc. 2.35.2).

And being envious at their embellishment, at this point they even **grow incredulous**.

Inceptives are by no means limited to the indicative, but are quotable for every part of the verb, especially the aorist participle (20) and infinitive (21) (cf. Rijksbaron 2002:21).¹¹

11 Many directives may be understood as inceptive in some sense (e.g., *let's go* [= start going], *be nice!*), though I omit data of this sort here because it is difficult in such cases to know how much is to be attributed to the modality and how much to the tense-aspect stem.

- (20) Participial inceptive aorist: state predicate

ὁ δὲ τούτῳ τῷ λόγῳ **καταρρωδήσας** τοὺς Πέρσας ἔλεγε τάδε· (Hdt. 9.46.1).

And at this message he, **having gotten scared of** the Persians, said as follows.

- (21) Infinitival inceptive aorist: state predicate

οἱ δὲ Αἰγύπτιοι, πρὶν μὲν ἢ Ψαμμήτιχον σφέων **βασιλεῦσαι**, ἐνόμιζον ἑωυτοὺς πρώτους γενέσθαι πάντων ἀνθρώπων· (Hdt. 2.2.1).

Now before Psammetichus **became king** of Egypt, the Egyptians deemed themselves to be the oldest nation on earth (ex. and tr. Rijksbaron 2002:21).

Based on these generalizations, we can observe a near-complementary distribution for the two constructions, on both the lexical and the syntactic levels, as discussed above. In particular, the aorist inceptive is restricted to states/conditions, while the imperfect is not; the aorist inceptive tends to occur *in* a restrictive clause or *as* a restrictive participle, while the imperfect is not so limited syntactically.

6. Theory and formal semantics

The traditional “neo-Reichenbachian” denotations of the imperfective and perfective aspect are given in (22). The most relevant part of each denotation is shaded.

- (22) Traditional imperfective and perfective denotations

a. IMPERFECTIVE: $[\lambda P.\lambda t_A.\exists e(t_A \subset t_E(e) \wedge P(e) = 1)]$

For some eventuality e , assertion time (t_A) **is properly included in** eventuality time (t_E), and the proposition $P(e)$ is true (1).

b. PERFECTIVE: $[\lambda P.\lambda t_A.\exists e(t_A \supseteq t_E(e) \wedge P(e) = 1)]$

For some eventuality e , assertion time **includes** eventuality time, and the proposition $P(e)$ is true.

These denotations fail to account for all interpretations actually observed for the imperfect/present and aorist. In particular, neither one can readily account for inceptive readings. To amend this, I propose the revised denotations in (23).

- (23) Revised imperfective and perfective denotations

a. IMPERFECTIVE: $[\lambda P.\lambda t_A.\exists e(t_A \prec t_E^1(e) \wedge t_A \cap t_E(e) \neq \emptyset \wedge P(e) = 1)]$

For some eventuality e , assertion time **fully precedes** the right edge of eventuality time (t_E^1), and the intersection of assertion time and eventuality time is non-empty, and the proposition $P(e)$ is true.

- b. PERFECTIVE: $[\lambda P.\lambda t_A.\exists e(t_A \not\prec t_E^1(e) \wedge t_A \cap t_E(e) \neq \emptyset \wedge P(e) = 1)]$

For some eventuality e , assertion time **does not fully precede** the right edge of eventuality time (t_E^1), and the intersection of assertion time and eventuality time is non-empty, and the proposition $P(e)$ is true.

(23a) continues to allow for t_A to be properly included in t_E , represented in Figure 1 above, as per the traditional denotation of imperfective aspect (Klein 1994:108), which accounts for the progressive/continuous and habitual interpretations (among others). Yet it also allows for assertion time to coincide with and/or partially precede the left edge of event time, as required by the inceptive interpretation, represented in Figure 2 above.

All that is excluded is for t_A to coincide with or follow the upper limit (“right edge”) of t_E . Context alone determines which reading arises—inceptive or non-inceptive—both being available to all predicate types. Most often “context” is determined by an adverbial element that specifies the assertion time, relative to which the span of the eventuality may yield either an inceptive interpretation or not.

As for the perfective, under the denotation in (23b) the configurations in Figures 3–5 are readily available.

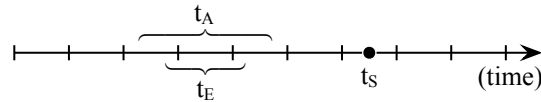


Fig. 3. Perfective aspect, past tense (concentrative interpretation)

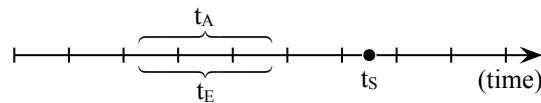


Fig. 4. Perfective aspect, past tense (complexive interpretation)

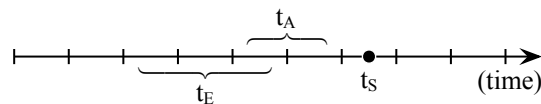


Fig. 5. Perfective aspect, past tense (egressive interpretation)

Figure 3 shows the most basic (and common) perfective use, called *concentrative* ($t_A \supset t_E$), arising from the combination of perfective morphology with a bounded

predicate. This use is often employed in sequential narration, which is said to “represent the perfective reading *par excellence*” (cf. E. Dahl 2010:78). Figure 4 represents the *complexive* use ($t_A = t_E$), where assertion time and eventuality time are coextensive (of the type *Agrippa served [a one-year term] as consul in 37 BCE*). Figure 5 represents the *egressive* use of the perfective, which focuses on the end of an action, most often to an accomplishment predicate, as exemplified in (24) (cf. ἐξέδειπεν ‘flayed, finished flaying’ in (13) above).

- (24) Aorist egressive for ἀγωνίζομαι ‘contend for a prize’ (accomplishment)

τί οὖν; ἠγωνίσου τι ἡμῖν; καὶ πῶς τι ἠγωνίσω; (Pl. *Ion* 530a)

So what (of it)? Pray tell, **did you do some competing**_[IPFV]? And how **did you compete**_[AOR]?

[i.e., “Did you participate in the contest, and (if so) how did you *finish up* or *place* in it?”]

The egressive is impossible to translate literally in English but is familiar from Russian (cf. Comrie 1976:19, 113).¹² It is likely that the egressive use is restricted to accomplishment predicates, arising pragmatically via coercion (like the inceptive perfective). However, since this is beyond my scope, I will simply assume here that the egressive reading is directly compatible with the meaning of the perfective aspect, as is captured by the denotation in (23b).

The only perfective reading *not* directly compatible with the denotation in (23b) is the inceptive, represented in Figure 2 above. This is desirable, since we have seen that the aorist inceptive reading does not arise purely from context, as the imperfect inceptive does, but particularly when it takes an unbounded predicate as its argument (*e*).

Intuitively speaking, there is a mismatch between the “boundlessness” of a stative argument, which has no intrinsic endpoints, and the “boundedness” of the perfective aspect, whose meaning requires its argument (*e*) to be contained within some endpoints (represented by the upper and lower bounds of t_A), whether intrinsic or imposed. If a predicate ($t_E(e)$) lacks such endpoints, the perfective will *impose* them on its argument ($t_A \supseteq t_E(e)$). This imposition of endpoints is what I mean to capture by means of “coercion,” which is not extra-syntactic or semantic machinery per se, but simply a formal representation of the “conflict resolution” that must occur whenever the aorist (i.e., perfective) morphology combines with a

12 E.g., *On mnogo delal_[IPFV], no malo sdelal_[PFV]* ‘He did (i.e., undertook) a lot, but **did** (i.e., **accomplished**) little’ (Comrie 1976:113).

stative predicate that it cannot readily impose boundaries on (i.e., when it is not complexive, given a relatively brief t_A , as determined by context). Again, such resolution avoids an impending mismatch between the selection restriction of the aorist (for bounded predicates) and that of stative arguments that it may take.

I therefore adopt the coercion analysis of Bary and Egg (2012), mentioned above. This will output an inceptive reading for the perfective/aorist *only* for non-event predicates, provided the context is suitable (i.e., supplying a sufficiently brief t_A). Bary and Egg (2012:123–4) posit a coercion operator that maps unbounded predicates (states) onto bounded ones (the perfective aspect), yielding the inceptive reading. They call this coercion operator “INGR” and define it as in (25).

(25) $INGR(P)(e)$ iff e is the smallest eventuality such that

$$\neg \exists e'. e' \supset \prec e \wedge P(e') \text{ and } \exists e''. e \supset \prec e'' \wedge P(e'')$$

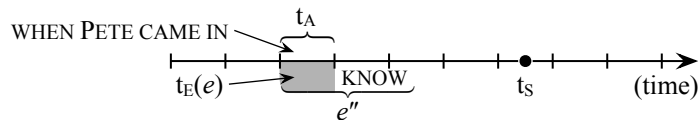
$INGR(P)$ holds for smallest eventualities e that do not abut on a preceding eventuality (relation “ $\supset \prec$ ”) of type P but abut on a following eventuality in the extension of P .

So the semantics of (7), cited above, applies as follows, in (26).

(26) $\exists x \exists e. I'(x) \wedge INGR(\text{know}'(x, \text{that-something-is-wrong}'))(e) \wedge t_A \supseteq t_E(e) \wedge t_A \prec t_s$

Assertion time t_A (i.e., *when Pete came in*) precedes the moment of utterance (t_s) and includes the runtime of the beginning of the state $t_E(e)$, namely that I knew that something was wrong (e'').

This is illustrated in Figure 6.



*When Pete came in (t_A), I **knew** (t_E) that something was wrong.*

Fig. 6. Perfective aspect, past tense (inceptive via coercion)

Simply put, there is a smallest possible eventuality (e) which no other eventuality of its kind immediately precedes (e'), but which an eventuality of its kind does immediately follow (e''). For KNOW, this means that there was no knowledge of type P before the realization at issue ($P(e)$), but there is some more knowledge of type P after it (e''). Crucially, the e at issue is treated as a discrete and bounded

whole separate from the e'' that follows it.¹³ In this way, the semantics of the perfective aspect is satisfied such that t_A includes t_E as applied to e (and hence t_A does not fully precede the right edge of t_E , as per (23b)).

However, this “coerced” inceptive reading must only arise in the right context, with an appropriately brief runtime of the assertion (t_A) relative to that of the eventuality (t_E). Otherwise, the complexive reading (cf. Figure 4 above) will come out by default, as in (27), where t_A is coextensive with t_E .

(27) καὶ ἐβασίλευσε_[AOR] ἔτεα δώδεκα, Σαδύαττεω δὲ Ἀλυάττης (Hdt. 1.16.1).

And he [Sadyattes] **reigned**_[AOR] (t_E) for twelve years (t_A); then from Sadyattes Alyattes [received the kingship].

This contextual adjudication between alternatives that, from the point of view of aspect alone, are equally possible is called the DURATION PRINCIPLE (Bary and Egg 2012:128–31), defined in (28).

(28) DURATION PRINCIPLE

“Properties of eventualities must be compatible with respect to the duration they attribute to an eventuality” (Bary and Egg 2012:129).¹⁴

In effect, the imperfect accomplishes by its nature what the aorist does by “coercion.” This accords best with the attested data, since it accounts for the near-complementary distribution of the two inceptive constructions—the aorist to state/condition predicates, the imperfect/present elsewhere.

I identify the denotations of the perfective and imperfective aspect with the Greek aorist and present stems respectively. That is, the aorist assigns the semantics of the perfective aspect, while the imperfect/present assigns the semantics of the imperfective aspect, as defined in (23).¹⁵

7. Conclusion

The distinction between the aorist and imperfect is subtle at all stages of Greek (Wackernagel 1926–8 [2009]:235). This paper provides at least one reliable distinction between the two, namely that in their inceptive use the aorist and

13 For the inceptive imperfect/present, this is not the case, as only one eventuality is needed.

14 “This information may be exact (as in *for five minutes*) or take the form of a ‘typical duration’ (e.g., we know that the duration of playing a sonata usually is measured in minutes, but not seconds, or days).”

15 This perfective/imperfective aspectual alignment is post-Homeric, emerging only within the Classical language (see Hollenbaugh 2018 and forthcoming).

imperfect/present are in near-complementary distribution according to predicate type, with the aorist inceptive attested only to state-like predicates and the imperfect inceptive used elsewhere. Revised denotations of both the perfective and the imperfective aspects have been able to account for all observed interpretations of the two functional categories, including the inceptive readings. The coercion operator INGR accounts for the near-complementary distribution observed in the data, whereby the aorist has the inceptive interpretation only when it takes as its argument a state/condition predicate. Accordingly, I identify the Greek imperfect as denoting imperfective aspect, and the aorist as denoting perfective aspect (as defined in (23)), at least by the end of the Classical period. In addition, I hope that this study has laid the groundwork for comparison to the similar behavior of past tenses in other IE languages (cf. §4.3 above), which may further our understanding of IE tense-aspect more generally.

8. Appendix: List of verbs that attest imperfect/present inceptives

Forms of the imperfect are cited in the first person (though most attestations are in the third person); the sole Present example in my data is cited as attested (ἀπιστοῦσιν ‘they grow incredulous’). The examples are organized by situation type. Items with question marks (put at the end of each set) are uncertain as examples of their category, being either unclearly inceptive in their context (“?”) or, especially (32), inceptive due to lexical factors having nothing to do with tense-aspect (“??”).

(29) Activities (i.e., volitional/agentive processes)

• ἄγω	‘lead’	→ ἤγον	‘started leading’ ¹⁶
• ἀθρέω	‘inspect’	→ ἤθρου	‘started inspecting’
• αἰτέω	‘ask’	→ ἤτουν	‘started asking’
• (ἀνα)βοάω	‘shout/cry (out)’	→ (ἀν)έβόων	‘started crying (out)’
• ἀνατιμάω	‘raise in price’	→ ἀνετίμων	‘began raising the price’
• βαδίζω	‘go, walk’	→ ἐβάδιζον	‘proceeded, went forth’
• βουλευόμαι	‘deliberate’	→ ἐβουλευόμην	‘began deliberating’ ¹⁷
• δαίνυμαι	‘feast’	→ (ἐ)δαινύμην	‘started feasting’
• δειπνέω	‘dine’	→ ἐδειπνοῦν	‘started dining’

16 E.g., Hom. *Od.* 24.5, Hdt. 9.14.1.

17 E.g., Hdt. 9.14.1.

• δηιώω	‘slay; ravage’		
		→ ἐδήουν	‘set to ravaging’
• διδάσκω	‘teach’	→ ἐδίδασκον	‘began to teach’ ¹⁸
• διώκω	‘pursue’	→ ἐδίωκον	‘gave chase’
• ἐλαύνω	‘drive’	→ ἤλαυνον	‘took to driving’
• ἐπιβουλεύω	‘plot against’		
		→ ἐπεβούλευον	‘began plotting against’
• ἐπιδείκνυμαι	‘exhibit’	→ ἐπεδεικνύμην	‘started showing off’
• ἐρωτάω	‘ask’	→ ἠρώτων	‘started questioning’
• εὔχομαι	‘pray’	→ ἡὺ-/εὐχόμεν	‘started praying’
• θέω	‘run’	→ ἔθεον	‘started running’
• θηλάζω	‘suckle’	→ ἐθήλαζον	‘took to breast-feeding’
• ἴημι	‘send, apply’		
		→ ἴην	‘started applying’
• μάχομαι	‘fight’	→ ἐμαχόμην	‘started fighting’
• πειρητίζω	‘attempt, try’		
		→ (ἐ)πειρήτιζον	‘began to try’
• πορεύομαι	‘move’	→ ἐπορευόμην	‘got moving’
• προσβάλλω	‘attack’	→ προσέβαλλον	‘proceeded to attack’
• πρόσκειμαι	‘lie upon, press upon’		
		→ προσεκέαμην	‘started attacking’
• στείχω	‘walk, march, go’		
		→ ἔστειχον	‘got moving’
• στρατηλατέω	‘lead in(to) battle’		
		→ ἐστρατηλάτεον	‘began the march’
• φεύγω	‘flee’	→ ἔφευγον	‘took to flight’
• χωρέω	‘withdraw, advance’		
		→ ἐχώρεον	‘charged’
• ? ἀντιβολέω	‘entreat, supplicate’		
		→ ἠντεβόλουν	‘began entreating’
• ? ἰκετεύω	‘beseech, implore’		
		→ ἰκέτευον	‘started imploring’
• ? οἶχομαι	‘go, have gone’		
		→ ὤχόμην	‘left, had gone’ ¹⁹
• ?? συμπολεμέω	‘wage/join war with’		
		→ ζυνεπολέμουν	‘joined the war’

18 E.g., NT Mk. 1:21, with εὐθύς ‘at once’.

19 E.g., Lys. 1.14.

(30) States, conditions, and medio-passive experiencer processes

- ἀπιστέω ‘distrust, disbelieve’
→ ἀπιστοῦσιν ‘they grow incredulous’
- βάλλομαι ‘get struck’ → ἐβαλλόμεν ‘started getting pelted’
- γελάω ‘laugh’ → ἐγέλων ‘started laughing’
- διαιτάομαι ‘lead a life(style)’
→ διητώμεν ‘started residing, occupied’
- διαφαίνω ‘show through’
→ διέφαινον ‘started shining through’
- δυσκολαίνω ‘be peevish’ → ἐδυσκόλαινον ‘started being fussy’
- ἔχω ‘hold’ → εἶχον ‘took hold of’
- κείμαι ‘lie, be lying down’
→ ἐκέιμεν ‘lay down’
- ταραύσσομαι ‘be troubled’ → ἐταραυτόμεν ‘got upset’

(31) Accomplishments

- γυμνόω ‘strip bare’
→ ἐγύμνουν ‘started stripping bare’
- εἰσκομίζομαι ‘carry in’
→ ἐσεκομίζόμεν ‘began to carry in’
- ἐπιδιαβαίνω ‘cross over after’
→ ἐπιδιέβαινον ‘proceeded to cross’²⁰
- καθίσταμαι ‘set in order’
→ καθιστάμεν ‘began arranging’
- παράγω ‘lead aside’
→ παρήγον ‘started leading aside’
- παρασκευάζομαι ‘prepare’
→ -εσκευαζόμεν ‘began preparations’
- ? (ἐκ)πέμπω/-ομαι ‘send (out)’
→ (ἐξ)ἔπεμπον ‘sent out (but not delivered)’

(32) Possible examples of inceptive achievements (or lexically inceptive?)

- ? λαμβάνω ‘take, get’ → ἐλάμβανον ‘started getting’
- ?? καθεύδω ‘(go to) sleep’ → ἐκάθευδον ‘went to sleep’
- ?? ὀργίζομαι ‘be/grow angry’ → ὀργιζόμεν ‘got angry’
- ?? ὀρμάομαι ‘start moving, move’ → ὀρμήμεν ‘got going’

20 E.g., X. *HG* 5.3.4 (cf. Emde Boas et al. 2019:406–7).

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