

Aspects of the Indo-European Aorist and Imperfect

Re-evaluating the evidence of the Ṛgveda and Homer and its implications for PIE

Ian Hollenbaugh

University of California, Los Angeles

ihollenbaugh@humnet.ucla.edu

Abstract

The Proto-Indo-European (PIE) tense-aspect system has been reconstructed since the time of Delbrück (1897) as containing a fundamental opposition between two aspect-denoting stems: An Aorist stem, denoting perfective aspect, and a Present stem, denoting imperfective aspect. This reconstruction is, for practical reasons, based almost entirely on Greek and Vedic. Re-examining the Homeric and Ṛgvedic data, I argue on semantic grounds against this century-old understanding of the tense-aspect system of PIE. In its place, I reconstruct the “Aorist” indicative as denoting *perfect* aspect (not perfective), and the “Imperfect” indicative as a *simple past* tense (not imperfective). Evidence for this reconstruction is based on the consistent usage in the *Ṛgveda* of the Aorist in the meaning ‘have done x’ (with present reference) and the Imperfect in the meaning ‘did x’ (especially in narrative contexts)—a distribution which frequently has a precise match in Homer.

Keywords

tense – aspect – Indo-European linguistics – verbal morphology – semantics – Homeric Greek – Vedic Sanskrit

1 Introduction and proposal

The Proto-Indo-European (PIE) verbal system is generally reconstructed as “aspectual” in nature, having two contrastive verbal stems: The Aorist stem is said to have denoted *perfective* aspect, while the Present stem is said to have had *imperfective* aspect. In the indicative past, these take the form of

Aorist and Imperfect tense respectively (Delbrück 1897:14–15, 230–241, 260–269, Meillet 1922:162–163). This view has gone essentially unaltered since it was first formulated by Delbrück (1897:15, 230–241, 268–269) as a contrast between ‘punctuality’ (Aorist stem) and ‘durativity’ (Present stem). In her recent work concerning verbal aspect in Homer, Napoli (2006) reformulates this hypothesis in terms of the cross-linguistic semantic categories *perfective* (Aorist stem) (46–47) and *imperfective* (Present stem) (64–70).¹ Moreover, this reconstruction has been arrived at mainly based on the evidence of Greek, since the Indo-Iranian evidence is considered not to be informative in distinguishing perfective and imperfective aspect (id.:45, cf. Meillet 1922:163, 213).² I would suggest, however, that the Vedic evidence has been unduly neglected, where the distinction between Aorist and Imperfect indicative is, as Delbrück (1897:240) puts it, “unverkennbar.”

In addition, aspect in Homer differed significantly from that of the later language, as noted, e.g., by Goodwin (1889): The “distinction between the Imperfect and Aorist was sometimes neglected, especially by the older writers” (25), and “the Imperfect is sometimes found in simple narration, where the Aorist would be expected, especially in Homer” (id.:7). Further, it is a peculiarity of Homer that the Imperfect indicative in a contrary-to-fact condition refers only to *past* time (Goodwin 1889:96), while in later Greek it refers regularly to the present (id.:94). If Classical Greek did indeed have a perfective/imperfective contrast between the Aorist and Imperfect (see Wackernagel 1926–1928 [2009]:221–226, 233–234), yet the aspectual system of Homer differed in a number of ways from the Classical system (id.:227, 235), then at minimum it follows that the aspectual system of Homer is *not* identical to that of Classical Greek (cf. Bartolotta 2009:516).

Indeed, there are many instances in which the Aorist indicative (hereinafter “Aor.”) and Imperfect indicative (hereinafter “Ipf.”) both in the *R̥gveda* (RV) and in Homer do not express the aspectual senses of perfective and imperfective respectively. Instead, we find the Aor. with the meaning of a (present) perfect, much like the construction with auxiliary *have* + past participle in Present-day English (PDE), as, e.g., in the sentence *I have written the book*. Whitney (1889:329), says that the Aor. in Vedic “had the value of a proper ‘perfect’, signifying something past which is viewed as completed with reference to the present” (similarly Delbrück 1897:240, 278–281). Wackernagel (1926–1928 [2009]:227)

1 Regarded as *communis opinio* (see, e.g., Fortson 2010:83, Weiss 2011:378).

2 Dahl 2010, following Hoffmann 1967, is a notable exception to this view, though even here the Present stem in Vedic is not analyzed as imperfective but as “neutral” in aspect (Dahl 2010:191–192, 213–216).

says that the Aor. in Homer “often does the job of denoting an action which has just been effected” and compares this to the Sanskrit Aor. (similarly Delbrück 1897:280–281). The following examples contain Aorist indicatives (Aors.) with present reference (i.e., expressing “perfect” or “anterior” aspect), in Homer (1) and RV (2) respectively.³

- (1) ἦ δὴ μυρί' Ὀδυσσεὺς ἐσθλὰ ἔοργεν
 βουλάς τ' ἐξάρχων ἀγαθὰς πόλεμόν τε κορούσων,
 νῦν δὲ τόδε μέγ' ἄριστον ἐν Ἀργείοισιν ἔρεξεν (*Il.* 2.272–274).⁴

‘Truly Odysseus has done_[Pf.] countless good deeds as leader in good counsel and waging war, but now he **has done**_[Aor.] *this*, the best (thing) by far among the Argives’ (ex. from Wackernagel 1926–1928 [2009]:227).

- (2) *īyúṣ té yé pūrvatarām āpaśyan viuchántīm uśásam mártiyāsaḥ
 asmābhir ū nū praticákṣiyā abhūd ó té yanti yé aparīṣu páśyān* (RV
 1.113.11).

‘They have gone, the mortals who saw the earlier dawn dawning forth. (This dawn) **has now come to be**_[Aor.] gazed upon by us. And there are those coming hither who will see (the dawn) in the future’ (tr. Jamison and Brereton 2014:264; ex. from Dahl 2010:264–265).

On the other hand, we find the Ip. in narrative contexts, which by the traditional account are proper to the Aor., since perfectives are regularly found in “sequential” narrative contexts cross-linguistically (Dahl 2010:78, Forsyth 1970:64–66), as in PDE *I wrote the book* (for chronological sequencing, cf. *I tripped and fell*). Whitney (1889:278) says that the Ip. in Vedic “is the tense of

3 Citations of the *Iliad* (*Il.*) are to West 1998–2000; those of the *Odyssey* (*Od.*) are to West 2017. Except where noted, translations are my own. In several cases, I rely on the translation of Jamison and Brereton 2014 for the RV citations. This is done in order to (help) avoid interpretation bias: If I believe a particular reading should be understood for a given verb in context (say, ‘have done x’), it strengthens the case if authoritative translators have arrived at the same reading independently.

4 In all numbered textual examples, bolded items are the verb form(s) in question, while the underlined items represent some additional information or context clues that help us locate the reference time of the (bolded) situation. This “additional information” is often an adverb, such as νῦν ‘now’, but may also be another verb (say, in the Present or Future tense, suggestive of non-past reference time), a participle, or an entire phrase or clause (such as a clause of purpose, which is future-oriented and commonly suggests non-past reference).

narration,” expressing “simple past time, without any other implication” (similarly Kiparsky 1998:29, n. 3 (on pp. 56–57)). Wackernagel (1926–1928 [2009]:235) says of the Ip̄f. in Homer:

Homer has ... many imperfects which serve as straightforward narrative forms, without depicting the action or the process any more than the corresponding aorist. We simply have to recognize, especially in view of comparison with related languages, above all Sanskrit, that the imperfect was often the narrative tense.

similarly DAHL 2010:78, GOODWIN 1889:7–8

The Ip̄f. thus has the effect of ordering events chronologically, which may additionally bear a causal relationship in the same direction. Such contexts cross-linguistically “represent the perfective reading *par excellence*” (Dahl 2010:78; cf. Forsyth 1970:64–66 “sequence of actions”). Examples of Imperfect indicatives (Ip̄fs.) in sequential narration (i.e., expressing “completive” readings or “perfective” aspect) can be seen in (3) and (4), from Homer and *RV* respectively.

- (3) Ἄτρεὺς δὲ θνήσκων ἔλιπεν πολύαρνι Θυέστηι,
αὐτὰρ ὁ αὖτε Θυέστ’ Ἀγαμέμνονι λείπε φορῆναι (*Il.* 2.106–107).

‘And Atreus, dying, left_[Aor.] [the scepter] to Thyestes rich in flocks, but Thyestes in turn left_[Ip̄f.] it for Agamemnon to bear’ (ex. from Wackernagel 1926–1928 [2009]:235).⁵

- (4) *māyāvinam vr̥trām asphuran nīh*
ārejetām ródasī bhiyāné (*RV* 2.11.9bc).

‘(Indra) **kicked away**_[Ip̄f.] wily Vr̥tra. The two worlds **trembled**_[Ip̄f.] in fear’.

In these respects, the Greek of Homer resembles *RV* more closely than it does Classical Greek, yet it is usually said that Vedic, and not Greek, has innovated (e.g., Lowe 2015:213). This significant *formal and functional* match between Homer and *RV*, though noted by Wackernagel and others (e.g., Delbrück 1897: 280–281), has played little role in the reconstruction of the aspectual system of the proto-language.

5 On this example, cf. Crespo 2014:74: “The conclusion to be drawn is that the imperfect may refer to an action that is either simultaneous or *subsequent* to the action denoted by the aorist” (emphasis mine).

It is the aim of this paper to (re-)examine these readings of the Aorist and Imperfect indicative in Homer and the *R̥gveda*, to define them in modern semantic terms as “perfect” (of the type *I have written the book*) and “simple past” (of the type *I wrote the book*) respectively, and to determine what these distributional facts can contribute to the reconstruction of tense and aspect in the proto-language. In particular, on the basis of the semantic agreement of the Vedic and Homeric Aor. and Ip̥f., along with formal semantic and typological considerations, I propose that it is in fact Vedic that preserves the inherited situation intact—at least in the indicative⁶—while Homeric Greek has innovated in certain respects. The observed meanings of the Aor. and Ip̥f. in both languages are best understood as having originated in Proto-Nuclear-Indo-European (PNIE) (i.e., excluding Anatolian: cf. n. (b) to Table 12 below; on the term, see Lundquist and Yates 2018:2080) as a perfect and a simple past category respectively.

After defining the tense and aspect categories and relevant terminology to be used in this paper (§ 2), I treat each language in turn, beginning with *RV* (§ 3), then examining the cognate categories in Homer, focusing on the *Iliad* for data (§ 4, with two subsections, one for each tense stem). I then offer brief discussion of the non-indicative (i.e., modal and non-finite) forms of the Present and Aorist stems in the two languages (§ 5). Finally, I present what can be gleaned from these observations toward a comparative reconstruction of the tense-aspect system of the proto-language (§ 6).

2 Preliminaries: defining semantic categories of aspect and tense

Before we proceed, let us formally define what we mean by the semantic labels applied to the aspectual categories and readings under discussion. In general, I assume for this analysis the framework of Klein 1994. For the diachrony of tense-aspect categories cross-linguistically, I follow Bybee, Perkins, and Pagliuca 1994 (hereinafter “Bybee et al. 1994”) (cf. § 6 below). In what follows, *situation* is used as a cover term for events and states taken together. *Event* refers to both telic achievement/accomplishment predicates (e.g., *strike*, *die*; *drown*, *run a mile*, etc.) and atelic activities (e.g., *run*, *swim*, *write*, *paint*, etc.).

We must first distinguish three temporal parameters, which may be related to one another in various ways to compose tense and aspect (Klein 1994:3–9).

⁶ See § 5 below on the non-indicative forms.

TSit: Situation time (TSit) or “event time” is the interval of time at which the situation actually holds true. It is the non-finite component of the predicate, independent of tense.

TU: Time of utterance (TU) or “speech time” is the interval (or point) of time in which the speaker produces the utterance under discussion.

TT: Topic time (TT) or “reference time” is the interval for which a claim is made by the speaker that the situation (TSit) holds true. This is the time referred to by a finite tense.

To borrow Klein’s (1994:4) example, if a judge in court were to ask a witness: “What did you see when you entered the room?” the witness could reply with (5):

(5) *There was a book on the table. It was in Russian.*

In Figure 1, we see that TSit is the book’s being in Russian (BE IN RUSSIAN), in square brackets, while TT, in braces, is the interval at which the speaker entered the room and saw the book on the table. The claim is simply that at the time of witnessing the event, there was a book in Russian on the table. We may safely assume that the book was in Russian both before and after the witness saw it (TT), and even long after the time of utterance. Hence, the finite component of the verb BE (namely, *was*) contrasts not with a present (*is in Russian*) or future (*will be in Russian*), but with its negative: *was not in Russian*. For this reason, we say that it does not matter for tense whether the time of the situation (TSit) itself precedes, coincides with, or follows the time of utterance (Klein 1994:5). All that matters for tense is where TT stands in relation to TU.

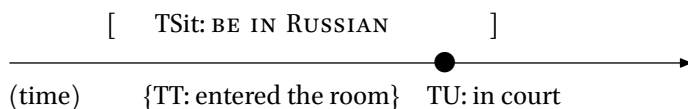


FIGURE 1 Past tense (TT precedes TU)

Tense is thus a relation of TT to TU. TT may precede TU (PAST TENSE), fully include TU (PRESENT TENSE), or follow TU (FUTURE TENSE) (Klein 1994:124), as shown in Table 1:

TABLE 1 Formalizing tense

i.	PAST TENSE:	$TT < TU$
ii.	PRESENT TENSE:	$TT \supset TU$
iii.	FUTURE TENSE:	$TT > TU$

(NB: “<” = ‘is before’, “>” = ‘is after’,
“ \supset ” = ‘fully includes’)

Aspect is a relation between TT and TSit (Klein 1994:99–108). TSit may be partly or fully included⁷ in TT (PERFECTIVE ASPECT), fully include TT (IMPERFECTIVE ASPECT), partly⁸ or fully precede TT (PERFECT ASPECT), or follow TT (PROSPECTIVE ASPECT), as shown in Table 2:

TABLE 2 Formalizing aspect

i.	PERFECTIVE ASPECT:	$TSit \cap / \subset TT$
ii.	IMPERFECTIVE ASPECT:	$TSit \supset TT$
iii.	PERFECT ASPECT:	$TSit \leq TT$
iv.	PROSPECTIVE ASPECT:	$TSit > TT$

(NB: “ \cap / \subset ” = ‘is partly or fully included in’, “ \leq ” = ‘partly or fully precedes’)

7 “[E]ither TSit and TT overlap, or TSit in turn is included in TT” (Klein 1994:102); TT is “partly before or partly after” TSit (id.:100, 108).

8 *Contra* Klein (1994:112–113), who does not allow for partial overlap of TT and TSit in the perfect, yet certain readings seem to require it, especially the universal (see below) and stative-resultative readings (cf. Kiparsky 2002:120–121). Thus, *The door has been closed all day* (universal) and *The door is still closed* (stative) relate a TSit (BE CLOSED) to a TT (*all day* and *still*) with which the TSit must partly overlap in time and partly precede, thus: BE CLOSED \leq *all day* \supset TU = *has been closed all day*; BE CLOSED \leq *still* \supset TU = *is still closed*. Note that both of these could equally well be represented by the present imperfective as defined above, since BE CLOSED may fully include *all day* and must fully include *still*. This ambiguity is desirable, since it is in precisely these two readings (i.e., universal and stative-resultative) that we find both Perfects and Presents being variously employed on a language-specific basis. Thus, PDE uses the Perfect for universal readings while many Romance languages use the Present. Conversely, PDE uses the Present to express stative meaning while other languages may use either a present imperfective or a present perfect (e.g., Perfects in Archaic Latin: *nunc intellexi* ‘now I understand!’ (Plaut. *Cist.* 624), *perii miser* ‘I’m dead/done for!’ (Plaut. *Amph.* 809); Perfects in RV: *arān ná nemīḥ pári tá babhūva* ‘like a rim the spokes of a wheel, he encompasses those’ (RV 1.32.15d) (tr. Jamison and Brereton 2014:136)).

In what follows, I examine the properties of each aspect in turn (though by no means exhaustively). All definitions and examples are to the past-tense instantiations of the respective aspectual categories (i.e., I do not consider here present, future, modal, and non-finite forms of the verb) or present and past in the case of the perfect (i.e., including the “pluperfect”).

We begin with the past **imperfective**. Here, the situation is viewed as unbounded in the past; it may or may not be completed by speech time. The predicate of an imperfective is frequently an atelic (i.e., unbounded) activity, most often rendered in PDE by the progressive, as in (6):

- (6) *John was running on the beach when Mary called him.*

Here, *when Mary called him* is the topic time (TT) with respect to the situation of John's running on the beach (TSit). Since the duration of John's running event includes the interval of Mary calling him, we may say that TSit includes TT and thus that the aspect of *was running on the beach* is imperfective.

In certain contexts, however, the predicate may be telic (i.e., bounded) yet nonetheless realized as imperfective—and even progressive—as in (7):

- (7) *John was running a mile when Mary called him.*

The readings available to the imperfective aspect will be referred to as *durative*. This includes several interpretive sub-categories, such as progressive, iterative, habitual, and conative (among others). We will not, however, need to differentiate such sub-categories in the course of this paper, and so *durative* will be a convenient cover term. Importantly, however, the simple Preterite in PDE may be used to express imperfective aspect in most of its non-progressive⁹ readings, including iterative events (8), habitual situations (9), and durative states (10). The first two of these can often (but not always) freely alternate with periphrases such as *kept doing x*, *used to do x*, or *would do x* in the same sorts of meanings.

- (8) *They defeated the enemy troops in a series of early battles but ultimately lost the war.*

9 On the PDE progressive see Comrie 1976:32–40. Non-progressive uses of this form occur expressing contingent states (e.g., *You're looking well*) and habitual situations (e.g., *I heard he's smoking again*), which are sometimes more-or-less interchangeable with the bare forms (e.g., *She is always acting that way* ≈ *She always acts that way*).

- (9) *They raised cattle for a living and sold fresh milk at the market every week.*
- (10) *Mary already knew the answer when John told it to her.*

Despite their unfortunately similar names, the perfect and perfective are fundamentally *distinct* aspectual categories (Klein 1994:109–111). They differ in what readings are available to them. The **perfect**, also called “anterior” or “retrospective” aspect (Dahl 2010:22, 29), has *constative* readings (term from Rijksbaron 2002:28–29, 36–37), in which the situation or its consequence(s) persist through speech time (or some other reference point in the case of the past perfect). These come in four different “flavors” or “readings” as exemplified by (11)–(14), from Kiparsky 2002:113.

CONSTATIVE READINGS:

- (11) **resultative**: *The police have probably caught the suspect by now.*
(telic only)
- (12) **experiential-existential**: *Fred has visited Paris several times.*
(telic or atelic)
- (13) **universal**: *I have known him since 1960.*
(atelic only)
- (14) **stative**: *I've got (=I have) something to tell you.*
(telic or atelic)

Example (11) implies that the suspect is (still) in custody in the “now” of the utterance time, as the state *resulting* from the event of catching. Such readings require telic predicates. (12) does not require that Fred is currently in Paris, only that he was there at *at least one point* in the past (and that he is still alive and relevant at speech time).¹⁰ (13) implies that the situation holds of every interval from its starting point up through speech time, and hence that there were no intervals from 1960 to the time of utterance in which “I” did not know “him” (and that I still do). Such readings require atelic predicates. Finally, the stative reading of (14) is represented in PDE only by the fixed phrase (*ha*)*ve got* and makes no reference to a preceding event but only to the state current at the time of utterance (Kiparsky 2002:120–121). As we shall see, the resultative read-

10 Gerö and von Stechow (2003:272–273) suggest that there are existential readings that are not experiential. These usually occur when the subject is not capable of “experiencing” anything, as in ‘Ask yourselves if any enmity ever has arisen_[Perfect] between me and Eratosthenes besides this one’ (Lys. 1.43, tr. Gerö and von Stechow 2003:273).

ing is characteristic of the Aor. in *RV* (though other constative readings are also found: see § 3 below), while all four readings are well represented in Homer by the Aor. (the stative reading is probably represented by several (otherwise puzzling) instances of the Aor. in Homer: see § 4.2 below).

Perfective aspect, on the other hand, represents a situation as complete (NB: not necessarily completed: see Comrie 1976:18–19), viewed as a bounded whole, as in (15) and (16). With certain predicates, the perfective may have an inchoative interpretation, as in (17), among other possible readings. We will leave aside the “performative” readings of the kind in (18) (on which see, e.g., Bary 2012 and Dahl 2010:80–82), which always have present reference time and are generally restricted to the first and second persons. Taken together, the perfective aspect may be said to express *completive*¹¹ readings (Dahl 2010:82, Comrie 1976:18–19).

COMPLETIVE READINGS:

(15) **sequential narration:** *Mary ran a mile, then she took a nap.* (telic only)

(16) **complexive-terminative:** *She reigned for 60 years.* (atelic only)

(17) **inchoative-ingressive:** *When the gun went off, the athletes ran*
(i.e., took off running) *as fast as they could.* (atelic only)

(18) [**performative:** *I do thee wed.*] (telic only)

Contrary to what is often held (e.g., Fortson 2010:90), perfective aspect does not need to be “punctual” nor express a “single event” (Dahl 2010:78–80, 299–300; Napoli 2006:64; Comrie 1976:16–18, 22–23, 31–32).

11 Note that the term *completive* is used by Bybee et al. (1994:54, 57–61, 89) to designate a distinct aspectual class, quite apart from the perfective. While the “completive” aspect (usually containing verbs meaning ‘finish’) regularly develops into a perfect, perfectives do not. Thus Heine (2003:594) and Nicolle (2012:372, 380–381) also make reference to “completives” as developing into perfects, *not* perfectives into perfects (NB: Nicolle’s reference to Hopper 1982 describing a resultative perfect from the perfective in Russian is not accurate: Hopper (id.:11–12) refers only to the *synchronic* usage of the Russian perfective with resultative or stative readings). Comrie (id.:19) also offers some discussion, with examples, of a completive verbal category in Russian as *distinct* from the Perfective. I use the term *completive* here to refer instead to the set of readings that constitute the interpretation of perfective aspect, following Comrie’s (1976:18–19) discussion of “completeness” as an essential component of perfective aspect.

We must differentiate cross-linguistically motivated aspect-denoting morphological categories—hereinafter referred to as “imperfective stems,” “perfective stems,” and “perfect stems” respectively (or simply “imperfectives,” “perfectives,” and “perfects”)—from the semantic aspectual categories themselves, generally referred to in the literature by the same names—hereinafter referred to as “imperfective aspect,” “perfective aspect,” and “perfect aspect.” The definitions of the aspect-denoting stems that follow are based on those of Bybee et al. 1994:53–55.

Further, the names traditionally assigned (e.g., in grammar books) to the actual morphological representation of each aspect-denoting category within a particular language need not have anything to do with its semantic expression, and often does not align with the cross-linguistic morphological categories defined here (cf. Klein 1994:111, Comrie 1976:53). Thus, the so-called “Perfect” in Latin, German, and many Romance languages “covers both perfect and non-perfect meaning” (Comrie 1976:53; cf. Nicolle 2012:381, Klein 1994:111, Bybee et al. 1994:80, 85) and would therefore probably best be considered either as a perfective (cf. Condoravdi and Deo 2015:265) or what Bybee et al. (1994:78–81) dub “old anterior” (see below and § 4.2). In keeping with standard practice, the traditional, language-specific label is written with an initial capital letter. Thus, we might say that Latin has a morphological stem class called the Perfect, which is in cross-linguistic semantic terms to be classified either as a perfective stem or “old anterior” (so in Bybee et al. 1994:80, Table 3.8) and which expresses both perfective and perfect aspect.

Further still, we must differentiate these categories from the *readings* that are characteristic of each aspectual class. The three aspects—imperfective, perfective, and perfect—will be defined as the set of all readings they contain. I will refer to these readings as *durative* ((6)–(10) above), *completive* ((15)–(18) above), and *constative* ((11)–(14) above), which represent the range of expression that makes up the meanings of the three aspectual categories: “imperfective aspect,” “perfective aspect,” and “perfect aspect” respectively.

The aspect-denoting categories (i.e., “perfective *stem*,” etc.), on the other hand, are named according to their *regular* denotations. However, cross-linguistically speaking, multiple types of readings—and therefore multiple aspects—may be expressed by a single aspect-denoting stem. Thus “perfective stems” are characterized by regular expression of perfective aspect (realized as completive readings) but are known to be *capable* of expressing (or compatible with) perfect aspect as well (realized as constative readings) in the right pragmatic contexts (Comrie 1976:55) or when not blocked by a semantically more specified perfect stem (id.:58), since perfective stems have a broader semantic scope than do perfect stems (see § 6 below, especially Table 10). By contrast,

TABLE 3 Readings available to tense-aspect stems (finite indicative only)

	Readings avail- able to a <u>perfect</u> aspect stem	Readings avail- able to a <u>perfective</u> aspect stem	Readings available to an <u>imperfective</u> aspect stem
Constative readings (perfect aspect)	<i>Your message <u>has</u> (just) <u>been</u> sent.</i>	<i>Your message <u>was</u> (just) <u>sent</u>.</i> (marginal/dialectal)	NONE
Completive readings (perfective aspect)	NONE	<i>Mary <u>ran</u> a mile.</i> (regular)	NONE
Durative readings (imperfective aspect)	NONE	NONE	<i>Mary <u>was running</u> <u>on the beach</u> for an hour.</i>

perfect stems are generally restricted to expression of perfect aspect (realized as constative readings).¹² In Table 3, perfect stems are shown to have constative readings only, whereas perfective stems regularly have completive readings but are also compatible with the constative readings proper to the perfect aspect (cf. Hopper 1982:11–12, with examples in Russian). Imperfectives are restricted to durative readings.¹³

Table 3 thus defines each aspect-denoting stem by the readings it has available to it. For example, if a stem regularly has completive readings and (in certain contexts) constative readings—i.e., it expresses both perfective and (in certain contexts) perfect aspect—it is classed as *a* perfective (contrast “old anterior” below). In other words, perfective stems mainly express the relationship between TSit and TT shown in i. of Table 2 above (TSit \cap / \subset TT) but are

12 This is restricted to what Bybee et al. (1994:78–81) refer to as “young anteriors,” having only constative readings. Stems that denote constative as well as completive and/or durative readings are necessarily classed as either “old anteriors” (see below), perfectives, or simple pasts. The distinction between these latter categories is taken up in the rest of this section and discussed with reference to Vedic, Homeric, and P(N)IE in §§ 3, 4, and 6 respectively.

13 Imperfectives may be “narrative” in the sense that they may occur in narration but generally do not sequence events chronologically as do perfectives or simple pasts (see Hopper 1982:6–8). Rather, they attribute habitual or generic qualities/actions to a referent (e.g., *He always smiled as he spoke*; ex. in Hopper 1982:7) or else are licensed by certain pragmatic factors that are not compatible with the perfective (see id.:12–13 for examples in Russian).

TABLE 4 Readings available to the simple past tense

Examples of the PDE preterite with various readings:	
1. Constative (perfect) readings [mostly telic]	a. <i>Your message <u>was</u> (just) <u>sent</u>.</i> [can = ‘has been sent’] b. A: “ <i>Is the door closed?</i> ” B: “ <i>Yes, I just <u>closed</u> it.</i> ” [can = ‘have closed’] c. A: “ <i>What’s wrong?</i> ” B: “ <i>I <u>lost</u> my keys</i> [can = ‘have lost’] d. <i>John told me he <u>kicked</u> Bill</i> [= ‘had kicked’] e. <i>John told me he <u>saw</u> Mary</i> [can = ‘had seen’]
2. Completive (perfective) readings [telic or atelic]	f. <i>Mary <u>ran</u> a mile in 8 minutes, then <u>went</u> home.</i> g. <i>Mary <u>ran</u> on the beach for an hour, then <u>went</u> home.</i>
3. Durative (imperfective) readings [atelic only]	h. <i>Mary already <u>knew</u> the answer when John told it to her.</i> i. <i>He always <u>smiled</u> as he <u>spoke</u></i> (ex. in Hopper 1982:7). j. <i>John told us he <u>saw</u> Mary.</i> [Where John said “Look! I see Mary.”]

also known to express that of iii. (TSit ≤ TT). If a stem regularly has only constative readings (TSit ≤ TT), it is classed as a perfect. If a stem has only durative readings (TSit > TT), it is classed as an imperfective.

For present purposes the readings may be taken to be roughly synonymous with the aspects that they express. What is of crucial importance, however, is the distinction of reading and aspect-denoting stem. I have aimed, therefore, to refer throughout this paper to the readings when indicating semantic interpretations (i.e., *durative*, *completive*, and *constative*), while reserving the labels *imperfective*, *perfective*, and *perfect* for the aspect-denoting stems. Where it is appropriate or necessary to refer to the aspects themselves, the word “aspect” will follow its respective label. As a rule, I do not specify sub-readings for each type (e.g., “resultative” or “complexive-terminative”) unless it is necessary to do so.

A “**simple past**” tense is a preterite category underspecified for aspect and therefore capable of expressing *any* aspect—having both completive and durative readings, as well as constative readings—depending on predicate type and pragmatic context (Bybee et al. 1994:84–85, 92–95; Klein 1994:102; Comrie 1976:53, 55, 58; cf. Hoffner and Melchert 2008:309, 317–318 for illustrative examples in Hittite). The PDE Preterite is an example of this type, as shown in Table 4.

The first example (1a.) in Table 4 is taken from the UCLA email server, where this notification is displayed after sending a message. Where other email servers have the (more common) variant “Your message has been sent” we may feel sure that the salience of the email’s being in a sent state has not changed from server to server: Only the choice of its morphological representation is different.¹⁴

In the second example (1b.) the state of being closed is salient in the discourse, yet the simple past is completely felicitous. Comrie (1976:55, n. 1) points out that, due to pragmatic (Gricean) factors, the simple past is often preferred in such contexts, where the continuation of the resultant state is salient and the perfect might be expected. After the situation is introduced into the discourse, speakers may take it as “common knowledge” and refer to it with non-perfect forms, as in the exchange A: “*I’ve broken my arm.*” B: “*Did you break it today?*” (Comrie’s example, though in my dialect I would say *I broke my arm* even here: cf. id.:53–54, n. 2 on dialectal variation in the licensing of the PDE Perfect). But this is not true in all languages that have a perfect, nor is it necessarily the case in similar PDE utterances, as in A: “*I’ve seen the Northern Lights (before).*” B: “*Oh, have you seen/(did you see) them recently?*”. The use of a simple past in these cases may therefore be attributed to pragmatic and language-/dialect-/speaker-specific factors, rather than to some change in the aspectual reading being expressed. In both of the above examples, the *reading* must be understood to be constative (and the aspect therefore perfect), as shown by the ability of each Preterite to be paraphrased felicitously with a *have*-Perfect in the same context (i.e., *was just sent* = ‘has just been sent’ and *just closed* = ‘have just closed’).

14 There is a range of dialectal variation with regard to intuitions about these readings in PDE. What is relevant here is simply that the dialects which do permit the Preterite in places where other dialects require the *have*-Perfect do so asymmetrically: That is, they allow the Preterite in constative contexts but not the *have*-Perfect in completive contexts (e.g., the *have*-Perfect is never permitted in sequential narration), at least in the indicative (cf. § 5 below). Similarly, *I (just) spilled my coffee* beside *I’ve (just) spilled my coffee* may not be interchangeable in all PDE dialects (as an anonymous reviewer reminds me). For those dialects in which the two are kept distinct, the constative readings of the Preterite are consistently blocked by (and in favor of) the Perfect. However, for those dialects in which the two are to some extent interchangeable, the relationship is asymmetrical: The Preterite *permits* constative readings, while the Perfect is *restricted to* constative readings. In either case, the Perfect lacks constative readings (except in neutralizing contexts: cf. § 5 and the discussion of relative past/out-of-sequence readings below), such that the distribution of the two forms is consistent with the hypothesis that the readings available to a (present) perfect indicative are a strict subset of those available to a simple past or perfective (Condoravdi and Deo 2015:261–262, 266).

That the simple past has a broader range of meaning than the perfect can be seen, for instance, in the contrast between *Have you ever gotten married?* and *Did you ever get married?*, where the former is felicitous only with an understood indefinite object (A: “*Have you ever gotten married to anyone?*” B: “*No, I never have*”), not a definite one (#*Have you ever gotten married to that nice person you were dating in high school?*). The latter is felicitous either with a definite object (“*Did you ever get married to that nice person you were dating in high school?*”) or, at least in certain dialects of PDE (my own included), with an indefinite object (A: “*I got married and divorced twice in 5 years. How about you: Did you ever get married (to anyone)?*” B: “*No, I never did*”), though a periphrasis is preferable in this case for both readings of the simple past: “*Did you (ever) end up getting married to anyone/to that nice person you were dating?*” (a periphrasis that is incompatible with the *have*-Perfect). In each case, the indefinite interpretation amounts essentially to an “experiential” constative reading (perfect aspect). The point remains that simple pasts and perfectives seem to be capable of expressing what perfects regularly express (i.e., constative readings), but perfects cannot express everything that simple pasts/perfectives can (cf. n. 41 below). In other words, the perfect may be used in a subset of the contexts in which a simple past or perfective may be used (for a non-English example of a simple past with constative readings see Bybee et al. 1994:94; for a perfective with constative readings see Hopper 1982:11–12).¹⁵

In relative past/out-of-sequence contexts (see below), the PDE Preterite is often virtually identical in sense to the Perfect when the predicate is an (atelic or telic) event (e.g., *John said he kicked/had kicked Bill*; *John said he read/had read the book in an hour*; *John said he read/had read for an hour*),¹⁶ but not when it is a verb of perception (1e./3j. in Table 4) or a stative predicate: *John said he*

15 How exactly we should formalize this “subset” relationship (cf. §6 below) between the readings of perfect stems and those of perfective stems and simple pasts (as well as the “old anteriors,” discussed below) remains to be worked out. That these cross-linguistically motivated macro-categories—perfective, simple past, and old anterior—may each express multiple aspects is quite clear, to judge by the evidence presented by Bybee et al. (1994:81–87) and Condoravdi and Deo (2015:261–262, 266), among others (cf., e.g., Willi 2018:411–412 on “aoristic drift,” Hopper 1982:11–12, Forsyth 1970:74–76). How exactly they accomplish this is a different matter, which I leave for another occasion.

16 Here, the only difference between the two tenses is that the Preterite is open to a habitual interpretation that precedes or continues up through John’s speech time (*John said he kicked Bill/read (the book) every day*), while a habitual reading of the Perfect must be located before John’s speech time (*John said he had kicked Bill/had read (the book) every day*).

liked Mary means something different than *John said he had liked Mary*, and *John said he lived in Paris* is ambiguous between durative (= ‘John said he was living in Paris’) and constative (= ‘John said he had lived in Paris’) readings.

By far a simple past’s most common interpretation is as completive (expressing perfective aspect). We may wonder, then, how a simple past tense is distinguished from a perfective aspect stem. Simply put, a simple past can be interpreted as durative, while the perfective cannot. Simple pasts thus have one more reading available to them than do perfectives. It makes sense, then, that the “difference between a language that has a simple past and one that has a perfective is the presence or absence of a past imperfective” (Bybee et al. 1994:83; cf. id.:51, 91–95). That is, perfectives differ from simple pasts only in that their durative readings are semantically *blocked* by an imperfective stem that occurs in that language. This entails that a perfective stem cannot exist in a language unless an imperfective also exists in that language (cf. n. 48 below). Simple pasts have no such restriction.¹⁷

Certain other distributional differences between perfectives and simple pasts are given by Bybee et al. (1994). Unlike simple pasts, perfectives are rarely formed to stative predicates and, where they are, they do not have past reference (id.:92–93). Likewise, perfectives are commonly used in non-past or future contexts, whereas simple pasts are not used outside past contexts except in conditionals (id.:95). Finally, while perfectives contrast with imperfectives, simple pasts either co-occur with imperfective markers to signal past imperfective, as in PDE *was sleeping* (id.:85), or they are “used alone to signal both perfective and imperfective past” (id.:95), as in English *slept* (compare perfective *John slept through the night* to imperfective *While John slept, Mary snored*). These distributional facts are in line with the supposition that the PDE Preterite is a simple past and not a perfective. It will be seen in §§ 3–4 below that the same may be said of the IpF. in RV and Homer.

While perfectives and simple pasts are preferred in narrative contexts (Bybee et al. 1994:83–84, Dahl 2010:78), perfects are not: Compare *John iced the*

17 According to Bybee et al. (1994:85), the existence of the past imperfective (type *was x-ing*) in PDE is itself evidence for PDE having a simple past rather than a perfective, as it is composed of imperfective aspect + past tense. The PDE past imperfective is mainly restricted, with some exceptions, to progressive readings (Comrie 1976:32–40), such that it does not block all imperfective readings available to the Preterite. Thus, the PDE Preterite again reveals itself to be a simple past, as it is preferred to the progressive in certain imperfective contexts, such as habitual readings of the type in (9) above. Further evidence that the PDE Preterite is not a perfective is provided by its use in present counterfactuals and “future less vivid” conditionals, which tend not to be represented by perfective morphology cross-linguistically (see Iatridou 2000:235–239, 244–245).

cake. He (then) went shopping with #John has iced the cake. He (then) went/has gone shopping (ex. from Condoravdi and Deo 2015:266). Many languages, however, have a morphological category regularly used in narration (i.e., one that has completive readings) that also has regular (but less frequent) constative readings, thus expressing both perfect and perfective aspect with a single form. The so-called “Perfects” in German and French are cases in point (Condoravdi and Deo 2015:265, Bybee et al. 1994:85, Comrie 1976:53–54). I will refer to such categories as “old anteriors,” following the label assigned to them by Bybee et al. (1994:78–81).¹⁸ These pattern more with perfectives or simple pasts than with perfects (Bybee et al. 1994:81) but differ from perfectives crucially in expressing perfect aspect not just marginally—i.e., in limited pragmatic situations or with certain (stative) predicates (cf. Hopper 1982:11–12, Forsyth 1970:74–76)—but *regularly* (id.:78). They thus represent an “intermediate” stage, in diachronic terms, in the grammaticalization of a perfect stem to a perfective stem or simple past (see further §§ 4.2 and 6 below). It is to this “old anterior” category that I argue the Aor. of Homer belongs (§ 4.2 below), whereas the Aor. of later Greek can more properly be called a perfective.

The **relative past** is simply the perfect aspect (Klein 1994:130–133; Comrie 1976:53, 55–56, 81; cf. Dahl 2010:11) in a particular syntactic situation, namely a dependent clause embedded under a matrix verb that is past-referring. Instead of continuing into the time of speech, here the situation continues to a salient reference point, typically anaphoric to the matrix verb. These may represent past-shifted perfect aspect (resultative or experiential), as in (19), or may stand for past-shifted perfective aspect, as in (20), with the distinction being neutralized in such contexts (Comrie 1976:55; cf. § 5 below).

(19) *I asked them whether they **had** (ever) **met** the Pope.* (underlying perfect: *Yes, we have!*)

(20) *I asked where they **had met** (up) last night.* (underlying perfective: *We met at ...*)

18 Languages that lack a distinct perfect will generally use a perfective or simple past to express constative readings (Comrie 1976:58), often with a special particle that marks the perfective stem as perfect-denoting (id.:59, 81–82), although imperfectives are also compatible at least with the stative and universal readings of the perfect aspect (id.:63–64). Note that aspect is neutralized (i.e., speakers make fewer overt distinctions) in certain embedded contexts, wherein perfect morphology can stand for imperfective aspect in relative past constructions (Iatridou 2000:240), imperfective morphology can be interpreted with perfective aspect in the protasis of counterfactual conditions (id.:236), and so forth.

When the two clauses standing in this relation to one another are independent sentences, the perfect denotes “counter-sequentiality” (Givón 2001:293–296) or “out-of-sequence” narration (Bybee et al. 1994:62), as in (21) and (22).

(21) *I was grumpy all week. I **had** recently **quit** smoking.*

(22) *I was late to work. My alarm **had** **failed** to go off.*

Perfect morphology is often not required to express this reading. A simple past or perfective may also do so (as predicted under their definitions as containing constative readings, though substituting the Preterite for the Perfect seems better in (20) and (22) than in (19) and (21) above). Thus, for (22), certain PDE speakers might equally well say *my alarm didn't go off* with a meaning that is no less “out of sequence.” Yet the perfect does disambiguate the relative past/out-of-sequence reading where the simple past leaves open the possibility of the topic time overlapping with speech time (see Table 4 and discussion above). Thus, *John told us he saw Mary* can mean either that he had already/previously seen her when he told us about it (= constative: 1e. in Table 4 above), or that he was looking at her at the time he announced it to us (= durative: 3j. in Table 4 above).

Taken together, the relative past and out-of-sequence readings constitute what is often referred to as “pluperfect” or “past anterior/perfect.”¹⁹ However, I follow Klein (1994:130–133) and Comrie (1976:53) in regarding the “pluperfect” simply as an expression of perfect aspect that is “past shifted” with respect to a past tense matrix verb.²⁰ As such, it may have all the usual constative readings. Thus, for example, (19) has an experiential reading, while (21) has a resultative reading, both with respect not to utterance time but to the topic time established by the matrix/preceding verb (i.e., *asked* and *was grumpy* respectively). However, as stated above, the distinction between constative and completive readings is neutralized in this context (as it is in certain non-indicative forms: see § 5 below). Thus, in (20) and (22) the morphological Perfect represents a completive reading (perfective aspect).

19 Though often languages that have perfects also have a morphological expression of the relative past/out-of-sequence readings as a past perfect (as in the PDE *had*-Perfects beside the *have*-Perfects), languages are also attested which have a perfect but lack a morphological past perfect (Bybee et al. 1994:62–63).

20 Indeed, in the narrative-present contexts, the present perfect will be used: “And Mrs. Taylor, who's *had* a few by then, says ...” (ex. from Vermant 1983:66). Here, the perfect is used “to point to a prior event that is now relevant to the main narrative sequence” (Bybee et al. 1994:62). Examples (19)–(22) above may be similarly understood.

It is not entirely clear how such facts should be incorporated into a theory of discrete aspect-deonoting stems, but the past and future perfect, as well as the non-finite and modal forms of a perfect stem, certainly have different properties than the present perfect (cf. Stowell 2007 and 2008; Kiparsky 1998:51–54). This being the case, I have everywhere separated the relative past/out-of-sequence perfects from the rest of the attested constative readings in the analysis below (§§ 3–4), so that the reader may easily distinguish the constative readings “proper” from the relative past/out-of-sequence readings, which are more open to skepticism or competing analyses. In Homer and *RV*, the Aor. is regular in relative past and out-of-sequence contexts (see § 3 and § 4.2 below). Many of these are certainly constative of the type in (19) and (21), while others are past-shifted perfectives, of the type in (20) and (22). I treat both types as constative, following the theoretical treatments adopted in this paper and regarding the expression of “past shifting” as proper to the constative/perfect domain, since in either case the situation time partly or fully precedes the topic time (provided by the matrix clause or some other salient context) in a way that is not true of the perfective aspect (cf. above). My analysis, in any case, does not crucially depend on this decision, and I have aimed to be as transparent as possible about what readings are attested and how they figure in to the aspectual classification of the Aor. and Ip_f. below.

3 Evidence from the *R̥gveda*

The Ip_f.²¹ in *RV* regularly has completive readings and is the default tense of sequential narration (Dahl 2010:192–195, 201–209; Kiparsky 1998:33; Hoffmann 1967:151; Delbrück 1897:268 ff., 1876:90 ff.; Whitney 1889:278), as shown in (23).

- (23) *ṛtúr jānitṛī tāsya apās pári makṣú jātá áviśad yásu várd*
tád āhanā abhavat pipyúṣī páyo (RV 2.13.1a–c).

21 I leave aside the distinction between the augmented and augmentless (or injunctive) forms of the Ip_f./Present injunctive and Aor./Aorist injunctive in *RV*. For discussion of this see § 6 below, especially n. 51–52, Table 12 (a)–(b). There are several places where, because of vowel contraction, the presence or absence of an augment is ambiguous. I have in general assumed an augment where the reading is non-modal (these are marked as ambiguous in the spreadsheet discussed in n. 25 below but are treated as indicative for the purposes of this analysis).

'Soma **entered** among the waters, in whom he grows strong. Then he **became** a voluptuous woman, swelling with milk' (tr. Jamison and Brereton 2014:418).

Further, the Ip. does *not* regularly express durative readings (Kiparsky 1998:29, n. 3 (on pp. 56–57); Whitney 1889:201). Given its completive readings, it can minimally be said to express perfective aspect. We will return, however, to the question of whether the Ip. is better regarded as a perfective aspect-denoting stem or a simple past tense stem, since completive readings are proper to either category. Let us first examine the Aorist.

The Aor. in *RV* expresses perfect aspect (Dahl 2010:264–269; Kiparsky 1998:39, 41–43, 45–46; Wackernagel 1926–1928 [2009]:227; Macdonell 1916:345–346; Delbrück 1897:240–241, 278–281, 1888:280–281, 285–286; Whitney 1889:201, 329), as shown by the constative readings in (24) and (25).

RESULTATIVE PERFECT READING:

(24) *ví uṣá āvo divijá rténa* (*RV* 7.75.1a).

'Dawn, born in heaven, **has dawned** widely with her truth' (tr. Jamison and Brereton 2014:977) (cf. (2) above and see Dahl 2010:264–266 for further examples under the scope of *nú* and *nūnám* 'now').

UNIVERSAL PERFECT READING:

(25) *jyóg evá dīrghām táma áśayīṣṭhāh* (*RV* 10.124.1d).

'For a long time indeed you **have lain** in long darkness' (tr. Jamison and Brereton 2014:1601; cf. *RV* 10.124.4ab).

It may express relative past (Dahl 2010:275–277, Gonda 1962:93–102, Delbrück 1888:578–579) or out-of-sequence (Dahl 2010:277–278, Hoffmann 1967:178–179, Tichy 1997:599) readings—either subordinated to (26) or coordinated with (27) a narrative Ip. or Perfect indicative (Pf.) of ordinary sequence.

(26) *ūrdhvó hí ásthād ádhi antárikṣe ádhā vṛtráya prá vadhām jabhāra* (*RV* 2.30.3ab).

'Since²² he **had stood**_[Aor.] upright in the midspace, (then) he bore_[Pf.] his murderous weapon forth against Vṛtra.'

22 On this use of *hí* as a subordinator, see Jamison and Brereton's (2018) online *Rigveda*

- (27) *vádhar jaghāna táviṣībhir índrah*
yá éka íd apratír mányamāna ád asmād anyó ajaniṣṭa távyān (*RV*
 5.32.3b–d).

‘Indra smashed_[pf.] away the weapon (of him) who had been reckoning himself invincible even alone. Then another stronger than him **had been born**_[Aor.]’ (ex. in Dahl 2010:277–278, to which I refer the reader for further examples; cf. n. 41 below on the licit but uninformative rendering of this passage with a simple past ‘was born’).

Kiparsky (1998:39, 41–43, 45–46; 2005:225) attributes the fact that the Aor. is formed only to telic (or “telic/atelic”) predicates to its being a specifically *resultative* perfect, with which predicates that are exclusively atelic would be incompatible and uninterpretable (1998:45). Hence, the alignment of the morphological Aor. with telic predicates need not depend crucially on the existence of a perfective aspect-denoting stem in the proto-language. That is, the traditional perfective/imperfective system reconstructed for PIE is not required to explain the strong tendency of telic roots to build (root) Aor. stems and atelic roots to build (root) Present stems (cf. Willi 2018:28–37, 2007:35–36; Bartolotta 2009). However, the Aor. *does* occasionally seem to have universal readings (Delbrück 1897:278–281, Dahl 2010:289–290), as in (25) above and (30) below. Dahl (2010:290) takes these universal Aors. as further evidence that the Aor. is perfective in *RV*, despite the fact that he himself, earlier in the same work (id.:21–22), describes the universal reading as a type of perfect, not perfective.

It is puzzling that Dahl (2010:301, but cf. 23) characterizes the Aor. in *RV* as denoting perfective aspect, particularly in light of his own evidence: For example, he observes (id.:264–269) that the Aor. regularly expresses “recent past,” which he himself classifies as a type of perfect (id.:83–84).²³ Further, he notes that the Aor. in *RV* “very rarely [has] remote past reference time” (id.:272; similarly Delbrück 1876:86–88, Hoffmann 1967:145–160, Tichy 1997:591–602).²⁴ I

Translation: Commentary to RV 2.30.3; see Dahl 2010:275–276 for secure examples with the subordinators yadā́ and yád ‘when’, and cf. Gonda 1962:93–102 for still more examples.

23 In fact, the “recent past” reading is regarded as a subtype of the *resultative* perfect reading by, e.g., Kiparsky (2002:120, 1998:41–42) and Klein (1994:113). However, an anonymous reviewer notes that this issue is far from settled and that it may indeed be best to keep the two readings distinct. For present purposes, such a fine-grained distinction does not affect the analysis, so long as both are regarded as readings of the perfect aspect (i.e., are constative). I therefore do not distinguish the two readings throughout this paper, but this decision should not be taken to mean necessarily that such a distinction does not exist.

24 A good deal of Dahl’s (2010:23–24) basis for disagreeing with Kiparsky (1998:39, 41–43,

therefore adopt Kiparsky's (1998:39, 41–43, 45–46) analysis here: The Aor. in *RV* expresses *perfect* rather than a perfective aspect (similarly Mumm 2002:183). Thus, as pointed out already by Whitney (1889:329), “it requires accordingly to be rendered by our tense made with the auxiliary *have*.”

As a sample of the tense distribution within the family books, I have collected data from Maṇḍala 11, which—being attributed almost entirely to a single poet, Ḡṛtsamada (Jamison and Brereton 2014:399)—provides us a good synchronic picture of the tense-aspect system in the earliest attested Vedic. These data points were acquired by careful analysis of each non-modal finite verb (indicative and injunctive) in Maṇḍala 11 *in its context*. “Context” was considered at every level: collocation of a verb with its preverb, phrasal or clausal context, coordination with or subordination to other verbs, and the larger contexts of its verse, surrounding verses, hymn, and (where relevant) group of hymns.

As any reader of *RV* will be aware, it is often exceedingly difficult to determine with confidence the precise reading of a particular instance of a verb (see Dahl 2010:1–4 for discussion of the many reasons for this difficulty). Often multiple readings are possible. However, most of these issues arise when the finite verb is injunctive, where the ambiguity lies in deciding whether to interpret the form as having one of several modal readings or one of the readings of the indicative, all of which are available to the injunctive (see Kiparsky 2005 for details). For this reason, I have excluded the injunctives from my analysis here, though the clear disparity in the distribution and frequency of various indicatival readings found among the augmented indicatives beside those of the non-modal injunctives are interesting in their own right (see § 6, n. 51–52 for discussion). Considering only the augmented forms, however, limits the number of possible readings, such that it has been possible to sort all 163 indicative past-tense verbs of Maṇḍala 11 into three groups of readings: constative, completive, and durative. More fine-grained distinctions, such as experiential vs. universal perfect or ingressive vs. terminative perfective are more difficult and

45–46) and Mumm (2002:183) and assuming a perfective/imperfective contrast for the Aor. and Ip. rests on the non-indicative modal forms of the verb, in particular Hoffmann's (1967:44, 105–106) classic treatment of the Aorist and Present injunctive forms in prohibitions with *mā* ‘don't’ as having ‘preventive’ (i.e., perfective) and ‘inhibitive’ (i.e., imperfective) sense respectively. Kiparsky (1998:46) likewise claims that “[t]he clearest aspectual contrast between aorist and non-aorist injunctives appears in prohibitions” (similarly Willmott 2007:106). However, Hoffmann's (1967:105–106) proposal has recently been challenged (Hollenbaugh 2017 and 2018), and the grounds for supposing perfective/imperfective contrast among non-indicative verb forms in *RV* remains dubious (cf. § 5 below).

not sufficiently informative to figure in our analysis (though nearly all constative Aor. readings, including the relative pasts, seem to be resultative, and most completive readings of the Ip_f. are in sequential narration). There is one exception: Where an Aor. (once Ip_f.) is subordinated to a past-referring verb or narrative Present, the sense is most often relative past, and I have given counts for such occurrences separately in Table 5 in row “1a,” which are all included in the total count for constative readings (there do not happen to be any “out-of-sequence” readings in Maṇḍala 11). Recall that the relative past and out-of-sequence readings are a subclass of constative readings, to which the usual range of interpretations is available (resultative, etc.) but, again, not labelled separately in Table 5.

Of principal concern has been giving actual numbers to the statements of the grammarians (Whitney 1889, Wackernagel 1926–1928 [2009], Delbrück 1897, etc.) that “most” or “very many” Aors. have “perfect” readings and to confirm statements by the same grammarians that the Ip_f. is always or nearly always “narrative” and not imperfective in aspect (i.e., lacks durative readings). Where difficult cases arose, say, in deciding between constative and completive readings of the Aor., I have in every case sided with the completive. Note that this “default” runs contrary to the traditional assertions of the grammars (see §1 above) but *is* in line with the assumption that the Aor. was a perfective stem in P(N)IE or even into RV (Dahl 2010:341, e.g.). Since it is precisely this view that my analysis argues against, it makes sense to side with the “perfective hypothesis” in dubious cases, so as to avoid undue bias on my part to the extent possible. Though some Aors. thus placed in the “completive” category might conceivably be interpreted as constative, there does exist an undeniable handful of completive Aors. (cf. n. 26 below).

In deciding on a particular reading, while I have made use of frame adverbs/adverbials (especially those meaning ‘now’ or ‘then’) wherever they occur, these are simply lacking for many examples. Larger context may then be sought: Are there nearby non-past verbs that would suggest present reference time? Is this a ritual action that takes place in the “now” of utterance time (Dawn hymns, for example, always describe the sun as having *just* risen)? Does it occur in a sequential narrative context, conjoined with Ip_fs. or Perfects? Is it past shifted, subordinated to Ip_fs. or Perfects? In the end, however, final decisions come down to philological judgments. Nonetheless, I have not made these judgments on my own: I have consulted multiple translations (above all Jamison and Brereton 2014, from which my readings differ only occasionally and with reluctance), as well as the tense-aspect literature for relevant passages (especially Dahl 2010) or other commentary, especially Jamison and Brereton’s (2018) online *Rigveda Translation: Commentary* to Maṇḍala 11. Finally, and most

TABLE 5 Readings available to Aor. and Ip. in RV II

	Aor. indicative (47)	Ip. indicative (115)
1. constative	87% (41)	8% (9)
1a. relative past	15% (7)	1% (1)
2. completive	13% (6)	92% (106)
3. durative	0	0

importantly, I have sorted the verbs into these three categories in direct consultation with Prof. Jamison. Word by word I presented her with my findings, and, word by word, she responded with detailed notes or verbal discussion—either agreeing, suggesting revision, or, occasionally, revising her own view based on my observations. This was done in an initial read-through of Maṇḍala II, before my current hypothesis had yet been fully formed. Some months later, armed with a revised framework of tense and aspect and a working hypothesis, I went back over each form and discussed many of them again with Prof. Jamison, focusing on the more difficult cases. Though the quality and accuracy of my analysis has profited greatly from Prof. Jamison’s input, I stress again that I am solely responsible for the analysis presented here. The results are given in Table 5.²⁵

In Table 5, the total attestations for each form that have a particular reading are given as (rounded) percentages of the total count for that category, with the number of data points in parentheses. So, about 87% or 41 out of 47 Aors. in RV II have constative readings, and so forth.

What is striking here is that the Aor. seems regularly to have constative readings (characteristic of perfect aspect), with only a handful of completive readings,²⁶ while the Ip. regularly has completive readings characteristic of

25 While there is not space to list every example with sufficient context to demonstrate its reading, I have collected all of these into a spreadsheet which is available online at <https://ucla.academia.edu/IanHollenbaugh>. Readers will find this under the title “Ip. and Aor. in RV II.”

26 That the Aor. in RV has occasional completive readings (Dahl 2010:9–11, 269–272, 290–293; Kiparsky 1998:31–32 “statement of fact”; Hoffmann 1967:155 “Konstatierung”; Gonda 1962:80–92; Delbrück 1876:88) does not disqualify it as a perfect stem (cf. the “bare fact” readings of the Greek Aor. (Wackernagel 1926–1928 [2009]:225)). It is possible for perfects which by no means regularly express completive readings to attest them under certain circumstances, as discussed by Bybee et al. (1994:101–102). These are perfects that cannot meaningfully be classed as old anteriors or perfectives, yet nonetheless can be used in

perfective aspect (with only a handful of other readings and *no* durative readings in Maṇḍala 11). This would lead us to classify the Aor. in *RV* as a perfect stem and the Ip. as a perfective stem.

Since the Ip. does not regularly have durative readings (not one in *RV* 11), it may indeed best align with the perfective aspect-denoting stem as defined in § 2 above. However, the Ip. in *RV* may occasionally have durative readings (Dahl 2010:209–213), as in (28) and (29), referring to unbounded states in the past, as well as perfect (30) and relative past/out-of-sequence (31) readings (Dahl 2010:197–201, Delbrück 1897:269).

(28) *puroḷá ít turváso yáḁsur āsīd* (*RV* 7.18.6a).

‘Turvaśa Yakṣu **was** the offering cake’.

(29) *atiṣṭhan* / *níruddhā āpaḥ* (*RV* 1.32.11ab).

‘The waters **stayed held down**’ (or: ‘**stood still, obstructed**’).

certain contexts not permissible to perfects in other languages. Comrie (1976:54) provides examples in Spanish and Russian. It must be emphasized that the various aspect-denoting categories defined in the literature and adopted here are merely a convenient simplification of a more complex picture. More likely, tense-aspect stems exist on a spectrum, such that we may speak of stems which are regularly perfect denoting (= perfects), perfective denoting (= perfectives), or both (= old anteriors and simple pasts) but should be nonetheless unsurprised to find occasional “leaks” or apparent breaches in regularity. This becomes clearer when we consider the fact that even the stative-resultative category of predicated *tá*-participles in Vedic (Condoravdi and Deo 2015, Jamison 1990) has occasional and unexpected completive readings already in *RV* (Jamison 1990:6–7; cf. Huehnergard 1987 for a semantic analysis of transitive predicate-statives in Akkadian), e.g.: *sakṛd dha dyaúr* ajāyata *sakṛd bhúmīr* ajāyata *pṛśnyā dugdhām sakṛt páyas* (*RV* 6.48.22a–c (popular verse)) ‘Only once was heaven *born*; once was the earth *born*. Only once was the milk of Pṛśni *milked*’ (ex. and tr. Jamison 1990:7). Indeed, one would be hard pressed to find a “pure” aspect stem in any language that *never* has readings not proper to its class. For this reason, the classification of aspect stems is based on the readings they express *regularly* rather than exceptionlessly. In any case, the Aor. will end up as a simple past tense in post-Vedic Sanskrit (Whitney 1889:201, 328), so we should perhaps expect to find some early “leakage” in *RV* into this broader aspectual domain (i.e., with completive readings), which was later expanded to the point of regularity. The much more robust completive use of the Aor. in Homer (cf. § 4.2 below) is an extension of the same “generalizing” tendency, by which a stem gradually gains readings over time (cf. § 6 below). See Bybee et al. 1994:86–87 for possible reasons for this common semantic shift.

- (30) *púnaḥ sám avyad vítatam váyantī madhyá kártor ní adhāc chákma dhí-
rah
út samhāyāsthād ví ṛtūṃr adardhar arāmatih savitā devā āgāt* (RV
2.38.4).

‘Once again the weaver has wrapped up_[Aor.] what was stretched out; in the middle of his work the mindful (worker) has set down_[Aor.] his craft. Having pulled himself together, he [=Savitar] has stood up_[Aor.]. He has always kept_[Ipf.] the seasons separate. As Proper Thinking, god Savitar has come_[Aor.]’ (tr. Jamison and Brereton 2014:457).

- (31) *yáta u áyan tát úd īyur āviśam* (RV 2.24.6d).

‘(The poets) went up to enter there whence they had come’.

This shows that the Ip. is compatible with *any* aspect, as is characteristic of simple pasts but not perfectives.²⁷ Thus, the Ip. may “fill in” for an Aor. in certain contexts, especially where there is no Aor. form available to be built to a particular stem (as with the intensive in (30), the intensive being categorically restricted to the Present stem) or root (as with *√i* ‘go’ in (31)²⁸). It is the Ip., then, and not the Aor. (as is often claimed), which has the broadest temporal reference as a marker of past tense, expressing variously perfective, imperfective, and perfect readings. As we saw above (n. 18), perfective stems or simple pasts are often used to express constative readings in languages that lack a marker or stem specifying perfect aspect (Comrie 1976:58). Since RV has the

27 What is here referred to the “simple past” of Bybee et al. 1994:84–85 is roughly in line with Dahl’s (2010:191–192, 213–216) “neutral aspect” assigned to the Present stem in RV. The simple past does indeed seem necessarily to be “neutral” in aspect, but as I do not consider non-past and modal/non-finite forms here, the term *simple past* seems preferable (cf. § 5 below).

28 The Pf. to *√gam* ‘go’ or the Aor. to *√gā* ‘go’ may also express the relative past meaning ‘had come/gone’: *uśānā yāt parāvāto / ājagann ūtāye kave* (RV 1.130.09de) ‘when you, o sage poet, had come from afar (to the house of) Uśanā for help’ (tr. Jamison and Brereton 2014:300); *ābhīr hī māyā ūpa dāsyum āgān mīhaḥ prā tamrā avapat tāmāṃsi* (RV 10.73.5cd) ‘Because with these (wives of his) he [had come] right up to the Dasyu [=Namuci], to his wives, he scattered forth darkening mists and darkness’ (tr. modified from Jamison and Brereton 2014:1503; cf. also RV 10.61.10cd). What motivates the decision between these three is unclear, but all three are certainly theoretically compatible with relative past readings, as both simple past (Ip. *√i*) and perfect (Pf. *√gam*, Aor. *√gā*) stems allow such readings (on the Pf. as perfect denoting in RV see Dahl 2010:342–372, Kiparsky 1998:39, 41–43, 45–46).

Aor., which *does* mark perfect aspect, it makes sense that this is the preferred form for constative readings, by which the constative readings available to the IpF. are semantically blocked in all *possible* cases. We should expect, as we in fact find, that the IpF. only expresses constative (including relative past/out-of-sequence) readings when there is no viable or convenient Aor. stem available to the desired predicate. This suppletive relationship argues in favor both of the Aor. as a perfect and of the IpF. as either a perfective or simple past (both are equally compatible with this function).

To decide between labeling the IpF. in *RV* as “perfective” or “simple past” is more difficult. In favor of the simple past label is the observation of Bybee et al. (1994:83) that a grammaticalized perfective stem only comes into being when an imperfective stem is found in the same language, blocking its durative readings and restricting the perfective stem to completive/constative readings. Otherwise, the stem will develop as a simple past tense stem, denoting both durative and completive/constative readings with a single morphological form. As there is no grammaticalized means of expressing imperfective aspect at any stage of Sanskrit (Whitney 1889:201),²⁹ and we find at least some examples of IpFs. with durative readings in *RV*, it accords best both with the theory and the evidence to regard the IpF. in *RV* as a simple past tense. Further, the IpF. in *RV* is not used with non-past or future reference, as perfectives are (Bybee et al. 1994:95), and the IpF. built to stative predicates has past reference (see (28)–(29) above), whereas perfectives to stative predicates tend to be non-past (id.:92–93). Moreover, given that the IpF. is the past tense formally corresponding to the Present indicative, which *does* regularly express imperfective aspect (see Kiparsky 1998:39), it seems quite unlikely that the IpF. should exclusively denote perfective aspect (perfectives tend to lack corresponding presents: see Bybee et al. 1994:83).

However, due to the extreme rarity of durative readings of the IpF. in *RV*, in addition to the fact that constative readings of the IpF. are not informative in deciding between the two categories, I will leave open the question of whether the IpF. represents a perfective aspect or a simple past tense category—the distinction not being of crucial importance in this case. What matters is that in

29 However, imperfective aspect may be overtly marked by periphrasis with the present participle when predicated (sc. a form of ‘be’) (e.g., *RV* 2.11.4b: *śubhrām vājram bāhuvor dād-hānāḥ* ‘(We) (are) placing in (your) two arms the lovely mace’), or with the *tá*-participle and the verb *√sthā* ‘stand’ (as in (29) above), along with a few other constructions. Such periphrasis may also refer to past time, making a past progressive (e.g., *RV* 5.32.3c: *yá éka íd apratír mányamāna* ‘[Indra smashed him] who even alone was/had been thinking himself unstoppable’; cf. (27) above).

RV the Ip_f. does not regularly denote imperfective aspect, even as the Aor. does not regularly denote perfective aspect. In all cases, we do not see any sign of the perfective/imperfective contrast that we might expect if such a system existed in the proto-language. Instead, we see a different kind of system, and one with good cross-linguistic parallels. We need look no further than PDE for an analogous set-up: on the one hand, a perfect (of the type *have written*), corresponding to the R̥gvedic Aor., and on the other a preterite (of the type *wrote*), corresponding to the R̥gvedic Ip_f., which may be regarded as perfective or simple past.

4 Evidence from Homer

4.1 *Imperfect indicative in Homer*

It is difficult to maintain that the Ip_f. in Homer is an imperfective aspect-denoting stem, seeing as it very often has readings proper (by the traditional account) to the Aor. tense. While the Ip_f. does frequently express imperfective aspect (i.e., durative readings), a data sample taken from *Iliad* I shows that it has *completive* readings (characteristic of perfective aspect) in roughly 60% of its attestations (see below), whether augmented or not (cf. Willi 2018:385–389; see below n. 51–52, Table 12 (a)–(b)).³⁰ Furthermore, the Ip_f. may be used alongside the Aor. without apparent distinction in sense (Crespo 2014:73–74, Dahl 2010:77–78, Wackernagel 1926–1928 [2009]:235, Goodwin 1889:7–8), as shown in (32)–(34).

- (32) Ζεὺς γὰρ ἐς Ὠκεανὸν μετ' ἀμύμονας Αἰθιοπῆας
 χθιζὸς ἔβη κατὰ δαίτα, θεοὶ δ' ἅμα πάντες ἔποντο (*Il.* 1.423–424).

'For Zeus **went**_[Aor.] yesterday to Oceanus, to the faultless Ethiopians for a feast, and the gods all **followed**_[Ip_f.] with him'.

- (33) ἦ μυρὶ Ἀχαιοῖς ἄλγε' ἔθηκεν,
 πολλὰς δ' ἰφθίμους ψυχὰς Ἀϊδὶ προΐαψεν
 ἡρώων, αὐτοὺς δὲ ἐλώρια τεύχε κύνεσσιν
 οἰωνοῖσι τε πᾶσι, Διὸς δ' ἐτελείετο βουλή (*Il.* 1.2–5).

30 On completive readings of the Ip_f. in Classical Greek see, e.g., Bakker 2010:161–166, Rijksbaron 2002:11–14, Smyth 1956:427.

‘[The wrath] which **inflicted**_[Aor.] countless woes on the Achaeans, and **sent forth**_[Aor.] many valiant souls of heroes to Hades, and **made**_[Ip.] them prey for dogs and all birds, whereby the plan of Zeus **was accomplished**_[Ip.].’

- (34) *ὠιχόμεθ' ἐς Θήβην, ἱερὴν πόλιν Ἡετίωνος,
τὴν δὲ διεπράθομεν τε καὶ ἤγομεν ἐνθάδε πάντα* (*Il.* 1.366–367).

‘We **went**_[Ip.] to Thebes, the holy city of Eetion, and then we **sacked**_[Aor.] it and **led**_[Ip.] hither all (its spoils).’

It is often claimed that the Ip. with perfective sense is “distributive,” the action applying multiply to either a plural subject or plural object or both (Gildersleeve and Miller 1900:92, e.g.). Yet this usage is not unique to the Ip. but is also common with the Aor., as in (35), and hence is not a reliable way of differentiating Ip. from Aor. usage (see similarly Crespo 2014:76–78).

- (35) *καὶ τὰ μὲν εὖ δάσσαντο μετὰ σφίσιν υἱες Ἀχαιῶν* (*Il.* 1.368).

‘And the sons of the Achaeans duly **divided** these things among themselves.’

Compare also *ἀλλήλοισι κέλευσον* (*Il.* 2.151) beside *ἀλλήλοισι κέλευσαν* (*Od.* 6.211) ‘they (each) gave commands to one another’. Further, distributive Aors. may co-occur with distributive Ips., both being complete in sense, as in (36).

- (36) *μίστυλλον τ' ἄρα τᾶλλα καὶ ἀμφ' ὀβελοῖσιν ἔπειραν
ῶπτησάν τε περιφραδέως, ἐρύσαντό τε πάντα* (*Il.* 1.465–466).

‘They **cut up**_[Ip.] the rest and **pierced**_[Aor.] (the pieces) on spits and **roasted**_[Aor.] (them) carefully and **drew**_[Aor.] all of them off (the spits)’ (cf. Goodwin 1889:7–8 on this example).

Another way of distinguishing Aor. and Ip. stems with apparently identical readings has been to take pragmatics into consideration. Under such analyses (e.g., Sicking 1991; cf. Crespo 2014:75–76), the verbal action marked by the Ip. is said to be “backgrounded,” while that of the Aor. is “foregrounded”—a known function of imperfective and perfective stems cross-linguistically (Forsyth 1970:9–10, Hopper 1982:9). Yet there are many counter-examples to this in Homer, such as (37), where we find five Ips., all of which further the nar-

rative sequence in chronological order, a hallmark of perfective aspect (Dahl 2010:78, Forsyth 1970:64–66). The sequence of actions does not culminate with a foregrounded Aor., as we should expect. Instead, the Ipfs. are capped off by a summarizing Ipf. in complexive or durative meaning.

- (37) οἱ μὲν ἔπειτ' ἀναβάντες ἐπέπλεον ὑγρὰ κέλευθα,
 λαοὺς δ' Ἀτρείδης ἀπολυμαίνεσθαι ἄνωγεν.
 οἱ δ' ἀπελυμαίνοντο καὶ εἰς ἄλλα λύματα ἔβαλλον,
 ἔρδον δ' Ἀπόλλωνι τεληέσσας ἐκατόμβας
 ταύρων ἢ δ' αἰγῶν παρὰ θῖν' ἀλὸς ἀτρυγέτοιο·
 κνίσῃ δ' οὐρανὸν ἵκεν ἑλισσομένη περὶ καπνῶι.
 ὧς οἱ μὲν τὰ πένοντο κατὰ στρατόν· (Il. 1.312–318).

'They, having embarked, sailed_[IpF.] over the watery paths, and the son of Atreus ordered_[PF.] the troops to wash themselves; so they washed themselves_[IpF.] and (then) threw_[IpF.] the dirties into the sea; then to Apollo they sacrificed_[IpF.] the perfect hecatombs of bulls and goats by the shore of the barren sea, and the savor reached_[IpF.] heaven twirling around the smoke. Thus they labored at/were laboring at_[IpF.] these things throughout the camp'.

In (38), we find a host of Aors. in sequential narration (= completive) which are bookended by two Ipfs. (ἵκανεν 'came' and τίθει 'placed'). Here, the foregrounded action certainly seems to be the placing of Cryseis in the hands of her father. Yet the usage of Aor. and IpF. is precisely the reverse of what it ought to be if the IpF. obligatorily served a backgrounding function in the discourse. The litany of backgrounded actions by which the troops disembark all occur in the Aor. (except the IpF. ἐκ βαῖνον 'they stepped/went out'), yet these apparently serve only to set up the culminating action, which occurs in the IpF. (τίθει 'he placed'; on this verb cf. Napoli 2006:197).

- (38) αὐτὰρ Ὀδυσσεύς
 ἐς Χρύσην ἵκανεν ἄγων ἱερὴν ἐκατόμβην.
 οἱ δ' ὅτε δὴ λιμένος πολυβενθέος ἐντὸς ἵκοντο,
 ἰστία μὲν στείλαντο, θέσαν δ' ἐν νηϊ μελαίνῃ,
 ἰστόν δ' ἰστοδόκηι πέλασαν προτόνοισιν ὑφέντες
 καρπαλίμως, τὴν δ' εἰς ὄρμον προέρεσαν ἐρετμοῖς.
 ἐκ δ' εὐνὰς ἔβαλον, κατὰ δὲ πρυμνήσι' ἔδησαν,
 ἐκ δὲ καὶ αὐτοὶ βαῖνον ἐπὶ ῥηγμῖνι θαλάσσης,
 ἐκ δ' ἐκατόμβην βῆσαν ἐκηβόλῳ Ἀπόλλωνι·

ἐκ δὲ Χρυσῆϊς νηὸς βῆ ποντοπόροιο.
 τὴν μὲν ἔπειτ' ἐπὶ βωμὸν ἄγων πολύμητις Ὀδυσσεύς
 πατρὶ φίλῳ ἐν χερσὶ τίθει, καὶ μιν προσέειπεν·
 (...) ὥς εἰπὼν ἐν χερσὶ τίθει, ὃ δὲ δέξατο χαίρων
 παῖδα φίλην (*Il.* 1.430–441, 446–447).

'But Odysseus **came**_[Ip.f.] to Cryses leading the sacrificial hecatomb. And just when they **had come**_[Aor.] within the very deep harbor, (first) they **drew**_[Aor.] the sails, then they **put**_[Aor.] them in the black ship, then they **brought**_[Aor.] the mast onto the mast-holder having lowered it with the forestays swiftly, and they **rowed**_[Aor.] **forth** with oars to its anchorage. Then they **cast**_[Aor.] **out** the mooring-stones, and they **tied**_[Aor.] it **down** with stern-cables; then they themselves also **went**_[Ip.f.] **out** upon the surf of the sea, and they **drove**_[Aor.] **out** the hecatomb for far-shooting Apollo; and Cryseis **went**_[Aor.] **out** from the sea-faring ship. Thereupon, crafty Odysseus, leading her to the altar, **put**_[Ip.f.] her in the hands of her dear father and said to him: (...) Thus having spoken he **put**_[Ip.f.] her in his hands, and rejoicing he **received**_[Aor.] his dear daughter'.

The repetition “τίθει ... τίθει” seems to denote the beginning and end of the action (i.e., with ingressive and egressive (= terminative) readings respectively), acting as frames for the direct speech that intervenes (καὶ μιν προσέειπεν ... ὥς εἰπὼν ...). In both cases, the meaning must be completive (distinctly *not* durative ‘was putting’), given the surrounding narrative context marked by the many (completive) Aors. The former τίθει is further limited in time by ἔπειτ’ ‘then, thereupon’, while the latter τίθει is followed in close conjunction by ὃ δὲ δέξατο ‘and he received’, which must be read as completive.

Bakker’s (2010:164–166) pragmatic account allows for Aors. in temporal clauses to be “backgrounded” in the discourse, but he claims that the discourse function of the Aor. is to express “the assertion of facts from the past in function of the speaker’s interests in the present” (id.:163). It is unclear what this would mean for (38), in which the “speaker” (Homer) does not seem to have any particular investment in one event over the other, particularly with regard to the departure of the men from the ship (Ip.f. ἐκ βαῖνον) vs. that of Cryseis (Aor. ἐκ βῆ) or the giving (Ip.f. τίθει) and receiving (Aor. δέξατο) of Cryseis. It might be supposed that the Ip.f. in these cases indicates that the verbal action continues up through the time of speech or narration, but Crespo (2014:74–75) explicitly rejects this as a necessary component of the meaning of the Ip.f. Still, the repeated sequence of the same lexeme βαῖνον ... βῆ in (38)—the first Ip.f. and

the second Aor.—speaks against the Crespo's (2014:71, 81) account, who claims that in such cases of narrative alternation the Aor. must always precede the IpF. in the discourse (though this rule is meant to account only for such repetition in the *singular*; yet his example (9) (id.:75), with a singular verb, seems similarly problematic).

And so, in the face of alternative explanations, I repeat Wackernagel's (1926–1928 [2009]:235) observation here: “We simply have to recognize ... that the imperfect was often the narrative tense.”

That the time of the situation (TSit) is fully included in the time referred to (TT) (i.e., is perfective in aspect) may be made reasonably clear by the presence of adverbs, adjectives (cf. *χθιζός* ‘yesterday’ in (32) above), or participles that indicate the time interval to which the action of the verb is confined, as in (39) and (40).

(39) *αὐτίκ' ἐγὼ πρῶτος κελόμην* θεὸν ἰλάσκεσθαι (*Il.* 1.386).

‘At once I first bade them appease the god’.

(40) ἦ γὰρ Ἀχιλλεύς
πέμπων μ' ὦδ' ἐπέτελλε μελαινάων ἀπὸ νηῶν (*Il.* 24.779–780).

‘For truly Achilles **commanded** me thus upon sending me forth from the black ships’.³¹

Further, it is a curious fact of Homer that the IpF. does not have present reference in conditional clauses, as it does in later Greek (Smyth 1956:518), but only refers to the past (id.:520, Goodwin 1889:96), as in (41). This makes little sense if the IpF. in Homer is an imperfective aspect-denoting stem, as past imperfectives tend cross-linguistically to express counterfactuality only in the *present* (cf. Iatridou 2000:239, 244–245).

(41) οὐδ' ἄν πω *χάζοντο* κελεύθου δῖοι Ἀχαιοί,
εἰ μὴ Ἀλέξανδρος ...
παύσεν ... Μαχάονα (*Il.* 11.504–506; cf. *Il.* 24.220).

31 Compare the finite equivalent in narration, with two IpFs.: *ἀλλὰ κακῶς ἀφίει, κρατερὸν δ' ἐπὶ μῦθον ἔτελλεν* (*Il.* 1.379) ‘But he **sent** him **away** harshly, and he **laid** a stern command upon him’.

'But not even yet **would** the noble Achaeans **have given ground**_[IpF] from their course, if Alexander had not ... stopped_[Aor.] ... Machaon'.

Where an Aor. is formed to the same verb that attests an IpF. with completive sense that Aor. is generally not completive (or not exclusively completive) in sense but has some other function in the semantic domain of the Aor. (i.e., constative readings). Thus, beside the narrative (= completive) senses of the IpFs. τεύχε 'made' and ἐτελείετο 'was accomplished' in (33) above, we find the corresponding Aors. used to express all manner of constative readings (i.e., perfect aspect), as seen in (42)–(45), though completive readings are also found, as in (46).

- RESULTATIVE PERFECT (also: *Il.* 14.338):

(42) τὸν δὲ θεοὶ μὲν τεύξαν, ἐπεκλώσαντο δ' ὄλεθρον
ἀνθρώποις, ἔν' ἔησι καὶ ἐσσομένοισιν αἰοιδή (*Od.* 8.579–580).

'For the gods **have brought about** [the doom of Troy] and spun ruin for humans, so that there may be song also for those yet to be born'.

- EXPERIENTIAL PERFECT (also: *Il.* 12.222, 23.149):

(43) ἐσθλὸν δ' οὐτέ τί πω εἶπας ἔπος οὔδ' ἐτέλεσσας (*Il.* 1.108).

'And as yet you have neither spoken_[Aor.] any good (word) nor **have** you **effected** (it)'.

- RELATIVE PAST (also: *Il.* 6.314, 14.166; *Od.* 7.235, 8.276):

(44) αὐτὰρ ἐπεὶ δὴ τεύξε σάκος μέγα τε στιβαρόν τε (*Il.* 18.609).

'Then, when he **had wrought** this shield, both great and heavy'.

(45) μισθοῦ χωόμενοι, τὸν ὑποστάς οὐκ ἐτέλεσεν (*Il.* 21.457).

'[We were] angry about the wages, which, having promised (to us), he **had not accomplished**'.

- COMPLETIVE:

(46) τεύξ' ἄρα οἱ θώρηκα φαινότερον πυρὸς ἀγύης (*Il.* 18.610).

'Then he **wrought** for him a corselet brighter than fire in its shining'.

Under this analysis, we may now explain certain pairs which have eluded explanation, having apparently identical meaning in the Aor. and IpF., by observing that the Aor. is in fact preferred in contexts of present reference (i.e., constative readings). Compare (47) and (48), where the constative reading is salient in the Aor. *ἐκέλευσα* 'I have (now) ordered', but not admissible in the IpF. *ἐκέλευον* 'I ordered' (cf. (39) above).³²

– CONSTATIVE READING AVAILABLE (AOR.):

- (47) τοῦνεκα νῦν αὐτός τ' ἀναχάζομαι ἢ δὲ καὶ ἄλλους
Ἀργείους ἐκέλευσα ἀλγήμεναι ἐνθάδε πάντας (*Il.* 5.822–823).

'Therefore now I myself am giving ground and **have ordered** all the rest of the Argives to be gathered here likewise'.

– CONSTATIVE READING NOT AVAILABLE (IPF.):

- (48) ἦ μάλα δὴ τέθνηκε Μενoitίου ἄλκιμος υἱός,
σχέτλιος· ἦ τ' ἐκέλευον ἀπώσάμενον δῆιον πύρ
νῆας ἔπ' ἄψ ἰέναι (*Il.* 18.12–14).

'Surely the valiant son of Menoetius is dead, the stubborn man; yet surely I **ordered** him to return again to the ships upon having thrust back the destructive fire'.

As Goodwin (1889:7–8) notes, several verbs seem to have no semantic distinction between their Aor. and IpF. forms: "Thus βαῖνον and βῆ are used without any perceptible difference in *Il.* 1, 437 and 439" (cf. (38) above) both with ἐκ 'out' and both meaning 'went forth, stepped out' in a narrative context (cf. Smyth 1956:427 and Rijksbaron 2002:11–14 on the quite different use of the IpF. in narratives of later Greek). Other such verbs in the *Iliad* noted by Goodwin (1889:7–8) are: βάλλετο (2.43) ~ βάλετο (2.45), θῆκεν (23.653) ~ τίθει (23.656), δῶκε (7.303) ~ δίδου (7.305), ἔλιπεν (2.106) ~ λείπε (2.107) (but cf. Friedrich 1974:15). To this I would add (at least) τίκτω 'beget' and τρέφω 'rear', as well as ἵστημι 'stand', with ingressive sense (cf. Rijksbaron 2002:17–18, 22–23) available to both tenses: IpF. παρ-ίστατο (*Il.* 16.2) 'drew nigh to, came to stand next to' beside Aor. στή (δ' ὀπι-θεν) (*Il.* 1.197) 'came to stand, took position (behind [him])'.³³

32 Other such pairs include: Aor. ἤκουσα (*Il.* 1.396) 'have heard/listened to' beside IpF. ἤκουον (*Il.* 8.4) 'listened (to)', Aor. ἀπειλήσαν (*Il.* 2.665) 'had threatened' beside IpF. ἀπειλήτην (*Od.* 11.313) 'threatened (to)'.

33 Other examples of this type include: IpF. ἡμείβετο (*Il.* 1.121, etc.) 'answered' beside Aor.

Certain verbs are found only in the Ip. in Homer, but *never* have imperfective meaning (Wackernagel 1926–1928 [2009]:222–224), particularly verbs of speaking (Delbrück 1897:281, n. 1), such as (προσ-)ἔφη (*Il.* 1.84, 1.584, etc.)/(ἔ)φάτ(ο) (*Il.* 1.33, 1.188, etc.) ‘said’ and (προσ-)ηὔδα (*Il.* 1.92, 1.201, etc.) ‘answered’ (for such cases in Classical Greek cf. Rijksbaron 2002:18–19).³⁴ Wackernagel (1926–1928 [2009]:223–224) claims that predicates like φημί ‘say’ and νέομαι ‘return’ are inherently telic and hence do not (need to) build Aor. stems, since they express perfective aspect automatically, by their lexical semantics. To refer to past time they build only an Ip. as a kind of default. Conversely, Wackernagel (1926–1928 [2009]:222–223) suggests that verbs like κείμαι ‘be lying’, ἥμαι ‘be sitting’, and εἰμί ‘be’ do not build Aor. stems because they, as state predicates, are lexically specified for durativity (i.e., are necessarily atelic), and so are incompatible with the Aor. (be it perfect- or perfective-denoting).

If this is so, then we must understand the Ip. to be the default or semantically unmarked past-referring stem for Homeric Greek. If it were otherwise, we should expect that lexically telic predicates like φημί build an Aor. stem as a matter of course. More importantly, if the Ip. truly did represent an imperfective aspect-denoting stem, telic-restricted predicates should be uninterpretable in combination with it (unless in a “coerced” durative meaning, which we do not find). So, by the traditional account, not only should φημί and νέομαι default to the Aor. for completive/constative readings, they should lack Ip. forms altogether or, in their Ip. forms, ought to be “coerced” into having some shade of durative meaning such as ‘was saying/returning’ or ‘used to say/return’, yet these Ips. have instead only completive or constative readings. See Napoli 2006:178–181 on the problems with Hoffmann’s (1970) proposal that φημί has no Aor. because it derives from a durative root meaning ‘speak, talk’ rather than ‘say’ (NB: just the opposite of Wackernagel’s (1926–1928 [2009]:223–224) claim!). It is true that φημί is a *verbum dicendi*, which are known to interact with aspect differently than other verbs (see, e.g., Napoli 2006:173–181, 196). Yet if “verbs of communication tend to be preferentially employed in the imperfective aspect” (id.:181), we are left wondering why the Aor. εἶπον ‘(have) said’ does

ἀμείψατο (*Il.* 4.403) and ἡμείψατ(ο) (*Il.* 23.542) ‘answered’, Ip. ὀφείλλεν (*Il.* 1.353) ‘ought’ beside Aor. ὀφείλες (*Il.* 1.415) ‘ought’.

34 ἔζετ(ο) (*Il.* 1.48, etc.) ‘sat down’ may well be the Ip. of ἔζομαι (cf. κατ’ ... ἔξει (*Od.* 10.378) ‘are you sitting down?’) and as such would be another example of this type. However, since this form is generally analyzed as either a reduplicated (*LIV*²:514) or simple (augmented) thematic Aor. (Cardona 1960), I have left it out of consideration in the present analysis (NB: its inclusion in the data of either category would not significantly affect the conclusions here presented).

not occur in the Ip_f., despite the seemingly identical value of the two verbs (Jacquinod 1990:247).

Against this complicated picture, we find instead the Ip_f. expressing durative readings with certain kinds of predicates (i.e., states/activities) but completive or constative readings with other kinds of predicates (i.e., achievements/accomplishments), where the Ip_f. morphology itself neither specifies for nor excludes either predicate type. Under Wackernagel's (implicit) view, then, an Aor. is predicted to be built only when the predicate is both *compatible* with non-durative readings (unlike *κείμαι* 'be lying', etc.) and *not lexically restricted* to non-durative readings (unlike *φημί* 'say' and *νόμομαι* 'return'). Thus, the Ip_f. to *atelic* predicates that lack Aor. stems are open only to durative readings, relying on suppletion with other verbal roots to fill out the missing senses ('lie down', etc.; see Wackernagel 1926–1928 [2009]:223). But the Ip_f. to *telic* predicates that lack Aor. stems are open to either completive readings (e.g., *ἔφατ(ο)* (*Il.* 1.33, etc.) 'said') or constative readings (e.g., *νόμην* (*Od.* 4.585) 'have returned'; for the reading see Wackernagel 1926–1928 [2009]:224).³⁵ When an Aor. to some root stands in a suppletive relationship to a root of similar meaning that only builds an Ip_f., the Aor. is preferred for constative readings, blocking these senses for their counterpart in the Ip_f. This is made quite clear in (49), where the Ip_fs. built to *φημί* 'say' (i.e., *προσέφη* and *ἐφάμην*) have completive readings ('said'), while the Aor. *ἔειπες* (built to the root (F)έπ- 'speak') is used to convey the constative readings ('have spoken/said').

- (49) τὸν δ' ἄρ' ὑπόδρα ἰδὼν προσέφη κορυθαίολος Ἑκτωρ·
 "Γλαῦκε, τίη δὲ σὺ τοῖσδε ἔων ὑπέροπλον ἔειπες;
 ὦ πόποι, ἦ τ' ἐφάμην σε περὶ φρένας ἔμμεναι ἄλλων
 τῶν ὅσσοι Λυκίην ἐριβόλακα ναιετάουσιν·
 νῦν δέ σε' ὠνοσάμην πάγχυ φρένας, οἷον ἔειπες" (*Il.* 17.169–173).

Then, having frowned, Hector of the flashing helmet **said to**_[Ip_f.] him:
 "Glaucus, why **have you, such as you are, spoken**_[Aor.] insolently? Alas,

35 This is different from the situation in Latin—a language in which perfective/imperfective stem contrast is quite clear—where we find similar verbs with defective paradigms which, nonetheless, do *not* use the Ip_f. to convey completive readings. For instance, *inquit* and *ait* are used to mean 'says' or 'said' (as Present or Pf.), while the corresponding Ip_fs. (*inquiēbat* and *aiēbat*) can *only* mean 'was saying, used to say'. Conversely, in Latin, Pf. stems are built even to state predicates, such as 'be': cf. Pf. *fuī* 'was, has been' beside Ip_f. *erat* 'was, used to be'. On imperfective aspect stems interpreted as completive/perfective see Napoli 2006:180–181; Iatridou 2000:235–242, 254–263; Hopper 1982:12–13. On the classification of (ἐ)φη 'said' as an Ip_f. solely based on the fact that it has a corresponding root-Present *φημί* (unlike (ἐ)βη 'went' or (ἐ)στη 'stood'), see Strunk 1994:421.

truly I **thought**_[IpF.] that in wit you were above (all) others that dwell in rich-soiled Lycia; but **now** I **have scorn**_[Aor.]³⁶ of your wits entirely, at what manner of thing you **have said**_[Aor.].”

In this way, the view endorsed here—that the Aor. is a kind of perfect-denoting category and the IpF. is often perfective-denoting—is able to explain the usage of many Aors. and IpFs. in Homer in a way that does not rely on supposition of the “original” (i.e., reconstructed) actionality of the roots in question (Hoffmann 1970), nor on a synchronic analysis that requires certain roots to lack Aors. because they are *telic* (φημί ‘say’ and νέομαι ‘return’) and other roots to lack Aors. because they are *atelic* (κεῖμαι ‘be lying’, ἥμαι ‘be sitting’, and εἰμι ‘be’) (Wackernagel 1926–1928 [2009]:222–224), while yet other verbs of similar or identical meaning lack *IpFs.* because they are *telic* (εἶπον ‘said’). Further, though I do not doubt the cross-linguistic tendency of verbs of communication to be built to an imperfective stem with apparently perfective meaning (Napoli 2006:196), we are able to avoid the still problematic issue of why Aors. to verbs of communication are attested alongside the IpFs. in Homer (id.:178–181) and even offer an explanation for it by observing in the text a tendency for Aors. across the board—be they *verba dicendi* or otherwise—to have constative or completive readings, while the IpFs. have completive or durative readings. Thus, εἶπον means ‘said’ (completive) or ‘have said’ (constative), while the IpF. forms of φημί mean ‘said’. The partial overlap in their meanings (i.e., the completive reading ‘said’) is predicted as it is attested, and the lack of durative readings in the IpF. forms of φημί (‘was saying’, ‘used to say’, etc.) is not problematic, as it is for the other accounts, since the IpF. is understood to be a simple past, a category which favors completive readings.

Finally, the IpF. sometimes has readings proper to the Aor. (i.e., constative) (Delbrück 1897:269, Friedrich 1974:15), such as resultative (e.g., νεόμην (*Od.* 4.585) ‘have returned’, discussed above) and relative past/out-of-sequence, as in (50)–(52).³⁷

- (50) τὸν δ’ ἔλιπ’ αὐτοῦ
 χωόμενον κατὰ θυμὸν ἐϋζώνοιο γυναικός,
 τήν ῥα βίηι ἀέκοντος ἀπηύρων (*Il.* 1.428–430).

36 This is a possible example of the stative perfect reading of the Aor. (cf. (58) and (66) below and § 2 above).

37 Out-of-sequence readings of the IpF. are attested rarely with frame adverbs: νῦν ἐφάμην (*Il.* 8.498) ‘Now, I had intended’.

'And there she left_[Aor.] him angry at heart about the fair-girdled woman, whom by force they **had taken**_[Ipf.] from him unwilling'.

- (51) Ἐκτωρ μὲν Πάτροκλον ἐπεὶ κλυτὰ τεύχε' ἀπηύρα,
εἴλχ' (*Il.* 17.125–126).

'But Hector, when he **had stripped**_[Ipf.] from Patroclus the glorious armor, tugged at_[Ipf.] (him)'.

- (52) ὥς ἔφεπε κλονέων πεδίον τότε φαίδιμος Αἴας,
δαΐζων ἵππους τε καὶ ἀνέρας. οὐδέ πω Ἐκτωρ
πεύθετ', ἐπεὶ ῥα μάχης ἐπ' ἀριστερὰ μάρνατο πάσης (*Il.* 11.496–498).

'Thus glorious Ajax, routing (them), drove_[Ipf.] (them) over the plain at that time, slaying both horses and men. But Hector **had not yet learned**_[Ipf.] (about this), since he was fighting_[Ipf.] on the left of the whole battle' (similarly, cf. *Il.* 5.702, 13.521, 17.377, 22.437).

Such facts make good sense if the Ip. is a simple past or perfective stem, which typologically can and do have constative readings available to them (cf. § 2 above; cf. Condoravdi and Deo 2015:266, Comrie 1976:53, 58), but make little sense if the Ip. is truly an imperfective stem in Homer.

This is not to deny that the Ip. in Homer has durative readings. It frequently does, as in (53) (and cf. μάρνατο 'was fighting' in (52) above).

- (53) ἀλλ' οὐκ Ἀτρεΐδῃι Ἀγαμέμνονι ἦνδανε θυμῷ (*Il.* 1.24).

'Yet this **did not please/was not pleasing** to the heart of Agamemnon'.

Remarkably, however, taking Book I of the *Iliad* as a sample, I have found that the Ip. has completive readings 59% (84/142) of the time, while the canonical durative readings account for just 39% (56/142) of attestations (excluding ἔζομαι and κλύω,³⁸ cf. n. 34 above).³⁹ The Ip. is also marginally compatible with

38 Though often interpreted as an Ip., ἔκλυε- is properly an Aor. (*LIV*²:334), having accordingly regular constative meaning, e.g.: ἡμὲν δὴ ποτ' ἐμέο πάρος ἔκλυες εὐξαμένοιο (...) ἦδ' ἔτι καὶ νῦν μοι τόδ' ἐπικεῖρήνον ἐέλδωρ (*Il.* 1.453–455) 'As you **have heeded** me praying ever before (...) still even now fulfill this desire for me'. Occurrences of this verb in *Iliad* I are therefore considered with the Aor. data in § 4.2 below.

39 When in doubt about which reading to interpret for a particular instance of a verb, I have,

constative readings, in 1% (2/142) of attestations. Note that most of the constative readings that might be available to the Ip_f. are semantically blocked by the Aor., which is the more specified past category (cf. Kiparsky 1998:30, 43–45).⁴⁰

The Ip_f. in Homer thus aligns better with what in the semantic literature is technically referred to as a simple past (cf. § 2 above)—a category which has both completive *and* durative readings available to it (Bybee et al. 1994:84–85, 91–95), as well as marginal constative readings (Comrie 1976:53, 58), depending on predicate and context. While perfectives are also marginally compatible with constative readings, they are not compatible with durative readings (Condoravdi and Deo 2015:265–266). Since the Ip_f. in Homer does have durative readings in a significant portion of attestations (~ 40%), it cannot be a perfective. Only the simple past tense category is broad enough to encompass the full range of readings available to the Ip_f. in Homer. This is summarized in (54).

- (54) **IMPERFECT IN HOMER = SIMPLE PAST** (cf. Bybee et al. 1994:81–87):
- ✓ Regularly expresses both completive and durative readings, depending on predicate and context.
 - ✓ Has constative readings, depending on predicate and context.
 - ✓ Is not restricted to durative readings, as imperfective stems are (id.:125–126).
 - ✓ Has durative readings, which perfective stems lack (id.:84–85).

This is not unlike the PDE Preterite which likewise is regularly completive but not infrequently has durative readings and is compatible with constative readings, including relative past (cf. § 2 above).

as a rule, assigned the reading that accords with the traditional account (rather than my own) for that stem. Thus an Aor. is by default counted as completive unless there is good reason to read it as constative, and the Ip_f. is assumed to be durative unless there is good reason to read it as completive. This approach is meant to help avoid undue interpretation bias.

- 40 As with *RV* 11, these data points were obtained by careful study of each finite verb (with or without augment) in context, with all the same approaches, procedures, and cautions discussed in § 3 above (but without consultation with Prof. Jamison). The interpretive problems of the injunctive in *RV* are not met with in Homer, such that it has been possible to include the augmentless past tenses along with the augmented ones (I find no significant difference in the distribution of readings attested by the augmented forms as opposed to the augmentless ones, but cf. n. 52 below). While there is not space to list every example with sufficient context to show its reading, I have collected all of these into two spreadsheets, which are freely available online at <https://ucla.academia.edu/IanHollenbaugh>. Readers will find one document for each tense, under the titles “Ip_f. in Iliad 1” and “Aor. in Iliad 1” respectively.

4.2 *Aorist indicative in Homer*

Similarly problematic is the case of the Aor. in Homer. It does not, in fact, seem to fit well with the perfective category to which is almost universally assigned in the literature (cf. §1 above). On the one hand, it does not stand in contrast to an imperfective stem, as we have just seen that the Homeric Ip.f. is a simple past. A contrastive imperfective stem, according to Bybee et al. (1994:83), is a requisite of a grammaticalized perfective stem. More importantly, although the Aor. does frequently express perfective aspect (i.e., completive readings), a data sample taken from *Iliad* I shows that it has constative readings (characteristic of *perfect* aspect) in nearly 40% of its attestations (see below), whether augmented or not (cf. Willi 2018:368–376 and below n. 51–52, Table 12 (a)–(b)).

That the Aor. has constative readings in Homer is relatively uncontroversial, being discussed at some length by Delbrück (1897:280–281) and Wackernagel (1926–1928 [2009]:227), both of whom compare it to the Vedic Aor. in this meaning. (For the marginal existence of this reading in Classical Greek, cf. Rijksbaron 2002:28–29, 36–37 and Bakker 2010:161–166). Among Delbrück's examples is (55), in which we find a resultative reading (βουλεύσατο 'has devised') as well as a relative past reading (cf. Rijksbaron 2002:20) in the temporal ἐπεί-clause (ῥῥλεσα 'have destroyed', anterior with respect to ἰκέσθαι 'to return').

- (55) νῦν δὲ κακὴν ἀπάτην βουλεύσατο, καὶ με κελεύει
 δυσκλέα Ἄργος ἰκέσθαι, ἐπεὶ πολὺν ῥῥλεσα λαόν (*Il.* 2.114–115).

'But now he **has devised**_[Aor.] cruel deceit and orders_[Present] me to return in disgrace to Argos after I **have destroyed**_[Aor.] much of the host.'

An out-of-sequence reading (cf. Rijksbaron 2002:20) is seen in (56), and both out-of-sequence and relative past in (57).

- (56) ἄλοχος δ' οὐ πῶ τι πέπυστο
 Ἑκτορος· οὐ γάρ οἱ τις ἐτήτυμος ἄγγελος ἐλθὼν
 ἤγγειλ' (*Il.* 22.437–439).

'But the wife of Hector was not yet aware_[Pluperfect] of anything; for no true messenger, having come, **had reported**_[Aor.] to her'.

Here, the Pluperfect πέπυστο denotes the state that would result from the Aor. ἤγγειλ(ε), which logically precedes it but linearly follows as an explanatory aside signaled by γάρ 'for'.

- (57) τοῖσι δὲ Νέστωρ
 ἡδυεπὴς ἀνόρουσε (...) τῶι δ' ἤδη δύο μὲν γενεαὶ μερόπων ἀνθρώπων
 ἐφθίαθ', οἳ οἱ πρόσθεν ἅμα τράφον ἢ δ' ἐγένοντο
 ἐν Πύλῳ· ἡγαθέηι, μετὰ δὲ τριτάτοισιν ἀνασσεν (*Il.* 1.247–252).

'And among them sweet-speaking Nestor arose_[Aor.] (...) In his time two generations of mortal men had already passed away_[Aor.], who had been born_[Aor.] and raised_[Aor.] with him before in sacred Pylos, and he was [currently] ruling as king_[Ipf.] among the third'.

The Aor. may be coordinated with a Pf. to the same verb, with similar meaning. In (58), the Pf. ἔοργε is experiential, referring to a series of actions leading up to the time of utterance and assigning a (characteristic) attribute to its subject, while the Aor. ἔρεξε is resultative, referring to a single event located just before the utterance time, whose outcome is still in effect (Wackernagel 1926–1928 [2009]:227).

- (58) ἦ δὴ μυρὶ Ὀδυσσεὺς ἐσθλὰ ἔοργεν
 βουλὰς τ' ἐξάρχων ἀγαθὰς πόλεμόν τε κορύσσω,
νῦν δὲ τόδε μέγ' ἄριστον ἐν Ἀργείοισιν ἔρεξε,
 ὃς τὸν λωβητῆρα ἐπεσβόλον ἔσχ' ἀγοράων (*Il.* 2.272–275).

'Truly Odysseus **has wrought**_[pf.] countless good deeds as leader in good counsel and waging war, but now *this* deed is by far the best that he **has wrought**_[Aor.] among the Argives, who has kept/keeps_[Aor.] this word-sliling slanderer from the assemblies'.

In (59), the Pf. εἰλήλουθας could either be stative ('are you here') or resultative ('have you come'), while the Aor. ἦλθον ('I have come') is resultative. (For discussion of the differences between constative Aor. and Pf., see Rijksbaron 2002:36–37.) Note that the following expressions of purpose (underlined) refer to future time with respect to the time of the utterance, supporting the reading of both verbs with present reference.⁴¹

41 Note that being able to translate a verb with the PDE Preterite is strictly uninformative in determining whether it has a constative reading or not. In (59), we *could* translate 'I came (just now) to stop your fury'. Yet, as we have seen (§2 above), the PDE Preterite, being a simple past, is ambiguous and in principle always compatible with perfect aspect. What matters is being able to translate felicitously with the PDE *have*-Perfect, which is only

- (59) “τίπτ’ αὖτ’ αἰγιοόχοιο Διὸς τέκος, εἰλήλουθας;
 ἦ ἵνα ὕβριν ἔδῃ Ἀγαμέμνονος Ἀτρείδαο;
 (...)
 “ἦλθον ἐγὼ πάυσουσά τεδὸν μένος, αἶ κε πίθηαι” (*Il.* 1.202–207).⁴²

“Why again, child of *aegis*-bearing Zeus, **have you come/are you here**_[PF]?
 Is it so that you may observe the insolence of Agamemnon son of Atreus?”
 (...) “**I have come**_[Aor.] (in order) to stop your fury, if you will obey.”

The Aor. may also co-occur with the Pf. in stative or universal perfect meaning, as in (60) and (61):

– RESULTATIVE AOR., STATIVE PF.:

- (60) πολλοὶ γὰρ τεθνᾶσι κάρη κομόωντες Ἀχαιοί,
 τῶν νῦν αἶμα κελαινὸν ἐϋρροον ἀμφὶ Σκάμανδρον
 ἐσκέδασ’ ὀξὺς ἄρης, ψυχὰι δ’ Αἰδόσδε κατῆλθον (*Il.* 7.328–330).

‘For many long-haired Achaeans **are dead**_[PF], whose dark blood keen Ares **has now spilt**_[Aor.] about fair-flowing Scamander, and their souls **have gone down**_[Aor.] to (the house) of Hades’.

licensed with constative readings, at least in the Present indicative (cf. Condoravdi and Deo 2015:265–266). More precisely, if the reference time is the present (as often indicated by adverbial elements), the verb in the Aor. is considered to have a constative reading, and it will most often be *able* to be translated with the PDE *have*-Perfect (i.e., it will be grammatical to do so). In the case of the relative past reading, the reference time is determined by the matrix clause and the constative reading is simply past shifted (though sometimes this “shifting” occurs with reference to a present or future event: cf. (55) above). Here too, being able to translate with the simple past is uninformative; what is crucial is whether it is licit to render such a passage with ‘*had* done x’. For example, *John said he kicked Bill* is equivalent to *John said that he had kicked Bill*, such that both can be said to have a (past shifted) constative reading of *kick*. However, *John said that he liked Mary* is not necessarily equivalent to *John said that he had liked Mary*, as the latter is specified as relative past while the former is ambiguous between a relative past and a durative reading.

- 42 Compare, strikingly, the alternation of Aor. and Pf. to verbs meaning ‘come’ in *RV*: *āchā śindhūm mātṛtām āyāsam vipāsam urvīm subhāgām aganma* (...) *ó śú svasārah kār-āve śṛṇota yayau vo dūrād ānasā rāthena ... ā te kārō śṛṇavāmā vácāmsi yayātha dūrād ānasā rāthena* (*RV* 3.33.3ab, gab, 10ab) “**I have come**_[Aor.] to the most motherly river, we **have come**_[Aor.] to the wide well-portioned Vipāsh” (...) “Listen, sisters, to the bard: He **has come**_[PF] to us from afar with wagon and chariot ... We shall listen, bard, to your words: You **have come**_[PF] from afar with wagon and chariot.”

– RESULTATIVE AOR., UNIVERSAL PF.:

- (61) ἤδη γὰρ νῦν μοι τόδ' ἐεικοστὸν ἔτος ἐστίν
ἐξ οὗ καίθην ἔβην καὶ ἐμῆς ἀπελήλυθα πατρὸς (*Il.* 24.765–766).

'For already now this is the twentieth year for me since I **have journeyed**_[Aor.] from there and **have gone away/been absent**_[PF.] from my homeland'.

Unlike the IpF., the Aor. is frequently coordinated with verbs of the Present tense, and may come under the scope of adverbs of currency, such as νῦν 'now', as in (62) (cf. (47) and (55) above).⁴³

- (62) νῦν δ' ἄμα τ' αὐτίκα πολλὰ διδοί, τὰ δ' ὀπισθεν ὑπέστη,
ἀνδρας δὲ λίσσεσθαι ἐπιπροέηκεν ἀρίστους (*Il.* 9.519–520).

'But now straightway he **offers** you many (gifts) at once, and **has promised** them (to you) hereafter, and **has sent forth** the best men to entreat (you)'.

We also find experiential readings of the Aor., usually with adverbs πολλάκι(ς) 'often', ἤδη 'already', or πω 'yet', as in (63)–(65).

- (63) πολλάκι γάρ σεο πατρὸς ἐνὶ μεγάροισιν ἄκουσα (*Il.* 1.396).

'For I **have often** heard you in the halls of my father'.

- (64) οὐ γάρ πῶ ποτ' ἐμὰς βοῦς ἤλασαν οὐδὲ μὲν ἵππους (*Il.* 1.154).

'For never yet **have they driven off** my oxen nor my horses'.

- (65) ἤδη γάρ ποτ' ἐγὼ καὶ ἀρείοισιν ἡέ περ ὑμῖν
ἀνδράσιν ὠμίλησα, καὶ οὐ ποτέ μ' οἷ γ' ἀθέριζον.
οὐ γάρ πω τοίους ἴδον ἀνέρας, οὐδὲ ἴδωμαι (*Il.* 1.260–262).

'For once already [i.e., as of now at some interval in the past] I **have marched/consorted**_[Aor.] with men more warlike than you, and never [i.e., on no occasion within that interval] did they disregard_[IpF.] me [i.e., my advice]. Such warriors I **have never since seen**_[Aor.] nor shall see'.

43 Further examples include: *Il.* 5.822–823, 9.519–520, 13.77–78, 14.72–73.

TABLE 6 Aor. readings in book I of the *Iliad*

Time reference and available readings	Count (out of 217 total)	Percent of total Aors.
1. constative (⇒ perfect aspect)	83	38 %
1.1 resultative/experiential/universal	81	37 %
a. not relative past	47	22 %
b. relative past	34	16 %
1.2 stative	2	1 %
2. completive (⇒ perfective aspect)	132	61 %
3. Other (durative?) ^a	2	1 %

a Durative sense is perhaps also available to the Aor.(!), as in *ἄέκοντε βήτην παρὰ θῖν'* (*Il.* 1.327) 'They walked/were walking along the shore unwilling(ly)'. Cf. *στήτην* (*Il.* 1.332) 'stood still' (or perhaps 'halted?').

In (65), the experiential perfect readings are rendered by the Aor., describing events of the past as they pertain to the speaker's lasting experience, while the Ipfc. ἀθέριζον 'they never disregarded me' most likely refers to an extensive but nonetheless *completed* span of time in the past—a complexive-terminative completive reading (cf. § 2 above)—or else to a habitual situation in the past 'they never used to disregard me' (a durative reading).

Finally, stative perfect readings occur, as in (66) (likewise *Il.* 5.423 (νῦν ... ἐφίλησεν) and (49) above (ὠνοσάμην 'I have scorn'); perhaps also (58) above (ἔσχε(ε) 'keeps'), unless "performative" in the 3rd person: '(hereby) keeps').

(66) μή μ' ἔρεθε, σχετλή, μή χωσαμένη σε μεθείω,
τὼς δέ σ' ἀπεχθήρω ὥς νῦν ἔκπαγλ' ἐφίλησα (*Il.* 3.414–415).

'Don't provoke me, stubborn woman, lest having been angered I cut you loose, and I come to despise you so terribly as I currently love you'.

Note that this is in no meaningful sense a "gnomic" Aor., but neither can it (without violence) be understood as referring to anything other than the present state.

In all, the picture for the distribution of readings expressed by the Aorist is seen in Table 6. As with the Ipfc, I have collected this data from *Iliad* I as a sample (see § 4.1, n. 40 above for methodological discussion and a link to the collected data).

TABLE 7 Co-occurrence of adverbs of currency with Aor. and Ip. in the *Iliad*

	Aor.	Ip.	Present	Pf.	Other (modals, etc.)	Reference time(s)	Constate reading(s) available
1. νῦν '(just) now' (342)	21 % (71)	< 1 % (1?) ^a	28 % (96)	6 % (22)	5 % (153)	present/ future	resultative
2. νέον 'newly' (18)	39 % (7)	33 % (6)	ο	6 % (1)	2 % (4)	present/ past/future	resultative/ universal
3. πολλάκι(ς) 'often' (9)	67 % (6)	22 % (2) (-σκ-)	11 % (1)	ο	ο	present/ past	experiential
4. ἤδη 'already' (53)	30 % (16)	9 % (5)	23 % (12) ^b	13 % (7)	5 % (13)	present/ future/past	experiential/ resultative/ universal
5. πω 'yet' (65)	35 % (23)	22 % (14)	8 % (5)	20 % (13)	15 % (10)	present/ past/future	experiential/ resultative/ universal

a See n. 37 above.

b These generally have universal readings 'have been x-ing'.

The distribution of constative readings of the Aor. to completive readings of the Aor. is thus roughly 40 to 60, or 2 constative readings to every 3 completive readings.⁴⁴

Delbrück (1897:280) says that in Homer the Aor. is found "sehr häufig" under the scope of the adverbs νῦν '(just) now' and νέον 'now, then', and that νῦν is virtually never found with the Ip. (so also Bakker 2010:162). Precisely how 'often', and to what semantic effect, I have sought out exhaustively in the text of the *Iliad*. I add also the adverbs πολλάκι(ς) 'often', ἤδη 'already', and πω 'yet'. The results are summarized in Table 7. Labels within categories are given in order of frequency of occurrence (so νῦν refers to the present more often than it refers to the future, νέον occurs with resultative readings more often than with universal readings, etc.). Percentages are given with respect to the total for each category (so 21 % of all occurrences of νῦν in the *Iliad* scope over an Aor., 28 % over a Present, etc.).

44 Note that there do not happen to be any clear gnomic Aors. in book 1, and I accordingly have no claim to make about this category here. The single plausible case of a gnomic Aorist (ἐκλυον, 1.218) is included under "experiential/universal" in the data summarized in Table 6, since 'they have (often/always) listened' may in this case readily be understood to mean 'they (are wont to) listen' (cf. what Smyth (1956:431) refers to as the "empiric" Aor.). The important thing here is that its reference is clearly to the *present* time, irrespective of its interpretation as properly gnomic/habitual or experiential/universal.

The Aor., when under the scope of any of these adverbs, *always* has either present reference time, yielding some sort of constative reading (resultative, experiential, or universal), or else has past reference time in the sense of a relative past or out-of-sequence perfect ('had done x').⁴⁵ They are never completive. By contrast, the IpF., when under the scope of these same adverbs, always has *past* reference time (cf. Bakker 2010:162–163). In most cases, these IpFs. have durative readings (rather than completive), since adverbs of currency emphasize action that is already underway. Adverbs like τότε 'at that time, then' (67) make past reference clear.

(67) τότε δ' ἤδη ἔχεν κάτω γαῖα μέλαινα (*Il.* 2.699).

'But already at that time the dark earth **held/was holding** him down (in it).'

These adverbs are by no means required in order for the Aor. to express constative readings, as Wackernagel (1926–1928 [2009]:227) is careful to point out. Indeed, the vast majority of constative Aors. in Homer have no such adverb, as demonstrated by (68).

(68) ἦλθον ἐγὼ παύσουσα τεδὸν μένος, αἶ κε πίθηαι,
οὐρανόθεν· πρὸ δέ μ' ἦκε θεὰ λευκώλενος Ἥρη (*Il.* 1.207–208).

'I **have come** from heaven to **stop** your fury, if you will obey: The goddess white-armed Hera (**has**) **sent** me **forth**.'

We may therefore conclude, with Wackernagel (1926–1928 [2009]:227), that the Aor. *on its own* could have present reference (i.e., constative readings), and, with Delbrück (1897:280), that this occurred "sehr häufig" in Homer, accounting for roughly 40% of all Aors. in our sample.⁴⁶

Of the 216 completive readings in book 1 (excluding ἔζομαι, cf. n. 34 above), 84 are IpF. (39%) and 132 are Aor. (61%). Certainly the IpF. is not the *default*

45 The adverbs in Table 7 seem to decide between the various constative readings (resultative, experiential, or universal) available. Thus, an underspecified constative Aor. may have a sub-reading specified either by context or by the presence of a particular adverbial modifier (νῦν implies resultative, πολλάκις implies experiential, etc.).

46 Dedicatory inscriptions, always in the Aor. and never the IpF. (Wackernagel 1926–1928 [2009]:233–234), also accord with the generalization that the Aor. is perfect-denoting, e.g., ἀνέθηκε 'has dedicated' (i.e., permanently), whereby the resultant state of the dedication retains eternal current relevance (i.e., 'has dedicated *this* statue *here*').

narrative tense in Homer, in contrast to the situation of *RV* (cf. § 3 above). Yet it also seems incorrect to characterize the *Aor.* as the default narrative tense in Homer, seeing as it is preferred to the *Ip.* by a margin of just 22%.⁴⁷ What we find in Homer, then, is not the Classical Greek system of “*Aor.* = perfective, *Ip.* = imperfective” (see, e.g., Rijksbaron 2002:11–21) but rather the first stirrings thereof, wherein the *Aor.* is only beginning to be preferred to the *Ip.* in narrative contexts (i.e., with completive readings), while yet retaining, in no small part, its constative readings (i.e., perfect aspect).

For this reason, the synchronic *Aor.* of Homer seems most closely to align with what Bybee et al. (1994:78–81) call “old anteriors” (I add in square brackets the equivalent terms used in the present paper):

[Old anteriors] represent an intermediate stage between pure anterior [= perfect] and [simple] past or perfective. These ... have anterior [= constative] as a use but also have other uses suggestive of more grammaticized meanings (...) The majority of anterior[s] in this group have a use as non-anterior past or perfective. (...) The old anteriors, then, *pattern more with perfectives and [simple] pasts* than with the young anteriors [= perfects] in their form as well as in their meaning. (Emphasis mine.)

I follow Bozzone 2011 (drawing on Bakker 2005 and Bybee et al. 1994:78–81) in claiming that the Homeric *Aor.* is an old anterior, regularly expressing both perfective and perfect aspect, with the former of more frequent occurrence. It is important to note here that an old anterior by definition must “evolve” (i.e., grammaticalize) from a “young anterior” (Bybee et al. 1994:78), by which is meant a (plain) perfect aspect-denoting stem of the type defined in § 2 above. This observation is based on the fact that there is not, to my knowledge, cross-linguistic evidence of an old anterior developing from anything other than a young anterior/perfect (though the young anterior/perfect may have its origin in stative or dynamic verb sources: cf. n. 54 below). In particular, perfectives are not known to change into perfects, whether old or young, as this would involve restricting the form’s range of application and even *losing* readings already available to the morphology—a change explicitly ruled out by Condoravdi and Deo (2015:261–262), who show that the stages of development are “unidirectional” and “uniformly generalizing” (see § 6 below). According to this view, the change from perfective to perfect stem not only does not happen, it cannot

47 Contrast the *Pf.*, for which I find only a single narrative/completive reading: *ἐπεὶ δὲ πρῶτα τομὴν ἐν ὄρεσσι λέλοιπεν* (*Il.* 1.235) ‘since first it left its stump in the mountains’.

happen. So, if the Homeric Aor. is an old anterior (= old *perfect*), then the pre-Homeric Aor. was necessarily a (*young*) perfect and therefore *not* a perfective aspect-denoting stem.

In sum, we must take seriously the frequent constative readings of the Aor. in Homer. These may be explained if we understand the Aor. to represent an “old anterior” aspect-denoting category (i.e., a “more grammaticalized” type of perfect stem), in support of which the following reasons have been adduced:

1. The Aor. regularly expresses *both completive and constative* readings, patterning “more with perfectives” (i.e., about 60 % of the time in *Iliad* 1) than with perfects (i.e., about 40 % of the time in *Iliad* 1) (Bybee et al. 1994:78–81).
2. The Aor. is *not* in complementary distribution with an imperfective stem (since there is no imperfective stem in Homer), as is required of perfectives (Bybee et al. 1994:83–85; cf. Napoli 2006:209–215).

Since the Aor. of Homer virtually never expresses durative readings, it cannot be a simple past tense. Similarly, the abundance of completive readings (~ 60 %) rule out its classification as a plain perfect stem (= “young anterior”). Yet the relatively high percentage (~ 40 %) of constative readings, in addition to the absence of an imperfective stem in the language, speaks against the Homeric Aor. being understood as a perfective stem. Hence, of the cross-linguistically motivated aspect-denoting categories here defined, “old anterior” seems to fit best with the semantics of the Aor. as attested in Homer. Of course, this need not be the case in later Greek, where a perfective/imperfective system *does* seem to be in place (Rijksbaron 2002:11–21)—a typologically common development (see § 6 below).

We are left with a Homeric verbal system that is well paralleled in the world’s languages (Comrie 1976:53), as, e.g., in modern North German (cf. Nicolle 2012:381, Bybee et al. 1994:85). Here, we find a the *haben*-Perfect, which most often has completive meaning (Durrell 2011:287–290), but may also express its historically original constative senses (id.:287–288, 290). In other words, it expresses both perfective and perfect aspect, and is thus analogous to the Aor. of Homer as an “old anterior.” Meanwhile, “das Präteritum” or “das Imperfekt” is most often completive in meaning (id.:287–290) but can also have durative readings (id.:290, 296) and “occasionally” constative readings as well (id.:288). It thus matches the Homeric IpF. as a simple past tense category, expressing *any* aspect.⁴⁸ The readings available to old anteriors as opposed to other aspectual categories so far discussed are summarized in Table 8, with examples of North German (from Durrell 2011:289) and PDE.

48 The change of the Homeric simple-past IpF. to a true imperfective stem in later Greek

TABLE 8 Readings available to old anterior beside other aspect stems

	Perfects		Preterites	
	<u>Perfect</u> aspect stem (= Vedic Aor.)	<u>Old anterior</u> aspect stem (= Homeric Aor.)	<u>Perfective</u> aspect	<u>Simple past</u> tense stem (= Vedic & Homeric Ip f.)
Constative (perfect) readings	<i>Your message</i> <i>has (just)</i> <i>been sent.</i>	<i>Was haben Sie</i> <i>gesagt?</i> (≠ <i>Was sagten Sie?</i>)	<i>Your message</i> <i>was (just) sent.^a</i> (= <i>has been</i>)	<i>Your message was (just)</i> <i>sent.^a</i> (= <i>has been</i>)
Completive (perfective) readings	NONE (or rare)	<i>Was haben Sie</i> <i>gesagt?</i> (= <i>Was sagten Sie?</i>)	<i>Mary ran a mile.</i> (≠ <i>Mary has run</i> <i>a mile</i>)	<i>Mary ran a mile.</i> (≠ <i>Mary has run a mile</i>)
Durative (imperfective) readings	NONE	NONE	NONE	<i>He always smiled as he</i> <i>spoke.^b</i>

- a This sense is often semantically blocked by a perfect stem where a perfect stem exists in the language.
- b This sense is semantically blocked by an imperfective stem where an imperfective stem exists in the language.

5 Modals and non-finite forms of the Aorist and Present stems

I here include a brief excursus on the modal and non-finite forms of the Aorist and Present stems. Let me say from the outset that this section is strictly beyond the stated scope of my paper. As such, I have not systematically collected data to be presented and analyzed as in the preceding two sections, and all statements should be understood to be tentative. Still, inclusion of some brief discussion of how the non-indicative verb forms fit in with this

is paralleled, e.g., in Central Semitic, which develops a new imperfective stem (*yaqtulu* ‘is/was killing’) based on the inherited Semitic prefixed past tense (*yaqtul* ‘killed’) (Rubin 2008:62, 64, 76). Given that the development of perfectives depends on having imperfectives with which to contrast (Bybee et al. 1994:83), the development of the Ip f. from simple past to imperfective in post-Homeric Greek may have facilitated the change of the Aor. from old anterior to perfective.

picture may (as an anonymous reviewer points out) be found to be a benefit rather than an intrusion. I suggest simply that the non-indicative forms of the Aorist and Present stems do not, in either Homer or *RV*, have readings which are incompatible with those attributed to their indicative past tenses (i.e., Aor. and Ip.f.) in the preceding sections. In Homer, the non-indicatives can be seen to align precisely with the indicative values of their respective stems: Aorist = perfect/constative or perfective/completive; Present = imperfective/durative, perfective/completive, or (marginally) perfect/constative. In *RV*, we find instead a general lack of positive evidence for any aspectual distinction between these stems in their non-indicative forms, save perhaps in the injunctive (see below).

In certain modal and non-finite forms (in certain syntactic contexts), we should on semantic grounds expect perfect and perfective aspect to be neutralized (Stowell 2007 and 2008, Condoravdi 2001, Comrie 1976:55). This is borne out in Greek, where we find the Aorist modals to have a “punctual” reading (= perfective/completive) (Smyth 1956:415–416 “simple occurrence”): Thus, an Aorist imperative such as δότε (e.g., *Il.* 6.476, *Od.* 2.212) can only mean ‘give!’ not #‘have given!’. A Present imperative, on the other hand, has not only its characteristic imperfective/durative readings (e.g., *κεῖσ’* οὔτω (*Il.* 21.184) ‘lie/keep lying so!’) but also instances of apparent perfective/completive readings that are not obviously distinct in meaning from their Aorist counterparts, e.g.: *δίδωθι* δέ μοι κλέος ἐσθλόν (*Od.* 3.380) ‘grant_[Present] me good fame’; *φέρτε* δέ χερσὶν ὕδωρ (*Il.* 9.171) ‘bring_[Present] water for their hands’ (cf. the Aorist *ἔνεικε* ‘bring!’ in (69) below and at *Od.* 22.481: *οἷσε* θέειον ... *οἷσε* δέ μοι πῦρ ‘bring_[Aorist] sulfur ... and bring_[Aorist] me fire!’). We even find Aorist and Present imperatives alternating quite freely within a single series of commands, as in (69).

- (69) ἄγρει δὴ, πῦρ *κεῖον* ἐνὶ μεγάροισι, Μελανθεῦ,
 πὰρ δὲ τίθει δίφρον τε μέγαν καὶ κῶας ἐπ’ αὐτοῦ,
 ἐκ δὲ στέατος *ἔνεικε* μέγαν τροχὸν ἔνδον ἐόντος (*Od.* 21.176–178).

‘Come on_[Present], Melanthios, **light**_[Aorist] a fire in the palace, then **set**_[Present] both a large stool beside (it) and a fleece upon it, and **bring out**_[Aorist] a large wheel of lard from what is inside’.

In addition, we find the Aorist imperative in distributive contexts—where the grammars would predict a Present—as in (70), just as we saw with the Aor. above (§ 4.1):

- (70) τῶν οἱ ἕκαστος φᾶρος εὖπλυνές ἦδὲ χιτῶνα
καὶ χρυσοῖο τάλαντον ἐνείκατε τιμήεντος
αἶψα δὲ πάντα φέρωμεν ἀολλέα (*Od.* 8.392–394).

'Each of you **bring**_[Aorist] for him a well-washed cloak and tunic and a talent of precious gold, and let's bring_[Present subjunctive] all these things together right away'.

The Present imperative can thus be seen to have the same durative and completive readings attributed to the IpF. above (§ 4.1), while the Aorist has its regular completive readings (cf. § 4.2), and the constative readings are unavailable to either stem in the imperative (see below on constative readings outside the imperative). This approach has the advantage of explaining certain alternations of Present and Aorist imperatives that are not "well behaved" under the traditional model. In particular, it is not to be viewed as irregular or problematic if we come across a Present imperative that is difficult to interpret as durative and which is more naturally understood as completive.

The aspectual distinction in prohibitions between μή + Aorist subjunctive and μή + Present imperative, if one exists at all in Homer (cf. Willmott 2007:99–100), can be explained similarly, with the Aorist having its perfective/completive value 'don't do x' and the Present being open to either imperfective/durative readings 'stop doing x' or perfective/completive readings 'don't do x' (Smyth 1956:410). Constative readings are apparently unavailable to either stem in negative commands ('don't have done x!'), just as they are in the positive ones discussed above.⁴⁹

The same, in principle, holds for the Greek optative and subjunctive (i.e., Aorist = perfective/completive, Present = any aspect). For an example of the Present stem in perfective/completive sense, see example (70) above: αἶψα ... φέρωμεν (*Od.* 8.394) 'let's bring at once', a Present subjunctive beside the Aorist imperative ἐνείκατε 'bring!' (cf. *Od.* 22.139: ὑμῖν τεύχε' ἐνείκω 'let me bring you arms', with the Aorist subjunctive). For the Present in durative sense we may consider, e.g.: αἶ γάρ ... ἥβῳιμι (*Il.* 7.132–133) 'if only I were in my prime'; τῇιδ' εἴη (*Il.* 24.139) 'so be it'; εἰ δ' ἄν ἐμοὶ ... τίνειν οὐκ ἐθέλωσιν (*Il.* 3.288–289) 'But if they should remain unwilling to pay me'.

In contrast to what we saw above for the imperative, however, there is some evidence that the constative readings of the Aorist stem are retained in the

49 Note that the constative readings are also not well formed in PDE commands, whose perfect morphology is unambiguous.

subjunctive and optative in Homer (Goodwin 1889:26–27, § 93), as shown by (71)–(72) (both types are expressed in post-Homeric Greek by the Perfect⁵⁰). In (71) the situation that Hera is afraid of has already occurred (Aorist subjunctive); she is merely dreading that her suspicions are really true. (72) expresses a hope that the event has already come to pass (Aorist optative), not that it will in the future.

- (71) νῦν δ' αἰνῶς δειδοῖκα κατὰ φρένα, μή σε παρείπηι ...
 ἤερῃ γὰρ σοί γε παρέζετο καὶ λάβε γούνων (*Il.* 1.555–557).

'But now I am terribly afraid at heart that she **may (prove to) have persuaded** you [or 'that she **has persuaded** you'] ... For early this morning she sat beside_[Aor.] you and took hold_[Aor.] of your knees'.

- (72) αἶ γὰρ δὴ ... ᾧδ' ἄφαρ ἐκ Τρώων έλασαίαιτο μώνυχας ἵππους (*Il.* 10.536–537).

'**May they (prove to) have driven** the single-hoofed horses thus away from the Trojans'.

Compare the Homeric use of the Aorist optative with *κεν* in the apodoses of *past* unreal conditions (Goodwin 1889:161–162), where, e.g., *κεν ... ἀπόλοιτο* (*Il.* 5.311, 5.388) means 'would have perished' (= perfect/constative), as in (73), while the same form elsewhere (without *κεν*: *Il.* 6.170, 14.142, 18.107; *Od.* 1.47) means 'would perish' (= perfective/completive), as in (74).

- (73) καὶ νῦ κεν ἔνθ' ἀπόλοιτο ἄναξ ἀνδρῶν Αἰνείας,
 εἰ μὴ ἄρ' ὅξυ νόησε Διὸς θυγάτηρ Ἀφροδίτη (*Il.* 5.311–312).

'Aeneas, lord of men, **would have perished** then and there if Aphrodite, daughter of Zeus, had not noted_[Aor.] (him) keenly'.

- (74) ὥς ἔρις ἔκ τε θεῶν ἔκ τ' ἀνθρώπων ἀπόλοιτο (*Il.* 18.107).

'Would that strife **would vanish** both from gods and from humans'.

50 The morphological Perfect is in Homer not a perfect but a stative-resultative stem (Gerö and von Stechow 2003:251–254, 263, 266–269) and so should not be expected to express the same range of constative readings as the Homeric Aorist. Though I leave the Perfect aside for now, its distinct stative-resultative value does appear to be similarly neutralized outside the indicative, particularly in the imperative (cf. Goodwin 1889:26, 33–34).

One wonders if the constative examples of Aorist modals in Homer are not in fact archaisms, rather than “instances of an earlier laxity of usage” (Goodwin 1889:27), representative of a tense-aspect system in which the Aorist stem expresses *perfect* aspect—a system still alive in Homer and with remnants even in the later language (cf. id.:25–26, 28). The Present stem, too, may on rare occasions express constative readings, as in (75) with the Present optative.

- (75) ἔνθα κε βεῖα φέροι κλυτὰ τεύχεα ... εἰ μή οἱ ἀγάσσατο Φοῖβος Ἀπόλλων (*Il.* 17.70–71)

‘Then easily he **would have borne (away)** the famous armor, if Phoebus Apollo had not begrudged_[Aor.] (it) to him’.

Crucially, such examples of constative Aor. (and Pres.) subjunctives and optatives are restricted to Homeric Greek and must be described as outliers and irregularities by the traditional accounts of Greek grammar (e.g., Goodwin (1889:27): “probably an inference drawn from context”), yet they are perfectly in line with (and in fact predicted by) the theory put forth here: The Aorist, being an “old anterior,” has its regular constative and completive readings, while the Present stem may have all three aspectual readings (just as the IpF., being a simple past tense, may express any aspect).

The readings available to the Aorist participle and infinitive in Homer are the same as those available to the Aorist indicative, namely perfect/constative and, less often, perfective/completive: The familiar (schoolbook) reading of Aorist participles, ‘having done x’ (e.g., *Il.* 1.428), renders a constative interpretation (“anterior,” Bozzone 2011:2–3). The constative reading is thus the most common interpretation of the Aorist participle, representing the event as preceding that of the main verb (i.e., TSit ≤ TT; cf. § 2 above). Sometimes, however, the Aorist participle is to be translated by a non-progressive Present participle in PDE (cf. Comrie 1976:39), which renders the perfective/completive interpretation (“coincident,” Smyth 1956:420, § 1872c.2). Often, this has an ingressive sense, as in PDE *Suddenly knowing what to do* [≠ ‘having known’], *John ran out the door* (cf. Comrie 1976:20). Possible Homeric examples of Aorist participles whose situations are simultaneous to or coterminous with the main verb (i.e., situation time is improperly included in topic time; cf. § 2 above), rather than anterior to it, are given in (76)–(77):

- (76) τοὶ δ’ ἰδρῶ ἀπεψύχοντο χιτῶνων
στάντε ποτὶ πνοιήν παρὰ θῖν’ ἄλός (*Il.* 11.621–622).

'They dried_[1pf.] the sweat from their tunics, **(by) standing**_[Aorist] [\neq 'having stood'/'having come to stand'] in the breeze by the shore of the sea'.

- (77) τὼ μὲν ταρβήσαντε καὶ αἰδομένῳ βασιλῆα
στήτην (*Il.* 1.331–332).

'These two, **being afraid**_[Aorist] [\neq 'having been/become afraid'] and **(being) in awe**_[Present] of the king, **stood still**_[Aor.]'.

Such examples are rare in Homer, however, and their synchronic status is far from clear.

Similarly, the Aorist infinitive in Homer may have either a constative or a completive reading, which can be seen most clearly in indirect discourse: Thus, 'he says to have done this' (φησὶ τοῦτο ποιῆσαι) may be interpreted as completive 'he says that he did this' (e.g., *Il.* 4.375, 6.206) or constative 'he says that he has done this' (e.g., *Il.* 3.393, 6.98) (see Chantraine 1953:306 and Goodwin 1889:42). The same is true, *mutatis mutandis*, for the participle and infinitive of the Present stem, to which both imperfective/durative and completive/constative readings are available (Smyth 1956:418–419).

Thus, though these non-finite and modal forms of Homer require a fuller treatment than can be given here, it is clear that they are in no way inconsistent with the analysis presented above (§ 4). In short, the readings available to the non-indicative Aorist and Present stems in Homer are precisely those available to the indicative, except that the constative readings are unavailable to the imperative and not overtly distinguished from the completive readings in the subjunctive, optative, and non-finite forms (similar to PDE: see Comrie 1976:55).

The relation of the non-indicative Present and Aorist stems to one another in Vedic is far less clear. Despite the careful efforts of some to find a semantic motivation for their distribution—most notably Dahl (2010:216–260, 302–340, 385–422), duly met with skepticism by Jamison (2014:159–160)—they do not appear to interact in a systematic way at any stage of the language outside the indicative (Whitney 1889:220, § 582; Bloomfield and Edgerton 1930:63, 130) and the non-modal uses of the injunctive (cf. n. 51–52, Table 12 (a)–(b) below). Gonda (1962), too, "is unable to find a consistent aspectual distinction, although it seems that he would very much like one to exist" (Baum 2006:66). A semantic analysis of this kind is unlikely on its own to provide an account of the distribution of the two stems (Jamison 2008:92). Rather, it has recently become clear that formal limitations, detached from categorical functionality, may account for the distribution of these stems, in particular of the Aorist participle (Lowe

2015:204–213) and Aorist imperative (Baum 2006:65–66), being moribund categories since our earliest texts, and of the Perfect modals as they relate to those of the Present (Jamison 2009, 2016, 2018).

Bloomfield and Edgerton's (1930:63–64, 94–114, 130–133) systematic and comprehensive presentation of stem alternations in Vedic allows them to declare definitively that the modals to these stems are “impenetrably undifferentiated.” They further observe that the tenses usually change in lockstep with the moods, such that, say, an imperative to a given root prefers the Present stem, while its subjunctive occurs in the Aorist. Thus, for example, in *RV* the Present imperative *yachatu* alternates with the Aorist subjunctive *yamsat*, both to the root \sqrt{yam} ‘reach’, while $\sqrt{bhū}$ ‘become’ has both the Present imperative *bhava* and the Aorist sub-/injunctive *bhuvas*. This makes true minimal pairs of modals to different tense stems of the same root exceedingly rare and speaks strongly against a synchronic aspectual alternation between the Aorist and Present in their non-indicative forms. Those minimal alternations that do show up with both stems in the same mood occur either in extremely similar passages (such as *RV* 3.47.3a *rtúbhir ... pāhi* and *RV* 2.37.3d *píba rtúbhiḥ*, both ‘drink by turns’ (cf. Baum 2006:67)) or else in variants of one and the same passage in different texts (or even in different parts of a single text), for which Bloomfield and Edgerton (1930) cite copious examples. None of this, of course, rules out the possibility of an inherited, pre-Vedic system with well-behaved aspectual distinctions, but it does make it decidedly misguided to look to Vedic for positive evidence of aspectual alternations outside the indicative (past).

Hoffmann's (1967) account of the injunctive in Vedic as a mood that shows an aspectual distinction among the Present and Aorist stems remains widely believed. I cannot treat this massive topic here, but, as Baum (2006:66) notes, Hoffmann's (1967:270 ff.) remarks on the non-prohibitive injunctives are tentative and “difficult to prove.” In particular, his characterization of the injunctive as “memorative” is not typologically motivated, as the category is unparalleled cross-linguistically (Kiparsky 2005:220). Kiparsky (id.:220–223) concludes that the injunctive is not a modal category at all, but rather is unspecified for mood and tense. The aspectual distinction that Hoffmann (1967:44, 105–106) attributes to the prohibitive injunctives (i.e., Aorist = preventive ‘don't do x’, Present = inhibitive ‘stop doing x’) has recently come under scrutiny as well (Hollenbaugh 2017 and 2018; cf. n. 24 above). In sum, the modals and non-finite forms do not provide secure positive evidence for the use of the Aorist and Present stems in Vedic and therefore contribute little to our inquiry into the tense-aspect system of the proto-language.

We must, then, confront the fact that our evidence for the tense-aspect system of PNIE (setting aside the Perfect) consists only of: (i) the indicatives, which

TABLE 9 Aspect-denoting categories for *RV*, Homer, and PNIE

Morphological category	<i>R̥gveda</i>	Homer	PNIE reconstruction
AOR.:	perfect	old anterior (i.e., a type of perfect)	*perfect
IPF.:	simple past (or perfective?)	simple past	*simple past

stand in contrast to one another only in the past, hence the comparison of Aor. to Ip̥f.; (ii) the modal and non-finite forms of Homeric Greek, which, as we have seen, differ significantly from those of the Classical language. If the latter are without viable comparanda in Vedic, then it is on the indicative past alone that our best comparative evidence for reconstructing the tense-aspect system of the parent language rests (along with the corresponding augmentless/injunctive forms in their *non-modal* uses: cf. n. 51–52 below). It is to this task that I now turn.

6 Reconstructing tense-aspect in PNIE

Overall, the Aor. and Ip̥f. of *RV* and Homer is summarized in Table 9, with my proposed reconstruction for the proto-language in the rightmost column.

The reconstruction of a simple past category for the proto-language might seem problematic in light of the fact that PIE is generally considered to have been “tenseless” (Napoli 2006:45–47, with references in n. 19). But consider Bartolotta 2009:514–515 (similarly Willi 2018:28–37; Lundquist and Yates 2018:2140; Napoli 2006:212; quite differently Kloekhorst 2017):

In fact, when injunctive endings began to take the suffix **-i* in order to indicate the present tense, all the injunctive forms without this suffix *began automatically to indicate the past tense, i.e. the non-present tense ...* Therefore, the prefixed augment **e-* turns out to be a more recent trait which marks the past tense redundantly ... [P]ersonal endings endowed with the suffix **-i* are in fact common to most of the attested Indo-European languages, testifying to a system where *present stem was marked in opposition to an unmarked past tense*. (Emphasis mine.)

While I doubt that the augment was entirely “redundant”—after all, in *RV* at least, the augmentless forms have modal and non-past functions—it is certainly the case that the augmentless past tenses regularly refer to past time in the same way as their augmented counterparts in *RV*, as shown in (78) (cf. Whitney 1889:221; Willi 2018:400–415),⁵¹ as well as in Homer (see, e.g., ἔλιπεν beside λείπε ‘left’ in (3) above; cf. Willi 2018:358–376, 415–416).⁵²

51 In *RV* 11, for instance, setting aside the specialized usage in prohibitive constructions, the Present injunctive has non-modal tensed readings (i.e., readings expressible by the Ip.f., which excludes modal and generic/“timeless” readings) in some 51% of occurrences (20 out of 39), or 45% (20 out of 44) including prohibitions. Likewise, the Aorist injunctive, excluding prohibitions, has non-modal tensed readings (i.e., those expressible by the Aor.) in 59% of occurrences (26 out of 44); if we include prohibitions, the figure is 36% (26 out of 72). Together, the non-modal tensed readings account for 55% (46 out of 83) of injunctives built to either stem, excluding prohibitions; with prohibitions, the figure is 40% (46 out of 116). Whitney’s (1889:221) assessment of the situation in *RV* paints a similar picture: “In *RV*., the augmentless forms are more than half as common as the augmented (about 2000 and 3300) ... Their non-modal and modal uses are of nearly equal frequency. The tense value of the non-modally used forms is more often past than present.”

52 In Homer, while it is difficult to determine the semantic significance of the alternation between augmented and augmentless forms of the Ip.f. and Aor. (for discussion and review of the literature, see now Willi 2018:358–389), the distinction is certainly not a modal one, as it frequently is in *RV* (see n. 51 above). I therefore treat augmentless forms of the Ip.f. and Aor. together with their augmented counterparts as a single category in Homer (cf. n. 40 above). In my analysis of *RV*, I exclude the injunctive from consideration (cf. n. 21 above), though in its non-modal uses it too aligns precisely with its augmented counterparts, the Ip.f. and Aor. respectively (cf. n. 51 above). It should be mentioned that the augmented Aors. in *RV* have constative readings more often than their augmentless counterparts—a situation similar to what has been described for Homer (see, e.g., Willi 2018:369–370): In *RV* 11, the augmented Aor. attests 42 constative readings to 6 completive readings (7:1), while the Aorist injunctive has just 14 constative readings to 10 completive readings (1.4:1). However, in both Homer and *RV*, such a distribution does not, as some have assumed (ibid.), entail that the augment is itself responsible for encoding constative readings (or “present relevance”), but only that it *restricts* or limits the set of readings already available to the verbal stem in such a way that the constative readings are drawn out (cf. the similar “limiting” function of various adverbs and particles). Crucially, this is only true when the stem is Aorist. The augmented forms of the Ip.f. in *RV* and Homer only rarely have constative readings (or any form of “present relevance”) (cf. Willi 2018:385–389), while the Present injunctive frequently *does* have non-past reference precisely in its modal and generic/“timeless” (i.e., non-indicative) uses, but otherwise has the same past narrative function (i.e., completive readings) as the augmented Ip.f. We must conclude, then, that this “present relevance” is to be attributed to the Aorist stem itself, and that the relevant distinction is the one between the Aor. and Ip.f. forms, rather than between the augmented and augmentless forms (pace Willi 2018:60–61, 348–350, 385–389). Simply put, the Aor., whether augmented or not, has regular constative readings with present reference in both Homer and *RV*, whereas both the augmented Ip.f. and the augmentless Ip.f./Present injunc-

(78) *srjó mahír indra yá ápinvah* (RV 2.11.2a).

'You released_[Present injunctive] the great (waters), Indra, which you swelled_[Ipf.].'

Further, it is difficult to imagine how a system could be at once "tenseless" and yet employ a particle that expresses present *time*. The *hic-et-nunc* particle, **-i*, being a marker of present tense (or "non-past," along with the middle endings in **-r*), in and of itself *presupposes* the existence of tense-marking in the earliest reconstructible PIE (Willi 2007:35–36), with past being "unmarked" (Lundquist and Yates 2018:2138, 2140).⁵³ Hence, positing a simple past tense stem for PIE poses no inherent problem. Indeed, the system envisioned here has at once tense *and* aspect, more-or-less like the one found in PDE (see § 4.1 above). I follow Comrie (1976:83): "Thus it seems that Proto-Indo-European lacked ... a special form combining imperfective aspect and past time reference."

As for the Aorist, if indeed it represents a perfect stem in Vedic and Homeric (whether "young" or "old" respectively), it would be typologically anomalous for it to have originated as a perfective stem. Cross-linguistically, perfects tend to grammaticalize to perfectives or simple pasts (Bybee et al. 1994:68–74, 81–87, 105; cf. Willi 2018:411–415 on "aoristic drift"). This process is a known *grammaticalization pathway* (GP) for the diachronic development of tense-aspect stems. Crucially, the paths of change are "unidirectional" (left to right in (79)) and the stages of development are "uniformly generalizing," meaning that the set of readings available to each stage to the right is a superset of readings available to all the stages to its left (Condoravdi and Deo 2015:261–262, 266; cf. Comrie 1976:61; see Bybee et al. 1994:86–87 for possible reasons for this cross-linguistic tendency).

CROSS-LINGUISTICALLY COMMON GP OF ASPECT-DENOTING STEMS:

(79) stative-resultative⁵⁴ >> perfect >> perfective

tive regularly have past reference and are only marginally compatible with constative interpretations. While I am by no means denying that the augment has some contribution to the verbal semantics in both languages (I would say as a restricting element), clearly *something* is going on beyond this that must account for the Aor./Ipf. distinction, which I attribute to the intrinsic aspectual contrast between the two stem types.

53 Various scholars have considered a tense-based (rather than purely aspectual) verb system for PIE (for references, see Napoli 2006:47, n. 21).

54 A stative-resultative (typically involving verbs meaning 'be' or 'have') is not the only source for a perfect. Bybee et al. (1994:55–61, 69–74, 105) also discuss the development of perfects from "dynamic" sources, one of which they term "completive" (≠ perfective or *completive*

TABLE 10 Typologically common GP of aspect stems over time:

	Stative- resultative	Perfect	Perfective or simple past	
	Stage I	Stage II	Stage IIIa	Stage IIIb
STATIVE	√	√	√	√
RESULTATIVE	√	√	√	√
EXPERIENTIAL	∅	√	√	√
UNIVERSAL	∅	√	√	√
COMPLETIVE	∅	∅	√	√
DURATIVE	∅	∅	∅	√

Thus a perfect stem may express stative-resultative readings plus experi-
ential and universal readings, while a perfective stem can express all these
readings plus completive readings, and the simple past tense can express any
aspect, including the durative readings characteristic of imperfective aspect.
This is represented in Table 10, adapted from Condoravdi and Deo 2015:266.

From left to right over time, these tense-aspect categories gradually gain
readings as they grammaticalize further along the GP and never lose readings
available to the prior stage. A perfect stem may develop into either a perfect-
ive or a simple past, depending solely on whether or not an imperfective stem
exists in the same language (Bybee et al. 1994:83). If there *is* an imperfective
stem in the language, the perfect stem will develop into a perfective, its would-

as used in this paper: cf. § 2, n. 11 above). Likewise, perfectives have sources other than
perfects (id.:87–91). What is crucial is that the source of a perfect is never a perfective: The
paths of change, though not singular, remain “unidirectional” and “uniformly generaliz-
ing” (Condoravdi and Deo 2015:261–262, 266). The precise origin of the Aor. in (pre-)PIE
may not be recoverable by the comparative method, but it does not seem likely, in fact, to
have originated as a stative-resultative category, since there is no evidence of a ‘be’ or ‘have’
semantic value for the markers of the Aor. at any stage, a morphological representation of
past perfect corresponding to the Aor. is lacking, and the Aor. is marked by bound rather
than free morphemes (cf. Bybee et al. 1994:63–69). More likely, then, is a dynamic source
of one of the types described by Bybee et al. (1994:69–74). This would suggest that one of
the markers of “Aorist” originally contributed a meaning along the lines of ‘finish’, ‘come’,
‘go’, or some directional term designating completion (‘into’, ‘away’, ‘up’, ‘out’, etc.) (id:56–
57). There are various candidates for such markers in the morphological components of
the Aor. (*s*-suffix, augment, etc.), but we can as yet do little more than speculate on their
original (pre-perfect) contribution to the semantics of the verb form.

be durative readings being blocked by the imperfective stem (cf. § 2 above). If there is *not* an imperfective stem, the perfect stem will develop into a simple past tense stem, expressing durative readings in the absence of a stem specified for imperfective aspect.

What to my knowledge *never* occurs is a diachronic change in the opposite direction, from perfective stem to perfect stem, as represented in (80).

UNPARALLELED DEVELOPMENT:

(80) *perfective >> perfect

Therefore, the traditional reconstruction (Table 11) would have to explain:

1. How an original perfective stem (Aor.) *becomes* perfect-denoting in Vedic and Homeric only to become perfective-denoting⁵⁵ all over again in the later stages of these languages.⁵⁶
2. How an original imperfective-denoting IpF. *acquires* completive readings in Homer, only to lose them again in Classical Greek, while the IpF. only very rarely has imperfective readings at *all* stages of Sanskrit, including RV (Whitney 1889:201; Kiparsky 1998:29, n. 3 (on pp. 56–57)).

The reconstruction proposed here (Table 12) solves this problem of directionality, bringing the development of Indo-European tense-aspect stems in line with parallel developments known to occur cross-linguistically.⁵⁷

55 Except where perfect readings are motivated by (pragmatic) context in Classical Greek (Rijksbaron 2002:28–29), as is known to occur among perfectives cross-linguistically (Comrie 1976:58).

56 See now Willi 2018:413–415 for a discussion of a similar problem with respect to the augment.

57 Such developments are evident in the Perfects of German and Romance (Comrie 1976:53, Bybee et al. 1994:85), Greek (Gerö and von Stechow 2003), West Semitic (stative > perfective/"suffix conjugation") (Al-Jallad 2018:317, Huehnergard 1987), Chinese (Condoravdi and Deo 2015:262), and the predicated *tá*-participles of Sanskrit (from stative-resultative in RV to simple past in Middle Indic) (Condoravdi and Deo 2015, Jamison 1990), just to name a few. Even among languages that lack a perfect stem, and therefore express perfect aspect by means of a perfective or simple past, these generally make use of some particle or adverb with the perfective or simple past to signal perfect meaning, e.g.: Arabic *qad* (+ perfective) (Haak 1997:150, Comrie 1976:81), Najdi Arabic *ǧid* (makes experiential perfect) (Ingham 1994:104), Chinese *guo* (makes experiential perfect) (Klein 1994:112, Comrie 1976:59), and Hittite *kāša(tta)* or *kāšma* (+ simple past) (Hoffner and Melchert 2008:323–324). Russian is a notable exception to this generalization (cf. Dahl 2010:78, Comrie 1976:58). Significantly, Homeric and Vedic have no such particle or adverb to limit the sense of their supposed perfective stem to perfect aspect (constative readings), as is prevailingly the case in the languages just surveyed—unless, perhaps, the augment (as per Bakker 2005:129, Willi 2018:416; but decidedly not in line with the view of the augment either as a marker of "pastness" (cf. Willi 2018:357, 413) or of "perfectivity" (pace Willi

TABLE 11 Traditional reconstruction (not consistent with GP)

	PNIE (traditional)	<i>Rgveda</i> (as attested)	Homer (as attested)	Classical Sanskrit (Whitney)	Classical Greek (Smyth)
AOR.:	*perfective	perfect	old anterior (i.e., a type of perfect)	simple past (or perfective?)	perfective
IPF.:	*imperfective	simple past (or perfective?)	simple past	simple past (or perfective?)	imperfective

This analysis relies crucially on a comparative reconstruction that is, at its core, remarkably simple: A (young) perfect in the one language matching an (old) perfect in the other cannot but point to a category which in the proto-language was either a perfect or some sort of perfect-like/pre-perfect category, such as a resultative or what Bybee et al. (1994:54, 57–61, 89) term a “compleitive” (NB: *not* the same as the term for perfective readings used throughout this paper; cf. n. 11 and n. 54 above). As the simplest possible reconstruction for the Aor. is a perfect, this is the one I posit here. The Ipf. is even more straightforward, being a simple past in both relevant languages and therefore almost certainly a simple past in the proto-language.

Another advantage of the present analysis is that it relies for its comparative material on the meanings of the stems as directly attested in the relevant texts (or text samples). It does not make recourse to the “original” (i.e., internally reconstructed) meanings of roots or stems: E.g., *φημί* need not mean ‘speak, talk’ rather than ‘say’, contrary to its attested use in Homer, in order to explain why it has no Aor. stem (cf. § 4.1 above); we need not insist too strongly on the imperfectivity of the Ipf., nor the perfectivity of the Aor., where the texts would more naturally lend themselves to other interpretations. In particular, this analysis offers an account of the compleitive readings of the Ipf. and the constative readings of the Aor. found in *RV* and Homer, which other accounts fail to capture or, in some cases, to reckon with at all.

2018:60–61, 348–350, 381–389)). This suggests yet again that the Aor. in Homer and *RV* is not a perfective stem but a perfect. As for the Ipf., a parallel for the change from a simple past tense stem to an imperfective aspect stem is found, for example, in Central Semitic (see n. 48 above). This is the change that must occur from Homer to later Greek, where the Ipf. is known to denote imperfective aspect.

TABLE 12 Proposed reconstruction (consistent with GP):^a

	PNIE (proposed)	<i>R̥gveda</i> (as attested)	Homer (as attested)	Classical San- skrit (Whitney)	Classical Greek (Smyth)
“AOR.”: ^b	*perfect	perfect	old anterior (i.e., a type of perfect)	simple past (or perfective?)	perfective
“IPF.”:	*simple past	simple past (or perfective?)	simple past	simple past (or perfective?)	imperfective

- a Note that the reconstruction proposed here does not depend crucially on the augment, since the augmentless or “injunctive” forms are regularly non-modal and past referring (cf. n. 51–52 above), nor is the augment reconstructible for PIE or even PNIE (Lundquist and Yates 2018:2141). In Homer, the augment has no *clear* semantic value (cf. Willi 2018:368–376); in *RV*, it serves only to *restrict* the tense-aspect stems to their non-modal and non-generic/habitual readings (cf. Willi 2018:397–416). In no case does it *endow* the stem with a particular reading or set of readings, nor does it *mark* past tense “redundantly” (cf. above, Bartolotta 2009:514–515; Willi 2018:358–389, 397–316). The readings available to the tense-aspect stems must therefore be derived from the stems themselves, as I have sought to do in this analysis.
- b Where Table 12 has “Aor.” and “Ip̥f.”, the reader should understand, respectively, “augmentless finite Aorist-stem forms without the *hic-et-nunc* particle, *-i-” and “augmentless finite Present-stem forms without the *hic-et-nunc* particle, *-i-.” These I would regard in P(N)IE as “Aorist” (really a perfect) and “Imperfect” (really a simple past) *indicative*, rather than “injunctive,” there being as yet no augmented forms for them to stand in contrast to (cf. n. (a) to Table 12 above). This interpretation is entirely consistent with the function of the Anatolian (augmentless) Preterite as a simple past tense, which I would regard as *directly* descended from the PIE simple past (= the morphological “Ip̥f.” + non-characterized “Aors.”), given that there must originally have been no distinction between a root “Ip̥f.” and root “Aor.” (Clackson 2007:133–135), and that the Aor. as a distinct aspect-denoting category could not have existed before the development of the *s*-Aor. (Clackson 2007:135), which arose *after* Anatolian branched off, in PNIE (Strunk 1994:424). In other words, the present analysis implies that Anatolian preserves the inherited PIE situation essentially intact, as regards the past and non-past tense stems.

Thus, in sum, this proposal has the advantage over previous accounts of being (i) in line with observed synchronic and diachronic cross-linguistic tendencies, (ii) based on straightforward comparative reconstruction of form-to-function pairings of etymologically related verbal categories, and (iii) founded entirely on data as attested in the texts themselves, without recourse to internal reconstruction. Of course, much work remains in order to strengthen these findings: A larger text sample—ideally, the entirety of the relevant texts—should be considered; the later stages of both languages should be re-examined along similar lines, so that we may have a better understanding of the relevant

diachronic developments in the attested languages; the tense-aspect systems of other PIE languages, above all Hittite, should be incorporated into this picture in order to reconstruct high-node PIE (cf. n. (b) to Table 12 above); and the various theories of the origins and development of PIE tense and aspect (beginning in pre-PIE) should be (re)considered with respect to the relatively late (PNIE) reconstruction formulated here. Nonetheless, I hope at least to have provided a basis for further exploration of this topic that will lead to a fuller understanding of tense and aspect both in the IE languages as they relate to one another and in reconstructed PIE at its various time depths.

Acknowledgments

I am deeply indebted to Stephanie Jamison and David Goldstein, under whose mentorship and guidance I carried out this project. I would also like to thank Tim Stowell, Jesse Lundquist, Anthony Yates, and the faculty and graduate students of the Program in Indo-European Studies at UCLA for their helpful feedback at various stages of the development of this paper. Finally, I am grateful to my two anonymous reviewers for their careful and insightful comments. The views expressed here are entirely my own, along with any remaining infelicities.

References

- Al-Jallad, Ahmad. 2018. The Earliest Stages of Arabic and Its Linguistic Classification. In Elabbas Benmamoun and Reem Bassiouney (eds.), *Routledge Handbook of Arabic Linguistics*, 315–331. London / New York: Routledge.
- Bakker, Egbert. 2005. *Pointing at the Past: From Formula to Performance in Homeric Poetics*. Washington, D.C.: Center for Hellenic Studies.
- Bakker, Egbert. 2010. Pragmatics: Speech and Text. In Egbert Bakker (ed.), *A Companion to the Ancient Greek Language*, 151–167. Oxford, U.K. / Malden, MA: Wiley-Blackwell.
- Bartolotta, Annamaria. 2009. Root Lexical Features and Inflectional Marking of Tense in Proto-Indo-European. *Journal of Linguistics* 45.3, 505–532. Cambridge: Cambridge University Press.
- Bary, Corien. 2012. The Ancient Greek Tragic Aorist Revisited. In Michael Meier-Brügger and Gerhard Meiser (eds.), *Glotta* 88.4, 31–53. Göttingen: Vandenhoeck & Ruprecht.
- Baum, Daniel. 2006. *The Imperative in the Rigveda*. Utrecht: LOT (Landelijke Onderzoeksschool Taalwetenschap/Netherlands Graduate School of Linguistics).
- Bloomfield, Maurice and Franklin Edgerton. 1930. *Vedic Variants, vol. 1: The Verb*. Philadelphia: University of Pennsylvania Press.

- Bozzone, Chiara. 2011. The Grammaticalization of the Ancient Greek Aorist and its Effects on the Greek Verbal System. *22nd International Conference on Historical Linguistics*. https://www.academia.edu/1693381/The_Grammaticalization_of_the_Ancient_Greek_Aorist.
- Bybee, Joan, Revere Perkins, and William Pagliuca. 1994. *The Evolution of Grammar: Tense, Aspect and Modality in the Languages of the World*. Chicago / London: University of Chicago Press.
- Cardona, George. 1960. The Indo-European Thematic Aorists. Ph.D. diss., Yale University.
- Chantraine, Pierre. 1953. *Grammaire homérique: Tome II: Syntaxe*. Paris: Les Belles Lettres.
- Clackson, James. 2007. *Indo-European Linguistics: An Introduction*. Cambridge: Cambridge University Press.
- Comrie, Bernard. 1976. *Aspect*. Cambridge / New York: Cambridge University Press.
- Condoravdi, Cleo. 2001. Temporal Interpretation of Modals: Modals for the Present and for the Past. In David Beaver, Stefan Kaufmann, Brady Clark, and Luis Casillas (eds.), *Stanford Papers on Semantics*, 59–88. Stanford: Center for the Study of Language and Information (CSLI).
- Condoravdi, Cleo and Ashwini Deo. 2015. Aspect Shifts in Indo-Aryan and Trajectories of Semantic Change. In Chiara Gianollo, Agnes Jäger, and Doris Penka (eds.), *Language Change at the Syntax-Semantics Interface*, 261–291. Berlin: de Gruyter.
- Crespo, Emilio. 2014. A Rule for the Choice of Aorist and Imperfect. In Annamaria Bartolotta (ed.), *The Greek Verb: Morphology, Syntax, and Semantics (Proceedings of the 8th International Meeting on Greek Linguistics, Agrigento, October 1–3, 2009)*, 71–82. Louvain-la-Neuve / Walpole, MA: Peeters.
- Dahl, Eystein. 2010. *Time, Tense and Aspect in Early Vedic Grammar*. Leiden / Boston: Brill.
- Delbrück, Berthold. 1876. *Altindische Tempuslehre*. Halle: Verlag der Buchhandlung des Waisenhauses.
- Delbrück, Berthold. 1888. *Altindische Syntax*. Halle: Verlag der Buchhandlung des Waisenhauses.
- Delbrück, Berthold. 1897. *Vergleichende Syntax der indogermanischen Sprachen*, Zweiter Theil. Strassburg: Trübner.
- Durrell, Martin. 2011. *Hammer's German Grammar and Usage*, 5th edn. London: Hodder Education.
- Forsyth, James. 1970. *A Grammar of Aspect: Usage and Meaning in the Russian Verb*. Cambridge: Cambridge University Press.
- Fortson, Benjamin W. 2010. *Indo-European Language and Culture: an Introduction*, 2nd edn. Oxford, U.K. / Malden, MA: Wiley-Blackwell.
- Friedrich, Paul. 1974. On Aspect Theory and Homeric Aspect. *International Journal of American Linguistics*, 40.4 (pt. 2), 1–44. Chicago: University of Chicago Press.

- Gerö, Eva-Carin and Arnim von Stechow. 2003. Tense in Time: The Greek Perfect. In R. Eckardt, K. von Heusinger, and C. Schwarze (eds.), *Words in Time: Diachronic Semantics from Different Points of View*, 251–293. Berlin: de Gruyter.
- Gildersleeve, Basil Lanneau and Charles William Emil Miller. 1900. *Syntax of Classical Greek from Homer to Demosthenes, vol. 1*. New York / Cincinnati / Chicago: American book Company.
- Givón, Thomas. 2001. *Syntax, vol. 1*. Amsterdam: John Benjamins.
- Gonda, Jan. 1962. *The Aspectual Function of the R̥gvedic Present and Aorist*. Hague: Mouton & Co.
- Goodwin, William W. 1889. *Syntax of the Moods and Tenses of the Greek Verb*. Revised ed. London: Macmillan.
- Haak, Martine. 1997. *The Verb in Literary and Colloquial Arabic*. Berlin and New York: de Gruyter.
- Heine, Bernd. 2003. Grammaticalization. In Brian D. Joseph and Richard D. Janda (eds.), *The Handbook of Historical Linguistics*, 575–601. Oxford, U.K. / Malden, MA: Blackwell.
- Hoffmann, Karl. 1967. *Der Infinitiv im Veda*. Heidelberg: Winter.
- Hoffmann, Karl. 1970. Das Kategoriensystem des indogermanischen Verbums. *Münchener Studien zur Sprachwissenschaft* 28, 19–41.
- Hoffner, Harry A., and H. Craig Melchert. 2008. *A Grammar of the Hittite Language, vol. 1: Reference Grammar*. Winona Lake, IN: Eisenbrauns.
- Hollenbaugh, Ian. 2017. Preventing Inhibition: A Reassessment of the Prohibitive Construction in Early Vedic. Presented at the *Annual Meeting of the American Oriental Society*, March 18, 2017.
- Hollenbaugh, Ian. 2018. Don't Stop *mā́* Now: A New Approach to Prohibitive Constructions in *R̥gveda* and *Atharvaveda*. Presented at the *30th Annual UCLA Indo-European Conference*, November 10, 2018.
- Hopper, Paul J. 1982. Aspect between Discourse and Grammar: An Introductory Essay for the Volume. In Paul J. Hopper (ed.), *Tense-Aspect: Between Semantics and Pragmatics*, 3–18. Amsterdam: Benjamins.
- Huehnergard, John. 1987. Stative, Predicative, Pseudo-Verb. *Journal of Near Eastern Studies* 46.3, 215–232. Chicago: University of Chicago Press.
- Iatridou, Sabine. 2000. The Grammatical Ingredients of Counterfactuality. *Linguistic Inquiry* 31.2, 231–270. Cambridge, MA: MIT Press.
- Ingham, Bruce. 1994. *Najdi Arabic: Central Arabian*. Amsterdam / Philadelphia: John Benjamins.
- Jamison, Stephanie W. 1990. The Tense of the Predicated Past Participle in Vedic and Beyond. *Indo-Iranian Journal* 33.1, 1–19.
- Jamison, Stephanie W. 2008. Review of Baum 2006. In *Kratylos* 53, 90–93.
- Jamison, Stephanie W. 2009. Where are all the Optatives? In Kazuhiko Yoshida and

- Brent Vine (eds.), *East and West: Papers in Indo-European Studies*. Bremen: Hempen Verlag.
- Jamison, Stephanie W. 2014. Review of Dahl 2010. In *Indo-Iranian Journal* 57.1/2, 151–160.
- Jamison, Stephanie W. 2016. The Vedic Perfect Subjunctive and the Value of Modal Forms to Tense/Aspect Stems. In Ivo Hajnal, Daniel Kölligan, Katharina Zipser (eds.), *Miscellanea Indogermanica: Festschrift für José Luis García Ramón zum 65. Geburtstag*, 313–324. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.
- Jamison, Stephanie W. 2018. The Vedic Perfect Imperative and the Status of Modal Forms to Tense-Aspect Stems. In Lucien Van Beek, Alwin Kloekhorst, Guus Kroonen, Michaël Peyrot, Tijmen Pronk (eds.), *Farnah: Indo-Iranian and Indo-European Studies in Honor of Sasha Lubotsky*, 55–63. Ann Arbor: Beech Stave.
- Jamison, Stephanie W. and Joel P. Brereton. 2014. *The Rigveda: The Earliest Religious Poetry of India*. 3 vols. Oxford: Oxford University Press.
- Jamison, Stephanie W. and Joel P. Brereton. 2018. Maṇḍala 11. *Rigveda Translation: Commentary*. Posted 2/18/18, accessed 8/21/18. <http://rigvedacommentary.alc.ucla.edu/>.
- Kiparsky, Paul. 1998. Aspect and Event Structure in Vedic. In Rajendra Singh (ed.), *Yearbook of South Asian Languages and Linguistics 1998*, 29–61. New Delhi / Thousand Oaks / London: Sage Publications.
- Kiparsky, Paul. 2002. Event Structure and the Perfect. In David I. Beaver, Luis D. Casillas Martinez, Brady Z. Clark, and Stefan Kaufmann (eds.), *The Construction of Meaning*, 113–135. Stanford: Center for the Study of Language and Information (CSLI).
- Kiparsky, Paul. 2005. The Vedic Injunctive: Historical and Synchronic Implications. In Rajendra Singh and Tanmoy Bhattacharya (eds.), *Yearbook of South Asian Languages and Linguistics 2005*, 219–235. New Delhi / Thousand Oaks / London: Sage Publications.
- Klein, Wolfgang. 1994. *Time in Language*. London / New York: Routledge.
- Kloekhorst, Alwin. 2017. The Old Hittite and the Proto-Indo-European Tense-aspect System. In Benjamin W. Fortson, Götz Keydana, Elisabeth Rieken, and Paul Widmer (eds.), *Indogermanische Forschungen*, 122.1, 295–307. Berlin / Boston: de Gruyter.
- LIV²: Rix, Helmut and Martin Kümmel. 2001. *Lexikon der indogermanischen Verben: die Wurzeln und ihre Primärstammbildungen*, 2nd edn. (LIV²). Wiesbaden: Reichert.
- Lowe, John. 2015. *Participles in Rigvedic Sanskrit*. Oxford: Oxford University Press.
- Lundquist, Jesse and Anthony D. Yates. 2018. The Morphology of Proto-Indo-European. In Jared Klein and Brian Joseph (eds.), *Handbook of Comparative and Historical Indo-European Linguistics*, 2079–195. Berlin: de Gruyter. <http://www.pies.ucla.edu/resources/ady/papers/IEmorph-F.pdf>.
- Macdonell, Arthur Anthony. 1916. *A Vedic Grammar for Students*. Oxford: Oxford University Press.

- Meillet Antoine. 1922. *Introduction a l'étude comparative des langues indo-européennes*. Paris: Hachette.
- Mumm, Peter Arnold. 2002. Retrospektivität im Rigveda: Aorist und Perfekt. In Heinrich Hettrich and Jeong-Soo Kim (eds.), *Indogermanische Syntax: Fragen und Perspektiven*, 157–188. Wiesbaden: Reichert.
- Napoli, Maria. 2006. *Aspect and Actionality in Homeric Greek. A Contrastive Analysis*. Milan: Angeli.
- Nicolle, Steve. 2012. Diachrony and Grammaticalization. In Robert I. Binnick (ed.), *The Oxford Handbook of Tense and Aspect*, 370–397. Oxford: Oxford University Press.
- Rijksbaron, Albert. 2002. *The Syntax and Semantics of the Verb in Classical Greek*, 3rd edn. Chicago / London: The University of Chicago Press.
- Rubin, Aaron D. 2008. The Subgrouping of the Semitic Languages. *Language and Linguistics Compass* 2.1, 61–84.
- Sicking, Christiaan Marie Jan. 1991. The Distribution of Aorist and Present Tense Stem Forms in Greek, Especially in the Imperative. In Hartmut Erbse, Klaus Nickau, and Klaus Strunk, *Glotta* 69.3/4, 154–170. Göttingen: Vandenhoeck & Ruprecht.
- Smyth, Herbert Weir. 1956. *Greek Grammar*. Cambridge, MA: Harvard University Press.
- Stowell, Tim. 2007. Sequence of Perfect. In Louis de Saussure, Jacques Moeschler, and Genoveva Puskas (eds.), *Recent Advances in the Syntax and Semantics of Tense, Mood and Aspect (Trends in Linguistics, vol. 185)*, 123–146. Berlin: Mouton de Gruyter.
- Stowell, Tim. 2008. Where the Past Is in the Perfect. In Ángeles Carrasco Gutierrez (ed.), *Tiempos compuestos y formas verbales complejas (Linguística Iberoamericana, vol. 34)*, 103–118. Madrid: Vervuet.
- Strunk, Klaus. 1994. Relative Chronology and Indo-European Verb-System: The Case of Present- and Aorist-Stems. *Journal of Indo-European Studies* 22.3/4, 417–434.
- Tichy, Eva. 1997. Vom Indogermanischen Tempus/Aspekt-System zum vedischen Zeitstufensystem. In Emilio Crespo and José-Luis García Ramón, *Berthold Delbrück y la sintaxis indoeuropea hoy (Actas del Coloquio de la indogermanische Gesellschaft 21–24 septiembre de 1994)*, 589–609. Madrid / Wiesbaden: Reichert.
- Vermant, Stefan. 1983. *The English Present Perfect: A Dynamic-synchronic Approach (Antwerp Papers in Linguistics no. 32)*. Wilrijk, Belgium: Universitaire Instelling Antwerpen, Departement Germaanse, Afdeling Linguïstiek.
- Wackernagel, Jacob. 1926–1928 [2009]. *Lectures on Syntax: with Special Reference to Greek, Latin, and Germanic*. Translated and edited with notes and bibliography by David Langslow. Oxford / New York: Oxford University Press.
- Weiss, Michael. 2011. *Outline of the Historical and Comparative Grammar of Latin*, 2nd (corr. repr.) edn. Ann Arbor / New York: Beech Stave.
- West, Martin L. 1998–2000. *Homeri Ilias*. Bibliotheca Teubneriana. Vol. 1 Berlin; Vol. 2 Leipzig: Teubner.
- West, Martin L. 2017. *Homerus Odyssea*. Bibliotheca Teubneriana. Berlin: De Gruyter.

- Whitney, William Dwight. 1889. *A Sanskrit Grammar*, 2nd edn. Cambridge MA: Harvard University Press.
- Willi, Andreas. 2007. Of Aspects, Augments, Aorists—or How to Say to Have Killed a Dragon. In George Coulter (ed.), *Greek and Latin from an Indo-European Perspective*, 34–48. Cambridge: Cambridge Philological Society.
- Willi, Andreas. 2018. *Origins of the Greek Verb*. Cambridge: Cambridge University Press.
- Willmott, Jo. 2007. *The Moods of Homeric Greek*. Cambridge: Cambridge University Press.