7. The Synthetic Perfect from Indo-Iranian to Late Vedic*

Eystein Dahl, UiT – The Arctic University of Norway

Abstract:

This paper outlines the origin and development of the synthetic Perfect from Indo-Iranian, the reconstructed common ancestral stage of the Iranian and Indo-Aryan languages, to Vedic, the oldest attested stage of Old Indo-Aryan. Comparative evidence from Old Iranian, Homeric Greek and a number of other Indo-European languages shows that this morphological category ultimately stems from Proto-Indo-European. In the course of its history, the synthetic Perfect develops from a P-oriented stative construction in Indo-European, via an anterior construction in Indo-Iranian to a general past tense with an emerging indirect evidential sense in Old Indo-Aryan. The present contribution highlights the various stages of development reflected in Vedic, but it also includes reference to the Indo-Iranian prehistory of the Vedic Perfect, as well as to its demise in later stages of Indo-Aryan. The development of the Indo-Iranian Perfect indicates that anterior categories tend to be rather unstable diachronically.

Keywords: Indo-Iranian, Indo-Aryan, stative, anterior, evidentiality.

1. Introduction

Among the various inherited tense-aspect categories in the Vedic verbal system, the synthetic Perfect of the type *takṣa* 'has made, fashioned' (from the verb root *takṣ-* 'fashion, make') represents an intriguing and elusive case. The synthetic Perfect is an inherited category, and that is at least of Proto-Indo-Iranian age, as shown by Iranian data like Gatha Avestan *tataša* 'has made, fashioned' (cf. Kümmel 2000). Moreover, data from Homeric and Classical Greek as well as a number of other Indo-European languages strongly indicate that the synthetic Perfect was part of the Proto-Indo-European verbal system.

While this much is uncontroversial, the semantic properties of the synthetic Perfect remain somewhat more disputed. According to one rather well established line of thought, the original construction had a resultative stative present meaning and was mainly formed from punctual unaccusative change of state verbs (cf. e.g. Delbrück 1897; Jasanoff 1978), a situation which is still largely reflected in Homeric Greek (cf. e.g. Jasanoff 1978: 14). However, as convincingly shown in Kümmel (2000), there is sufficiently clear comparative data from Early Vedic and Gatha Avestan to conclude that the Indo-Iranian synthetic Perfect had developed a more general semantics, possibly approaching a present anterior meaning (cf. e.g. Dahl 2011b). In Vedic Sanskrit, on the other hand, we witness a number of further developments. At the beginning of the Vedic tradition, the synthetic Perfect appears to have a present anterior meaning, but from early on this meaning approaches a general past meaning, the Perfect ultimately developing into an indirect evidential past category (cf. e.g. Dahl 2012, 2014, 2015).

This paper explores the development of the synthetic Perfect from Indo-Iranian to Late Vedic. Section 2 contains a brief outline of the theoretical framework on which this work is based (2.1) and an overview of the necessary philological information (2.2). Section 3 discusses the Indo-Iranian situation (3.1) and briefly comments upon the development of the synthetic Perfect in Old Iranian (3.2), where it is eventually replaced by a periphrastic construction (cf. Jügel this volume). Section 4 outlines the development of the synthetic Perfect in Old Indo-Aryan, from Early Vedic (4.1) via Middle Vedic (4.2) to Late Vedic (4.3). Section 5 summarizes the main points made in the course of the paper.

2. Theoretical and philological preliminaries

2.1 Theoretical considerations

I take it as uncontroversial that one of the universal functions of sentences consists in relating individuals and situations to times and worlds. The semantic domains of tense and aspect both concern the relation between individuals, situations and times, whereas modality concerns the relation between individuals, situations and possible worlds. Most language-specific tense systems seemingly presuppose a linear concept of time and, as a first approximation, this is taken to be a constitutive and hence universal feature of natural language. Accordingly, the linguistic concept of time may be defined as a dense, monodirectional directed path structure (cf. Dahl 2010: 31 with references).
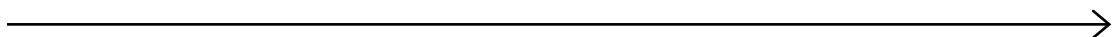
→

Figure 1: Time as a dense monodimensional directed path structure

Tense distinctions involve implicit reference to at least two points or intervals in time, the time of the utterance or speech time and the time of the situation or event time. However, as first noted by the logician Hans Reichenbach (cf. Reichenbach 1947), two temporal parameters are insufficient to account for the difference in meaning between categories like the English Simple Past and Present Perfect in a principled manner. Both of these two types of categories are or at least can be used to express that a situation is located prior to the time of speech. This is not the whole story, however, since while the Simple Past is perfectly compatible with adverbial expressions denoting a specific time in the past, the Present Perfect is generally incompatible with this kind of adverbial, as illustrated by the opposition between *He visited me (yesterday)* and *He has visited me *(yesterday)*. In order to account for the semantic difference between the Simple Past and Present Perfect, Reichenbach introduced a third parameter, reference time. Along the lines of works like Kamp & Reyle (1993), Eberle & Kasper (1994) and Kiparsky (1998, 2002), the present model presupposes four temporal parameters. These are speech time (t_S) or the time of the utterance, event time (t_E) or the run time of the event denoted by the predicate, reference time (t') or the time spoken about, and evaluation time (t_0) or the temporal perspective of the speaker. Evaluation time is understood as the temporal perspective from which something is regarded as past, present or future. This parameter is usually anchored in speech time but may be shifted to other times by various morphosyntactic means. Intervals rather than points are taken to constitute the basic values of the temporal parameters, points being regarded as minimal intervals. Furthermore, tense is understood as a type of relation between evaluation time/speech time and reference time, whereas aspect is a type of relation between reference time and event time.

In the present context, the anterior/perfect aspect is particularly relevant. Bybee et al. (1994: 54) define anteriors as follows:

'Anteriors (or "perfects" as they are often called) differ from completives in being relational: an anterior signals that the situation occurs prior to reference time and is relevant to the situation at reference time. Anteriors are often translated by the English Perfect and often accompanied by the relational adverbs 'already' and 'just'. Anteriors may occur with past or future tense marking.

In the time-relational framework outlined above, the anterior aspect may be defined in terms of a partial precedence relation between event time and reference time such that event time

precedes or overlaps with reference time (cf. e.g. Dahl 2010: 82). This definition is intended to capture an important feature that is left implicit in Bybee et al.'s (1994) definition of anteriors, namely that categories of this type tend to be vague with regard to whether the situation denoted by the predicate has been completed prior to reference time or not. Indeed, it is characteristic of this kind of category that the range of interpretations associated with a given form with anterior semantics depends on the semantic properties of the underlying predicate. For example, English Perfect forms of state predicates like *has slept* or *has lived* are vague with regard to both of the meanings identified above. On the other hand, corresponding forms of accomplishment predicates, e.g. *has built a house* or *has read the book* are only compatible with the completive reading. The relational dimension becomes somewhat more precise later in the text, where anteriors are defined in terms of 'a past action with current relevance' (Bybee et al. 1994: 61). It is not entirely clear how a notion like current relevance can be accounted for in the time-relational framework. In previous work (e.g. Dahl 2010: 85), this was resolved by introducing an 'extended now' present reference time, which is in essence a reference time extending from some indefinite time in the past. It typically, though not necessarily includes speech time as its final subinterval. The main motivation for introducing the extended now operator is the so-called universal reading associated with present anterior categories like the English Present Perfect. In a sentence like 'I have lived here since 2005', the Perfect expresses that the situation denoted by the predicate extends through the past and still holds at the time of the utterance, a reading enforced by the time adverb. It is dubious, however, whether this subtype of present time reference fully captures the notion of current relevance. This is because current relevance seems to imply a more general relation than the universal reading, which tends to be restricted to stative predicates, as just noted. We will return to this question later on.

As noted in the introductory section, the synthetic Perfect develops into an inferential past category in Old Indo-Aryan, a fact implying that evidentiality becomes a grammatically relevant semantic dimension in the language (cf. Cardona 2002, Dahl 2012). It is not immediately clear how a neo-Reichenbachian framework of the type just outlined can be accommodated to incorporate evidentiality distinctions. A revision of the model is therefore appropriate and necessary.

At the beginning of this section, we introduced the linear notion of time as a constitutive and hence universal feature of natural language, defined as a dense monodimensional directed path structure in Figure 1. The hypothesis that this notion of time is universal has the immediate advantage that it is falsifiable, since a priori it precludes, amongst other things, the possibility

that any natural language has a tense system based on, for instance, the notion of time as a repetition of cycles. There is reason to believe, however, that this definition of linear time may be somewhat too strong. Drawing on data from various Bantu languages, Botne & Kershner (2008) make a strong case for the claim that two distinct conceptualizations of time play a role in natural language, arising from two distinct metaphors, time as path and time as stream. In the first conceptualization, time 'is construed as a stationary time-line along which the Ego, the conceptualizer, moves' (Botne & Kershner 2008: 148). In the latter, time is conceptualized as moving and, in addition, 'either Ego or Event may be perceived of as moving with respect to the other' (ibid). Botne & Kershner (2008: 148) represent the relationship between the various dimensions of temporal conceptualization in the manner shown in Figure 2, where (a) symbolizes the stationary timeline, while (b) symbolizes moving time.
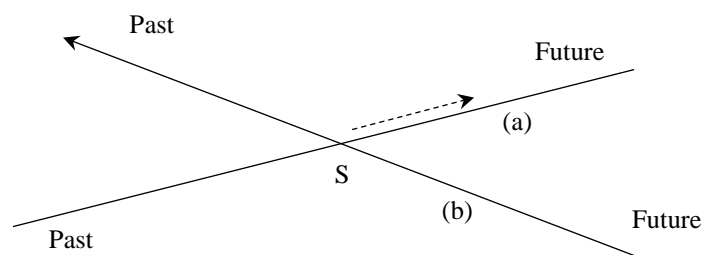

Figure 2.   Linguistic construals of time (line) combined (after Botne & Kershner 2008: 149)

Figure 2 illustrates how two of the construals of time distinguished above may combine to form a two-dimensional conceptual space for temporal interpretation. These observations suggest that time as expressed in language may also have more than one dimension, inviting the conclusion that the linguistic notion of time is neither monodimensional nor, strictly speaking, directed, contrary to the initial assumptions made in this section.

Botne & Kershner (2008: 152) define tense as a 'relation that holds between S (the locus of the speech event) and a cognitive temporal domain' and distinguish between inclusive and exclusive cognitive domains. Inclusive cognitive domains include the deictic center, characteristically anchored in S, as part of the time span of the cognitive world; such domains are labelled P-domains[1] and understood as 'a primary, prevailing experiential past and future perspective'. In exclusive cognitive domains, on the other hand, the deictic center is dissociated

---

[1] In the present context, P-domain is understood as shorthand for primary domain.

from the cognitive world; such domains are labelled D-domains.[2] Figure 3 gives a schematic representation of the rather complex model of linguistic time developed by Botne & Kershner (2008).[3]
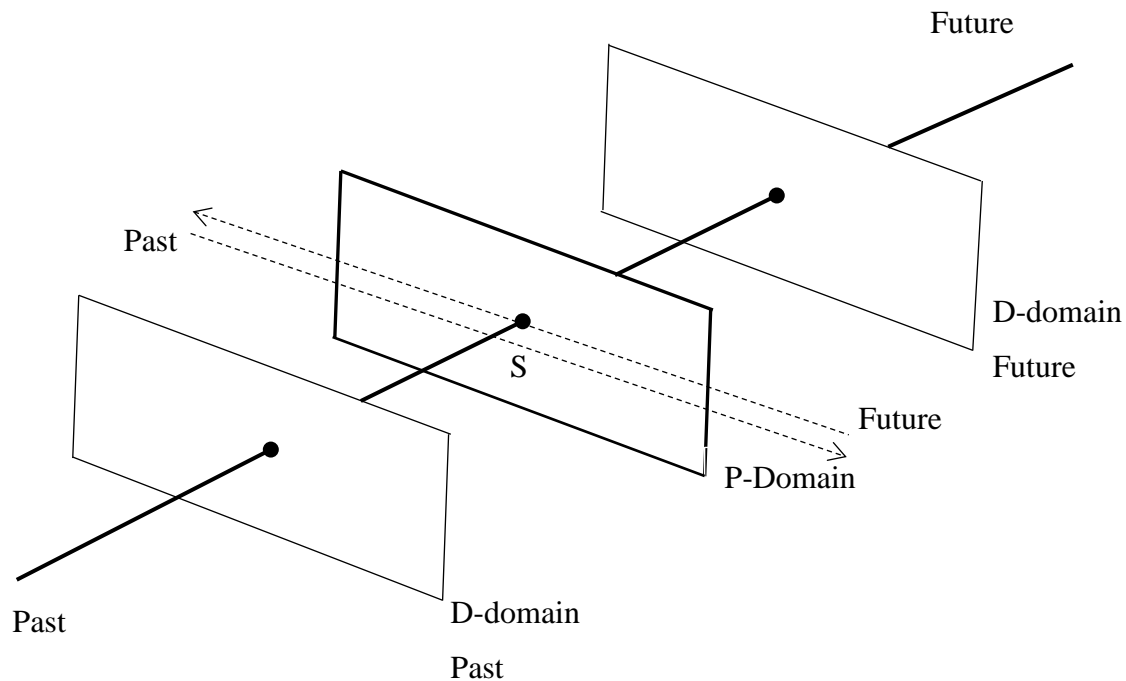

Figure 3.   Correlations of cognitive worlds with three perspectives on time (after Botne & Kershner 2008: 153)

At this point, some remarks are in order.[4] Attention should be paid to the fact that the stationary timeline is no longer associated with an arrow. This is motivated by the fact that it no longer represents a timeline along which the Ego moves in real time but rather a more markedly abstract timeline where voluntary movement in either direction is possible through imagination. In contrast, the moving timeline, where time is conceptualized as a stream, has a less abstract, more direct character, and represents the temporal dimension through which the Ego floats or

---

[2] In the present context, D-domain is understood as shorthand for dissociated domain.

[3] Cf. Botne & Kershner (2008: 149): 'In order to reduce the number of schemas used in the paper and to facilitate comparison of formal marking in each construal, we combine the path and stream orientations illustrated in Figure 2 into one diagrammatic representation, as in Figure 3. Furthermore, we will, henceforth, for ease of exposition, refer to each line as a timeline, even though conceptually they represent alternative perspectives on one timeline.'

[4] The following remarks are heavily indebted to Peter-Arnold Mumm. I wish to express my gratitude to him for bringing a number of intriguing consequences into focus for me.

over which the Ego contemplates. The two dimensions of time are associated with imagination and memory, respectively: While the P-domain and moving time are understood as the realm of personal experience and memory, the D-domain is the realm of imagination. This is a point where the previously introduced distinction between speech time and evaluation time proves useful, since D-domains may be understood in terms of evaluation times distinct from speech time.

This paper attempts to combine the insights incorporated in the neo-Reichenbachian framework outlined above and the multidimensional and multidirectional notion of time arising from Botne & Kershner's (2008) model. The distinction between inclusive and exclusive cognitive domains allows for reinterpreting current relevance, which is notoriously difficult to define in a one-dimensional model, in terms of speaker-oriented subjective proximity, a notion clearly belonging to the cognitively inclusive P-domain. On the other hand, narrative discourse contexts, which characteristically do not presuppose a relational interpretation with relevance for the situation at speech time, are, by definition, anchored in the cognitively dissociated D-domain. Another important advantage this combined framework has over the monodimensional framework, on which much of my previous work has been based, is that it allows for anchoring different evidentiality notions to the two domain types, in that the P-domain may be hypothesized to involve direct evidentiality and the D-domain indirect evidentiality.[5] These proposals will be further elaborated and refined below.

2.2 Philological preliminaries

In the present context, 'Vedic' refers to the language of the so-called Vedas, the sacred textual corpus of Hinduism, 'Classical Sanskrit' is the language codified by the indigenous Indian grammarian Pāṇini, 'Avestan' is understood as the language of the Avesta, the oldest attested Iranian collection of texts, forming an important part of the sacred texts of Zoroastrianism,

---

[5] As pointed out by a reader, there may be a conceptual problem here. Specifically, the idea that current relevance is part of the P-domain, while indirect evidentiality is anchored in some D-domain, may turn out to be difficult to maintain, since indirect evidentiality is sometimes strongly associated with current relevance. A case in point would be a situation where someone infers from indirect evidence that a situation must have taken place, for instance at a crime scene with no eyewitnesses. While I have to admit that I have no fully satisfactory analysis to offer, one way of dealing with this apparent dilemma would be to link this pattern of use to the fact that indirect evidentials develop from a resultative meaning through an inferential implicature, where the speaker infers a past situation on the basis on a present state. On this assumption, the inferential reading of indirect evidentials would represent a kind of bridging context, where a reading firmly anchored in the P-domain (resultative) invites an inference connected with another, cognitively less immediate domain.

while 'Old Persian' is used to mean the language of the inscriptions of the Achaemenids. Indo-Iranian or Proto-Indo-Iranian is understood as a hypothetical language reconstructed on the basis of Vedic, Avestan and Old Persian.

As the historical context of the Vedic primary sources remains to a large extent opaque, any attempt at establishing an absolute chronology for these texts remains uncertain. According to one widespread view the earliest extant text, the Rigveda, had attained the form known to us somewhere around 1200 BC. The latest Vedic texts are probably not much younger than 600 BCE. As regards Classical Sanskrit, it is difficult to establish an absolute chronology but a plausible date for Pāṇini's comprehensive description of Sanskrit, the Aṣṭādhyāyī, lies somewhere around 600 BCE. Our absolute chronological framework thus covers about 6 centuries, from approximately 1200 to 600 BCE.

The extant corpus of Vedic texts is rather voluminous and it is possible to distinguish at least five distinct chronological stages of Vedic. Table 1 gives an overview of these stages and the most important primary sources that constitute the diachronic framework in this work (cf. e.g. Witzel 1989, 1995).

Table 1. Chronological stages of Vedic

Early Vedic:	The language of the Rigveda (RV)[6]
Early Middle Vedic:	The language of the mantra parts of the Atharvaveda (AVŚ, AVP), the Yajurveda (VSM, VSK, TS^M, MS^M, KS^M) and the Rigvedakhilāni (RVK)
Middle Vedic:	The language of the oldest Vedic prose texts (e.g. TS^P, MS^P, KS^P, AB I-V, TB I-III 9, TĀ III-VI, ŚBM VI-X 5)
Late Middle Vedic:	The language of the younger Vedic prose texts (e.g. AB VI-X, ŚBM I-V, TB III 10-12, JB, KB)
Late Vedic ≈ Classical Sanskrit	The language of the youngest Vedic prose texts (e.g. BĀU = ŚBM X 6.4- 6.5.8, XIV 4.1-9.4)

Avestan and Old Persian represent the oldest attested stages of the Iranian branch of the Indo-Iranian languages. The Old Iranian corpora are considerably smaller than the Vedic corpus and,

---

[6] It should be noted that the Rigveda does not constitute a chronologically unitary corpus, as it partly contains very old material as well as relatively recent material. While I refrain from a discussion of its different chronological stages, I wish to draw attention to the fact that it contains some hymns that for various reasons rather belong to Early Middle Vedic than to Early Vedic proper. I refer to Kulikov (2013) for a different chronological framework.

consequently, our knowledge of the linguistic characteristics of these languages is somewhat less precise. Like the Vedic sources, the Avestan texts contain virtually no historical references and it is therefore difficult, if not impossible, to establish an absolute chronology for this corpus. However, most scholars agree that it is possible to discern two stages of Avestan, Old and Young Avestan. Old Avestan is the language of the strophic stanzas known as the Gāthās and of the ritual prose text Yasna Haptaŋhāiti, which most likely may be ascribed to the religious reformer Zarathuštra, as well as three holy prayers. Since Old Avestan is the language used in the Gāthās, some scholars use the term Gatha Avestan instead. Young Avestan is the language found in the remaining parts of the Avestan corpus and in scattered citations in Middle Iranian, most notably Pahlavi religious texts (cf. e.g. Hoffmann & Forssmann 2004: 33; Skjærvø 2009). The Old Persian sources, on the other hand, consist of inscriptions from the 6th to the 4th century BCE, which are datable with a high degree of confidence and appear to constitute a linguistically unitary corpus, reflecting a branch of Old Iranian that shows a number of intriguing differences vis-à-vis Avestan.[7]

Table 2. Chronological stages of Old Iranian

Old Avestan (Gatha Avestan)	The Gāthās of Zarathuštra (Yasna(Y) 28-34, 43-46, 47-50, 51 and 53)
	The Yasna Haptaŋhāiti (Y 35.2-41.6)
	Three holy prayers (Y 27.13, 27.14, and 54.1)
Young Avestan	The remaining parts of Yasna (Y 1-26, parts of Y 27 and Y 41, Y 42, Y 52, Y 54s.2-72)
	Vīsperad (Vr.) 1-24; Nyāyišn (Ny.) 1-5; Gāh (G.) 1-5; Yašt (Yt.) 1-21; Sīrōza (S.) 1-2; Āfrīnagān (A.) 1-4; and Vīdēvdād (Vendīdād; V) 1-22
Old Persian	The Inscriptions of the Achaemenids 6th to 4th Centuries BCE

The Vedic, Avestan and Old Persian sources pose serious challenges to any study of historical-comparative semantics, especially because the available texts rarely provide much contextual information. This raises the question of how one can delimit the semantic properties of grammatical categories in corpus languages and reconstructed languages based on textual evidence, which is in many cases not sufficiently clear or controversial. However, most of the distribution patterns discussed presently represent fairly well established tendencies in at least

---

[7] Skjærvø (2009: 51) distinguishes between four branches of Old Iranian: Old Central Iranian, to which Avestan belongs, Old South-West Iranian, which comprises Old Persian, Old Northwest Iranian and Old Northeast Iranian, the latter two of which are virtually unattested, apart from some names and loanwords found in other languages.

one of the Old Indo-Iranian languages and are in line with the comparative evidence provided by the others.

3. The Synthetic Perfect in Indo-Iranian

3.1 The Proto-Indo-Iranian Situation

As noted above, there is general agreement that the PIE synthetic Perfect represented a resultative/stative construction, primarily serving as the stative present of instantaneous achievement predicates.[8] Along similar lines, the Proto-Indo-Iranian (PII) synthetic Perfect has a strong tendency to carry present time reference and generally does not attract atelic predicates (cf. Di Giovine 1990, 1996a, 1996b; Kümmel 2000; Dahl 2011b). The Vedic and Avestan evidence suggests that the Indo-Iranian Perfect Indicative had at least two distinct readings. First, Perfect forms of a number of achievement predicates characteristically show a present state reading without any clear reference to a previous change of state, a property inherited from PIE. Many verbs of this type do not have a regular Present Stem in the Indo-Iranian languages, the Perfect carrying functions typically associated with the PII Present (cf. e.g. Kümmel 2000: 66-70; Dahl 2010: 126-128, 2011b).

(1) Rigveda V 44.15a [Early Vedic][9]

agnír	***jāgāra***	*tám*	*ŕcaḥ*	*kāmayante*
Agni:NOM	awake:PRF.3SG	he:ACC	Ṛk_verses:NOM	love:PRS.3PL

'Agni is wakeful, him the Ṛk-verses love' (after Dahl 2010: 358)

(2) Nirangistān 19 [Young Avestan]

aēšō	*ratu.friš*	*yō*	***jaγāra***
this:NOM	priest_pleaser:NOM	who:NOM	awake:PRF.3SG

---

[8] Note that a distinction is made by instantaneous achievements and achievements in this work. The difference between these two predicate classes is that instantaneous achievements (e.g. *explode*) are taken to be inherently punctual and telic, hence the distinct oddness of a sentence like +*the bomb was exploding *(but in the end it did not explode)*. Non-instantaneous achievements (e.g. *win*) are telic, but not inherently punctual, hence the acceptability of *he was winning the race (but in the end he did not win)* (cf. Dahl 2010: 38-40 for discussion).

[9] The examples and abbreviations follow the Leipzig Glossing Rules. In addition, I employ the following abbreviations in the glosses and the main text:

ABS: Absolutive, AOR: Aorist, IPF: Imperfect, OPT: Optative, PTC: Participle, PPP: Past Passive Participle, PRT: Particle, PRV: Preverb, PIE: Proto-Indo-European, PII: Proto-Indo-Iranian, t_S: Speech Time, t_E: Event Time, t_0: Evaluation Time, t': Reference Time, P-domain: Primary Domain, D-domain: Dissociated Domain.

'He who is wakeful satisfies the priest'

Second, comparative evidence suggests that PII Perfect forms of non-instantaneous achievement and accomplishment predicates were typically associated with a 'resultative' meaning, expressing that a state resulting from the completion of a past event holds at speech time. The resultative reading differs from the present state reading in that the resultative reading involves indirect reference to a previous change of state, while the present state reading does not. Note that here and elsewhere temporal adverbs like *nūnám/nūnáṃ*[10] 'now' and other *hic-et-nunc* deictic elements are taken to be strongly indicative of P-domain reference.

(3) Rigveda VIII 4.11 [Early Vedic]

ádhvaryo	*drāváyā*	*tvám̌*	*sómam*	*índraḥ*	*pipāsati /*
Adhvaryu:VOC	let_flow:IMP.2SG	you:NOM	soma:ACC	Indra:NOM	be_thirsty:PRS.3SG
úpa	*nūnáṃ*	***yuyuje***	*vŕ̥ṣaṇā*		
unto	now	yoke:PRF.3SG	horses:ACC		
hárī	*ā́=ca*		***jagā́ma***	*vr̥trahā́ //*	
bay:ACC	to=and		come:PRF.3SG	Vr̥trakiller:NOM	

'Adhvaryu, you let the soma flow! Indra is thirsty. Now the Vr̥trakiller has yoked his two bay horses and has come hither' (after Dahl 2010: 355)

(4) Yasna 29.1 [Old Avestan]

ā	*mā*	*aēšəmō*	*hazas=čā*	*rəmō*	***hišāiiā***
at	I:ACC	wrath:NOM	violence:NOM =and	restraint:NOM	bind:PRF.3SG

'Wrath and violence, restraint have bound me (and now keep me bound)' (after Skjærvø 2009: 133)

Under this reading, the Perfect denotes an event that has reached completion prior to reference time/speech time, implying that the state resulting from completion of the event still holds at the time of the utterance.

We noted previously that the PII Perfect generally appears to avoid combining with atelic predicates. It should be emphasized, however, that there is one significant counterexample to this lexical restriction, namely the state verb **as-* 'to be' (Vedic *as-*, Avestan *ah-*), which shows Perfect forms in both of the branches, as illustrated in (5) and (6).

(5) Rigveda VIII 20.15 [Early Vedic]

---

[10] Here and in the following, I give both the citation form and the contextually determined variant of the same form when they are not identical, i.e. *nūnám* is the citation form and *nūnáṃ* is a sandhi variant.

subhágaḥ	*sá*	*va*	*ūtíṣv*	**ā́sa**
blessed:NOM	he:NOM	you:GEN	protection:LOC	be:PRF.3SG
pū́rvāsu	*maruto*	*vyùṣṭiṣu /*		
earlier:LOC	Maruts:VOC	daybreaks:LOC		
yó	*vā*	*nūnám*	*utá ~*	*ásati //*
REL.NOM.SG	PTC	now	and	be:PRS.SBJV.3SG

'O Maruts, blessed with your protection at earlier daybreaks has he been, who will also be (blessed) now'

(6) Yasna 33.10 [Old Avestan]

vīspā̊	*stōi*	*hujītaiiō*	*yā̊*	*zī*	**ā̊ŋharə̄**	
all:NOM	be.INF	good_gains:NOM	REL.NOM	PTC	be:PRF.3PL	
yā̊s ~	*cā*	*həntī*	*yā̊s ~*	*cā*	*mazdā*	*⁺buuaiṇtī*
REL.NOM	and	be:PRS.3PL	REL.NOM	and	wise_one:VOC	become:PRS.3PL
ϑβahmī	*hīš*	*zaošē*	*ābaxšō.huuā*			
your:LOC	they:ACC	approval:LOC	receive:PRS.IMP.2SG			

'In order for all good gains to be available (to Thee), (namely) those which indeed have existed, and which exist, and which will exist, O Wise One, receive them into Thy approval' (after Humbach, Elfenbein and Skjærvø 1991: 138)[11]

The forms *ā́sa* in (5) and *ā̊ŋharə̄* in (6) clearly indicate that the PII verb **as-* 'to be' had a (partial) active Perfect paradigm, and that such forms were primarily used with an existential meaning.[12] Table 3 gives the inventory of Perfect forms belonging to this verb in Vedic and Avestan.[13]

---

[11] This translation takes the verb *ah-* 'to be' to have an existential meaning in this passage, being rendered as 'be available', 'have existed' and 'exist'. This example also illustrates that the verb *bauu-* 'become' is sometimes used with a clear future meaning in Avestan, forming a suppletive paradigm with *ah-*.

[12] A reader points out that the Vedic example seems to be compatible with an extended now reading, while the Avestan example is not compatible with this kind of reading. However, I take the frame adverb *nūnám/nūnáṃ* 'now' in the relative sentence to denote a time interval that includes speech time, forming a contrast to the clause with the Perfect form *ā́sa* 'has been', thus inviting an existential rather than a universal reading.

[13] These data raise some rather intriguing issues. One possibility is that Vedic reflects the PII situation, and that the gaps in the paradigm reflect accidental gaps in the corpus. Although I have found no explicit claims to this effect in the literature, most scholars appear to accept this assumption tacitly. Another possibility is that Avestan reflects the PII situation, that is, that the third person forms was the point of entrance, as it were, of the Perfect into the verbal paradigm associated with the verb **as-*, and that the full-fledged paradigm reflected in Vedic represents a later innovation of this branch. Some readers may frown upon this somewhat speculative scenario, not least

Table 3. Perfect forms of *as-* in Vedic and *ah-* in Avestan

	Vedic	Avestan
1st person singular	*ā́sa*	
2nd person singular	*ā́sitha*	
3rd person singular	*ā́sa*	*ā̊ŋha*
1st person dual		
2nd person dual	*āsáthur*	
3rd person dual	*āsátur*	
1st person plural	*āsimá*	
2nd person plural		
3rd person plural	*āsúḥ*	*ā̊ŋharə̄*

The examples in (5) and (6) illustrate that the Perfect forms of Vedic *as-* and Avestan *ah-* typically denote a situation or state which has occurred at least once prior to the time of the utterance. This is the reading labeled as 'experiential' or 'existential', characteristically associated with present anterior categories. These considerations suggest that the PII synthetic Perfect was not only innovative vis-à-vis its PIE ancestral construction in being marginally compatible with state predicates but that the resulting constellation tended to yield an existential meaning. We may therefore conclude that the PII synthetic Perfect had developed a present anterior aspectual semantics largely corresponding to the English Present Perfect (cf. e.g. Kümmel 2000; Dahl 2011b). On the assumption that present anterior categories by definition are associated with the notion of current relevance, as discussed in Section 2.1 above, we may tentatively assume that the PII Perfect was restricted to the P-domain.

Judging from the comparative data, the PII verbal system had a complex inventory of tense/aspect categories (cf. Dahl 2011a, 2011b). Even though a full discussion of these matters is far beyond the scope of the present paper, it may be useful to consider the position of the Perfect within this system. PII had an opposition between perfective and neutral aspect in the past tense system,[14] expressed by the so-called Aorist and Imperfect, and an opposition between

---

because the Avestan corpus is so limited that one may reasonably doubt whether it can serve as the base of an *argumentum ex silentio* along the proposed lines.

[14] Along the lines of Dahl (2010 and elsewhere), the neutral aspect is taken to represent an underspecified aspectual category that is compatible with imperfective and perfective readings alike. In a time-relational framework like that outlined previously in this paper, the neutral aspect may be defined in terms of a general overlap relation

the present anterior Perfect and the neutral Present in the present tense system. Drawing on the discussion in Dahl (2011a, 2011b), we may tentatively conclude that the PII Perfect and Present were restricted to the P-domain and that the Imperfect was restricted to past D-domains.[15] Consider, by way of illustration, the examples from Early Vedic and Old Persian in (7) and (8).

(7) Rigveda X 72.3ab[Early Vedic]

devā́nāṃ	*yugé*	*prathamé*
Gods:GEN	generation:LOC	first:LOC
'sataḥ	*sád*	***ajāyata*** /
not_being:ABL	being:NOM	be_born:IPF.3SG

'In the (time of the) first generation of gods, being was born from not-being' (after Dahl 2010: 187)

(8) Darius Behistun B[Old Persian]

iyam	*gaumāta*	*haya*	*magus*
this:NOM	Gaumāta:NOM	the:NOM	Magian:NOM
adurujiya	avaθā	*aθanha*	
lie:IPF.3SG	thus	say:IPF.3SG	

'This (picture represents) Gaumāta the Magian; he lied (and) said thus' (after Skjærvø 2009: 129)

These examples illustrate that the Vedic and Old Persian Imperfect tended to be used in contexts referring to past times that do not involve any direct relation to the time of speech but rather appear to be cognitively distant, a feature characteristic of D-domains.

The PII Aorist, on the other hand, appears to have a more flexible distributional pattern. On the one hand, Aorist forms are found in past D-domains, in complementary distribution with the Imperfect (cf. Dahl 2011a: 276f.). On the other hand, Aorist forms in the source languages express that a situation has occurred immediately prior to speech time, as illustrated in (9) and (10).[16] Such examples suggest that the PII Aorist was compatible with the P-domain as well.

(9) Rigveda I 113.11 [Early Vedic]

---

between reference time and event time. I take the overlap relation to imply that two intervals minimally share one subinterval, thus giving rise to a broad range of lexically and contextually determined readings.

[15] Here and in the following, I am primarily referring to the paradigmatic forms carrying inherent tense and neutral modal value, that is, the indicative forms of the tense/aspect stems.

[16] Another readily available interpretation, kindly suggested to me by the Editors, is that the Aorist Indicative in such cases has a perfective present meaning, denoting an instantaneous event with no extension and already completed as it appears.

asmā́bhir	*ū*	*nú*	*praticákṣiyā* ~	***abhū́d***
we:INS	and	now	visible:NOM	become:AOR.3SG

'And now she has come into existence to be seen in turn by us' (after

Klein 1978: 134)

(10) Yasna 45.8 [Old Avestan]

nū	*zīṯ*	*cašmaⁱnī*	***vii.ā̆.darəsəm***
now	for	eye:LOC	catch_sight:AOR.1SG

'For I just now caught sight of it in (my) eye' (after Skjærvø 2009: 130)

Figure 4 gives a schematic representation of the distribution of tense/aspect forms in PII.[17]
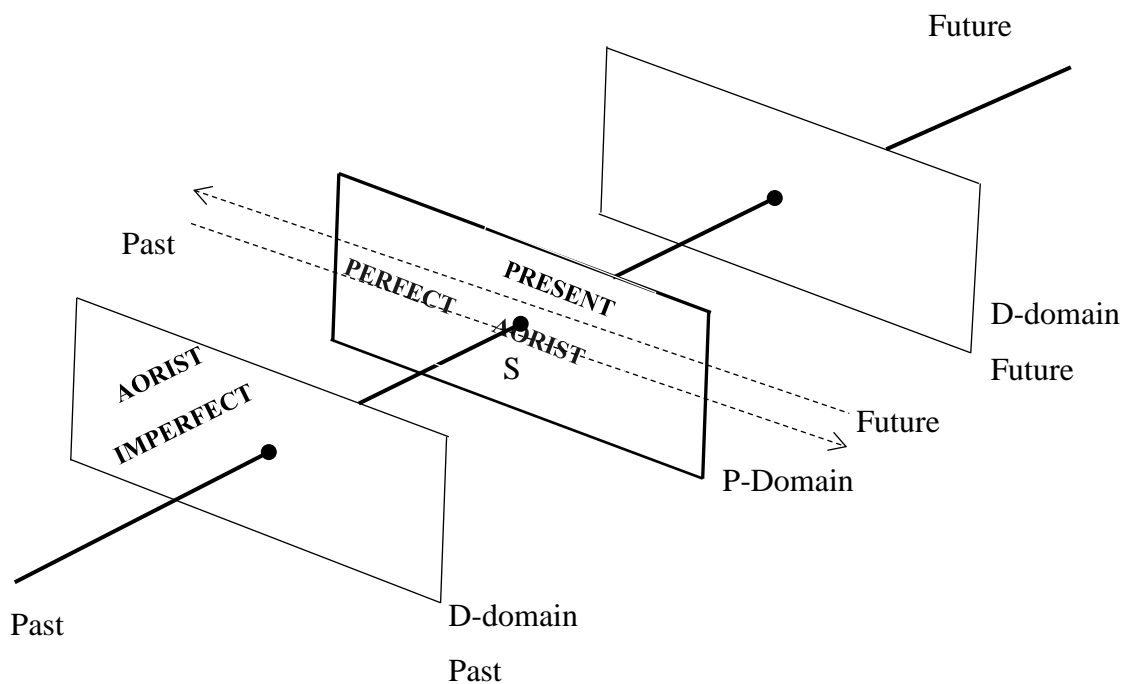
Figure 4: The distribution of the tense/aspect categories across the cognitive domains in PII

3.2 Outline of the development of the synthetic Perfect in Old Iranian

In his comprehensive monograph on the synthetic Perfect in Indo-Iranian, Kümmel (2000: 683) notes that the Avestan data are too scanty to allow for any firm conclusions as to the development of the Perfect. He observes, however, that there is no evidence of a narrative use of the Perfect in Avestan, suggesting that it represented a present anterior category in this stage

---

[17] A reader points out that on the perfective present reading, the Aorist Indicative would represent a point in S, while the Present Indicative would denote an interval. Figure 4 does not fully capture this distinction, but still locates the Aorist Indicative in the immediate vicinity of the Present Indicative.

of Iranian. This assumption is partly supported by data like those discussed in Section 3.1 and partly by the fact that the Avestan Perfect occasionally appears to have something like a universal reading, as illustrated in (11).

(11) Yasna 1.1 [Young Avestan]

yō	*nō*	*daδa*	*yō*	*tataša*
REL.NOM	we:ACC	place:PRF.3SG	REL.NOM	form:PRF.3SG
yō	***tuϑruiiē***	*yō*	*mainiiuš*	*spəṇtōtamō*
who:NOM	nourish:PRF.3SG	who:NOM	spirit:NOM	most_divine:NOM

 '(Ahura Mazda) who has set us in place, who has fashioned us, who has

 nourished us, the most divine spirit' (after Dahl 2011b: 285)

Here, the Perfect form *tuϑruiiē* appears to have a universal reading, denoting a situation that has extended through the past and still holds at the time of utterance. As noted previously, this reading is restricted to atelic predicates in Vedic. In contrast, the Perfect forms *daδa* 'has placed' and *tataša* 'has fashioned' seem to have an existential reading here, reflecting the fact that they are based on underlying telic predicates.

 In Old Persian, we find only one undisputed relic form of the synthetic Perfect, namely the Perfect Optative form *caxriyā* 'might make' (Darius, Behistun I 50). Even though the Iranian evidence is quite limited, there seems to be reason to assume that the inherited synthetic Perfect represented a present anterior category in the earliest stages of Iranian, and that it maintained this character throughout historically attested Avestan. In Old Persian, on the other hand, the synthetic Perfect was fully replaced by the analytic Perfect of the *manā kərtam* type, illustrated in (12).

(12)   Darius, Behistun I 27-28 [Old Persian]

ima	*taya*	*manā*	*kərtam*	*pasāva*
that:NOM	which:NOM	I:GEN	do:PPP	after
yaθā	*xšāyaθiya*	*abavam*		
when	king:NOM	become:IPF.1SG		

'This (is) (that) which was done by me after (I) became king' (after Kent

 1953: 117)

I refer to Haig (2008) and Jügel (this volume) for a more thorough discussion of the organization of the Old Persian past tense system and the development of the analytic Perfect construction in Iranian.

    4.   The synthetic Perfect in Old Indo-Aryan

4.1 The synthetic Perfect in Early Vedic

As suggested by the discussion in Section 3.1, the Early Vedic synthetic Perfect shows a number of readings that are characteristically associated with present anterior categories. In previous work (e.g. Dahl 2010), I have attempted to make a case for the claim that the Old Indo-Aryan Perfect is a present anterior category at the beginning of its attested history, thus essentially maintaining the semantic properties of its PII ancestor. Examples (13) through (16), illustrate that the Early Vedic Perfect is compatible with a universal reading (13), an existential reading (14), a resultative reading (15) and a present state reading (16).

(13)   Rigveda VIII 67.16 [Early Vedic]

śáśvad	*dhí*	*vaḥ*	*sudānava*	*ā́dityā*
continuously	for	you:GEN	of_good_gifts:VOC	Ādityas:VOC

ūtíbhir	*vayám*	*purā́*	*nūnám*	***bubhujmáhe***
favours:INS	we:NOM	formerly	now	enjoy:PRF.1PL

'For we have constantly been enjoying ourselves by your favors, o Ādityas of good gifts, formerly (and) now'

(14) Rigveda IX 23.7 [Early Vedic]

asyá	*pītvā́*	*mádānām*	*índro*	*vṛtrā́ṇi*	*apratí*
it:GEN	drink:ABS	exhilarating_drinks:GEN	Indra:NOM	enemies:ACC	unopposable:ACC

jaghā́na	*jaghánac*	*ca*	*nú*
smite:PRF.3SG	smite:PRF.SBJV.3SG	and	now

'Having drunk of its exhilarating drinks Indra has smashed unopposable enemies and shall have them smashed now'

(15) Rigveda IX 67.30 [Early Vedic]

alā́yyasya	*paraśúr*	***nanā́śa***
Alāyya:GEN	axe:NOM	disappear:PRF.3SG

tám	*ā́*	*pavasva*	*deva*	*soma* /
he:ACC	hither	purify:PRS.IMP.2SG	god:VOC	Soma:VOC

ākhúṃ	*cid*	*evá*	*deva*	*soma* //
mole:NOM	like	just	god:VOC	Soma:VOC

'Alāyya's axe has disappeared. O god Soma, bring it hither after purification, that which is (hidden) like a mole, god Soma!' (cf. also Dahl 2010: 355)

(16) Rigveda IV 24.5 [Early Vedic]

ā́d íd	*dha*	*néma*	*indriyáṃ*	*yajanta*
and_right_then	PTC	some:NOM	of_Indra:ACC	sacrifice:PRS.3PL

ā́d ít	*paktíḥ*	*puroḷā́śaṃ*	*riricyāt* /

and_right_then	cooked_food:NOM		rice_cake:ACC	leave:PRF.OPT.3SG	
ā́d ít	*sómo*		*ví*	*papṛcyā́d*	*ásuṣvīn*
and_right_then	Soma:NOM		apart	mix:PRF.OPT. 3SG	non_pressers:ACC
ā́d íj	**jujóṣa**		*vṛṣábhaṃ*	*yájadhyai //*	
and_right_then	become_pleased:PRF.3SG		bull:ACC	sacrifice:INF	

'And right then some are sacrificing to Indra's (name), right then the cooked food may succeed the rice cake, right then soma may exclude the non-pressers, right then he has become pleased with the bull for the sacrifice'

Under the assumption that the Early Vedic Perfect is a present anterior category, it is, by definition, associated with the aspectual relation 'Event time precedes or overlaps with Reference time' and the temporal relation 'Evaluation time included in Reference time'. An immediate advantage of an analysis along such lines is that it allows for distinguishing between the three readings illustrated in (13) through (16) in a straightforward way.

First, the universal reading, which is limited to atelic predicates, illustrated in (13), expresses that a situation has been going on from some indefinite time in the past until the time of the utterance. It implies that event time is coextensive with reference time, which includes evaluation time as its last subinterval. This constellation is schematically illustrated in Figure 5.
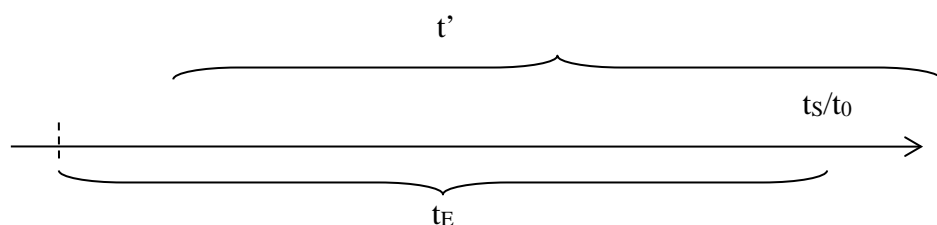

Figure 5: A time-relational representation of the universal reading of the Early Vedic Perfect

Second, the existential reading, illustrated in (14), expresses that one or more instantiations of the situation denoted by the predicate has been terminated prior to the time of the utterance, implying that event time precedes reference time which includes evaluation time, a constellation that may be schematically expressed as in Figure 6.
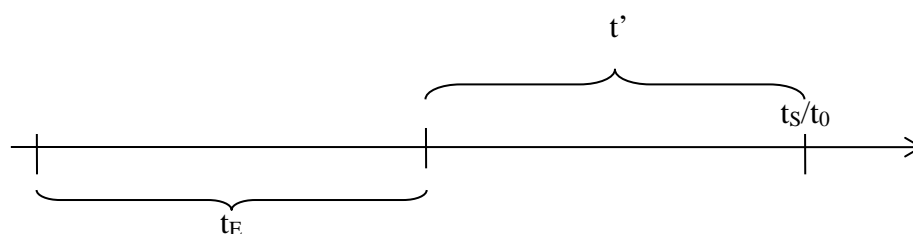
Figure 6: A time-relational representation of the existential reading of the Early Vedic Perfect

Third, the resultative reading, illustrated in (15), expresses that an event has been completed prior to the time of the utterance and that a state resulting from the completion of a single, specific instantiation of the event type denoted by the predicate holds at the time of the utterance. One way of analyzing this reading is that it implies that event time immediately precedes reference time, which includes evaluation time, and is coextensive with the state resulting from the completion of the event (RS), as schematically expressed in Figure 7.
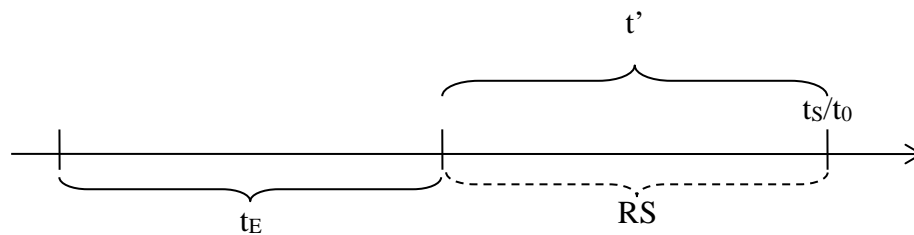
$$t'$$

$$t_S/t_0$$

$$t_E \qquad RS$$

Figure 7: A time-relational representation of the resultative reading of the Early Vedic Perfect

On this analysis, the resultative reading of the Early Vedic Perfect is a semantically more specific variant of the existential reading. Example (16) illustrates that the Perfect has a stative present reading with instantaneous achievement predicates, which may be analyzed as a lexically determined variant of the resultative reading. The stative present reading of the Early Vedic Perfect is schematically represented in Figure 8.
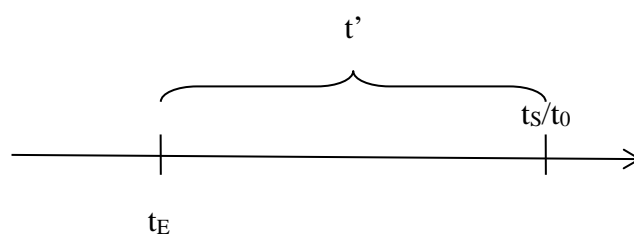
$$t'$$

$$t_S/t_0$$

$$t_E$$

Figure 8: A time-relational representation of the stative present reading of the Early Vedic Perfect

The stative present reading of the Early Vedic Perfect is restricted to a limited group of instantaneous achievement predicates that remains relatively stable through the history of Vedic. Under the assumption that the anterior aspect may give rise to a reading according to which event time overlaps with reference time, the punctual character of instantaneous achievement predicates may be interpreted as the first subinterval of a state of the type implied by the verb, thus defocusing the change of state feature associated with predicates of this kind.

The assumption that the Early Vedic synthetic Perfect is a present anterior category runs into the difficulty that there is one example in the Rigveda of a Perfect Indicative form modified by the frame adverb *hyás/hyáḥ* 'yesterday', cited in (17).

(17) Rigveda X 55.5d [Early Vedic (?)]

adyā́	*mamā́ra*	*sá*	*hyáḥ*	***sám***	***āna*** //
today	die:PRF.3SG	he:NOM	yesterday	PRV	breathe:PRF.3.SG

'Today (the moon) has died. Yesterday he (still) breathed'

The fact that the Perfect is compatible with frame adverbs denoting a specific past time interval is remarkable indeed. It constitutes a genuine counterexample to the analysis of the Early Vedic Perfect as a present anterior category, since categories of this kind tend to be odd or incompatible with such frame adverbs. However, the hymn from which example (17) is extracted belongs to the tenth book of the Rigveda which is generally considered to constitute a relatively young part of this text corpus (cf. e.g. Kulikov 2013 for discussion). It is therefore reasonable to conclude that the example in (17) reflects a later stage in the development of the Vedic Perfect, being suggestive of a development from anterior to perfective/simple past.

Along analogous lines, Dahl (Forthcoming) makes a case for the claim that the Early Vedic Perfect represents a transitional stage between the inherited present anterior semantics and its later general past semantics. This assumption reflects the observation that the Early Vedic Perfect sometimes occurs in contexts with a clear anchoring in the P-domain, as illustrated in (18) through (20), and in other cases occurs in contexts anchored in a past D-domain, examples of which are found in (21) and (22).

(18)   Rigveda IV 6.7cd [Early Vedic]

ádhā	*mitró*	*ná*	*súdhitaḥ*	*pāvakò*
now	contract:NOM	like	benevolent:NOM	bright:NOM
'gnír	***dīdāya***	*mắnuṣīṣu*	*vikṣú //*	
Agni:NOM	begin_to_shine:PRF.3SG	of_men:LOC	clans:LOC	

'Like a well-established contract does the pure Agni now shine among the human clans [P-Domain]' (after Klein 1985: 114)

(19) Rigveda VI 34.1cd [Early Vedic]

purắ	*nūnám*	*ca*	*stutáya*	*ŕ̥ṣīṇāṃ*
formerly	now	and	praise:NOM	sages:GEN
paspṛdhrá	*índre*	*ádhy*	*ukthārkắ //*	
compete:PRF.3PL	Indra:LOC	for	verse_and_song:NOM	

'Previously and now the praises of the sages, their verses and songs have contended over Indra [P-Domain]'

(20) Rigveda I 145.1a [Early Vedic]

táṃ	*pṛcchatā*	*sá*	***jagāmā***	*sá*	*veda*
he:ACC	ask:PRS.IMP.2PL	he:NOM	come:PRF.3SG	he:NOM	know:PRF.3SG

'Ask him! He has come, he knows [P-domain]' (after Jamison & Brereton 2014: 322)

(21) Rigveda I 32.2 [Early Vedic]

áhann	*áhiṃ*	*párvate*	*śiśriyāṇáṃ*	
smite:IPF.3SG	dragon:ACC	mountain:LOC	lie:PRF.PRT.ACC	
tváṣṭā	*asmai*	*vájraṁ*	*svaryàṃ*	***tatakṣa /***
Tvaṣṭar:NOM	he:DAT	mace:ACC	resounding:ACC	make:PRF.3SG
vāśrắ	*iva*	*dhenávaḥ*	*syándamānā*	*áñjaḥ*
bellowing:NOM	like	milkcow:NOM	stream:PRS.PRT.NOM	straight
samudrám	*áva*	*jagmur*	*ắpaḥ //*	
sea:ACC	to	go:PRF.3PL	waters:NOM	

'He smashed the serpent resting on the mountain – for him Tvaṣṭar had fashioned the resounding[/sunlike] mace[past D-domain]. Like bellowing milk-cows, streaming out, the waters went straight down to the sea' (after Jamison & Brereton 2014: 134f.)

(22) Rigveda X 73.10 [Early Vedic]

áśvād	***iyāya* ~**	*íti*	*yád*	*vádanty*
horse:ABL	go:PRF.3SG	thus	when	speak:PRS.3PL

ójaso	*jātám*	*utá*	*manya*	*enam /*
power:ABL	born:ACC	then	think:PRS.1SG	he:ACC

manyór	***iyāya***	*harmyéṣu*	***tasthau***	
rage:ABL	go:PRF.3SG	safe_house:LOC	stay:PRF.3SG	

yátaḥ	***prajajñá***	*índro*	*asya*	*veda //*
whence	be_born:PRF.3SG	Indra:NOM	this:GEN	know:PRF.3SG

'When they say: "He came from a horse", then I think that he is born from power. He came from (battle) fervour, he stayed in a safe house. Only Indra knows from whence he was born' [(inferential) past D-domain][18]

These examples illustrate that the Early Vedic Perfect is compatible with both types of cognitive domains. Given what has been said above, it is tempting to analyze this as the result of an ongoing change in the behavior of the Perfect, reflecting a change in its temporal semantics. We have already noted that the universal reading of the Perfect is virtually unattested after the Early Vedic period. Similar considerations apply to the stative present reading, which remains a lexically distributed archaism in later stages of Vedic but does not show any sign of productivity, since virtually no new Perfect forms yielding this reading are attested and some of the relevant inherited Perfect stems are formally assimilated to Present stems (cf. also Kümmel 2000). These considerations suggest that the behavior of the Early Vedic Perfect Indicative reflects a transitional stage between a situation where it is more or less restricted to the P-domain, as was hypothesized to be the case in PII, and a situation where it is restricted to past D-domains. Figure 9 gives a representation of how two Perfect forms, *jagāma* (20) and *takṣa* (21) are mapped onto the cognitive domains in Early Vedic.

---

[18] It must be conceded, however, that the evidence for an inferential past reading of the Early Vedic Perfect provided by this example is perhaps not of the strongest possible kind. This is because the verse may also be interpreted as implying a P-domain-oriented rather than a D-domain oriented interpretation since it pertains to the origin of the now and always powerful Indra. In that case, the Perfect forms would have a more strictly existential reading, as kindly pointed out to me by Peter-Arnold Mumm.
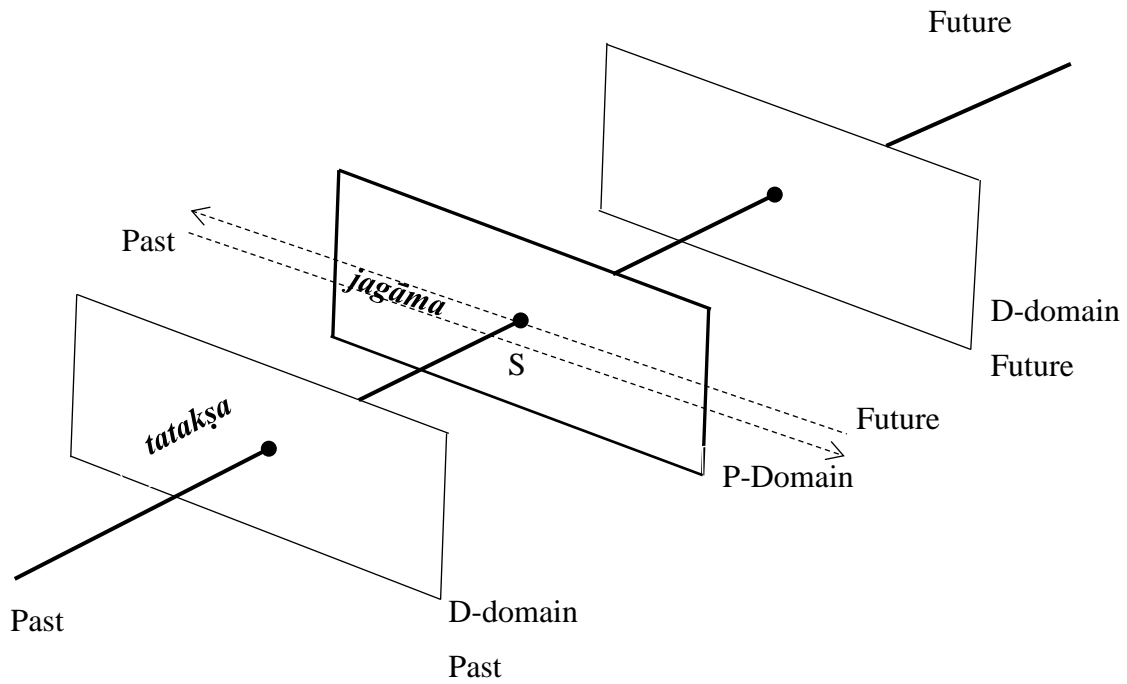
Figure 9. Perfect forms in different cognitive domains

Figure 10 gives a representation of the distribution of the tense/aspect categories across the cognitive domains in Early Vedic.
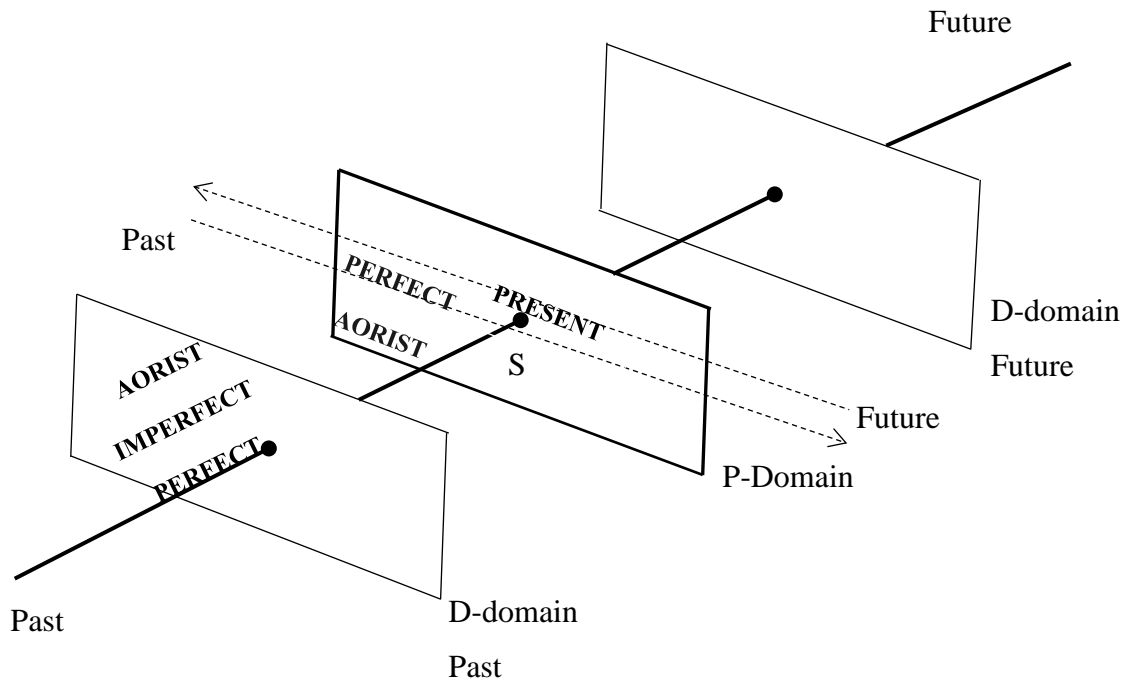
Figure 10:   The distribution of the tense/aspect categories across the cognitive domains in Early Vedic

In previous work (e.g. Dahl 2010: 86, 371) I have suggested that the inferential reading often associated with old Perfects across languages may be analyzed in terms of an implicit or explicit intensional operator. In the present context, such operators may be taken to have the effect of shifting the anchoring of a sentence to a cognitively more or less distant D-domain, typically outside the scope of the speaker's own sphere of experience. While the resultative reading characteristically highlights a present state resulting from the completion of a past event, as in (20), repeated here for convenience, the inferential reading is taken to infer a past event from a present situation, as tentatively illustrated in (22), also repeated.

(20) Rigveda I 145.1a [Early Vedic]

tám	*pṛcchatā*	*sá*	***jagāmā***	*sá*	***veda***
he:ACC	ask:PRS.IMP.2PL	he:NOM	come:PRF.3SG	he:NOM	know:PRF.3SG

'Ask him! He has come, he knows [P-domain]' (after Jamison & Brereton 2014: 322)

(22) Rigveda X 73.10 [Early Vedic]

áśvād	***iyāya ~***	*íti*	*yád*	*vádanty*
horse:ABL	go:PRF.3SG	thus	when	speak:PRS.3PL
ójaso	*jātám*	*utá*	*manya*	*enam /*
power:ABL	born:ACC	then	think:PRS.1SG	he:ACC
manyór	***iyāya***	*harmyéṣu*	*tasthau*	
rage:ABL	go:PRF.3SG	safe_house:LOC	stay:PRF.3SG	
yátaḥ	***prajajñá***	*índro*	*asya*	*veda //*
whence	be_born:PRF.3SG	Indra:NOM	this:GEN	know:PRF.3SG

'When they say: "He came from a horse", then I think that he is born from power. He came from (battle) fervour, he stayed in a safe house. Only Indra knows from whence he was born' [(inferential) past D-domain]

While the idea that the inferential reading is a contextually determined variant of the resultative reading introduced by an intensional operator certainly is appealing, it is unclear exactly what function this operator has. One way of interpreting an analysis along these lines within the multidimensional timeline approach is that intensional operators of the kind under discussion pick out D-domains that are outside the scope of the speaker's own experience. Given that the resultative reading is anchored in the P-domain, the inferential reading may be regarded as a kind of bridge context between the P-domain and cognitively dissociated D-domains. Some corollaries of an analysis along these lines will be explored in the following sections.

4.2 The synthetic Perfect in Middle Vedic

4.2.1   The Early Middle Vedic Perfect

In Early Middle Vedic, the Perfect shows a somewhat different range of readings from that associated with its Early Vedic predecessor, suggesting that its semantic properties have undergone a slight change. In (17) we encountered an example of a Perfect form modified by the adverb *hyás* 'yesterday', possibly a reflection of an ongoing semantic change. In Early Middle Vedic similar examples occur, as illustrated in (23), where the adverb *ágre* 'in the beginning' modifies the Perfect form *suṣuve* from the verb *SAV-* 'press, extract', implying a remote past reading. It should be noted, however, that the pronoun *imám* 'this here' implies a continuity with the present extraction of soma, reflecting a tension between P-domain and a D-domain orientation. This example may be regarded as a bridging context, where the inherited experiential reading of the Perfect is on the verge of developing into a general past reading.[19]

(23) Taittirīya-Saṃhitā I 7.10.1 [Mantra, Early Middle Vedic]

vā́jasya	*imám*	*prasaváḥ*	***suṣuve***	*ágre*
strength:GEN	this:ACC	impulse:NOM	extract:PRF.3SG	beginning:LOC
sómaṁ	*rā́jānam*	*óṣadhīṣv*	*apsú*	
soma:ACC	king:ACC	herb:LOC	water:LOC	

'In the beginning, the incentive of reward extracted this king soma from the herbs and waters'[20] [P-domain or D-domain]

Examples like those cited in (17) and (23) clearly show that the Early Middle Vedic Perfect is compatible with specific past reference times, suggesting that it represents a past tense category at this stage. This observation is corroborated by the fact that there appear to be very few examples of Perfect Indicative forms with a universal reading at this stage. A possible example is given in (24).

(24) Atharvaveda Paippalāda VI 3.10 [Early Middle Vedic][21]

yad	*dhāvanti*	*punate*	*tad*	*āpo*

---

[19] Recall the above remark that the experiential reading of anteriors characteristically refers to some indefinite time in the past, and that categories of this kind tend not to be compatible with frame adverbs denoting a specific past time, such as *ágre* 'in the beginning'. I am grateful to Peter-Arnold Mumm for bringing the ambiguous tension in this example into focus for me.

[20] The present translation of *vā́jasya prasaváḥ* as 'incentive of reward' *grosso modo* follows Amano (2009: 409f.) who gives the translation 'Antrieb zum Sieg im Wettrennen.'

[21] The text follows Griffiths (2009). Bhattacharya (1997) reads *saṃ **papṛchre*** 'they have exchanged greetings'.

when	run:PRS.3PL	cleanse_oneself: PRS.3PL	then		waters:NOM
yat	*tiṣṭhanti*	*śuddhā*	*it*	*tad*	*bhavanti /*
when	stand:PRS.3PL	clean:NOM	indeed	then	become:PRS.3PL
na	*asām*	*avadyam*	*avidaṃ*	*na*	*ripraṃ*
not	they:GEN	imperfection:ACC	find:AOR.1SG	not	impure:ACC
sanād	*eva*	*madhunā*	*saṃ*	**papr̥cre**	
old:ABL	just.so	sweetness:INS	PRV	mix:PRF.3PL	

'When they stream, then the waters cleanse themselves; when they stand still, then they become pure. I have not found any imperfection or vice of theirs. From ancient times they have been mixed with sweetness (Soma)'[P-domain]

These considerations indicate that the Early Middle Vedic Perfect had an inventory of readings primarily associated with D-domains, examples like the one cited in (25) shows that it possessed a resultative reading, which by hypothesis is anchored in the P-domain, as indicated by the pronoun *imám/imáṃ* 'this here'.

(25) Atharvaveda Śaunakīya VII 20.5 [Early Middle Vedic]

ā́		*imáṃ*	*yajñám*	*ánumatir*	**jagāma**
to		this:ACC	sacrifice:ACC	Anumati:NOM	come:PRF.3SG
sukṣetrátāyai		*suvīrátāyai*		*sújātam /*	
possession_of_good_field:DAT		possession_of_good_men:DAT		excellent:ACC	
bhadrā́		*hy*	*àsyāḥ*	*prámatir*	*babhū́va*
prosperous:NOM		for	she:GEN	providence:NOM	become:PRF.3SG

'Anumati has come unto this excellent sacrifice to grant us abundance of fields and heroes. For her providence has become prosperous (before). [P-domain]'

Before concluding this section, brief mention should be made that Perfect forms of instantaneous achievement predicates have a stative present meaning in Early Middle Vedic, just like in Early Vedic. The examples in (26) and (27) suffice to illustrate.

(26) Atharvaveda Śaunakīya XI 4.25ab [Early Middle Vedic]

ūrdhváḥ	*suptéṣu*	**jāgāra**	
upright:NOM	sleeping:LOC	awake:PRF.3SG	
nanú	*tiryáṅ*	*ní*	*padyate*
never	horizontally	down	fall:PRS.3SG

'Upright is he awake among the sleeping ones; never does he fall down horizontal'

(27) Atharvaveda Śaunakīya V 11.4cd [Early Middle Vedic]

tvám	*tá̄*	*víśvā*	*bhúvanāni*		***vettha***	
you:NOM	the:ACC	all:ACC	being:ACC		know:PRF.2SG	
sá	*cin*	*nú*	*tváj*	*jáno*	*māyī́*	***bibhā́ya***
the:NOM	even	now	you:ABL	man:NOM	cunning:NOM	become_afraid:PRF.3SG

'You know all these beings. Even the cunning man is now afraid of you'

In Early Middle Vedic, then, Perfect forms with past time reference anchored in a past D-domain become more frequent, although we find a number of examples of Perfect forms with P-domain anchoring.

The data considered in this section suggest that Early Middle Vedic Perfect shows a similar, though not identical behavior to its Early Vedic predecessor. It has developed somewhat further in the direction of a general past tense with neutral aspectual semantics. However, the Perfect still occurs in contexts with a clear anchoring in the P-domain, but this pattern of use is primarily found with Perfect forms of instantaneous achievements with a stative present meaning.

4.2.2   The Perfect in Middle Vedic Proper

In the Middle Vedic sources, the synthetic Perfect shows three main uses. First, we have the now familiar Perfect forms of instantaneous achievement predicates with a stative present value, with a clear anchoring in the P-domain, illustrated in (28). Second, the Perfect occurs in contexts describing some actual, typically ritual practice, where it is used to highlight a past situation explaining the background of the practice under discussion, as illustrated in (29). This reading is of some interest, since it may be understood as an example either of current relevance, associated with the P-domain, or of simple past, associated with a D-domain; I will return to this question shortly. Example (30) illustrates that Middle Vedic Perfect forms are compatible with adverbs denoting a specific past time, thus showing simple past tense semantics. Finally, Perfect forms are sometimes used to express that the speaker infers from a present state that a situation has occurred in the past, as illustrated in (31). Earlier in this paper, this reading was argued to represent a kind of bridging context between the P-domain and a cognitively more distant D-domain. In the present case, P-domain orientation is indicated by the presence of the

adverb *iha* 'here', while the context suggests that the occurrence of a prior situation is inferred from a present situation.

(28) Taittirīya Saṃhitā II 3.3.4 [Prose, Middle Vedic]

réto	*hí*	*vā́*	*etásmād*	*vā́jinam*	*apakrā́maty*
semen:NOM	for	PTC	he:ABL	potent:NOM	leave:PRS.3SG

átha	*eṣá*	*kláibyād*	**bibhāya**
then	he:NOM	impotence:ABL	become_afraid:PRF.3SG

'For the potent semen leaves him; then he is afraid of impotence [P-domain]'

(29) Maitrayanī Saṃhitā 3.1.3 [P-domain]

yát	*kāmáyeta*	*pāpavasīyasáⁿ*	*syād*	*íti*
if	wish:PRS.OPT.3SG	pāpavasīyasa_sacrifice:NOM	be:PRS.OPT.3SG	QUOT

gardabhám	*pū́rvaṃ*	*nayeyur*	*áparam*	*áśvam.*
ass:ACC	first	lead:PRS.OPT.3.PL	later	horse:ACC

vái	*vipū́janaḥ*	*sáurākiḥ*	*pāpavasīyasáṃ*	**cakāra**
PTC	Vipūjana:NOM	Saurāki:NOM	pāpavasīyasa_sacrifice:ACC	make:PRF.3SG

tát	*pāpavasīyasám*	*evá*	*eténa*	*karoti.*
the:ACC	pāpavasīyasa_sacrifice:ACC	PTC	this:INS	make:PRS.3SG

'If he wishes: "There shall be a pāpavasīyasa sacrifice", one should first lead the donkey, later the horse. Vipūjana Saurāki made a pāpavasīyasa sacrifice. Therefore one makes the pāpavasīyasa sacrifice with this' [P-domain or D-domain?]

(30) Aitareyabrāhmaṇa V 34 [Prose, Middle Vedic]

ardhabhāg	*gha*	*vā*	*eṣa*	*itareṣām*	*ṛtvijām*
sharer_of_half:NOM	PTC	PTC	he:NOM	other:GEN	priests:NOM

agra	**āsa**	*yad*	*brahmārdham*	*eva*	*brahmaṇa*
beginning:LOC	be:PRF.3SG	REL:NOM	brahman's_half:NOM	PTC	brahman:GEN

āsa	*ardham*	*itareṣām*	*ṛtvijāṃ*
be:PRF.3SG	half:NOM	other:GEN	priests:NOM

'In the beginning, the Brahman was a sharer of half with the other priests; a half (of the holy power) was the Brahman's, a half the other priests' [D-domain] (Keith 1920: 258)

(31) Kāṭhaka-Saṃhitā IX 3:106,11-107,2 [Prose, Middle Vedic]

ādityā	*vā*	*itas*	*sarveṇa*	*eva*	*saha*	*amuṃ*
Ādityas:NOM	PTC	from.here	everything:INS	PTC	with	that:ACC

lokam	*āyaṃ́s.*	*te*	*'muṃ*	*lokaṃ*	*gatvā*	*vyatṛṣaṃ́s.*

world:ACC	go:IPF.3PL	they:NOM	that:ACC	world:ACC	come:ABS	get_thirsty:IPF.3PL
te	*'vidur:*	*amutaḥ*	*pradānād*	*vā*	*iha*	***ājagāma***	*íti*
they:NOM	know:IPF.3PL	from.there	gift:ABL	PTC	here	come:PRF.3SG	QUOT

'The ādityas went out from here with everything to that world. When they had come to that world, they became thirsty. Then they knew: "it (the thirst) has come here from that gift from there"'[D-domain or P-domain?]

The use of the Perfect illustrated in (28) has already been accounted for. The reading illustrated in (29) is at first glance ambiguous, being in principle compatible with a current relevance type of reading or a simple past reading. Recall Bybee et al.'s (1994: 54) definition of anteriors, according to which categories of this kinds are characterized by what we have loosely called current relevance, and may be translated by the English Present Perfect and/or accompanied by relational adverbs like 'already', 'just' or similar expressions. While it is notoriously difficult to determine the exact semantic properties of grammatical categories in corpus languages, adverbs and particles occasionally provide important additional information that may contribute to clarifying muddy issues. In example (29), the Perfect form ***cakāra*** from *kar-* 'make' is preceded by the particle *vái*, which according to Kobayashi (2012) primarily serves to introduce new information in discourse, being associated with presentational focus. This pragmatic function seemingly involves something very similar to current relevance, and it is reasonable to draw the preliminary conclusion that the reading under discussion is related the current relevance reading of the Perfect shown in earlier stages of Vedic. On this assumption, the use of the Middle Vedic Perfect illustrated in (29) belongs to the P-domain. The example given in (30) illustrates that the Middle Vedic Perfect was compatible with frame adverbs denoting a specific past time, in this case *agre/agra* 'in the beginning', seemingly having a general past value. Finally, the example in (31) illustrates the inferential past reading of the Perfect.

In Middle Vedic, then, the Perfect is compatible with both types of cognitive domains, as suggested by the examples given. Figure 11 illustrates the distribution of the Perfect in Middle Vedic.
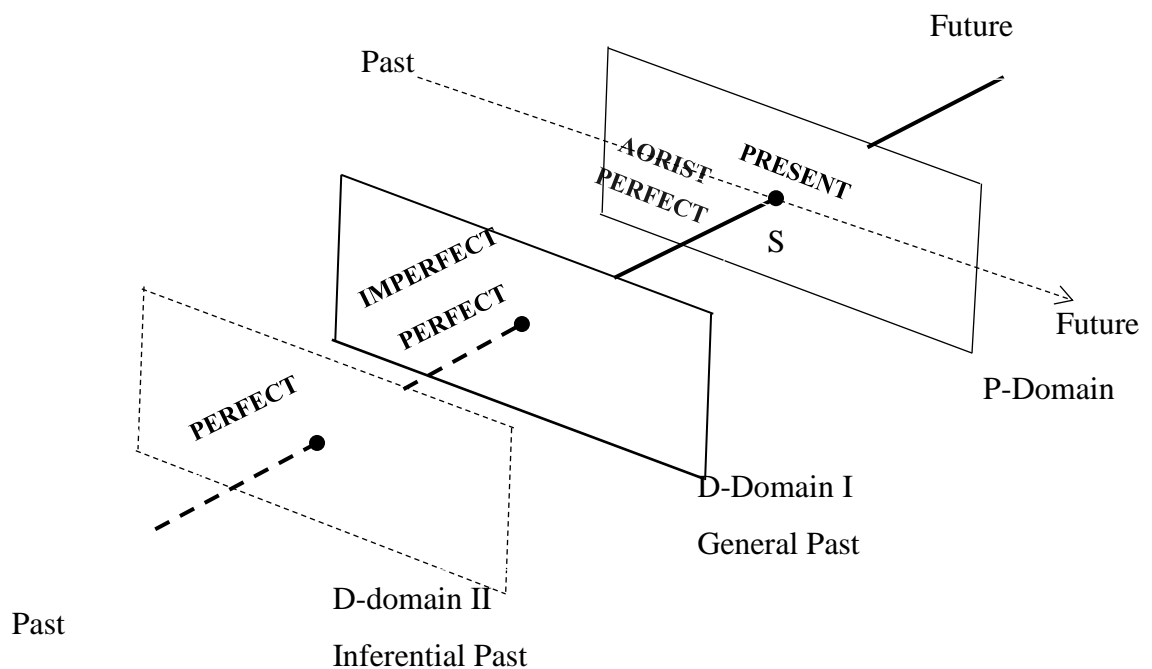
Figure 11:   The distribution of the tense/aspect categories across the cognitive domains in Middle Vedic

Note that the graphic representation differs from the previous ones in that it contains a second past D-domain, labelled Inferential Past. This domain is represented by means of a rectangle with dotted lines in order to suggest that it has not reached fully grammaticalized status yet. The timeline leading to it is represented as a dotted line in order to suggest that the general past D-domain represents a limit between past times that may be within the realm of the speaker's own experience and past times that cannot be within this realm. It should be observed, however, that this does not necessarily imply that this cognitive domain is limited to past events witnessed by the speaker. Rather, both the Perfect and the Imperfect were compatible with both of these types of contexts in Middle Vedic, but the Perfect was also occasionally used with a marked inferential implicature, which seems not to have been available for the Imperfect.

4.3 The synthetic Perfect in Late Vedic

In Late Vedic, the Perfect is exclusively used in contexts referring to situations outside the speaker's own sphere of experience. As discussed in Dahl (2012), the frame story in the narrative parts of the older Upaniṣads is characteristically set in a legendary time in the past, located outside the narrator's own sphere of experience. In these texts, the Perfect is the only available category used in the frame story, while the Aorist and Imperfect exclusively occur in direct discourse referring to the recent and remote past, respectively. The original aspectual distinctions between the three past tense categories is lost at this stage. Consider the following examples:

(32) Śatapathabrāhmaṇa Madhyaṃdina XIV 6.9.19-20 [Late Vedic]

śā́kalya	*íti*	*ha*	**uvāca**	*yā́jñavalkyaḥ*	*tvā́ṃ*	*svid*
śā́kalya:VOC	QUOT	PTC	say:PRF.3SG	Yájñavalkya:NOM	you:ACC	PTC

imé	*brāhmaṇā́*	*aṅgārā*	*vakṣáyaṇam*	*akrata*		*íti*
these.NOM	Brahmins.NOM	of_Aṅgāra.NOM	eloquent.ACC	make.AOR.3PL		QUOT

yā́jñavalkya	*íti*	*ha*	**uvāca**	*śā́kalyo*	*yád*	*idáṃ*
Yájñavalkya:VOC	QUOT	PTC	say:PRF.3SG	śā́kalya:NOM	when	just_now

Kurupañcālā́nām	*brāhmaṇā́n*	*atyávādīḥ*	*kim*	*bráhma*
Kurus_and_Pañcālas:GEN	Brahmins:ACC	out_talk:AOR.2SG	what	truth:ACC

vidvān	*íti*
know:PRF.PRT.NOM.SG	QUOT

'Yājñavalkya said: "Śākalya, it is clear that the Brahmins from Aṅgāra have made you eloquent." Śākalya said: "Tell me, Yājñavalkya, which truth did you know when you out-talked the Brahmins of Kuru and Pañcāla just now?"'

(33) Śatapathabrāhmaṇa Madhyaṃdina XIV 6.3.1 [Late Vedic]

átha	*ha*	*enam*	*bhujyur*	*lā́hyāyaniḥ*	**papracha**
and	PTC	he:ACC	Bhujyu:NOM	Lāhyāyani:NOM	question:PRF.3SG

yā́jñavalkya	*íti*	*ha*	**uvāca**	*madréṣu*	*cárakāḥ*	*yā́jñavalkya*
Yájñavalkya:VOC	QUOT	then	say:PRF.3SG	Madras:LOC	students:NOM	Yájñavalkya:VOC

páryavrajāma	*té*	*patáñcalasya*	*kā́pyasya*	*gṛhān*	*aíma*
travel_around:IPF.1PL	these:NOM	Patáñcala:GEN	Kāpya:GEN	house:ACC	go.to:IPF.1PL

tásya	*āsīd*	*duhitā́*	*gandharvágṛhītā*	*tám*	*apṛchāma*
he:GEN	be:IPF.3SG	daughter:NOM	gandharva.possessed:NOM	he:ACC	ask:IPF.1PL

kò	*'si*	*íti*	*sò*	*'bravīt*	*sudhanavà̀ àṅgirasa*
who:NOM	be:PRS.2SG	QUOT	he:NOM	say:IPF.3SG	Sudhanavan Āṅgirasa:NOM

'Then Bhujyu Lāhyāyani began to question him. "Yājñavalkya" he said, "once, when we traveled around in the land of the Madras as itinerant students, we visited the home of

Patañcala Kāpya. He had a daughter possessed by a Gandharva. We asked him who he was and, and the Gandharva said that he was Sudhanavan Āṅgirasa' (after Olivelle 1996)

These examples illustrate that Late Vedic Perfect Indicative forms such as *uvāca* 'said', *papracha* 'asked' are characteristically used in the narrative frame story. Aorist Indicative forms like *akrata* 'have made', *atyávādīs/atyávādīḥ* 'have outspoken' are used with a subjectively proximate or immediate past meaning, as indicated by the adverb *idám/idáṃ* 'just now'. Imperfect forms of the type *páryavrajāma* 'travelled around', *aíma* 'went to', *āsīd* 'was', *apr̥chāma* 'asked' and *(a)bravīt* 'said' are used in remote past contexts within the speaker's own experience. A tentative representation of the Late Vedic situation is given in Figure 12.
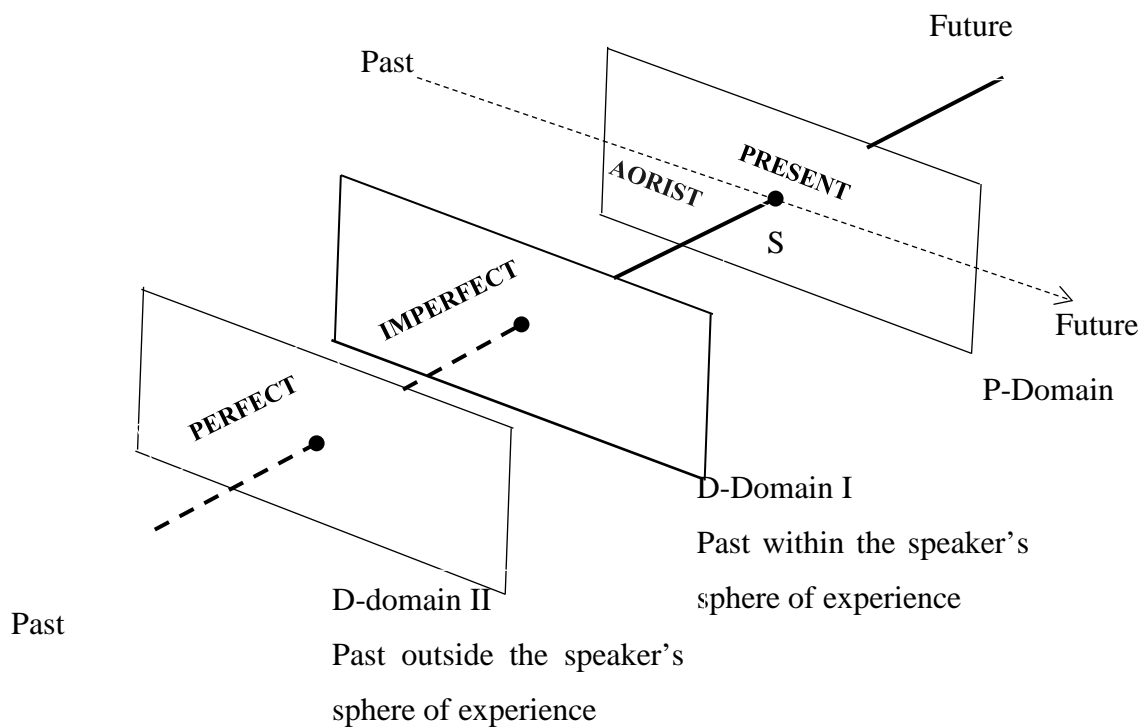

Figure 12:   The distribution of the tense/aspect categories across the cognitive domains in Late Vedic

Figure 12 illustrates a situation where the distribution of the past tense categories Aorist, Imperfect and Perfect is determined by remoteness distinctions and evidentiality, suggesting an

advanced grammatical development. In contrast, the Early Vedic system, illustrated in Figure 10, imposes very few restrictions on the distribution of the past tense categories, something which may be taken to suggest that the distinction between P-domain and D-domain is not strictly speaking grammatically relevant, being mainly dependent on contextual or pragmatic factors. In previous work (e.g. Dahl 2010) I have argued that the Early Vedic past tense categories have different aspectual properties, and that their distribution may largely be explained in terms of aspect distinctions. Later on, the aspectual distinctions are gradually lost, substituted as they are by a more complex system of temporal distinctions (cf. e.g. Dahl 2013, 2014, 2015 for discussion).

5. Conclusion

This paper has outlined the semantic development of the synthetic Perfect in the Old Indo-Iranian languages. The PII Perfect was hypothesized to represent a present anterior category, a property maintained in the Avestan branch of Old Iranian. In the Old Persian branch, however, the synthetic Perfect is more or less completely lost in the sources available to us. Due to the limited availability of data, the details of the changes undergone by the synthetic Perfect in Iranian remain unclear. In Old Indo-Aryan, the empirical evidence is somewhat richer, and consequently we have a better idea of the different stages in the development of the synthetic Perfect. At the beginning of the Old Indo-Aryan tradition, the Perfect appears to have maintained a present anterior character, but there is evidence that the Rigvedic hymns provide a window into its movement towards a general past tense. In later stages of Vedic, the Perfect gradually develops a direct evidential meaning, which can be accounted for within a multidimensional timeline approach along the lines of Botne & Kershner (2008). This framework elegantly models how Old Indo-Aryan gradually acquires new grammatical devices for distinguishing between semantic domains that are not grammatically relevant in the earlier stages of the language, nor in the prehistorical stages.

References:

Amano, Kyoko. 2009. *Maytrāyaṇī Saṃhitā I-II. Übersetzung der Prosapartien mit Kommentar zur Lexik und Syntax der älteren vedischen Prosa.* (= *Münchener Forschungen zur historischen Sprachwissenschaft*, 9.) Bremen: Hempen.

Bhattacharya, Dipak. 1997. *The Paippalāda-Saṃhitā of the Atharvaveda.* (= *Bibliotheca Indica*, 319.) Calcutta: The Asiatic Society.

Botne, Robert & Tiffany L. Kershner. 2008. "Tense and cognitive space: On the organization of tense/aspect systems in Bantu languages and beyond". *Cognitive Linguistics* 19.145-218.

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. 2002. "The Old Indo-Aryan Tense System". *Journal of the American Oriental Society* 122.235-243 (= *Indic and Iranian Studies in Honor of Stanley Insler on His Sixty-Fifth Birthday*.)

Dahl, Eystein. 2010. *Time, Tense and Aspect in Early Vedic Grammar: Exploring Inflectional Semantics in the Rigveda*. (= *Brill's Studies in Indo-European Languages & Linguistics*, 5.) Leiden & Boston: Brill.

Dahl, Eystein. 2011a. "Tense and aspect in Indo-Iranian Part 1: The Present and Aorist". in *Language and Linguistics Compass* 5.265-281.

Dahl, Eystein. 2011b. "Tense and aspect in Indo-Iranian Part 2: The Perfect, Futurate, Participial and Periphrastic Categories". *Language and Linguistics Compass* 5.282-296.

Dahl, Eystein. 2012. "Evidence for Evidentiality in Late Vedic". Klein & Yoshida, eds. 2012, 9-22.

Dahl, Eystein. 2013. "Typological change in Vedic: The development of the Aorist from a Perfective Past to an Immediate Past". *Diachronic and Typological Perspectives on Verbs* ed. by Folke Josephson & Ingmar Söhrman (= *Studies in Language Companion Series*, 134), 261-298. Amsterdam: Benjamins.

Dahl, Eystein. 2014. "The Development of the Vedic Perfect: From Anterior Present to Inferential Past". *Vedic and Sanskrit Historical Linguistics: Papers of the 13th World Sanskrit Conference III* ed. by Jared Klein & Elizabeth Tucker, 179-242. New Delhi: Motilal Banarshidass.

Dahl, Eystein. 2015. "Toward a formal model of semantic change: A neo-Reichenbachian approach to the development of the Vedic past tense system". *Lingua Posnaniensis* 57.41-76.

Dahl, Eystein. Forthcoming. "Tense and Temporal Remoteness in the Old Indo-Aryan Verbal System: A Multidimensional Timeline Approach". *Exploring Universals of Tense and Aspect* ed. by Vit Bubenik, Bridget Drinka, John Hewson & Ondřej Sefčik. Hamburg: Baar.

Delbrück, Berthold. 1897. *Vergleichende Syntax der indogermanischen Sprachen*. Vol. II. Strassburg: Trübner.

Di Giovine, Paolo. 1990. *Studio sul perfetto indoeuropeo I: La funzione originaria del perfetto studiata nella documentazione delle lingue storiche*. (= *Biblioteca di ricerche linguistiche e*

filologiche, 26.) Roma: Dipartimento di studi glottoantropologici dell'Università di Roma "La Sapienza".

Di Giovine, Paolo. 1996a. *Studio sul perfetto indoeuropeo II: La posizione del perfetto all'interno del sistema verbale indoeuropeo.* (= *Biblioteca di ricerche linguistiche e filologiche*, 40.) Roma: Il Calamo/Dipartimento di studi glottoantropologici dell'Università di Roma "La Sapienza".

Di Giovine, Paolo. 1996b. *Studio sul perfetto indoeuropeo III: Indici.* (= *Biblioteca di ricerche linguistiche e filologiche*, 41.) Roma: Il Calamo/Dipartimento di studi glottoantropologici dell'Università di Roma "La Sapienza".

Eberle, Kurt & Walter Kasper. 1994. "French past tenses and temporal structure". *Tense Systems in European Languages* ed. by Rolf Thieroff & Joachim Ballweg (= *Linguistische Arbeiten*, 308), 149-172. Tübingen: Niemeyer.

Griffiths, Arlo. 2009. *The Paippalādasaṃhitā of the Atharvaveda: Kāṇḍas 6 & 7.* (= *Groningen Oriental Studies*, 22.) Groningen: Forsten.

Haig, Geoffrey L. J. 2008. *Alignment Change in Iranian Languages: A Construction Grammar Approach.* (= *Empirical Approaches to Language Typology*, 37.) Berlin & New York: Mouton De Gruyter.

Hoffmann, Karl & Bernhard Forssman. 2004. *Avestische Laut- und Flexionslehre.* 2nd revised and extended edition. (= *Innsbrucker Beiträge zur Sprachwissenschaft*, 115.) Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Humbach, Helmut, Josef Elfenbein and Prods O. Skjærvø. 1991. *The Gāthās of Zarathushtra and the Other Old Avestan Texts I: Introduction – Text and Translation.* Heidelberg: Winter.

Jamison, Stephanie W. & Joel P. Brereton. 2014. *The Rigveda: The Earliest Religious Poetry of India. Translated by Stephanie W. Jamison and Joel P. Brereton.* 3 vols. Oxford: Oxford University Press.

Jasanoff, Jay H. 1978. *Stative and Middle in Indo-European.* (= *Innsbrucker Beiträge zur Sprachwissenschaft*, 23.) Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Kamp, Hans & Uwe Reyle. 1993. *From Discourse to Logic: Introduction to Modeltheoretic Semantics of Natural Language, Formal Logic and Discourse Representation Theory.* (= *Studies in Linguistics and Philosophie*, 42.) Dordrecht: Kluwer.

Keith, Arthur B. 1920. *Rigveda Brahmanas: the Aitareya and Kauṣītaki Brāhmaṇas of the Rigveda.* (= *Harvard Oriental Series*, 25.) Cambridge, Mass.: Harvard University Press.

Kent, Roland G. 1953. *Old Persian: Grammar, Texts, Lexicon.* (= *American Oriental Series*, 33.) New Haven, Conn.: American Oriental Society.

Kiparsky, Paul. 1998. "Aspect and Event Structure in Vedic". *The Yearbook of South Asian Languages and Linguistics* 1998.29-62.

Kiparsky, Paul. 2002. "Event Structure and the Perfect". *The Construction of Meaning* ed. by David I. Beaver, Luis D. Casillas Martínez, Brady Z. Clark & Stefan Kaufmann, 113-136. Stanford, Calif.: CSLI.

Klein, Jared S. 1978. *The Particle u in the Rigveda: A Synchronic and Diachronic Study.* (= *Zeitschrift für vergleichende Sprachforschung. Ergänzungsheft*, 27.) Göttingen: Vandenhoeck & Ruprecht.

Klein, Jared S. 1985. *Toward a Discourse Grammar of the Rigveda*. Heidelberg: Winter.

Klein, Jared S. & Kazuhiko Yoshida. eds. 2012. *Indic across the Millennia. From the Rigveda to Modern Indo-Aryan. Proceedings of the Linguistics Section. 14th World Sanskrit Conference, Kyoto, Japan, September 1-5 2009.* Bremen: Hempen.

Kobayashi, Masato. 2012. "Information Structure and the Particles *vái* and *evá* in Vedic Prose". Klein & Yoshida, eds. 2012, 77-92.

Kulikov, Leonid. 2013. "Language vs. grammatical tradition in Ancient India: How real was Pāṇinian Sanskrit? Evidence from the history of late Sanskrit passives and pseudo-passives". *Folia Linguistica Historica* 34.59-91.

Kümmel, Martin J. 2000. *Das Perfekt im Indoiranischen: Eine Untersuchung der Form und Funktion einer ererbten Kategorie des Verbums und ihrer Weiterentwicklung in den altindoiranischen Sprachen*. Wiesbaden: Reichert.

Olivelle, Patrick. 1996. *Upaniṣads. A new translation by Patrick Olivelle*. Oxford & New York: Oxford University Press.

Reichenbach, Hans. 1947. *Elements of Symbolic Logic*. New York: Macmillan.

Skjærvø, Prods O. 2009. "Old Iranian". *The Iranian Languages* ed. by Gernot Windfuhr, 43-195. London & New York: Routledge.

Witzel, Michael. 1989. "Tracing the vedic dialects". *Dialectes dans les littératures indo-aryennes: Actes du colloque international, org. par l'UA 1058, Paris (Fondation Hugot), 16-18 sept. 1986* ed. by Colette Caillat (= *Publications de l'institut de civilisation indienne*, 55), 97-264. Paris: Boccard.

Witzel, Michael. 1995. "Early Indian History: Linguistic and Textual Parameters". *Language, Material Culture and Ethnicity. The Indo-Aryans of Ancient South Asia* ed. by George Erdosy (= *Indian Philology and South Asian Studies*, 1), 85-125. Berlin & New York: de Gruyter.