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*ABSTRACTS*

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# **Ten constraints that limit the late (core) PIE homeland to the steppes**

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Since 2015, migrations from the Pontic-Caspian steppes into Europe and Asia have been revealed by the study of ancient DNA, leading to the recent resurgence of the steppe theory of Proto-Indo-European (PIE) origins. But the linguistic and archaeological support for the steppe theory has not been updated or integrated with recent specialist studies that examined aDNA not only from humans but also from horses, dairy peptides preserved in dental calculus, human skeletal pathologies associated with horseback riding, or other archaeological evidence. Here I differentiate Early PIE, prior to the Anatolian split, from Late PIE, also called Core or Nuclear PIE, the ancestor of all other IE branches. Ten linguistic, chronological, cultural, and genetic constraints taken from the LPIE vocabulary, its radiocarbon-dated material attestations such as wheels, and migrations revealed by aDNA are reviewed, supporting the hypothesis that the LPIE dialects were spoken in the Pontic-Caspian steppes 3500–2500 BCE.

# Meteorological terminology in the Middle Persian Zoroastrian tradition

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Nature has always been an important element of Zoroastrian religion, characterized by the presence of ‘nature’ gods, personifying some physical phenomenon: Sky and Earth, whom the Iranians called Asman and Zām; Sun and Moon, for them Hvar and Māh; and two gods of the Wind, Vāta and Vāyu (cf. Boyce 1979: 6). Over the years, various scholars have investigated the history of Iranian nature religion, largely driven by the desire to understand and assess the Zoroastrian Pantheon and the cosmogony of Zoroastrianism (see the recent *The Wiley Blackwell Companion to Zoroastrianism and literature* therein). The lexical field of weather terminology seems, however, to have received less attention, with the only exception of a recent paper of Panaino (forthcoming): “A meteorological semantic field in Avestan: Clouds, nimbuses, mists, and related words”.

The aim of the present paper is to investigate the formation, transmission and adaptation of meteorological terminology and related technical vocabulary in Middle Persian. Within Middle Persian Zoroastrian literature, special attention will be paid to *Bundahišn* (Agostini and Thrope 2020), especially to chapter 21 *On the Nature of Wind, Clouds, and Rain* containing a meteorological theory

that explains the existence of rain, storms, lightning, rainbows, and other phenomena.

In order to better understand the development of Zoroastrian meteorological knowledge and corresponding terminology, equivalents in other languages (especially Avestan, Old Indian, Greek, Latin, Aramaic) will be considered, if available, because of their usefulness not only in determining the meaning of otherwise opaque Iranian terms, but also in gaining etymology and in verifying the eventual influence from non-Iranian languages and cultural tradition.

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# A tale of two skies: *\*d̥i̯é̯u-* ‘bright sky’ and *\*néb<sup>h</sup>es-* ‘cloud’, and their implications for prehistoric uranology

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The roots *\*deǵ-* ‘bright’ and *\*neb<sup>h</sup>-* ‘cloudy, moist’ are at the core of two of the most widely attested Indo-European words for ‘sky’, namely *\*d̥i̯é̯u-* m. (Vedic *dyáuṣ* m./f. ‘sky, sky deity, Father Sky, day’, Young Avestan *diiaoš* gen./abl.sg. ‘from the sky’, Latin *sub ioue* ‘in the open air’, *diēs* ‘day, daylight, open sky’, *diū* ‘all day’, Oscan *diúveí* dat.sg., Umbr. *iuve* dat.sg. ‘day’, Old Irish *die*, *día* ‘day’, Welsh *dydd* ‘day’, Armenian *tiw* ‘day’) and *\*néb<sup>h</sup>es-* n. (Hittite *nēpiš-* ‘sky’, Cuneiform Luwian *tappaš-* ‘sky’, Hieroglyphic Luwian *tipas-* ‘sky’, Greek *νέφος* ‘cloud, mass of clouds’, Vedic *nábhas-* ‘mist, clouds, vapor’, Old Avestan *nabah-* ‘cloud’, Old Church Slavonic *nebo* ‘sky, heaven’, Old Irish *nem* ‘sky, heaven’, Welsh *nef* ‘sky, heaven’, Lithuanian *debesis* f. ‘cloud’, Latvian *debess* f. ‘sky, heaven’).

It is reasonable to infer—both from the underlying semantics of the respective roots and from the meaning of the continuants in the individual languages—that their basic meaning in PIE was ‘bright sky’ (*\*d̥i̯é̯u-*) and ‘cloud; cloudy sky’ (*\*néb<sup>h</sup>es-*), and that they referred to the two basic meteorological qualities of the day sky, namely clear and overcast. Interestingly, both nouns are used as theonyms: the well-known *\*d̥i̯é̯u s (ph<sub>2</sub>tér)* ‘Father Sky’ (Vedic *dyáuṣ pitā*,

Greek Ζεὺς πατήρ, Latin *Iup(p)iter*, *Diespiter*, Albanian *zot*) on the one hand, and the lesser-known Anatolian weather god *Nipas* (attested in Old Assyrian texts as NI-PA-AZ) and Old Norse *Nepr*, *Nefr*, a son of Odin, on the other. After discussing the continuants of the two nouns and their underlying roots in the individual branches, this talk sets out to explore the implications of the distribution of the etyma in the individual branches. Is there a chronological explanation for why certain branches generalize the one word or the other as their standard word for ‘sky’ or do microclimatical factors in the respective homelands play a role in this predilection? And what tentative conclusions can be drawn for the Proto-Indo-European pantheon?

# Germanic weather terms with suffixal *\*-st-* and their Indo-European heritage

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A range of weather terms and names for seasons in Indo-European languages occur with an apparent derivational element *\*-st-*, e.g.

- PGmc. *\*mih-stu-*, *\*mih-sta-* ‘fog’ < *\*h<sub>3</sub>migh<sup>h</sup>-st-* ~ Gk. *ὀμίχλη* ‘mist, fog’, Ved. *meghá-* ‘cloud; gloomy weather’;
- OHG *tun(i)st* ‘wind, storm’ < PGmc. *\*dun-sta-* ‘haze, mist’ ~ *\*dauniz* ‘id.’;
- Lat. *aestus* ‘heat’ and *aestās* ‘summer’ < *\*h<sub>2</sub>aǵd<sup>h</sup>-st-* ~ Gk. *αἴθος* ‘heat, fire’
- OIr. *aimser* ‘weather; period; season’ < PCelt. *\*am-st-era-* < *\*h<sub>2</sub>emh<sub>1</sub>-st-* ~ Hitt. *ḫamesḫa(nt)-* ‘time of harvesting’;
- Alb. *vjeshtë* ‘fall, autumn’, derived with PAlb. *\*(i)-st-* from *vjel* ‘to pluck’

Because geminates are absent in PIE, and since any secondary *\*-s-s-* having arisen by morphology is therefore simplified into a single *\*-s-*, the relevant material is often ambiguous. This is the case:

a) when the root in question ends in *\*-s-*, e.g.,

- PGmc. *\*frusta-* ‘frost’ may be a simple ppp. *\*prus-tó-*, but nothing precludes *\*prus-st-ó-*;
- OIr. *frass* < PCelt. *\*wrasto-* ‘rainshower, thunderstorm’, either from *\*h<sub>2</sub>u<sub>r</sub>s-to-* or *\*h<sub>2</sub>u<sub>r</sub>s-st-o-*;
- Toch. B *praṣciye* ‘thunderstorm’ < *\*prōs-ti-o-*, vrddhi of *\*pres-to-* (cf. PGmc. *\*furs-a-* ‘waterfall’), could theoretically be analyzed as *\*-sti-o-*, resp. *-sto-*, instead

b) or when the root is known to occur as part of an *s*-stem, e.g.,



- PCelt. *\*tefstu-* ‘heat’ (> OIr *tess*) is usually reconstructed as *\*tep-s-tu-*, because of the *s*-stem *\*tép-es-* reflected in Ved. *tápas-*, Lat. *tepor*, although it may alternatively be *\*tep-stu-*;
- Lat. *tempestās*, *tempestūs* ‘portion of time, season; weather; storm’, is also built on an *s*-stem (*tempus*, gen. *-oris*), but looks suspiciously like Lat. *aestus* ‘heat’ and *aestās* ‘summer’ above

In this paper, I will argue that such formations are likely to contain the PIE root *\*steh<sub>2</sub>-* ‘to stand’. Its zero-grade *\*-st(h<sub>2</sub>)-* is already known to occur as the second element in compound-like nominal formations, either referring to someone or something literally standing, e.g. Arm. *harowst* ‘mighty, great’ < *\*p<sub>ʀ</sub> h<sub>3</sub>os-sth<sub>2</sub>-o-* ‘standing in front’, or creating nomina loci where *-sth<sub>2</sub>o-* is directly translatable as ‘place’ vel sim., e.g. < *\*g<sup>w</sup>ou<sub>u</sub>-sth<sub>2</sub>-o-* > Skt. *goṣṭha-* ‘pen’, Celtib. *PouśTom* ‘cowshed’.

I submit that PIE *\*-sth<sub>2</sub>-* synchronically functioned as a derivational suffix much like German *-stand* and Persian *-i-stān*. It could thus further refer to a certain state, stage or condition, e.g. *\*(s)ta<sub>i</sub> h<sub>3</sub>-sth<sub>2</sub>-o-* ‘dough’ > RuCS *těsto* ‘dough’, Welsh *toes* ‘id.’; Arm. *hangist* ‘rest, peace; (adj.) ‘still’ < *\*s<sub>m</sub>-k<sup>w</sup><sub>i</sub>eh<sub>1</sub>-sth<sub>2</sub>-i-*; as well as to periods of time and points in time, e.g., *\*pre-sth<sub>2</sub>-o/i-* ‘fixed time’ > OE *frist* ‘period, interval; delay’, Lat. *festīnō* ‘hurry’, *confestim* ‘at once’, Toch. A *prašt* B *presto* ~ *preściya* ‘time; occasion; season’; Gk. *δορπηστός* ‘supper time; evening’; OLith. *ankstūs* ‘early’ < *\*‘at morning-time’*.

This use was expanded to names for seasons and finally to weather terms where *\*-sth<sub>2</sub>-* is often directly translatable as ‘time’ or ‘weather’, respectively. A

parallel use of *\*-i-stān* is known from Iranian languages, e.g. MP *damistān* ‘winter’, lit. ‘winter-land, winter-time’, NP *barfestān* ‘winter’, lit. ‘snow situation’.

The above analysis paves the way for new and revised etymologies of otherwise disputed items: PGmc. *\*harbista-* and *\*hawusta-*, both ‘harvest; fall’ can be analyzed as ‘plucking-time’ and ‘haying-time’ respectively, rather than semantically questionable substantivized superlatives. And a weather term proper like PGmc. *\*unsti-* ‘thunderstorm’ (OE *ȳst* m., OHG *unst* f.) does not need to contain *\*(h<sub>2</sub>)anh<sub>1</sub>-* ‘blow’, but can straightforwardly reflect *\*ŋ<sub>2</sub>-sth<sub>2</sub>-i-* ‘un-weather’, cf. to German *Unwetter*, Da. *uvejr* ‘id.’

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# **The heat of the Greek summer: Words and names, motifs and myths**

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Already Homer makes the star Sirius responsible for the heat of the Greek summer, which produced the expression "many-thirsty Argos" and other epithets of the epic language, some of them not yet understood. To appease the dog-star, supplicatory processions were sent to the summit of Pelion, distinguished men wrapped in sheepskins. But Sirius is not the only star that represents the fiery heat of the dog days. In my lecture I would like to show how the "Lion" attracted the attention of the Hellenistic astronomers and meteorologists, on the other hand – so far unrecognized – shapes the plot of a famous Greek tragedy.

# Proto-Indo-European *\*sneig<sup>wh</sup>*- ‘to fall down, to snow’

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In this paper, we present a diachronically syntactic analysis of the PIE verbal root *\*sneig<sup>wh</sup>*-, arguing that it did not originally mean ‘to snow’, in the proto-language, but rather more primarily ‘to fall down’. Evidence from several Indo-European branches is evaluated and argued to support a scenario in which the former meaning arose from the latter in a so-called impersonal verbal construction.

# Vedic *parjanya-* ‘(god of the) raincloud’, *pṛ́śni-* ‘speckled’ and the Proto-Indo-European word for ‘sprinkling, speck, drop’

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Vedic *parjanya-* ‘(god of the) raincloud’ has been subject to a great etymological conundrum, centring on its relationship to Old Icelandic *ffjörgyn* f. ‘a kind of landscape, mother of the storm-god’, Lithuanian *Perkū́nas* ‘(god of) thunder’, and Old Russian *Perúnъ* ‘id.’. However, the phonological difficulties with these comparisons are immense, particularly the contrast between Vedic *j* < *\*(gʷ)* and Germanic *g* < *\*(kʷ)* and Baltic *k* < *\*(kʷ)*. Various solutions exist, none completely satisfactory, and there are semantic and phonological issues with the two most popular etymologies, those who view *parjanya-* as ‘striker’, and those who view it as ‘sputterer’ (*EWAia* II: 97).

However, Ginevra (2021) has showed that the Old Icelandic *ffjörgyn* is well explained as *\*pérk̂nih₂-*, a *vṛ ddhi*-derivation of the word reflected in Vedic *pṛ́śni-* ‘speckled’ < *\*pṛ́ k̂ni-*, from the root *\*perk̂-*, often said to mean ‘speckled, dark’. As *pṛ́śni-* can refer to the sacral ground as mother of thundering gods, this correspondence is closer to the attested meaning of both words than either *\*per-* ‘strike’ or *\*perk̂<sup>w</sup>-* ‘oak’, which are the traditional explanations of *ffjörgyn* and its assumed cognate *Perkū́nas* (cf. Hirt 1892: 480, Nagy 1974, 1990: 186ff., West 2007: 241).

Taking the correspondence between *pṛ́ śni-* and *ffjorgyn* as a premise, I investigate how it provides new evidence for the meaning of *parjanya-*. Bearing in mind that the oldest meaning of the root *\*perk̂-* is ‘sprinkle’ (Griepentrog 1995: 197), and that Vedic *pṛ́ śni-* ‘speckled’ is used for ‘raincloud’, I argue that Vedic *parjanya-* is best explained as a *jo*-derivation of a Proto-Indo-European *\*pork̂-h<sub>3</sub>on(h<sub>x</sub>)-* with voicing of *\*k̂* by the following *\*h<sub>3</sub>* (cf. Proto-Indo-European *\*pi-ph<sub>3</sub>-e-ti* > Vedic *píbatī*, Old Irish *ibid*). The first element of this word appears to be Proto-Indo-European *\*prók̂s ~ \*pork̂ ~ \*pṛ́ k̂-* ‘sprinkling, speck, drop’ which yielded Greek *πρώξ* ‘id.’, *πρόξ* ‘deer’, nom.pl. *πόρκας*, *πράκες* (Schindler 1972: 94, Griepentrog 1995: 197), and I show that Old Norse *fránn* ‘glistening, spotted(?)’ < *\*prók̂-no-*, cognate to Gr. *Πρόκνη* ‘a kind of bird’ provides extra-Greek evidence of the root noun. The word *\*pork̂-h<sub>3</sub>on(h<sub>x</sub>)-* is then formed by the so-called Hoffmann-suffix or its possible underlying root *\*h<sub>3</sub>enh<sub>2</sub>* ‘to carry, charge’ (cf. Dunkel 2001: 14) to *\*pórk̂-* ‘sprinkling, speck, drop’, just as Proto-Indo-European *\*h<sub>2</sub>ép-h<sub>3</sub>on(h<sub>2</sub>)-* ‘river’ is formed to *\*h<sub>2</sub>ep-* ‘water’ (cf. Hamp 1972, Dunkel 2001: 14). The meaning of *parjan<sup>o</sup>* is thus ‘charged with dripping/sprinkling’, i.e., ‘raincloud’.

A consequence of this explanation is that the root *\*perk̂-*, when used to form words for ‘raincloud’ or for ‘earth as mother of thunder-gods’ (Vedic *pṛ́ śni-* < *\*pṛ́k̂ni-* and Old Norse *ffjorgyn* < *\*pérk̂nih<sub>2</sub>*) may not mean ‘speckled’ or ‘dark’ (as Ginevra argues), but retains the sense ‘sprinkle’, referring to the rain-dripped earth. This makes the connection between thunder-gods and the root of

*parjanya-* and *pr̥ śni-* semantically clear, though in a different way than is usually argued. Still, semantic problems exist with the Germanic cognates of *fjǫrgyn*, such as Goth. *faírguni* n. ‘mountain’.

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# What color was the Hittite cloud? The etymology of Hittite *alpaš* revisited

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The Hittite word *alpaš* has attracted the attention of scholars due to the fact that it presents a rather irregular outcome of an otherwise perfectly regular pattern of Hittite words preserved with an initial laryngeal /h/ continuing Proto-Indo-European  $*h_2$ . In this word, instead of the expected  $*h_2alpas$  from Proto-Indo-European  $*h_2elb^hos$ , we find a lack of the initial laryngeal. There have been numerous attempts at resolving this controversy – as a loanword from an unknown substrate language (Kortlandt 2010: 367), as a Proto-Indo-European word with initial  $*h_4$  which colored  $*e$  to /a/ but was not continued in Hittite (Kuryłowicz 1935: 29-30, Mallory & Adams 2006: 331), as a reflex of the Proto-Indo-European word  $*(h_1)alb^hos$  (Ringe 2017: 12, Weiss 2020: 45-46), as a reflex of the *o*-grade  $*h_2olbhos$  with the assumption of the loss of the laryngeal in Anatolian (De Vaan 2008: 32 after Lubotsky p.c.), or even disproving the etymology altogether, claiming that the word denoted ‘cloud’ (especially ‘storm cloud’) in Hittite cannot be so easily connected with the reflexes in the other Indo-European languages where it usually denotes the color ‘white’ or something pertaining to whiteness (Puhvel 1984: 38, Kloekhorst 2008: 169). None of these explanations is satisfactory in explaining an

otherwise regular form with multiple cognates in different Indo-European branches, though with different meaning, cf. Polish *łabędź* ‘swan’, Old High German *albiz*, *elbiz* ‘swan’ (originally probably ‘a white bird’), cf. Mudge 1931: 252.

In this paper it will be shown that the Hittite word for ‘cloud’ usually denotes an ordinary cloud (16 contexts out of total 22 attestations) rather than a storm cloud (as claimed by Puhvel 1984: 38) in the attested Hittite texts, and thus it can easily be connected with the word denoting ‘white’. Furthermore, it will be shown that the meaning of the word in the other Indo-European languages is rather ‘dull-white’ and not just ‘white’ (cf. Lat. *albus* ‘dull-white’ as opposed to *candidus* ‘white’, Gk. *alp<sup>h</sup>ós* ‘white leprosy’) and that it could belong to the words denoting names of colors in the Indo-European languages (cf. Schindler 1978: 45). Moreover, it will be claimed that this word is a direct cognate of the Indo-European reflexes mentioned above (cf. Mudge 1931: 252) and that the original Proto-Indo-Anatolian meaning (i.e., the one reconstructed for the oldest stage of Proto-Indo-European) should be reconstructed as ‘dull-white’. It will be shown that the reconstructed form should be *\*h<sub>1</sub>alb<sup>h</sup>os* and the position of *\*a* will be discussed within the Proto-Indo-European ablaut system.

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# Weather and climate in archaeolinguistics

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Archaeolinguistics is an interdisciplinary approach which makes linguistic inferences about the human past and combines them with archaeological and genetic evidence to reconstruct the interplay of language, culture, and human migration in the Anthropocene. The term Anthropocene refers to the period when human activity started to have an irreversible impact on our planet's climate. With a cut-off point of around 10 000 years ago, archaeolinguistics is set in the Anthropocene. Notwithstanding various calls to integrate the humanities into Anthropocene research, linguistics has been slow to engage with the topic.

In this talk, I will examine how climate and weather may have impacted language dynamics over the last 10 000 years. After exploring the interface between Archaeolinguistics and Anthropocene studies, I will discuss how climate affects language diversity, how it may impact language structure and how it drives language mobility. Finally, I will suggest that certain global climate trends may have led to local linguistic responses, simultaneously in different parts of the world.

Examples will be drawn from various languages and language families worldwide, but my research focus is on North and East Asia, particularly the

so-called “Transeurasian” language family — i.e., Japanese, Korean, Tungusic, Mongolic and Turkic languages— and neighbouring families. This region serves as an interesting test-case, not only because it is home to a variety of language families, but also because it is known for its versatile climate and changing landscapes since Neolithic times.

# Ancient Greek (ἀ)στεροπή, ἀστραπή ‘lightning-flash’ revisited

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Despite the universality of the lightning-flash as a weather phenomenon and the conceptualization of the thunder-bolt as a weapon of the weather deity in various Indo-European mythological traditions, there is no securely reconstructible word for this concept of Proto-Indo-European date, but rather all lexemes denoting ‘lightning-flash’ appear to be secondary formations within the individual branches derived from words encompassing general semantic domains such as ‘light’, ‘fire’, ‘shine’, ‘blaze’, ‘flash’, etc. (cf. Buck 1949: 56–57, Mallory & Adams 1997: 353). In Ancient Greek, the lightning-flash is designated by the term ἀστραπή with many variants, e.g., στεροπή, ἀστεροπή; denominal verbs ἀστράπτω, στράπτω; Στορπῆος (epithet of Zeus at Tegea), etc., which is commonly taken to reflect an inherited compound *\*h<sub>2</sub>st<sub>r</sub>g<sup>w</sup>-h<sub>3</sub>ok<sup>w</sup>-éh<sub>2</sub>* ‘star-eye’ *vel sim.* (Peters 1980: 208n160; cf. Mayrhofer 1986: 125). However, as Beekes (1987) has noted, the variants attested in the Greek dialects are not easily reconciled to an Indo-European proto-form and proposed that it should alternatively be assigned to the non-Indo-European substratum vocabulary in Greek (cf. also Beekes 2010: 156, 1402). In this paper I will re-examine the Greek word for ‘lightning-flash’ in their variants, introducing a mythological

comparison to Στερόπη and the other two Hesiodic Cyclopes (Ἄργης ‘Bright’ Βρόντης ‘Thunderer’) as the manufacturers and donors of the thunder-bolt (Hes. *Theog.* 140–141, 501–506, cf. West 1966: 303–304) to suggest that the variants of ἀστραπή may possibly point an Indo-Europeanizing re-interpretation of borrowed non-Indo-European lexical material within the emerging cultural context of Greek mythology and poetics as a new folk-etymology that would have been more semantically transparent to early Greek speakers.

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# Stormy weather in the Rigveda

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The hymns of the Rigveda, the oldest extant Indo-Aryan text, contain a variety of poetic imagery involving weather events, among them, vividly depicted, thunderstorms and heavy rainfall. Some of the Vedic deities and their mythologies are clearly associated with weather phenomena, as e.g. Indra, Parjanya, Vāyu, Vāta, Rudra, and – last but not least – the storm-related Marut. While the vocabulary for some common weather phenomena (*rain, wind, storm, mist, clouds, thunder, lightning, sun(shine)* etc.) is attested from early on in the Rigveda, terms for drought, frost, snow and hail are conspicuously lacking or very rarely attested.

A look at myths and literary imagery of mountains and rocks in the Rigveda gives us a glimpse into how the Vedic Aryans perceived their physical environment. This again allows us to draw conclusions as to where the hymns were created: in a mountainous area (Hindukush) rather than in the plains. Only in a setting within or very close to the mountains, a setting prone to dramatic climatic and geomorphic events (heavy thunderstorms, earthquakes, land- and stone-slides), is it understandable that mountains are perceived as "resounding violently", "moving up and down", "shaking", "trembling" and "making the earth unstable". First in a younger hymn, RV 10.173.3, this perception (and with



it the imagery) is reversed, namely when the newly consecrated king is wished to be "unwavering like a mountain". Here, it seems, mountains are now looked at from afar, becoming symbols of firmness and stability.

A study of the weather-related imagery and mythology in Vedic texts again provides us with a glance into how Vedic poets experienced and interpreted their natural environment. In my talk I aim to 1) survey weather-related vocabulary and poetic imagery in the Rigveda against the backdrop of the physical environment described in the hymns. With a focus on Indra's wild companions, the stormy Marut, I am going to 2) examine myths and motives connected to weather events, especially thunderstorms and heavy rainfall in the Rigveda, and 3) to discuss changes in the Maruts' imagery, mythology and rôle in later Vedic texts.

# The genesis of the Anatolian storm god

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The present talk has two goals: first, a formally fitting, new etymology of the name of the Hittite storm god, and second, a description of the genesis of the Anatolian storm god.

The name of the Hittite Storm-god, DU/IŠKUR-*unna* [Tarḫunna] was explained from the Proto-Indo-European root *\*terh<sub>2</sub>u-* ‘to overpower’ (> Hitt. *tarḫu-* ‘to prevail, to conquer, to be powerful’) either with the ‘Herrschersuffix’ *\*-Hno-* (Melchert 2014: 207 with ref.) or with a suffix in analogy to PIE

*\*Perkwu-h<sub>3</sub>no-*, the PIE weather god, being his epithet (Oettinger 2017: 593-595 with refs.). However, setting aside potential phonological problems with the first proposal, the *Herrschersuffix* is not deverbal (Oettinger 2017: 595) and *\*Perkwu-h<sub>3</sub>no-* is based only on Germanic and Balto-Slavic data, and thus, it cannot be back-projected to PIE. This talk suggests that *Tarḫunna* is an inner-Hittite derivation with the deverbal-denominal abstract suffix *-ātar*

(gen. *-annaš*) from the above-mentioned PIE root. In Hittite, genitives became frequently nominalized (‘free-standing genitives’, e.g. *tayazilaš* ‘he of the theft > thief’). Hitt. *\*tarḫuwātar* (gen. *tarḫuwannaš*) ‘overpowering/prevailing’ → *tarḫuwannaš* > (with a well-attested Hittite sound change) *Tarḫunnaš* ‘he of the

overpowering/prevailing > the prevailing, overpowering one' is thus a both formally and semantically fitting solution.

Whatever the precise origin of the Hittite form may be, it is not identical to the Luwic forms reflecting *\*tr̥ Hw-ént-/-ŋ t-* (e.g., Cuneiform Luwian *Tarhu(wa)nt-*, Lycian A *Trqqas*, Lycian B *Trqqiz*, Carian *Trq(u)δ*; see most recently Sasseville 2022 with refs.). Therefore, *contra* the *communis opinio* (most recently Sasseville 2022), no Proto-Anatolian storm god can be reconstructed and *\*tr̥ Hw-ént-/-ŋ t-* must be taken as a Luwic innovation. That said, we must be dealing with a parallel formation since both names are based on the same verbal root, the meaning of which is not connected to the nature of the storm god (it rather reflects his position in the local panthea). The impetus must have been common, but this cannot be a common inheritance, since their name does not continue any PIE theonym and it cannot be the epithet of a PIE weather god either, since we do not have such (cf. above). The other option is a local substrate and the local, pre-Indo-European population, the Hattians do indeed have a storm god called Taru. This is also supported by the 'Mediterranean iconography' of the Anatolian storm god, i.e., his association (and sometimes even identification) with the bull, which is again not weather-related. In other words, we are dealing with an *interpretatio luwica / hethitica* of the local storm god.

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# **Rain, *Ranae*, and rebirth ritual**

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I propose that the oft-compared singing frogs of Aristophanes's play *The Frogs* and the Rigvedic "Frog Hymn" (RV VII.103) are not just superficially similar but are in fact much more deeply related. Along with the similarities in the literary significance of the frogs as used in these two texts, the Indic Gharma/Pravargya ritual and the Greek Anthesteria and Lenaia festivals featured in either text show many overlaps in particularities of detail and ritual significance. The similarities of the two traditions' rituals in regard to themes, motifs, and placement in the rainy season all point to the Greek and Indic attestations being reflexes of an ancestral, weather-dependent ritual of at least a Proto-Graeco-Aryan date, one that is perhaps even reconstructible for Proto-Indo-European itself.

Stephanie Jamison (1992) has shown that natural details in the "Frog Hymn" betray the Rigvedic poets' awareness of the life cycle and behavior of the frogs in their environment in response to seasonal changes. With the start of the rainy season, the previously dehydrated frogs rehydrate in the rain and start croaking at each other gleefully in mating season. The poets expertly relate various natural phenomena with their own Pravargya ritual, such as likening the

frogs' croaks to the recitations of the students, and the frogs' eggs to milk boiling over.

Aristophanes's *The Frogs* likewise features a paralleling of frogs with sacred initiates. The chorus in the first half of the play is made up of sarcastic, silly frogs that keep repeating their vocalization "brekekekek koax koax", which Dionysus, as a bumbling initiate as a rower on the 'ship of poetry', imitates. In the second half of the play, the chorus of frogs is replaced with a chorus of wise sacred initiates (presumably played by the same actors as the frogs) and Dionysus becomes a weighty, authoritative judge of poetry. *The Frogs* was staged during the Lenaia festival and makes reference also to the Anthesteria festival, which were both festivals of Dionysus's rebirth held during the Mediterranean rainy season when the frogs would have been the most active in the marsh of Dionysus Limnaios, 'Marshy Dionysus'. The "Ship of State" metaphor used by Aristophanes also operates particularly aptly during the rainy, tempestuous Mediterranean winter unfit for sailing (Srirangarajan, 2021). This all points to there having been a ritual ancestral to both traditions which was held in the rainy season, in which, parallel to the rejuvenated croaking frogs, the student initiates were reborn into the world as full members of the religious community by repeating the sayings of their teachers back at them. The ritual was a joyful, light-hearted celebration of the successfully accomplished renewal of nature brought by the rains, paralleled by the successful initiation of the students. The humor of both the "Frog Hymn" and

Aristophanes's comedy indicate that the poets took the chance to be humorous and not too serious about the gravity of the ritual and celebrations. Additional shared details like two religious observances' fixation on pots and overflowing drinks only serve to strengthen the argument for their shared ancestry. There are multiple genera of frogs in the geographic area of the Yamnaya culture, including the "Common Frog" *Rana temporaria*, which could be identified as the frogs from which the ancestors of the Greeks and the Vedins drew inspiration. I will present this reconstruction to the audience and discuss its wider importance to understanding the Proto-Indo-Europeans' relationship to their climate, weather, and environment.

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# Reading the clouds: An investigation of Indo-European cloud words

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Terminology describing some types of meteorological phenomena is more easily reconstructible for Proto-Indo-European than others. It is often remarked that there are numerous reconstructible words for ‘rain’ (see, i.a., Gamkrelidze & Ivanov 1995; Mallory & Adams 2006); a striking fact not often discussed, however, is that the density of these is rivaled by the diversity of words for ‘cloud’ and related phenomena characterized by the visible aerosolization of water droplets, such as ‘mist’ and ‘fog’. On the cultural side, the significance and prominence of clouds in Indo-European speakers’ conception of the physical world is also notably reflected in the mythology and literature of many of the daughter languages (particularly Anatolian, Greek, Italic, and Indo-Iranian), in which gods are portrayed as living among the clouds and/or manipulating the clouds in numerous ways to influence the lives of mortals. Among the attested cloud terminology, a number of patterns may be observed, both morphological and semantic. This talk will explore the diversity of cloud terminology in Indo-European with an eye to determining the various roots which describe cloud phenomena, including their shades of meaning and geographical distribution. Additionally, the potential cultural and practical significance of having a rich vocabulary for cloud-related phenomena will be

discussed, with reference to similar terminological density in languages spoken by modern pastoral communities (as noted by, e.g., Yü 2011, Radeny et al. 2019, etc.).

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# The heavenly stormtroopers: The Maruts in the light of Indo-European comparison

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The association between Indra and the Maruts as his fighting troop has been well studied in scholarship on Vedic religion and mythology (Macdonell 1897, 80-81, Bhattacharji 1978, 131-3, Chakravarty, 1991, 611-636). Indra, the god of war and of lightning, goes to battle with his companions, who "rush with gleaming spears" (RV 5.55.1). The speed of the Maruts is also compared to that of Vāyu, the god of the wind. It is clear that they also assume some of the functions of Indra, their leader: they fly over the sky like clouds and their onslaught is compared to lightning and the thunderstorm. However, like their father, Rudra, they are also the singers of heaven and no one can match their poetic skills (RV 5.59.4.)

Stig Wikander (1938) identified the Maruts as the mythological image of the Indo-European youth warrior brotherhood (in German *Männerbund*) in Vedic India because they are described as a group of young warriors, all of the same age. However, Wikander's book is problematic because of his association with Nazi scholarship. It remains unclear how the weather aspect of the Maruts fit their other characteristics such as singing and healing. The controversial etymology connecting the Maruts with the Roman god Mars is equally problematic.

This paper argues that structural comparison between various Indo-European traditions is needed to explain the weather aspects of the Vedic storm gods. Building on established works on the relationship between complex sets of connections (Sanskrit *bandhu*) in the Vedic cosmos (Smith 1994, Proferes 2007), the paper uses Philippe Descola's (2013) anthropological theory of analogism to make links between the Maruts as the heavenly host of storm and the Vrātyas, the earthly warriors who identified with them on their raids. Using the theory of analogism facilitates going beyond George Dumézil's (1975) ideas on the relationship between Vedic and Roman religion to one that is more inclusive of the complexities of the Vedic cosmos with all its integral parts. The warrior brotherhood of the Vrātyas reflects the warrior traits of the mythical Maruts. Their atmospheric aspects are a reflection of the speed that is the ideal of young raiding warriors. Hence, the haste of the Maruts can be compared to the running Luperci of the Roman festival of the Lupercalia (Vuković 2023) and the migrant warbands that identified with wolves in the transitional period of the year (Anthony and Brown 2017), a time of storms that is crucial to such liminal rituals. The storm imagery of the Maruts is thus a result of a complex set of factors: their close link with Indra, the speed of running warriors, who identify with Maruts in their rites of passage, and the winter timing of such rituals.

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