

Caland Adjectives and Participles in Sanskrit and Proto-Indo-European

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1 Introduction

The PIE **-nt-* suffix is found in a wide variety of functions in daughter languages: participles, Caland system, proper names (e.g. places, peoples), pronominal system, plural marker in Tocharian, nominal derivatives in Anatolian, possible relation to Hittite ‘ergative’ suffix. Are (any of) these functions related?

Participles vs. Adjectives:

Participles: tense-aspect stem morphology; verbal syntax obligatory; participial ‘functionality’.

Adjectives: stem = verbal root; nominal syntax usual; ‘adjectival’ functionality.

2 Caland Adjectives in *-nt-*

“[In the Caland system] a root like *debh-* ‘small’, for example, will be said to have parallel derivatives in *-ro-* (Skt. *dabhra-*), *-i-* (*dabhīti-* < *dabhi-iti-*) and *-u-* (Hitt. *tepu-*) all equally primary and derived more or less simultaneously (in the most remote synchrony which we can actually recover) as an immediately possible set, one formation potentially implying the others, whatever the starting point of this implication.” (Nussbaum, 1976, p.5)

- Bartholomae (1888, p.563f.): some *-nt-* adjectives separate from participles.
- Caland’s original statements (Caland, 1892, p.266–268; Caland, 1893, p.592) are focused only on the Indo-Iranian suffixes *-ra-*, *-ma-* and *-i-* in compound. The only mention of *-nt-* by Caland (1892, p.267, fn.1) himself is in a footnote in which he mentions firstly exceptions to his rule, and then the single example of *-i-* alternating with *-nt-* in Avestan: the compound form *bərəzi-* of the basic adjective *bərəzant-* ‘high’.
- Wackernagel (1897, p.8–14) extended the process to **-u-*, **-no-* and some compound suffixes, as also to Greek and thereby Proto-Indo-European, but he does not mention *-nt-*.
- The next mention of *-nt-* in context of Caland’s Law is by Bartholomae (1900, p.136, fn.2).
- Risch (1937, 1974) and de Lamberterie (1990, p.18–25): no mention.
- Taken for granted by Bader (1975), Nussbaum (1976) and Rau (2009).
- Every ‘Caland adjective’ in **-nt-* has sometimes/often been analysed as a participle.

2.1 Caland **-nt-* outside Indo-Aryan

- Primary adjectives: Av. *xruuaṇt-* ‘bloody’, Gr. *κρέων* ‘ruler’, Toch. (A) *arkant* (B) *erkent* ‘black’, Lat. *gracens*; Av. *əṛəyaṇt-* ‘entsetzlich, abscheulich’?
- Primary abstract nouns (< adjectives?): Toch (A) *koṃ-pärkānt*, (B) *kaṃ-pirko* ‘sunrise’; OIr. *lethet* ‘breadth’, *tiget* ‘thickness’, *treisset* ‘strength’, *lagat* ‘smallness’, and *lóchet* ‘flash’; Dishington (2010, p.303–304) reconstructs PIE **dhughont-* (ON *dugand-*, OHG *tugend-* ‘usefulness, capability, doughtiness’) and **uidont-* (ON *vitand* ‘intelligence’, OHG *wizzantheit* ‘Wissen, Kenntnis’).
- *μέλας* and possibly *τάλας*, *-nt-* Caland adjectives which underwent secondary alteration to *-n-* stems according to Nussbaum (1976, p.21, 27).
- Thematized Caland **-nt-* suffixes may be seen in Av. *əṛəzata-*, Lat. *argentum*, Welsh *ariant* etc. and possibly in Lat. *nūntius* (<**neue-nt-iō-*) (Nussbaum, 1976, p.99).
- **-nt-* in complex Caland suffixes: Av. *bəzəuuānt-*, Hitt. *daššuānt-* ‘strong’, possibly Av. *əṛəzuuānt-*.

3 *-nt-* Adjectives in Sanskrit

3.1 *bṛhánt-* ‘high’

- Cognates Avestan *bəṛəzaṇt-*, the Irish PN *Brigit*, Germanic names in *Burgund-* and the Tocharian compound (A) *koṃ-pärkānt*, (B) *kaṃ-pirko* ‘sunrise’.
- Caland variants: Avestan *bəṛəzi-* (**-i-*), Hittite *parku-* and Armenian *barjr* (**-u-*), and Tocharian A *pärkär*, B *parkre* (**-ro-*).
- No corresponding verbal stem; usage entirely adjectival.

3.2 *ṛhánt-* ‘small, weak(?)’

- Caland variants *radhrá-* ‘weak’, *rándhi-* ‘subjugation’ (Rau, 2009, p.90).
- Isolated hapax: various alternative connections but none are secure (Mayrhofer, EWA, v.1, p.262).
- Sihler (1995, p.163): an Indic creation based on antonym *bṛhánt-*; if so it would still synchronically be a Caland adjective.

3.3 *mahánt-* ‘great’

- Caland adjective for Nussbaum (1976, p.99–100) and Rau (2009, p.80).
- Possible cognate: Lat. *ingens*.
- Caland variants include Gr. *μεγάλος*, Hitt. *mekki* ‘much’, RV *máhas-*.
- Clearly never a participle.

3.4 *járant-/juránt-* ‘old’

- Cognates Greek *γέρον* ‘old man’ and Oss. *zāron* ‘old’.
- Caland variants *jívri-*, *jírvi-* ‘weak’, *jarás-* ‘old age’, ON *karl* ‘(old) man’ etc.
- Adjectival feminine stem *járatī-*.
- *juránt-* may be part of same, originally amphikinetic, paradigm.
- Finite stems *járatī* and *jurátam* mean ‘makes old’.

3.5 *dhr̥śánt-* ‘bold’

- Caland variants *dh̥r̥ši-* ‘bold’, Av. *dar̥ši-* ‘id.’, Gr. *θρασύς* ‘id.’
- Almost all forms are a.sg.nt. or i.sg.nt. adverbs (cf. Avestan *darəšaṭ*).
- Unclear correlation to verbal stem.

3.6 *dódhant-* ‘violent’

- Caland variants: *dudhrá-* ‘violent’, *dúdhi-* ‘id.’.
- some assume a verbal stem (Gotō, 1987, p.175–176; Schaefer, 1994, p.139–140 with references), but there is no evidence.

3.7 *rúśant-* ‘bright, brilliant’

- no verbal stem, clearly an adjective.
- Nussbaum (1976, p.82): possible correspondence with OIr. *lóchet* ‘flash (of lightning)’.
- accent in compound: *rúśatpaśu-*.

3.8 *śucánt-* ‘bright, pure’

- usually classed as an aorist participle, there is some evidence for a thematic aorist stem.
- semantically equivalent to *śukrá-* and *śúci-*.

3.9 *citánt-* ‘brilliant’

- Hapax i.sg.f. *citántyā* implies a thematic verbal stem.
- attested *s*-aorist (suggesting an original root aorist, see Narten, 1964, p.114) makes the existence of a thematic aorist very unlikely.
- Functionally *citánt-* is merely an epithet and is equivalent to the Caland adjective *citrá-*.

3.10 *bhrájan-* ‘sparkling’

- the only active form of an otherwise medium tantum root.
- only evidence for a Caland system in this root is the *s*-stem noun *bhrájas-* ‘brilliance, sparkle’.
- accent on the compounds *bhrájjanman-* ‘of brilliant origin’ and *bhrájadṛṣṭi-* ‘whose spears sparkle’.
- *vibhrájan-* is problematic.

3.11 *pṛṣant-* ‘spotted’

- no verbal root in Sanskrit with which this synchronic adjective can be connected.
- even evidence for root aorist in PIE is marginal (LIV, p.492–493).
- beside Avestan *paršat-* (in the YAv. compound *paršat.gauu-*) there is also also a *-u-* adjective YAv. *paršu-*.

3.12 *tujánt-* ‘eager’

- Semantically adjective ‘eager’ beside \sqrt{tuj} ‘press forward’.
- Only finite form possibly confirming the stem is hapax medial *tujete* (RV 1.61.14b).
- Caland variants: *túgra-* and *túji-* (both PNs), Greek *στύγος*.

3.13 *sáhant-* ‘victorious’

- the only active ‘present’ form of this common root.
- *sáhant-* never has an object; little more than an adjective ‘victorious, conquering’.
- This contrasts even with the usually transitive medial ptc. *sáhamāna-* and perfect ptc. *sāsaváms-*.
- existence of the superlative *sáhantama-* (1.17.9a) shows it is not a synchronic participle; irregular stem suggests antiquity.

3.14 *usánt-* ‘willing, desirous’

- usually analysed as a lexicalized, morphologically regular present participle to the root $\sqrt{vaś}$ ‘desire’.
- much more common than finite forms.
- finite forms are commonly transitive, the participle never has an accusative object; it is simply an adjective ‘willing’.
- Cognate *έκών* is likewise adjectival.
- Caland variants: Greek *έκηλος*, Av. *vasah-*.
- Reconstructed with amphikinetic ablaut in PIE.

3.15 *bṛbánt-*?

- unclear *bṛbáduktha-* (RV 8.32.10a), possibly related to the equally unclear *bṛbú-*.
- Caland variant in Greek, if *βάραρος* is related (Mayrhofer EWA, v.2, p.230).

3.16 *tápant-*: a spurious Caland adjective?

- Old Irish cognate *té, téit* ‘hot’ and Caland variants Ved. *tápu-* ‘id.’ and RCS *teplъ*.
- Nussbaum argued *tápant-* was patientive-stative but finite stem agentive-transitive.
- In fact of the three forms of *tápant-* found in the RV two are agentive-transitive and only one is intransitive-stative; *tápati* can mean ‘be hot’.
- only possible evidence for a Caland adjective (perhaps existing alongside the participle and potentially attested at RV 9.107.20c) is the Classical PN *Tapatī-* MBh+.

4 Ablaut and relation to participles

- Nussbaum (1976) makes no claims about the relation, if any, between Caland **-nt-* and participial **-nt-*.
- Rau (2009, p.176 and fn.139) does discuss it, but his conclusions are ambiguous.
- Evidence for amphikinetic ablaut in some Caland adjectives but not in the participial system.
- *usánt-* — *ἔκων* suggests PIE amphikinetic **uék-ont-/uk-nt-* (Rix, 1976, p.123, 144).
- Likewise *járant-* and *juránt-*: PIE **ǵerh₂-ont-/ǵr_hh₂-nt-*.
- Schaffner (2001, p.610–622) lists only two other PIE **-nt-* stems for which there is (at least alleged) evidence for amphikinetic ablaut: the stem underlying Skt. *bṛhánt-*, and the noun **h₁éd-ont-/h₁d-nt-* ‘tooth’.
- Accented *-ó*-grade in hysterokinetic participles (**h₁s-ónt-/h₁s-nt-*): evidence for Pre-PIE amphikinetic ablaut?
- So any identity between **-nt-* participles and Caland adjectives can only be Pre-PIE, not PIE.
- **-nt-* participles evolved from Caland adjectives?

5 Caland adjectives in *-āna-*?

In the RV 17 of the just over 40 roots that are traditionally analysed as forming mediopassive ‘aorist’ participles, i.e. nearly 40%, have corresponding Caland systems, more than double the proportion which have attested corresponding finite mediopassive aorists.

To my knowledge it has never been explicitly claimed that *-āna-* is a Caland suffix. Rau (2009, p.85) lists YAv. *darəzāna-* as part of the Caland system to the root $\sqrt{\text{darəz}}$ (Skt. $\sqrt{\text{dṛh}}$), but without explanation.

5.1 *tṛṣāná-* ‘thirsty’

- functionally an adjective, equivalent to *tṛṣnáj-*, *tṛṣyāvānt-*, *tṛṣitá-*.
- no corresponding finite paradigm.
- Caland variant: *tṛṣú-* (= Av. *taršu-* ‘dry, firm’, Goth. *þaurusus* ‘dried, withered’).

5.2 *vipāná-* ‘inspired’

- No corresponding verbal forms.
- not obviously different from adjectival uses of Caland adj. *vīpra-*.

5.3 *śvitāná-* ‘bright’

- Caland variants: *śvitrá-* (Middle Persian *spīhr*), *śiti-* in compound with irregular dissimilation.
- No corresponding verbal stem.
- Semantically equivalent to *śvetá-* (*śvitrá-* has come to mean ‘white’).

5.4 Other possibles

- *dhṛṣāná-*, *dhṛṣámāṇa-*.
- *śubhāná-* ‘beautiful’ (beside *śubhrá-*).
- *piśāná-* ‘adorned’ (cf. *śilpá-* < **piślá-* Rau, 2009, p.144).
- *rucāná-* (cf. *rúci-*, Av. *raocah-*).
- *prathāná-* (cf. *pṛthú-*, *πλατύς* etc.).
- *prasahāná-* (cf. *sáhant-* above).

5.5 Analysis

- Evidence not so convincing as for *-*nt-* forms: mainly negative evidence.
- If accepted: Indo-Aryan, Indo-Iranian, or Indo-European?
- Vedic adjectives in *-asāna-*, e.g. *bhiyāsāna-*, *sahasāná-*, may support *-āna-* as a Caland suffix.
- Created by analogy with participial/Caland *-nt-*?
- Or: *-*no-* derivative to a stative stem, i.e. *-*eh₁-no-*. Compare *tṛṣāná-* with Latin *torrēre*, *rucāná-* with *lūcēre*.

6 Conclusion

- Morphological, syntactic and semantic evidence must be combined for a proper analysis of any form.
- we must heed Meißner’s (1998, p.251) warning: “es ist nicht alles „Caland“, was glänzt”.

- On the other hand the equivalent warning could equally apply to participles: simply because a word ends in *-nt-* or *-āna-* does not necessarily mean it was synchronically or even diachronically a participle.
- The inventory of *-nt-* Caland adjectives in Sanskrit is larger than previously supposed; that of participles is correspondingly smaller.
- In PIE **-nt-* Caland adjectives had amphikinetic ablaut, participles followed their verbal stem.
- Possible connection between *-āna-* and Caland system.
- Interestingly the third PIE participial suffix, **-uos-*, has been connected to the Caland system suffix **-u-* (Gusmani, 1968, p.91–119).
- There may be a pre-PIE identity between Caland adjectives and participles in **-nt-*, but at the earliest stage we can reconstruct with any certainty they are clearly distinct.

Table 1: Caland adjectives in *-nt-* in Sanskrit

Form	Corr. to verbal stem	Caland variants	Noted by R(au)/N(ussbaum)
<i>uśánt-</i>	Morph. only	<i>*-s, *-lo-?</i>	
<i>ṛhánt-</i>	None	<i>*-ro-, *-i-</i>	R
<i>járant-/juránt-</i>	Morph. only	<i>*-i-, *-lo-, *-s, *-i-</i>	N,R
<i>citánt-</i>	None	<i>*-ro-</i>	
<i>tujánt-</i>	Marginal	<i>*-i-, *-ro-, *-s</i>	
<i>dódhant-</i>	None	<i>*-i-, *-ro-</i>	N
<i>dhṛśánt-</i>	None (in RV)	<i>*-i-, *-u-</i>	N,R
<i>pṛśant-</i>	None	<i>*-u-</i>	
<i>bṛbánt-?</i>	None	<i>*-u-, *-ro-?</i>	
<i>bṛhánt-</i>	None	<i>*-i-, *-u-, *-ro-</i>	N,R
<i>bhrájant-</i>	Marginal	<i>*-s</i>	
<i>mahánt-</i>	None	<i>*-i-</i>	N,R
<i>rúśant-</i>	None	?	N
<i>śúcánt-</i>	Marginal	<i>*-i-, *-ro-</i>	
<i>sáhant-</i>	Marginal	<i>*-s</i>	

Table 2: Possible Caland adjectives in *-(m)āna-*

Form	Corr. to verbal stem	Caland variants
<i>tṛṣāná-</i>	None	<i>*-u-, *-s</i>
<i>dhṛṣāná-, dhṛśámāna-</i>	Partial	<i>*-i-, *-u-, *-nt-</i>
<i>piśāná-</i>	Marginal	<i>*-lo-, *-s</i>
<i>prathāná-</i>	None	<i>*-u-</i>
<i>prasahāná-</i>	Marginal	<i>*-nt-, *-s</i>
<i>rucāna-</i>	Marginal	<i>*-i-, *-s</i>
<i>vipāná-</i>	None	<i>*-ro-, *-s</i>
<i>śúcāmāna-</i>	Marginal	<i>*-i-, *-ro-, *-nt-</i>
<i>śubhāná-</i>	Marginal	<i>*-ro-, *-s</i>

References

- BADER, FRANÇOISE (1975). 'Adjectifs verbaux hétéroclitiques (*-i-/*-nt-/*-u-) en composition nominale'. *Revue de philologie, de littérature et d'histoire anciennes*, ser. 3 49=101, pp. 19–48.
- BARTHOLOMAE, CHRISTIAN (1888). 'Die arische flexion der adjektiva und partizipia auf nt-'. *Zeitschrift für vergleichende Sprachforschung* 29, pp. 487–586.
- BARTHOLOMAE, CHRISTIAN (1900). 'Arica XIII'. *Indogermanische Forschungen* 11, pp. 112–144.
- CALAND, WILLEM (1892). 'Beiträge zur kenntniss des Avesta'. *Zeitschrift für vergleichende Sprachforschung* 31, pp. 256–273.
- CALAND, WILLEM (1893). 'Beiträge zur kenntniss des Avesta'. *Zeitschrift für vergleichende Sprachforschung* 32, pp. 589–595.
- DE LAMBERTERIE, CHARLES (1990). *Les adjectifs grec en -υς : Sémantique et comparaison*. Louvain-la-Neuve: Peeters.
- DISHINGTON, JAMES (2010). 'The Caland System and the Germanic Third Weak Verb Class'. *Historische Sprachforschung* 123, pp. 297–317.
- GOTŌ, TOSHIFUMI (1987). *Die „I. Präsensklasse“ im Vedischen: Untersuchung der vollstufigen thematischen Wurzelpräsentia*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- GUSMANI, ROBERTO (1968). *Il lessico ittito*. Napoli: Libreria scientifica editrice.
- MAYRHOFFER, MANFRED (1986–2001). *Etymologisches Wörterbuch des Altindoarischen* (32 fasc.). Heidelberg: C. Winter.
- MEISSNER, TORSTEN (1998). 'Das „Calandsche Gesetz“ und das Griechische - nach 100 Jahren'. In Wolfgang Meid (ed.), *Sprache und Kultur der Indogermanen : Akten der X. Fachtagung der Indogermanischen Gesellschaft, Innsbruck, 22.-28. September 1996*, Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck, pp. 237–354.
- NARTEN, JOHANNA (1964). *Die Sigmatischen Aoriste im Veda*. Wiesbaden: O. Harrassowitz.
- NUSSBAUM, ALAN J. (1976). *Caland's "Law" and the Caland System*. Ph.D. thesis, Harvard University.
- PINAULT, GEORGES-JEAN (1989). 'Reflets dialectaux en védique ancien'. In Colette Caillet (ed.), *Dialectes dans les littératures indo-aryennes*, Paris: Collège de France, Institut de civilisation indienne, pp. 35–96.
- RAU, JEREMY (2009). *Indo-European Nominal Morphology: The Decads and the Caland System*. Innsbruck: Institut für Sprachen und Literaturen der Universität Innsbruck.
- RENOU, LOUIS (1936). 'Dénommatifs du Ṛgveda en -aryati, -anyati'. *Bulletin de la Société de Linguistique de Paris* 37, pp. 17–39.
- RISCH, ERNST (1937). *Wortbildung der homerischen Sprache*. Berlin: Walter de Gruyter.
- RISCH, ERNST (1974). *Wortbildung der homerischen Sprache*. Berlin: Walter de Gruyter, second edition.
- RIX, HELMUT (1976). *Historische Grammatik des Griechischen : Laut- und Formenlehre*. Darmstadt: Wissenschaftliche Gesellschaft. (Second, corrected edition published 1992).
- RIX, HELMUT, MARTIN JOACHIM KÜMMEL, THOMAS ZEHNDER, REINER LIPP, and BRIGITTE SCHIRMER (2001). *LIV, Lexikon der indogermanischen Verben : die Wurzeln und ihre Primärstambildungen*. Wiesbaden: Ludwig Reichert, second edition.
- SCHAEFER, CHRISTIANE (1994). *Das Intensivum im Vedischen*. Göttingen: Vandenhoeck & Ruprecht.
- SCHAFFNER, STEFAN (2001). *Das Vernersche Gesetz und der innerparadigmatische grammatische Wechsel des Urgermanischen im Nominalbereich*. Innsbruck: Institut für Sprachen und Literaturen der Universität Innsbruck.
- SCHINDLER, JOCHEM (1975). 'Armenisch erkn, griechisch ὀδύνη, irisch idu'. *Zeitschrift für vergleichende Sprachforschung* 89, pp. 53–65.
- SIHLER, ANDREW L. (1995). *New Comparative Grammar of Greek and Latin*. Oxford: Oxford University Press.
- WACKERNAGEL, JACOB (1897). 'Vermischte Beiträge zur griechischen Sprachkunde'. *Programm zur Rektoratsfeier der Universität Basel 1897*, pp. 3–62. (= *Kleine Schriften*, v.1, p.764–823).
- WACKERNAGEL, JACOB (1918). 'Indoiranisches'. *Sitzungsberichte der Preussischen Akademie der Wissenschaften 1918*, pp. 380–411. (= *Kleine Schriften* Vol. 1, p.299–330).
- WACKERNAGEL, JACOB and ALBERT DEBRUNNER (1896–1964). *Altindische Grammatik* (4 vol.). Göttingen: Vandenhoeck & Ruprecht.