# Indogermanistik und Linguistik im Dialog

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# Weise's Law: Depalatalization of Palatovelars before \*r in Sanskrit\*

#### Alwin Kloekhorst

In this article it is claimed that the Sanskrit distribution of the consonants k, g, gh and s, j, h before r/l shows that at a certain prestage depalatalization of original palatovelars before \*r (except before \*ri) must have taken place. It is argued that this development, "Weise's Law", may be dated back to at least the stage directly after the splitting off of Anatolian from PIE.

If one compares the Indo-European languages with regard to the velar consonants, three rows of correspondences are found, which are usually reconstructed as a row of palatovelars (PIE \*k, \*g, \*g), a row of labiovelars (PIE \*k", \*g", \*g") and a row of 'plain' velars (PIE \*k, \*g, \*g). It is remarkable, however, that despite the fact that for the Proto-Indo-European mother language three rows are reconstructed, in almost none of the separate Indo-European languages these three rows are attested next to each other. In the *satom*-languages¹ the rows of the plain velars and the labiovelars have merged in a series that contrasts with the palatovelars,² whereas in the *centum*-languages³ the plain velars and the palatovelars have merged in a series that contrasts with the labiovelars. Only in Anatolian the three rows of velars seem to have remained distinct.<sup>4</sup>

The fact that in almost no IE language the plain velars were contrastive with both the labioand the palatovelars indicates that the system of three different rows of velar consonants was rather unstable and therefore may have developed only quite recently within the prehistory of PIE. This view emerged in the 19th century already when specific phonological environments were identified in which only plain velars but no labio- or palatovelars occur. For instance, Brugmann (1881: 307¹) and De Saussure (1889: 161f.) showed that after \*u labiovelars are never found, and Meillet (1894: 294ff.) established that after initial \*s only plain velars and no palato- or labiovelars occur. On the basis of these distributions one could conclude that in PIE originally only a series of palatovelars and a series of labiovelars existed, which after \*u and initial \*s were neutralized to allophonic plain velars. First these plain velars were only phonetically contrastive, but later on (possibly within PIE already) they became phonologized.

Also within separate branches places of neutralizations were found. In Italo-Celtic and Germanic, labiovelars were neutralized before rounded vowels and obstruents (Meillet 1894: 279ff.). In Balto-Slavic, palatovelars were depalatalized before \*r,  $*IV^{back}$ , \*n, \*m, \*l, \*p and \*p

This article is a revision of my 'Kleine Scriptie' (~ BA thesis) Over de Wet van Weise: De Reflexen van PIE \*KR in het Sanskrit, written in 1999 under supervision of Prof. Lubotsky.

Indo-Iranian, Balto-Slavic, Armenian and Albanian.

The fact that PIE syllabic resonants are in Balto-Slavic normally vocalized to iR, but to uR when standing before or after a labiovelar (cf. Vaillant 1950: 167-177, and, most recently, Kortlandt 2007), shows that in proto-Balto-Slavic labiovelars still were separate phonemes, however, and that consequently PBSI. must have possessed three rows of velars.

Italic, Celtic, Germanic, Greek, Tocharian.

Namely, in the Luwic sub-branch: PIE \*k > Luw. z, Lyc. s, PIE \*k > Luw. k, Lyc. k, PIE  $*k^w > \text{Luw. } ku$ , Lyc. q (for the latter, cf. Kloekhorst 2006: 97-101).

(Meillet 1894: 297; Kortlandt 1978).<sup>5</sup> In Armenian and Albanian, palatovelars were depalatalized before \*r, \*l, \*n (Huld 1984: 160; Kortlandt 1985: 10; 1986: 41-2).

It is remarkable that within the *satom*-branch, almost all languages (Balto-Slavic, Armenian and Albanian) show a depalatalization of palatovelars before resonants. This, of course, begs the question: what was the situation in the only other language group belonging to the *satom*-branch, namely Indo-Iranian?

#### Weise's Law

In 1881, in an article on Greek etymologies, the German scholar Oscar Weise made the following interesting observation (p.115): "Wenn wir ... die mit Guttural + r oder I beginnenden indischen Wörter durchmustern und mit ihren griech. Reflexen vergleichen, so werden wir die Wahrnehmung machen, dass alle diejenigen Kehllaut +  $\varrho$  zeigen, welche den Guttural im Indischen unversehrt erhalten haben, dagegen griech. Guttural +  $\varrho$  regelmässig nur dann eintritt, wenn im Indischen die palatalen zischlaute g, g, g erscheinen. Die Ausnahmslosigkeit dieser Regel verbietet von selbst die Annahme, dass hier Zufall obgewaltet hat. Selbstverständlich sind aber dabei die Fälle ausgeschlossen, wo g (resp. g), nicht unmittelbar hinter dem Gutturale steht, sondern sich ein Vocal dazwischen befindet, wiewohl auch hier die oben aufgestellte Regel oft gilt". In other words, according to Weise, we find the following correspondences:

Skt. 
$$k$$
,  $g$ ,  $gh + r/l \sim Gr$ .  $\varkappa$ ,  $\gamma$ ,  $\chi + \varrho$   
Skt.  $\acute{s}$ ,  $\acute{j}$ ,  $h + r/l \sim Gr$ .  $\varkappa$ ,  $\gamma$ ,  $\chi + \lambda$ 

The claim that before \*rwe find reflexes of PIE plain velars only, whereas before \*/we find reflexes of palatovelars only, points to a complementary distribution that, if indeed correct, needs to be historically explained. From a PIE point of view, the most logical explanation would then be that before \*r, original palatovelars have been depalatalized to plain velars.

Although this article seems to have been largely forgotten by the scholarly world, sporadically we do find references to "Weise's Law", e.g. in Kortlandt 1978 (238: "The palatal feature of the palatovelars was lost before a following \*r in Indo-Iranian") or Beekes 1995: 112f. (without a specific reference to Weise). Unfortunately, however, the examples cited by Weise himself do not cover the whole material and many of the etymologies he used have in the meantime fallen in disfavor. Moreover, there seem to be some counterexamples, like Skt.  $\acute{srf}$  'beauty'  $\sim$  Gr.  $\varkappa \varrho \varepsilon \iota \omega v$  or Skt.  $\acute{sm\acute{a}\acute{s}ru}$  'beard'  $\sim$  Lith.  $sm\~{a}kras$ .

In this article it is my aim to investigate whether Weise's Law is correct or not. In order to achieve this goal I will treat all Sanskrit words that are relevant to the law, i.e. the words containing a cluster kR, sR, gR, jR, ghR and hR (in which R = r, r, l, l), which go back to PIE \*KR, as well as the words containing the sequences KiRV and KuRV or  $K\bar{l}RC$  and  $K\bar{u}RC$ , as these could point to PIE \*KRH. I shall use the symbol Skt. R below as a coversymbol for r, r, l, l, ur, ul, ir, il,  $\bar{u}r$ ,  $\bar{u}l$ ,  $\bar{l}r$ ,  $\bar{l}l$ .

Kortlandt *l.c.* points to the fact that often analogical restorations have taken place and that therefore the Balto-Slavic material is not always clear.

#### Determining the material

In order to gather the material that is relevant to this investigation, I have first collected from Mayrhofer's *Etymologisches Wörterbuch des Altindoarischen* (1986) all forms containing a cluster kR, śR, gR, jR, ghR and hR. From this collection I have removed the following words:

- words of which the meaning is unknown<sup>6</sup>
- words without a good IE etymology<sup>7</sup>
- words of onomatopoetic origin<sup>8</sup>
- words in which the relevant cluster does not reflect PIE \*KR9
- words that must be reconstructed with a labiovelar 10

akrá-(m.) '?', kúli (adv.) '?', krívi-(m.) '?', kharájru-'?', kharamajrá-'?', vinangrsá-'?', śíriṇā-(f.) '?'.

ángiras- (m.) 'Sänger, Priester', alíklava- (m.) 'eine Art Aasvogel' (hardly with kravís-), kírāta- (m.) 'Name eines verachteten Gebirgsvolkes', kirmirá- (adj.) 'bunt', kíla (adv.) 'gewiß, ja, fürwahr', kilása- (adj.) 'gefleckt, aussätzig', kīrtí- (f.) 'Gedenken, Erwähnung, Kunde, Ruhm' (derived from kari- to think of, to acknowledge' < \*kerH-; not with Goth. hropeigans 'conquering' and OHG hruom 'fame' < \*kreH-), kīrśā- (f.) 'ein Tier', kurfra- (n.) 'ein Kopfschmuck der Frauen', kúru- (m.pl.) 'Name eines Volkes und seines Landes', kurungá-(m.) 'Name eines Königs', kurūtínī- (f.) 'Benennung eines dämonischen Wesens', kurūru- (m.) 'ein bestimmtes Gewürm', kúla-(n.) 'Speisegemeinschaft', kulatā-(f.) 'eine untreue Frau', kulāya-(m., n.) 'Nest', kúlāla- (m.) 'Töpfer', kulija- (n.) 'ein bestimmtes Gefäβ', kúliśa- (m.) 'Axt, Beil', kulīkáya- (m.) 'ein bestimmtes Wassertier', kulíkā-(f.) 'ein bestimmter Vogel', kulungá-(m.) 'Antilope', kuluncá-(m.) 'Dieb', kuśrí-(m.) 'N. pr.', kūrmá- (m.) 'Schildkröte', krkalāsá- (m.) 'Chamäleon', kŕkāta- (n.) 'Halsgelenk', krcchrá- (n.) 'Schwierigkeit, Beschwerde', kfdara-(n.) 'Vorratskammer', kfpa-(m.) 'N. pr.', kfpīta-'Buschwerk, Gestrüpp', kṛmúka- (m.) 'eine Art brennbaren Holzes', kṛśana- (n.) 'Perle', kṛśanu- (m.) 'N. pr.', kṛsara- (m.?) 'ein Mus aus Reis und Sesam', krand- 'schreien, wiehern, dröhnen' (not with Gr. καλέω, Lat. clamāre 'to call' < \*(k²leh<sub>1</sub>-), krap-<sup>i</sup> 'jammern, flehen, traurig sein, sich sehnen', kram-<sup>i</sup> 'schreiten, gehen', krānā́ (adv.) 'in tatkräftiger, wirksamer Weise (?)', krúñc- (m.) 'Kranich, Wanderkranich', krúmu- (f.) 'Name eines Zuflusses des Indus', krod- 'dick machen (?)', krodh- 'zürnen, zornig werden', kland- 'erklingen, ertönen' (variant of krand-), klam'- 'müde werden, erschlaffen' (variant of śram'- ?), klītakā- (f.) 'Clycyrrhiza glabra (oder eschinata)', klībá- (adj.) 'entmannt, unvermögend', kled- 'feucht werden', kleś- 'plagen, quälen', khalákula-(m.) 'Dolichus uniflorus', gúggulu- (n.) 'Bdellion', gūrd- 'sich freuen, frohlocken, sich ergötzen', grdá- (m.) 'Penis', grstí- (f.) 'Färse', grhú- (m.) 'Bettler', granth'- 'knüpfen, binden, verbinden', ghūrn-'hinundherschwanken, sich hinundherbewegen', ghrā- 'riechen', jrambh- 'gähnen, den Rachen aufsperren', túgra- (m.) 'N. pr.', nakula- (m.) 'Ichneumon, Viverra ichneumon', nakra- (m.) 'Krokodil', bákura- 'etwas, womit man bläst', bekurā-(f.) 'Stimme, Ton', vángrda-(m.) 'Name eines indrafeindlichen Dämons', vyāghrá-(m.) 'Tiger', śaṣkulī- (f.) 'ein bestimmtes Backwerk', śigru- (m.pl.) 'Name eines Volksstammes', śirimbitha-(m.) 'Name eines Rsi', śirīsa- (m.) 'Acacia sirissa', śilá- (f.) 'Fels, Stein', śīghrá- (adj.) 'rasch, unverzüglisch, schnell', śúrpa- (n.) 'Getreideschwinge', śrgālá- (m.) 'Schakal', śrnkhalā- (f.) 'Kette, Fessel', śrtá- 'gar geworden, gekocht', śrath'- 'locker werden, lose werden, nachgeben' (not < \* kreth2- with OE hreddan, NHG retten 'to save', which would then reflect \* kroth2-eie-; the Germanic verbs rather reflect \* hradian, an inner-Germanic derivative of an adj. \*hrada-'quick' (ON hraðr'quick', MHG rade'quick, immediate')), śram-'müde werden, sich abmühen, sich anstrengen' (variant of klam'-; not with Gr. κρέμαμαι 'to hang, to float'), śrambh-'ermutigen', śrā- 'gar werden', śrāṇay- 'verschenken, schenken, verteilen', ślāgh- 'hochgestimmt sein, zuversichtlich sein', híruk, húruk (adv.) 'weg, fort', hŕd- (n.) 'Herz' (ultimately < \* kerd-; h- is of unclear origin), hray-i 'sich schämen', hrūdu-(m.) 'Name oder Epitheton des takmán-'.

kikirá kar-'zerreißen, zerfetzen', kṛkaváku-(m.) 'Hahn', krakṣ-'lärmen, brüllen', kroś-'schreien, anschreien', kroṣṭár-(m.) 'Schakal' (derived from preceding), ghṛṅ (adv.) 'kling!', cakravāká-(m.) 'eine Gänseart'.

klomán- (m.) 'die rechte Lunge, Plur. die Lungen' < \*pleu-mon-; śṛṅkhāṇikā- (f.) 'Rotz' < \*srnkH-; ślakṣṇá- (adj.) 'schlüpfrig, glatt, weich' < \*sleh₂ġ-snó-.</p>

- words in which an initial \*s may have been present 11

#### Words containing kR, gR and ghR

After having determined the relevant material, I will first look at the words containing the clusters kR, gR and ghR, i.e. the words that are usually reconstructed as containing a plain velar \*k, \*g,  $*g^h$  + resonant. According to Weise's Law, the resonant in these words should reflect PIE \*r and not \*l, and this seems to indeed be the case for all of them:

kṛṣṇá- (adj.) 'black' < \*krsnó- (OPr. kirsnan, OCS črыпь 'black').

 $kr\acute{a}tu$ - (m.) 'force' ~ Av. xratu- 'mental power' < \* $kr\acute{e}tu$ - (Gr. μρατύς 'superior' < \*kr-tu-, μράτος 'power' < \*kr-to-).

kravíṣ- (n.) 'raw, bloody meat' < \*kreuh<sub>2</sub>-s- (Gr. κρέας 'meat', Lat. cruor 'blood', Lith. kraŭjas 'blood', etc.).

 $kr\bar{u}r\acute{a}$ -(adj.) 'bloody, red, raw' < \* $kruh_2$ - $r\acute{o}$ -(id.).

gṛhá- (m.) 'house' ~ YAv. gərə $\delta a$ - 'dwelling of Daēuuic creatures'  $< *g^h rd^h \acute{o}$ - (Lith. gar̄das 'fenced space', OCS gradı 'city'  $< *g^h ord^h o$ -).

 $grabh^{j}$ - 'to seize' < \*  $g^{h}rebh_{l}$ - (Lith.  $gr\acute{e}bti$ ' to rob', Latv. grebt 'to grab', OCS grabiti' to rob', Hitt.  $kar\bar{a}p^{-j}/kare/ip$ - 'to devour'). (12)

gras-'to devour' < \*gres- (Gr. γράω 'to eat, to gnaw' < \*grs-e/o-, γράστις 'green fodder' < \*grs-ti-).

gráma- (m.) 'group, village' < \*gróm-o- (Russ. gromáda 'large pile', Pol. gromada 'group, pile, village community').

ghṛṣu- (adj.) 'cheerful, happy' is seen as a u-stem derivative from harṣ- 'to be delighted, to be excited' which belongs with YAv. zarəšiiamna- 'excited', Lat. horrēre 'to be stiff, to ruffle up' < \*g^hers-. Mayrhofer (s.v.) states that "[i]n harṣ/ghṛṣ- sind anscheinend zwei iir. Wortsippen zusammengefallen, \*ʃ^harš und \*g^harš [...i]m Idg. wohl \*g^hers und \*g^(u)hers''. More on this form below.

agrá-(f.) 'Jungfrau, Unvermählte' < \*n-g<sup>w</sup>rú-h<sub>2</sub>-; ághrā-(f.) 'Not, Übel, Drangsal' < \*He/og<sup>wh</sup>-leh<sub>2</sub>-?; aṅgúri-(f.) 'Finger, Zehe', áṅghri-(m.) 'Fuβ' < \*h₃eng<sup>wh</sup> if secondary full-grade to \*h₃neg<sup>wh</sup>-(Gr. ὄνυξ 'nail, paw', Lith. nagùtis' finger nail', OE nægl'nail'); âskra- (adj.) 'zusammenhaltend, befreundet' < \*â-sk<sup>w</sup>-ro-; kṛtá-(?) 'bester Wurf [im Würfelspiel]' < \*k<sup>w</sup>r-tó-; kṛtvas (adv.) '-mal' < \*k<sup>w</sup>r-tu-; kṛp- (f.) 'Aussehen, Schönheit, Schein' < \*k<sup>w</sup>rp-; kṛmi- (m.) 'Wurm, Made' < \*k<sup>w</sup>rmi-; kṛṣīvala- 'Ackerbauer' < \*k<sup>w</sup>ls-; kṛṣtí- (f.) 'Grenze' < \*k<sup>w</sup>ls-ti-; kray- 'kaufen' < \*k<sup>w</sup>reiH-; gir- (f.) 'Preislied, Anrufung' < \*g<sup>w</sup>rH-; girí- (m.) 'Berg, Hügel, Anhöhe' < \*g<sup>w</sup>rH-i-; gurú- (adj.) 'schwer, gewichtig, hart, heftig, drückend, groß' < \*g<sup>w</sup>rh₂-ú-; gṛtsa- (adj.) 'geschickt, gewandt, klug' < \*g<sup>w</sup>h]bh-so-; grávan- (m.) 'Preßstein, Stein zum Auspressen des Soma' < \*g<sup>w</sup>reh₂uon-; grīvâ- (f.) 'Nacken, Hinterhals' < \*g<sup>w</sup>r-iH-ueh₂-; grīṣmā- (m.) 'Sommer, Hochsommer' < \*g<sup>w</sup>riH-sm-; grumuṣṭi- (m.) 'schwere Handvoll' < \*g<sup>w</sup>r(h₂)-u-; glā- 'Widerwillen empfinden, Unlust empfinden, erschlaffen, matt werden' < \*g<sup>w</sup>l-eH-; ghṛṇā- (n.) 'Hitze, Glut, Sonnenglut' < \*g<sup>wh</sup>r-no-; ghṛtā- (n.) 'zerlassene Butter, Schmelzbutter, Ghee' < \*g<sup>wh</sup>r-to-; ghraṁsā- (m.) 'Sonnenglut, Sommerhitze' < \*g<sup>wh</sup>r-en-so-; cakrā- (n.) 'Wagenrad, Rad' < \*k<sup>w</sup>e-k<sup>w</sup>l-o-; cákri- (adj.) 'machend, wirkend, wirksam' < \*k<sup>w</sup>e-k<sup>w</sup>r-i-; yákar- (n.) 'Leber' (nom.sg. yákṛt) < \*kek<sup>w</sup>-r-; śákar- (n.) 'Dung, Kot, Exkremente' (nom.sg. śákṛt) < \*kek<sup>w</sup>-r-.

kṛtsná- (adj.) 'ganz, vollständig' (ultimately from \*(s)kwer-), kṛdhú- (adj.) 'verkürzt, verstümmelt, klein' (with áskṛdhoyu- (adj.) 'nicht knapp, unverkürzt, ungeschmälert' from \*(s)kerdh-), kṛśá- (adj.) 'mager, hager, abgemagert, schlank, schwächlich' (ultimately from \*(s)kwer-), krīḍ- 'spielen, scherzen, tändeln, tollen, sich heftig bewegen' (< \*(s)krisd-; MInd. kheḍ(d)-points to \*sk-, cf. Pischel 1879: 235f.).</p>

Cf. Kloekhorst 2008: 442f. for this reconstruction. Possibly, also Skt. grapsa-'bundle' belongs here, if from \*grabh-sa-.

At first sight, there seem to be three counterexamples, however, but these turn out to be irrelevant to our investigation:

takra- (n.) 'milk mixed with water' ~ Ir. \*taxra- < \*tmk-lo-, cf. ModIc. pēl 'buttermilk' < \*temk-lo-. The word is generally derived from the root \*temk- as attested in Skt. tanákti 'to pull together, to coagulate' (< \*tm-né-k-ti), Hitt. tame(n)k-²i 'to affix, to attach', MIr. técht 'coagulated', etc. Since the presence of the plain velar here is not determined by the following \*l, but is inherent to the root, this word is irrelevant to our discussion. 13</p>

giri- "sister-in-law": In 1976, Eichner-Kühn argued that in a few passages the word giri-, which normally means 'mountain', must in fact be translated 'sister-in-law', and therewith be the Skt. cognate to Gr. γάλως 'sister-in-law', and especially the form γάλις· γαλαός 'sister-in-law' as found in Hesych. She therefore reconstructs giri- as \*glh<sub>2</sub>-i-, which would be problematic for Weise's Law (showing a plain velar followed by \*ħ). Moreover, the plain velar does not match the Slavic material (OCS zblbva, Russ. zolóvka 'sister-in-law'), which points to \*g-. Recently, Griffiths/Lubotsky (2009) have shown, however, that in view of newly discovered passages in the Atharva-Veda it has become clear that giri- as attested in the passages treated by Eichner-Kühn in fact must be translated 'mountain' after all (and therefore reconstructed \*g\*rH-i-). Therewith, the word giri- 'sister-in-law' should be removed from the Sanskrit vocabulary.

gláu- 'lump, swelling(?)' is connected with OCS žbly, žely 'ulcer' and Slov. glûta, glúta 'lump, swelling', which point to  $*g^{(w)}leH$ -u-. Sometimes, Gr. γλουτός 'buttock' is connected as well, which would point to a \*g, but as this word has an inner-Greek cognate γλουθίον (diminutive of γλουτός), showing -θ- instead of -τ-, Beekes (2010:277) suggests that it may be of substratum origin. On the basis of the Skt. and Slavic forms we cannot determine whether the initial consonant was \*g or  $*g^w$ , so I will leave this word out of consideration here.

#### Words containing sR, jR and hR

Now we will move on to the words containing śR, jR and hR, i.e. words that reflect \*K,  $*\acute{g}$  and  $*\acute{g}^h$  + resonant. According to Weise's Law, the resonant in these words should go back to PIE \*I and not to \*r. In reality, this is not the case, however: we find in this group both words that reflect  $*\acute{K}I$  as well as words that reflect  $*\acute{K}I$ . I will first give here the words that reflect  $*\acute{K}I$ , i.e. the words that are in accordance with Weise's Law:

śiśira- (m.) 'spring, cold season' < \*ki-kiH-o- (derived from a root \*kelH- 'to freeze' as found in YAv. sarəta- 'cold', Lith. šálti 'to freeze, to become cold' and ON hēla 'white frost', if from PGerm. \*hi-hl-).

śray-'to lean on', YAv. *ni-sraii-*'to hand over, to lean' < \**klei-* (Gr. κλίνω 'to make lean, to incline', Lat. *clīnāre* 'to bend, to bow', OHG *hlinēn* 'to lean', etc.).

*śres-* 'to stick, to kling to' < \* *klei-s-* (id.).

*śréni-* (f.) 'row, line, group' < \* kle/oi-ni- (id.).

śrav- 'to hear', YAv. surunaoiti 'to hear' < \*kleu- (Gr. κλύω 'to hear', Lat. cluēre 'to be called', OIr. ro-cluinethar 'to hear', etc.).

 $\dot{s}$ ravas- (n.) 'fame' < \*  $\dot{k}$ leu-es- (id.).

Does the plain velar in the root \*temk- go back to an original labiovelar that was delabialized due to the preceding \*m?

śroṣ-'to obey, to be willing', GAv. səraošānē 'I will be obedient' < \* kleu-s- (id.).</p>
śróṇi- (f.) 'hip', YAv. sraoni- 'buttock, hip' < \* klou-ni- (Lat. clūnis 'buttock, haunch', Lith. šlaunis 'buttock, thigh').</p>

śroná-(adj.) 'paralysed, numb' < \* kle/ou-nó-(id.).

híranya- (n.) 'gold, precious metal', YAv. zarańiia- 'gold' < \*gʰlhȝ-en- (Gr. χλωρός 'bright yellow', Lith. žélti, Latv. zelt 'to grow, to grow green').

*hiri*°(1st member of comp.) 'golden'  $< *g^h lh_3 - i$ - (id.).

 $hl\bar{a}d$ - 'to cool down',  $hr\bar{a}d$ - 'to resound'<sup>14</sup> < \* $g^hleh_2d$ - (Gr. χάλαζα 'hail' < \* $g^hlh_2d$ - $ih_2$ , κέχλαδα (perf.) 'to cheer, to rustle'<sup>15</sup>, RussCS  $Zl\check{e}dica^{16}$  'frozen rain').

 $hr\bar{a}d\acute{u}ni-/hl\bar{a}d\acute{u}ni-(f.)$  'hail' < \* $g^hleh_2d-(id.)$ .

Of the words that reflect \*Kr and therefore would contradict Weise's Law, there are some in which the cluster \*Kr stands across a morpheme boundary: the palatovelar forms the root-final consonant that stands before a suffix that starts in \*r. It therefore is easy to understand that if Weise's Law is indeed correct, i.e. if original palatovelars were depalatalized before an \*r, the palatovelars in these words were restored on the basis of cognates where the root-final palatovelar was followed by a suffix that did not start in \*r. I therefore assume that in these words the cluster \*Kr was secondarily restored and that these words cannot be used as an argument against Weise's Law:

áśri- (f.) 'corner' < \*h²ek-ri- (Gr. ἄπρις 'mountain top', ὅπρις 'pointy', Lat. ocris 'summit' < \*h²ok-ri-): the root \*h²ek-'sharp' is also attested in Skt. aśáni- (f.) 'thunderbolt', áśman- (m.) 'stone, rock', etc.

*miśrá-* (adj.) 'mingled, mixed' < \**mik-ró-* (Lith. *mišras* 'mixed'): the root *meik-* is also attested in *(mi)miks-* 'to mingle' < \**(mi-)mik-s-*.

ájra- (m.), YAv. azrō 'field' < \* $h_2$ é $\acute{g}$ -ro- (Gr. ἀγρός, Lat. ager, Goth. akrs 'field'): the root \* $h_2$ e $\acute{g}$ - is also attested in Skt. ájati 'to drive', etc.

rjrá- (adj.) 'reddish; quick'  $< *h_2 r \acute{g}$ -ró- (Gr. ἀργός 'flickering, moving quickly, shiny'  $< *\dot{\alpha}$ ργρός): the root  $*h_2 e r \acute{g}$ - is also attested in Skt. rjíšvan- 'having swift dogs'  $< *h_2 r \acute{g}$ -i-.

Böthlingk/Roth 1875 cite the following lemmata:  $hr\bar{a}d$ - (1) "tönen";  $hr\bar{a}d$ - (2) "=  $hl\bar{a}d$ -";  $hl\bar{a}d$ - (1) "sich abkühlen, erfrischen, erquicken";  $hl\bar{a}d$ - (2) "=  $hr\bar{a}d$ -". The distinction between forms with -r- and -l- may therefore not be as strict as Mayrhofer presents it. Whitney (1885) cites almost only causative middle forms of  $hl\bar{a}d$ -, stating that "[o]nly one or two late sporadic forms outside the causative conjugation" can be found. I therefore propose the following semantic development. The root  $hr\bar{a}d$ -  $/hl\bar{a}d$ -  $<*g^hleh_2d$ - originally meant 'frozen rain, hail, hoarfrost, glazed frost', as attested in  $hr\bar{a}d$ ini-  $/hl\bar{a}d$ ini- 'hail' and RussCS zledica 'frozen rain'. When used verbally, it originally meant 'to hail, to come down of frozen rain'. When active, the meaning of this verb developed into '\*to rattle (of hail)' > '\*to make a rattling sound' > 'to sound'. When middle, the verb denoted 'to be(come) hoary, frosty', the causative to which, 'to let oneself be(come) frosty', could be figuratively used as 'to cool oneself down'.

Gr. κέχλαδα is the Doric perfect to an unattested verb \*χλήδω 'to cheer, to rustle'. I assume here a semantic development similar to the one in Sanskrit: '\*to hail' > '\*to rattle (of hail)' > '\*to make a rattling sound' > 'to cheer, to rustle'.

RussCS žlědica 'frozen rain' < \*želdica belongs with Slov. žlệd, žlędica 'glazed frost, frozen rain', Ukr. óželedь 'glazed frost', Pol. żłódź 'falling snow and rain', which all go back to PSlav. \*g'eld-. Since the palatalization of \*g' cannot be due to the following \*-e-, we must assume that \*g'eld- is the secondary full grade to an original zero grade stem \*g'bld- < \*gilHd- < \*gilHd- < \*gilHd- < \*g'lh²d-, where first the \*g' was depalatalized before \*i, then the \*!yielded \*ii, after which the plain velar \*g was palatalized before \*i, yielding PSlav. \*g'.

 $pajr\acute{a}$ - (adj.) 'firm, strong' < \* $peh_2\acute{g}$ - $r\acute{o}$ - $^{17}$  (Gr. πήγνυμι 'to attach', Lat.  $pang\~{o}$  'to attach' < \* $ph_2$ -n- $\acute{g}$ -): the root \* $peh_2\acute{g}$ - is also attested in Skt.  $p\acute{a}jas$ - (n.) 'firm side' < \* $peh_2\acute{g}$ -es-.  $v\acute{a}jra$ - (m.) 'thunderbolt', YAv. vazra- 'main weapon of Mithra' < \* $u\acute{e}h_2\acute{g}$ -ro- $^{18}$  (Gr. αγνυμι 'to break' < \* $u\acute{h}_2\acute{g}$ -, Hitt.  $u\~{a}k$ - $^i$ / uakk- 'to bite', TochAB  $w\~{a}k$ - 'to split, to burst').  $^{19}$ 

Some of the words containg  $\acute{sR}$ ,  $\acute{jR}$  or  $\acute{hR}$  from  $*\acute{Kr}$  show a zero-grade formation derived from a root of the structure  $*\acute{Ker}(C)$ . In my view, it is quite possible that in these words the palatovelar was restored in analogy to full grade forms. <sup>20</sup> These words cannot therefore be used as an argument against Weise's Law either:

- āśír-(f.) 'milk added to soma', áśīrta-(adj.) 'mingled (with milk)'  $< \bar{a} + * krh_2$ -: the full grade form \*  $kerh_2$  is attested in Gr. κεράννυμι 'to mingle'.
- śiras- (n.) 'head' < \* krh₂-es- (Gr. κάρη 'head'): although in Skt. śiras, śīrṣṇás < \* krh₂-es, \* krh₂-s-n-ós and Gr. κάρη, κραατός < \* krh₂-eh₂, \* krh₂-s-n(t)-os we only find zero-grade forms of the root, forms like Lat. cerebrum 'brains' < \* kerasrom < \* kerh₂-s-ro-and OHG hirni 'brain' < \* kerh₂-s-n-io- show that originally a full grade form \* kerh₂-s-r/n- must have been present as well.</p>
- *śŕnga* (n.) 'horn' < \* *kr*-*n*-go- (Lat. *cornū*, Goth. *haurn* 'horn'): if connected with *śarabhá* (m.) '(a kind of) deer' < \* *ker*-*n*- $b^h$ ó-, <sup>21</sup> we may assume an original ablauting *n*-stem \* *ker*-*n*-, \* *kr*-*n*-.
- śraddhá- (f.) 'trust' < \*Kred-dheh<sub>1</sub>-, lit. 'what is placed on one's hart' (GAv. zrazdā-'trusting, believing', Lat. crēdere 'to trust, to believe', OIr. cretim 'to believe'): śrad- < \*Kred-must be an oblique form from the paradigm of \*Ker-d-'heart'.<sup>22</sup>
- $j\bar{u}rv$  'to scorch, to exterminate' < \* $\acute{g}rh_2$ -u-: this verb forms a u-present to the root \* $\acute{g}erh_2$  as attested in Skt. jar- 'to be old'.
- híra- (m.) 'band, strip', hirá- (f.) 'vein' < \*g^hrh\_I- (Lat. (h)aru-spex 'person who examines the entrails of sacrificed animals' < \*g^hrh\_I-u-, Lat. hariolus 'soothsayer' < \*g^hrh\_I-i-, Hitt. karāt- 'entrails, innards' < \*g^hrh\_I-ód^h)-): full grade forms of this root are present in Lith. žárnos 'entrails' < \*g^horh\_I- and possibly Gr. χορδή 'bowel, sausage' < \*g^hor(h\_I)-.<sup>23</sup>
- hras-'to shorten' <  $*g^h r$ -es-: on the basis of MIr. gerr'short' <  $*g^h er$ -s- we may have to reconstruct an original ablauting s-present  $*g^h er$ -s-,  $*g^h r$ -es-.

In some of the words containing a cluster \*Kr, the palatovelar stands before the suffix -ru-. Since this suffix is likely to be the outcome of a metathesis of original \*-ur,  $^{24}$  we could

With loss of laryngeal before media + consonant, cf. Lubotsky 1981.

With loss of laryngeal before media + consonant, cf. Lubotsky 1981. In absence of any outer-Indo-Iranian cognates that show the same formation, it cannot in principle be stated with absolute certainty that the suffix in this word was \*-ro- and not \*-lo-. If the latter would turn out to be the case, then this word would be in accordance with Weise's Law after all.

The root \*ueh2g- is further unattested in Sanskrit. Since Weise's Law will turn out to have operated at the PIE level already, this need not concern us here.

In some cases, a cognate with a full grade form of the root is not available in Sanskrit itself. Yet, since Weise's Law will turn out to have operated at the PIE level already, this is irrelevant.

<sup>&</sup>lt;sup>21</sup> Nussbaum 1986: 6.

<sup>&</sup>lt;sup>22</sup> According to Beekes 1985: 171, this paradigm must have originally inflected \* Kér-d, \* Kr-éd-s.

<sup>&</sup>lt;sup>23</sup> Cf. Schrijver 1991: 208 for the Italic, and Kloekhorst 2008: 445-6 for the Hittite cognates.

<sup>&</sup>lt;sup>24</sup> Cf. Mayrhofer 1986a: 161f.

assume that the depalatalization did not occur in these words because at the relevant moment the palatovelar stood before \*u instead of before \*r. These words cannot therefore be used as an argument against Weise's Law either:

áśru- (n.), YAv. asrū- 'tear' < \* h<sub>2</sub>ékru- (Lith. ãšara, TochA ākär, nom.pl. ākrunt, TochB akrūna 'tear'): in view of forms with -n- like OHG trahin 'tear', it is possible that this word ultimately goes back to a \*-ur-/-uen-stem \* h<sub>2</sub>ék-ur, \* h<sub>2</sub>k-uén-s, <sup>25</sup> in which in the nom.-acc.sg. form the suffix \*-ur metathesized to \*-ru.

śmáśru-(n.) 'beard' < \*smók-ru-(Arm. mawruk''beard', Lith. smãkras'chin'): on the basis of Hitt. zama(n)kur, šamankur-'beard', which reflect \*smó(n)k-ur, we must assume that \*smók-ru- is the metathesized variant of \*smók-ur.

śvaśrú- (f.) 'mother-in-law' < \*suek-rú-h<sub>2</sub>- (Lat. socrus, OHG swigar, OCS svekry 'mother-in-law'): the form must ultimately reflect \*suek-ur-h<sub>2</sub>, the feminine form to a preform \*suék-ur 'father-in-law' which is still attested (with thematization) in Skt. śváśura-, Gr. ἐκυθός, OLat. socerus, Lith. šešuras, etc.

We are now left with a few words containing a cluster \*Kr, of which I see no possibility to explain the retention of the palatovelar before \*r through an analogical development. It is remarkable that in all these words the root contains an \*i, and that in the zero-grade forms this \*i directly follows the \*r. It is therefore attractive to assume that in the sequence \*Kri- the palatovelar was not depalatalized because the \*r itself was phonetically somewhat palatalized due to the following \*i. These words would then form a real exception to Weise's Law, which would be phonetically well motivated, however:

śray - /śrī- 'to make perfect, to make shine', śrī- (f.) 'beauty' < \*kreiH- / \*kriH- (Gr. κρείων, κρέων 'ruler, prince').<sup>27</sup>

jray-/jri-'to extend', jráyas-(n.) 'expanse, flat surface', YAv. zraiiah-'sea' < \* grei-/\* gri-(Hitt. karaitt-/garett-'flood' < \* groi-t-/\* grei-t-).

#### Conclusions

On the basis of a discussion of all the Sanskrit words that contain a cluster  $\dot{s}R$ ,  $\dot{j}R$ , hr, kR, gR and ghR, we must conclude that Weise's Law is real: in Sanskrit, there is indeed a complementary distribution between  $\dot{s}R$ ,  $\dot{j}R$  and hR on the one hand, which in principle reflect palatovelars before \*l, and kR, gR and ghR on the other, which reflect plain velars before \*r. This distribution is best explained by assuming that the plain velars go back to original palatovelars that have been depalatalized before \*r. This depalatalization did not take place before \*r, however: here we still find the palatovelar. Moreover, in some words the palatovelar was restored, either because it was followed by a morpheme boundary, or in analogy to full grade forms in which the palatovelar was not followed by \*r.

This means that the interesting pair  $gh_i$ ;su-'cheerful, happy' vs. hars-'to be delighted, to be excited' does not go back to two different etyma. In fact, we are dealing with an original root \* $g^h$ ers- > Skt. hars-, the u-stem derivative of which, \* $g^h$ rs-u-, has undergone

Eichner apud Mayrhofer 1986a: 162. Compare Lubotsky 1994: 99 for a different view, however.

Compare Balto-Slavic, where palatovelars were depalatalized before \*/followed by a back-vowel, but not before \*/followed by a front-vowel.

<sup>27</sup> Cf. Narten 1987 for this interpretation of śray -/śrī- and the etymological connection with Gr. κρείων, κρέων.

depalatalization through Weise's Law, yielding  $*g^h rs-u->$  Skt.  $gh_f su-$ . Therewith this pair forms a precious archaism.

#### Relative chronology

Although I have in this article discussed only the full Sanskrit material, also the Iranian material, as far as I am aware, supports our findings. This means that the depalatalization before \*r must be at least an Indo-Iranian development. As we have seen above, the other satom-languages, Balto-Slavic, Armenian and Albanian, also show depalatalization of palatovelars before \*r. This means that this depalatalization could be regarded a satom-development. Since the difference between palato- and plain velars by definition cannot be seen in the centum-languages, as here these two series have merged, we could in principle even claim that the development was PIE already. This fits our finding that the words  $\acute{asru}$ -,  $\acute{sma\acute{sru}}$ - and  $\acute{sva\acute{sru}}$ - show that the depalatalization must have taken place before the metathesis of \*-ur to \*-ru-. Since this development seems to have taken place in all IE branches except Anatolian (e.g.  $zama(n)kur < *smo\acute{k}-ur$ ), we may now be allowed to date Weise's Law to at least the stage before the non-Anatolian IE languages split up.  $^{30}$ 

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The presence of plain velars in Lith. *smākras*, Arm. *mawruk* and Alb. *mjekër* < \**smokru*- and OCS *svekry* < \**suekruh*<sub>2</sub>- must then be due to a later wave of depalatalization before \**r* (including \**ri*), after Indo-Iranian left the *satam*-branch.

<sup>&</sup>lt;sup>29</sup> Cf. Mayrhofer 1986a: 161f; Lubotsky 1994: 98f. (limiting the metathesis of \*-ur to \*-ru to final syllables only).

The situation within Anatolian is less clear. If the CLuwian hapax zaryani-/t³ruani-/ indeed means 'horn' and is cognate with HLuw. (CORNU)suran-'horn' and Hitt. karāyar/karaun-'horn', then it must reflect \*kr-uen-(with HLuw. suran- metathesized from /t³ruan-/?, cf. Kloekhorst 2008: 446-7) and shows a palatovelar that is not depalatalized before \*r. If this example is correct and if the palatovelar is not secondarily restored, then it would prove that Weise's Law is to be dated directly after the splitting off of Anatolian, and therewith would be the only sound law that I know of that can be regarded as a common innovation of the non-Anatolian IE languages, which would be another argument in favor of the Indo-Hittite model (for other arguments, cf. Kloekhorst 2008: 7-9).

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