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Reflexes of Proto-Indo-European **sk* in Indo-Iranian

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1. Introductory

1.1. In the last quarter of the nineteenth century a considerable progress was made in the understanding of the prehistory and distribution of the PIE velars. When in the late 1870-ies the Law of the Palatals (explaining Skt. *c j h* as a result of palatalization of **k g* g^h before PIE front vowels) was discovered[1], the following system of correspondences emerged:

		Skt.	Av.	OP	Slav.	Lith.	Arm.
Eastern	α	*ś*	*s*	*θ*	*s*	*š*	*s*
languages	β	*k/c*	*k/c*	*k/c*	*k/č*	*k*	*kʿ/čʿ*

		Gr.	Germ.	OIr.	MW	It.
Western	α’	κ	*h/g*	*k*	*k*	*c*
languages	β’	π/τ/κ	*hw/w*	*k*	*p*	*qu/p*

This system was used by Brugmann in the first edition of his *Grundriss*, where he reconstructed palato-velar **ḱ* (k_1 in his notation) for the correspondence between Eastern α and Western α’ and labio-velar **k*^{w} for the correspondence between Eastern β and Western β. Soon, however, it was discovered that there is ample evidence for βα’ correspondence. The inevitable question was how to deal with this new problem.

More or less simultaneously, Bezzenberger, Bugge, and Osthoff proposed in 1890 to solve the problem by assuming an additional series, that of pure velars (*k* or *q*). This theory found its way into the second edition of Brugmann’s *Grundriss* and has become a *communis opinio.*

1.2. The account presented in the preceding section is a slightly adapted[2] beginning of the seminal article by Meillet (1894), where he offers a strong and, to my mind, convincing criticism of the theory of pure velars (p. 278):

[1]For this Law see Mayrhofer 1983.

[2] I have only modernized the notation.

> "en supposant les deux séries k_1 et k_2 [i.e. k' and k^w, AL], on ne faisait que reporter à une date plus ancienne une dualité historiquement attestée dans toutes les langues de la famille; et en ajoutant une troisième, on suppose une richesse qui ne se trouve dans aucune. ... Si l'on réussit à rendre compte de α'β par les lois de détail, l'unique raison qui fait poser k_3 [pure velars, AL] s'évanouit. Or on a constaté depuis longtemps que les cas de correspondance α'β sont particulièrement fréquents dans le voisinage de certains phonèmes: après *u* (de Saussure, dans ces *Mémoires*, 6, 161) et devant *r* (Weise, dans *Bezz. Beit.*, 6, 115). S'il était possible de trouver quelques faits analogues, de grouper ceux déjà découverts et d'expliquer ainsi tous les cas ou du moins la majorité d'entre eux, l'hypothèse de Bezzenberger serait rendue inutile. C'est ce qui va être essayé ici."

In this article, I will concentrate on one particular context where the correspondence α'β is very frequent, viz. in the position after *s*. According to Meillet (p. 296f), the sequence **sk* is due to the loss of the palatal feature in this position in the *satəm* languages, so that the opposition between **sk'* and **sk* does not exist. Unfortunately, Meillet's position is now almost universally disregarded (Steensland 1973: 30ff. and Kortlandt 1978 are notable exceptions), and a renewed analysis of the relevant facts seems necessary.

1.3. The *communis opinio* follows Bezzenberger and operates with three velar series. It seems also to be generally accepted that the *satəm* languages have preserved a clear-cut opposition between **sk'* and **sk*. The evidence of Balto-Slavic, Armenian and Albanian is highly controversial, however. Suffice it to say that there are no less than seven different views on Balto-Slavic reflexes of PIE **sk'*:

Brugmann 1897-1916, Endzelin 1939	Lith. *š*, Sl. *s*
Leumann 1942	Balt. *st*
Pedersen 1943	BSl. *st* + V_{front}, *sk* elsewhere
Vaillant 1950, 1958, Stang 1972	Lith. *š*, Sl. *s* in anlaut, Lith. *šk*, Sl. *sk* in inlaut
Būga 1922, Shevelov 1964	Lith. *šk*, Sl. *sk*
Meillet 1894, Kuryłowicz 1935, Andersen 1970	BSl. *sk*
Steensland 1973, Kortlandt 1979	Lith. *š*, Sl. *s* + *i*, BSl. *sk* elsewhere

The Albanian and Armenian evidence is scant and does not allow reconstruction of an IE opposition between **sk* and **sk'*, which is primarily based on Indo-Iranian. It has become customary to almost automatically reconstruct PIE **sk'* for Skt. *ch*, Ir. *s* and palatalized **sk* for Skt. *śc* and Ir. *sc*. A thorough analysis of the evidence of the other *satəm* languages cannot be untertaken here, my main concern being the Indo-Iranian facts. In order to illustrate the problematic nature of the alleged opposition between **sk* and **sk'*, I only present a short discussion of those Indo-Iranian words with Skt. *ch*, Ir. *s*, which have correspondences in the other *satəm* languages.

1.4. In medial position we find:

1. The *sk*-presents (Skt. *-ch-*, Av. and OP *-s-*, cf. Skt. *yácha-*, *ichá-*, Av. *yasa-*, *isa-*, OP *yasa-*): Lith. *ieškóti* 'to look for'; Latv. *iẽskât* 'to louse'; OCS *iskati* 'to look for'; Arm. *-cʿ-*: *haycʿem* 'I search, demand', *harcʿanem* 'I ask'; Alb. *-h-*: *njoh* 'I know', etc. (see Demiraj 1997: 306 for a discussion).

2. Skt. *tuchyá-* adj. 'empty, vain': Lith. *tùščias* adj. 'empty, idle, vain', Latv. *tukšs* 'empty'; OCS *tъštъ* adj. 'empty, vain', Russ. *toščij* adj. 'lean'. The etymology and possible reconstructions are discussed below, § 5.3, but ORuss. *tъska* 'grief, longing' clearly shows that the IE cluster was not **sḱ*.

3. Skt. *áchā* 'to, towards': OCS *ešte* 'ἔτι, οὔπω', Russ. *ešče* 'again, yet' < **eskḗ*; Arm. *cʿ-* prep. + Acc. 'to' (for the etymology see below, § 5.2).

Although the evidence is small, it shows that Skt. *ch*, Ir. *s* correspond in medial position to Balto-Slavic **sk*, Arm. *cʿ*, Alb. *h*. The Lithuanian reflex *šk in ieškóti*, as opposed to Slav. *sk*, must be due to the RUKI-Law (in Slavic this Law does not apply if *s* stands before a consonant).[3] Arm. *cʿ* and Alb. *h* are the normal reflexes of PIE **sk* in all positions:

- Arm. *hacʿi* 'ash', Alb. *ah* 'beech' : OIc. *askr*, OE *æsc* 'ash';
- Arm. *cʿelum* 'I split', Alb. *halë* 'awn, splinter' : Lith. *skélti* 'to split';
- Arm. *cʿowcʿanem* 'I show' : OHG *scouwōn*, Skt. *kaví-* (without *s*-mobile);
- Alb. *hedh* 'I throw' : OE *scēotan*, Skt. *códati* (without *s*-mobile).

According to Klingenschmitt (1982: 83f.), however, PIE **-sḱ-* yields Armenian *čʿ* in medial position. His evidence consists of the *čʿ*-presents *čanačʿem* 'I know', *ałačʿem* 'I implore', etc. 28
Meillet 1936: 109 explained these presents by "élargissement d'un présent en **-ske-* par le suffixe **-ye-*", but Klingenschmitt objects to this view: "Es ist nicht ersichtlich, welcher morphologische Prozeß zur Entstehung einer solchen Suffixkombination hätte führen können. Das Lautgesetz *skį̯* > arm. *čʿ* ist von Meillet ad hoc angesetzt (*kį̯* scheint nach Ausweis von arm. *lowcʿane-* 'anzünden', falls < **lŏu̯ḱ-i̯e/o-* < **lŏu̯k-i̯e/o-*, im Armenischen als *cʿ* vertreten zu sein)" (p. 83). As far as morphology is concerned, "the addition of the present formative **-ye-* was motivated by the spread of **-ske-* as an aorist and subjunctive marker" (Kortlandt 1991: 1). The phonetic development **skį̯* > *čʿ* is parallel to **kį̯* > *čʿ* (cf. *čʿogay* 'I went' < **kį̯eu-*) and is quite straightforward. The reason why Klingenschmitt cannot accept this development is his assumption of an original difference between **sk* and **sḱ*. Since Meillet did not share this view,

[3] Būga's theory (1922: 249-252), explaining Lith. *šk* as a specific reflex of PIE **sḱ*, cannot be maintained. Stang (1972: 85) accepts Būga's view because of Lith. *vãškas*, Latv. *vasks*, OCS *voskъ* 'wax' vs. OHG *wahs*, OE *weax*, OIc. *vax*, but, in order to explain both the Balto-Slavic and Germanic forms, one has either to reconstruct **uoḱsko-* (Kortlandt 1979: 59) or to assume borrowing with irregular metathesis. For the same correspondence between Lith. *šk* and Slav. *sk*, cf. also the suffix Lith. *-iškas*, Slav. *-ьskъ* vs. Goth. *-isks* and Lith. *áiškus* 'clear', OCS *jasnъ* < **(j)ĕsknъ*, Lith. *raiškus* 'distinct', OCS *rĕsnъ* < ** rĕsknъ* 'true' (Stang 1972: 85).

his explanation was not ad hoc. On his part, Klingenschmitt has to explain away the *sk*-presents *harcʿanem* and *haycʿem* with *-cʿ-* < **-sk-*. He does this by reconstructing **pr̥ḱ-skḗ/ó-* and **h₂aiṣ-skḗ/ó-*, respectively, and assuming that the medial clusters eventually yielded **-ḱs-* > *cʿ*, which does not seem very probable. Note especially that the *sk*-present of the verb 'to ask' must have lost the first *ḱ* already in Proto-Indo-European (cf. Skt. *pr̥chā́ti*, Lat. *poscō*, MW *archaf*, etc.), cf. fn. 25 below.

1.5. In initial position, Skt. *ch-* / Ir. *s-* show the same set of correspondences, cf.:

Skt. *chid-*, Av. *auua.hisiδiiāṯ* 'to split' (Lat. *scindō*, Gr. σχίζω): Lith. *skaidýti* 'to divide', *skíesti (skíedžiu)* 'to dilute', *skaĩdula* 'fibre, filament', *skýstas* adj. 'liquid', *skiedrà* (2) 'chip, sliver'; Latv. *šķiêst* 'to splash, spil', *šķiêdra* 'fibre, filament', *šķidrs* adj. 'liquid'; OPr. *skijstan* 'pure'; OCS *čistъ* 'pure', *cěstiti* 'to purify', *cěditi* 'to strain, filter'[4]; Arm. *cʿtem* 'to scratch (the skin)'.

Stang (1972: 85) and Pokorny (920) try to explain away the evidence of this word family by reconstructing PIE **skeid-* and assuming *Gutturalwechsel* in Balto-Slavic. This is certainly unsatisfactory, but Stang had no other choice, since he followed Vaillant's view (1958: 150), viz. that in initial position, PIE **sḱ* yields Lith. *š*, Latv. and Slav. *s*, i.e. merges with the reflex of PIE **ḱ*. Stang adduces the following examples:

– Lith. *šáuti*, OCS *sovati* – OIc. *skjóta*
– OCS *sьjati* – Goth. *skeinan*
– Latv. *sejs*, OCS *sěnь* – Gr. σκία, Skt. *chāyā́*.

These items call for some comment. Lith. *šáuti* 'to shoot, fire', Latv. *šaũt* (< **sjaũt*) 'id.', OCS 29
sovati 'to poke', ORuss. *sovati* 'to throw (a spear)' point to PIE **ḱeuH-*. The Germanic forms (OIc. *skjóta*, OHG *sciozan*, etc. 'to shoot') have a different root shape (**skeud-*) and are generally connected with Skt. *codáti* 'to incite', which clearly points to a velar *k*. Here also belong OCS *-kydati*, SCr. *kȉdati* 'to throw', Latv. *kũdît* 'to incite' with the acute intonation due to Winter's Law.[5] The family of Lith. *šáuti* has also been connected with the Germanic root without a dental enlargement (Goth. *skewjan* 'to go', OIc. *skæva* 'to go, hurry', etc.), but this connection is unsatisfactory from a semantic point of view. At any rate, the modern etymological dictionaries of Germanic languages (for instance, Lehmann: 311, de Vries: 511) do not mention it.

The word for 'shadow' offers a well-known problem in Slavic, where we find three rhyming words **sěnь*, **těnь*, and **stěnь*. It is unclear how these forms relate to each other and to Latv. *sejs* 'shadow', *seĩja* 'face, shadow' (for this word family see further § 3.6).

The verb OCS *sьjati*, SCr. *sjȁti*, *sínuti* (< **sinǫti*) 'to shine' thus remains the only possible example of **#sḱ-* > Slav. **s-*. There are, however, other ways to account for this

[4]The acute intonation of the root in Balto-Slavic is due to Winter's Law. The Slavic forms show the reflex of initial *k-*, without *s*-mobile.

[5]Lith. *skudrùs* 'agile' cannot be connected with this word family because of its short vowel.

correspondence. Steensland (1973: 30ff.) and Kortlandt (1979: 58f.) assume that when the opposition between the two velar series was neutralized after *s in PIE, the archiphoneme was palatovelar before *i and plain velar in other positions. This would then explain the "palatal" reflex in Balto-Slavic. The evidence for the double representation of *sk is practically limited to this very word family, however[6]. I would therefore rather opt for a different solution. For the IE root for 'to shine' we may reconstruct *ḱieh$_1$- (reflected, for instance, in Skt. *śyāvá-* 'dark', Lith. *šývas* 'whitish, (dapple-)grey', OCS *sivъ* 'grey') and assume a secondary *s-* in Germanic (Goth. *skeinan*, etc.), probably taken from the root of OHG *scouwōn* 'to look', *scōni* 'beautiful'.[7]

1.6. This short overview of the material of the *satəm* languages outside Indo-Iranian suffices to show that there is no compelling reason to postulate PIE *sḱ next to *sk. In both word initial and medial positions we find a single reflex: Balto-Slavic *sk* (Lith. *šk* in the RUKI environment), Armenian *c*^{c}, Albanian *h*. This state of affairs necessarily raises the question whether it is possible to account for the Indo-Iranian facts without recourse to PIE *sḱ. The interpretation of the Indo-Iranian facts is of crucial importance to the question as to whether there was an opposition between *sk and *sḱ in Proto-Indo-European. 30

2. Indo-Iranian correspondences

The sound correspondences within Indo-Iranian are clear and can be represented as follows:

PIIr.	Skt.	Av.	OP	Examples
*č	*c*	*c*	*c*	Skt., Av., OP *-ca* 'and'
*ć	*ś*	*s*	*θ*	Skt. *víś-* 'clan', Av. *vīs-* 'house', OP *viθ-* '(royal) house'
*sk	*sk*	*sk*	*sk*	Skt. *skambhá-* 'support, pillar', Av. *fra-skəmba-* 'portico'
*sč	*śc*	*sc*	*s*	Skt. *pascā́*, Av. *pasca*, OP *pasā* 'after, later'
*sć-	*ch-*	*s-*	*θ-*	Skt. *chadáyati*, Av. *saδaiieiti*, OP *θadaya-* 'to appear'
*-sć-	*-ch-*	*-s-*	*-s-*	Skt. *pr̥chá́ti*, Av. *pərəsaite*, OP *aprsam* 'to ask'

The controversy concerns the Indo-European antecedents of Proto-Indo-Iranian (PIIr.) *sč and *sć.[8] The traditional doctrine, going back to Bezzenberger, assumes that PIIr. *sč is a reflex of

[6]The only other possible piece of evidence, adduced by Kortlandt (1979: 59), is Arm. *mozi* 'calf' (Gr. μοσχίον).

[7]Germanic often shows an initial *s-* where the other languages lack one. Another possible instance of secondary *s-* in Germanic is Skt. *śúpti-*, Av. *supti-* 'shoulder' vs. MLG *schuft*, Dutch *schoft* 'shoulder of a cow or a horse', which has probably taken the initial *s-* from the word for 'shoulder'. Cf. also Goth. *skura windis* 'storm', OHG and OE *scūr* 'shower' with initial *s-* vs. Lat. *caurus* 'northwest wind' < *ḱH$_1$uero-*, ORuss. *sěverъ* 'north, north wind' < *ḱeH$_1$uer-*, Lith. *šiáurė* (1) 'north' < *ḱeH$_1$ur-* (Schrijver 1991: 252).

[8]I will stick to these traditional reconstructions for the sake of clarity. The phonetic realization of PIIr. *č and *ć will be discussed in § 9. I will also keep the traditional labels PIIr. *č for palatalized PIE *k and PIIr. *ć for the reflex of PIE *ḱ.

palatalized PIE *sk, while PIIr. *sć comes from PIE *sḱ. This view was challenged by Zubatý (1892, written in 1889), who argued that the row of Skt. *ch* can be explained as a product of palatalization of PIE *sk(h). As we shall see below, this view is fundamentally correct, but Zubatý went astray in two respects: first, he thought that Skt. *ch* may also represent palatalized *kh, and second, he assumed that Skt. *ch* corresponds to Av. *-s-* only in medial position, but to Av. *sc-* in initial position. These mistakes were tacitly corrected by Meillet (1894: 295): "Le *-ch-* ne peut représenter *skh* puisque *-kh-* ne se palatalise pas et que les formes non palatalisées sont 31
skr. *-sk-*, gr. *-σκ-* et non *-σχ-*" and "Le traitement *-çc-* en sanskrit ou en zend, là où il apparaît, est analogique".

The issue of the Indo-Iranian reflexes of PIE *sk/sḱ was taken up by Leumann in his famous article "Idg. *s* im Altindischen und im Litauischen" (1942). Leumann follows the *communis opinio* that Skt. *ch* reflects PIE *sḱ and, without mentioning Meillet's article, argues with Zubatý: "Während an Stelle etwa von *kyu ein palatalisiertes *cyu* (praes. *cyávate* "sich entfernen") steht, ist in *khyā-* "sehen usw." keine Palatalisierung zu *chyā eingetreten; *ch* ist zu *kh* nicht in gleichem Sinn die Palatalform wie *c* zu *k*. Das ist ein entscheidender Einwand gegen J. Zubatý, KZ 31, 9-22, der *cch* auf ar. *sč* aus vor *e* und *i* palatalisiertem idg. *sk*, d.h. *sq*, zurückführen will" (p.6). As indicated above, Zubatý was certainly wrong in maintaining that *ch* may reflect *skh*,[9] but I fail to see how this affects Zubatý's theory about the origin of Skt. *ch* from palatalized PIE *sk. Furthermore, Leumann's example of a non-palatalized *kh* is wrong, since √*khyā-* is a variant of √*kśā-* (MS, KS), also attested as *kṣā-*, *kṣyā-*, *kśyā-* in different Vedic texts. The root *kśā-* is a pendant of Av. *xsā-* and must be connected with √*kāś-* (see Mayrhofer EWAia I: 420f, 456f). Nevertheless, the authority of Leumann was such that his point of view was generally accepted and the theory of Zubatý-Meillet fell into oblivion. All handbooks and dictionaries invariably derive Skt. *ch* from PIE *sḱ. The two conflicting viewpoints are represented in the following table:

PIIr.	Bezzenberger et al.	Zubatý – Meillet
*sć	< PIE *sḱ	< PIE *sk + front vowels
*sč	< PIE *sk + front vowels	secondary

In order to decide which of these views is correct, we must obviously look at the distribution of *sć and *sč. The question is: which of the two clusters is more likely to be the outcome of palatalized *sk. It is in this perspective that we shall address the matter.

[9]Zubatý based himself on *mūrkhá-* 'stupid' vs. *mū́rchati* 'to thicken, coagulate', but *mūrkhá-* is an analogical formation, derived from the present stem with the usual change of the palatal stop of the verb to the velar stop in the *a*-derivative, cf. AiGr. I: 154.

3. PIIr. *sć- in anlaut

Before we discuss the evidence, it may be worthwhile to contemplate what we expect. It is well known that Indo-Iranian languages dislike paradigmatic alternation of palatalized and non- 32
palatalized consonants in anlaut and often generalize one of the variants. In general, Sanskrit does so more rigorously than Iranian. For instance, Avestan has preserved the original distribution in the aorist of √*kar-* 'to make', viz. *cōrəṯ*, subj. *caraṯ* vs. impv. med. *kərəšuuā*, but Sanskrit has removed all traces of the palatalized onset. A more complicated situation is found with the root for 'to go': Sanskrit has again generalized the non-palatalized variant (except, probably, in the name *Jamádagni-*), but in Avestan it is the palatalized consonant that has spread from the aorist, cf. Av. pres. *jasaiti* (Skt. *gáchati*), caus. *jāmaiieiti* (Skt. *gắmáyati*), while the original distribution in the aorist has been preserved, viz. GAv. 3sg. *uz-jən*, 3sg. impv. *jaṇtū*, subj. *jamaitī*, *həm-jamaētē*, opt. *jamiiāṯ* (OP *ā-jamiyā*) vs. 3pl. *aibī-gmən*, 2sg. impv. *gaidī*. Finally, both Sanskrit and Iranian have generalized the palatal in all forms of √*car-* 'to move, wander'. As we see, the pace and direction of generalization is difficult to foretell. The upshot is that if **sć-* is a palatalized variant of **sk-*, we do not expect paradigmatic interchange. At best, the traces of the original distribution can be found in isolated formations.

The following list has been gleaned from Mayrhofer's EWAia and comprises only items with a clear or at least possible IE etymology. The order is alphabetic. If not indicated otherwise, the forms are attested in the RV.

3.1. √*chad-* 'to cover': pres. *chādáyati*, *āchád-* f. 'cover, defence', *anu-cchādá-* m. 'part of the garment', *chattra-* n. 'parasol', *chadís-*[10] n. 'cover', etc.

The IE etymology is unclear (the best candidates are Av. *sāδaiianṭī-* 'long trousers (?)', OE *hætera* 'garments'), but, if the root is of IE origin, **sked-* is a reasonable guess.

3.2. √*chand-* 'to appear, please' (cf. Hoffmann 1965: 174ff. = 1975: 165ff): pres. *chadáyati*, 2sg. impv. *chantsi*, *s*-aor. *achān*, subj. *chantsat*, pf. opt. *cachadyāt*, caus. *chandayate* 'to take pleasure in', °*chád-* adj. 'appearing', *chándas-* n. 'hymn of praising', *chándu-* adj. 'pleasant', etc.;

LAv. *saδaiieiti* 'to appear', GAv. *s*-aor. 2,3sg. *sąs*, 2pl. *sąstā*, LAv. caus.med. *səndaiiaŋᵛha* 'take pleasure in';

OP 3sg. pres. inj. *(mā) ϑadaya* 'let this not seem', subj. *ϑadayātiy*, *u-ϑaⁿdu* adj. 'satisfied'.

The palatalization is regular only in the aorist and in some nominal formations (Skt. 33
chándas-, *chándu-*, OP *u-ϑaⁿdu*), but generalization of the palatalized variant of the aorist is well attested in Indo-Iranian, cf. Av. pres. *jasaiti*, caus. *jāmaiieiti*, mentioned above. The reason for generalizing the palatalized variant may have been the urge to avoid homonymy with another root (cf. Skt. √*skand-* 'to jump', Av. √*skand-* 'to break, split').

[10] *chardís-* has a metrically short first syllable in the RV and is most probably a secondary variant of *chadís-*.

As far as the further IE cognates are concerned, we have two possibilities, which are probably not mutually exclusive. On the one side, we may compare Skt. pf. *śāśaduḥ*, med. *śāśadmahe*, *śāśadāna-* 'to excel, surpass', Gr. κέκασμαι, κεκασμένος (with a variant in Pindar κεκαδμένος) 'id.' (Schindler apud Mayrhofer EWAia I: 556, García-Ramón 1988-1990). On the other hand, it seems attractive to connect √*(ś)cand-* 'to shine' (cf. intens. RV 5.43.3 *caniścadat*, *(ś)candra-*'shining'), Lat. *candēre*, which point to PIE **skend-* (for Lat. *a*-vocalism after pure velars see Schrijver 1991: 425ff and p. 428 for a discussion of the other cognates). For further discussion of this root see below, § 12.

3.3. *chavī-* f. 'skin, hide' (TS+) is most probably connected with √*sku-*, PIE **skeu(H)-* 'to poke, make incisions' (RV intens. *coṣkūyate*; *apratiṣkuta-* 'finding no resistance'; AV *ā-skunoti* 'to punch (the ears of a cow)', etc.). In KEWA, Mayrhofer (I: 406, III: 508) accepted this etymology, convincingly arguing that words for 'skin, hide' are often derived from a verbal root with the meaning 'to tear apart, skin' (cf. δέρω : δέρμα and, from our root, Gr. σκῦτος, OHG *hūt*, Lat. *cutis* 'skin'). In the new dictionary, however, Mayrhofer (EWAia I: 557) rejects this connection. He states that this word is of PIIr. date, since *chavī-* cannot be separated from Av. *suri* (F 3b) 'skin of the living human'[11] and then writes: "Die idg. Grundform hatte dann **sḱ-*; die bisherigen Versuche, *ch* aus einer Vorform mit **sk(u̯)-* zu erklären, wären somit hinfällig". Mayrhofer hesitatingly mentions the old derivation of *chavī-* from √*chā-* 'to skin', but this leaves the formation unexplained. If we assume, however, that Skt. *ch* can result from palatalization of PIE *sk*, we can stick to the convincing reconstruction of Skt. *chavī-*, Av. **səuui-* as PIE **skeu-iH₂-*.

3.4. √*chā-/chi-* 'to skin' (for a discussion of the attested forms see Hoffmann 1966: 70f. = 1976: 463f.): pres. *chyati* (AV+) and ptc. *(°)chita-* (ŚB), ger. *avachāya* (ŚB), etc. According to Hoffmann, the present *vichāyati* '(mit brutalen Schlagen) treiben' (AVP+), later changed to 34
chāyayati and *vichayati*, is a denominative from the root noun **vichā-* 'das Wundschlagen, der Wundschlager'.

From Iranian, EWAia adduces two GAv. 2pl. imperatives *sāzdūm* 'zerfetzet!' and *siiōdūm* 'haut ein!', as well as nominal derivatives like Bal. *sāyag* 'to shear', Oss. (Iron) *sart* 'chisel' < **sāϑra-*, Khot. *sāta-* 'smooth', etc. As I hope to show elsewhere [[see now Lubotsky 2004]], this interpretation of the Avestan forms is doubtful: *sāzdūm* is rather 2pl. impv. to the root *sāh-*'to teach' (thus e.g. Humbach 1991), whereas *siiōdūm* must be read *siiōzdūm* (as it was edited by Geldner), 2pl. impv. to the root *siiazd-* 'to banish'.

The IIr. word family is usually connected with Gr. σχάζω, σχάω 'to slit open'. These presents and further nominal derivatives are based on the aorist σχάσαι (Frisk, s.v.), which is the only evidence for reconstructing **skeH₂-*. Even if the root did contain *H₂*, the initial cluster

[11] This connection was already proposed by Bartholomae: 1585. Klingenschmitt (1968: 46) suggested that, because of the lack of *i*-epenthesis, *suri* is likely to be a scribal mistake for **s(ə)uui* = *chavī-*.

must have been palatalized in the present *skH_2-i̯e/o-,[12] assuming that the laryngeal did not block palatalization.

There is an additional argument in favour of original *sk- in this root. It is plausible to assume that two IIr. roots for 'to tear off, to skin' (Skt. √*chā-* and √*sku-*) are root enlargements of the same Indo-European root, which would point to the analysis *sk-eH_2- and *sk-$eu(H)$-. Moreover, many other roots of the semantic field 'to cut, split' seem to have the same origin, cf. *sker-, skelH-, skeid-*, etc. (the unenlarged root in Lat. *secō*, etc.?). It is unattractive to separate the word families of Skt. *chā-* and *chid-* from the other 'cut'-roots and reconstruct PIE *$sk\acute{e}H_2$- and *$sk\acute{e}id$-, respectively. Is it mere accidence that the former root has an old *i̯o*-present and the latter contains an *-i-* in the root, which may be responsible for palatalization?

3.5. *chā̆ga-* m. 'billy-goat'. Oss. *sæ̆g*/*sæ̆gæ* 'goat' points to a short vowel in the root. Further etymological connections are uncertain. Theoretically, *skēgo-* is possible.

3.6. *chāyā́-* f. 'shadow', LAv. *asaiia-*[13] adj. 'shadowless'. The reconstruction of the PIE form is difficult. Mayrhofer (EWAia I: 559) reconstructs *$sk\acute{e}H_1$-i̯eH_2-, but, as far as I can see, the only reason for *H_1 is Endzelin's connection with OCS *sě̆nь* f. 'shadow' and Latv. *sejs* 'face, shadow', both of which are problematic.

At any rate, Gr. σκία, Toch. B *skiyo* and Alb. *hie* (cf. Demiraj 1997: 201) 'shadow' show that this word had an ablauting paradigm in PIE. Full grade of the root has been generalized in PIIr. (and Balto-Slavic?), whereas the other languages chose zero grade (*skii̯ā* < *$skHi$-eH_2- through Sievers' Law, i.e. *skHi̯- > *$skHi$i̯-, or, more probably, through laryngeal metathesis, i.e. *$skHi$- > *$skiH$-)[14]. The palatalization in Indo-Iranian may have originated in the zero grade forms. 35

3.7. √*chid-* 'to split': the initial cluster of PIE √*skeid-* would be palatalized in most forms, except for the perfect *cicheda* (Br+), caus. *chedayati* (Sū+), and °*cheda-* (AV+)[15].

3.8. √*chr̥d-* 'to pour over': pres. VII *chr̥ṇátti* (VS+), caus. *chardayati* (ŚB), *chardi-* (Sū.+) f. 'vomiting, sickness'. The etymology is uncertain. We may possibly connect OIr. *-ceird* 'to throw', MIr. *sceirdim* 'I throw up', Lat. *mūscerda* 'Mäusekot' and consider the root to be an enlargement of *sker-*, cf. Skt. *apa-skara-* 'excrements', *apa-skr̥-* 'ausspritzen', etc., but the oldest meaning in Vedic seems to be 'to pour over' (cf. Gotō 1997: 1006, n. 23). There are

[12]And, possibly, in the ptc. Skt. *chitá-* < *skita- < *$skH_2$to-, cf. *duhitár-* < PIE *d^hugH_2ter-.

[13]The short vowel in the Avestan word must be due to shortening of *ā* before *-i̯-*, which also occurred in Man.Sogd. and Khw. *sy'k* /*sayāka*/ 'shadow', Yazg. *sayēg*. Long *ā* is attested in e.g. Pahl. *s'dk* /*sāyag*/, Manichean MP *s'yg*, MoP *sāya* (MacKenzie 1971: 74).

[14]For Gr. σκίρον n. 'a kind of white parasol' cf. Frisk II 734; Gr. σκαιός, σκοιός 'shadowy' are very late and most probably secondary. The only evidence for internal *-ā-* in Pokorny's reconstruction (917f) of the root as *sḱāi-, sḱəi-sḱī-* is Gr. σκηνή, Dor. σκᾱνά́ f. 'tent, scene', but this connection is by no means evident.

[15]The χ in Gr. σχίζω remains unclear.

hardly any forms attested where palatalization of the initial cluster could arise. Since the etymology is uncertain, however, no conclusions can be drawn from this fact.

4. PIIr. **sč-* in anlaut

This cluster occurs very rarely in word initial position. In Vedic, the only word family which regularly shows initial *śc-* is the etymologically unclear root √*ścut-* 'to drip' (RV 8x *ścotanti*, of which 3 times *stokā́s(as) ścotanti* 'drops drip'; compounds *ghṛtaścúta-*, *madhuścúta-*). RV 1.104.2c *ścamnan* most probably stands for **śamnan* (cf. Jamison 1983: 103f, n. 62 with a discussion). The initial *ś-* in *(°)ścandrá-* adj. 'shining, glistening' is a secondary accretion to *candrá-* 'id.', as is shown by the metrics of the RV. We shall return to this word below, § 12.

In Avestan, initial *sc-* is found in

- GAv. *scaṇtū* (Y 53.2), 3pl. impv. aor. of √*hac-* 'to follow', which is secondary;
- V 13.40 *scąϑβa vəhrka* of unclear meaning and etymology;
- *scaini-*, for which see below;
- two causatives, viz. LAv. *sciṇdaiieiti* [16] 'to break' (for the root cf. *skəṇda-* m. 'breaking', Skt. *skándhas-* n. 'branch') and *fra-sciṇbaiiōiṯ* (V 18.74) 'to fix, fasten'[17], the *sc-* of which can hardly be due to palatalization because of the underlying *o*-vocalism.[18]

A complicated case is Avestan *azō scainiš* 'goat kid'[19], which was connected by Gershevitch (1971) with Baškardi *šen*, Bal. *šinikh*, *šanikh* 'kid', Oss. *stæn* 'male dog' < PIIr. **sčani-*[20] and further with the family of Skt. *kanyā́-*, Av. *kaine* 'young girl', Gr. καινός, Lat. *recēns*, as well as Church-Slavonic *štenę*, MW *ceneu* 'puppy' and OIr. *cano* 'wolf-cub'[21]. It is remarkable that initial *s-* is limited to Iranian and Slavic or even only to Iranian, if Slavic **ščenę*

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[16] Spelled *scaṇdaiia-* in Yt 10.36, 13.31.

[17] The initial *sc-* of the derivatives is likely to be dependent on that of the verb, cf. *fra-scimbana-* (V 18.74), *fra-sciṇbana-* (Yt 13.26, V 18.28) 'support, pillar' vs. Skt. *skámbhana-* (cf. V 18.74 *ϑrisatəm frascimbananąm frasciṇbaiiōiṯ*) and inf. *paiti-scaptaiiaē(ca)* (Y 16.8 = 68.8 = Yt 8.51 'to crush') with its unaffected *s* vs. GAv. *hišcamaidē*. The Khotanese forms like *ha-tcaṃ* 'to break' < **fra-sčandaja-* and **nal-tcīṃph-* 'to remove' < **niš-sčambaja-* (Emmerick 1968: 145, 49) show that this **sč* is of Proto-Iranian age.

[18] Where *sc-* does come from is difficult to determine. Possibly, causatives like Av. *jāmaiia-* (cf. also Khot. **naljsem-* 'to finish' < **niš-jāmaja-*, Emmerick 1968: 49) to *gam-* have created a model for secondary palatal onset in Iranian causatives.

[19] For the attestation and the correct reading see Hoffmann 1967: 36f. = 1976: 492f. and fn. 15a.

[20] As to Oss. *sænykk* 'goat kid', Gershevitch explained its *s-* (instead of the expected *st-*) by contamination with *sæğ* 'goat', but it is more probable that PIr. **sč* yields Oss. *s-* in anlaut, cf. also Oss. *æssændyn / æssæddun* 'to break, crumble', *sændæg* 'crumbled bread in milk' < PIr. **sčand-* (in inlaut, **sč* yields Oss. *st*, cf. Oss. *fæstæ* 'behind, after' < **pasčā*, Av. *pasca*). Difficult to assess are Y. *səkʷon*, W. *sokɛn* 'puppy', which seem to point to **sk-*.

[21] Note that some of the derivatives of this IE root point to a final laryngeal, e.g. the short vowel in Skt. *kanyā́-*, Av. *kaine* < **konHi-Hon-* and Proto-Celtic **kanaų̯on-* < **kenHų̯on-* (Schrijver, pers. comm.). On the other hand, OIr. *cét-* 'first', Gaul. *Cintu-*, if related, are *aniṯ*.

is an Iranian loan word (cf. dial. Slav. *sobaka* 'dog', borrowed from Iranian **s(a)bāka-*, see Vasmer s.v.). This fact suggests that this *s-* is *s*-mobile, which may have been added at a later stage to the palatalized form **cani-* (cf. further § 12).

5. Evaluation of the initial sequences

The distribution of PIIr. **sć-* and **sč-* clearly shows that **sć-* is either found before front vowels, or there is an alternation where the palatalized variant could have been generalized. It is important that, on the one hand, we find an isolated formation Skt. *chavī́-* < **skeu-iH₂*, and, on the other, there are no isolated formations with *ch-* or *chr̥-*, except for the unclear √*chr̥d-* and 37
clearly non-IE *chúbuka-* n. 'chin' (in Sūtras also *cubuka-*).[22] On the other hand, reflexes of PIIr. **sč* are either secondary or etymologically unclear.

6. PIIr. **-sć-* in inlaut

6.1. **sk*-presents.

6.1.1. In order to analyze the evidence in proper perspective, it is essential to take two points into consideration. First of all, the suffix is thematic. If the suffix had the shape **-ske/o-*, we may expect an alternation between palatalized and non-palatalized variants. However, Indo-Iranian has generalized the palatalized variant in thematic presents (cf. Skt. *pácati*, Av. *(ham.)pacaiti* 'to cook'; Skt. *sácate*, Av. *sacaite* 'to follow, accompany'; Skt. *bhujáti* 'to bend'; Skt. *dáhati*, Av. *dažaiti* 'to burn', etc.) and it is only natural to find the palatalized variant in *sk*-presents.

Secondly, the suffix is not productive in Sanskrit. It only occurs in some ten odd presents, eight of which are old formations:

ichátі 'to wish, search' < PIE **H₂is-sk-*, cf. Av. *isaite*, OHG. *eiscōn*, Lith. *ieškóti*, OCS. *iskati*, Arm. *haycʿem*;

uchátі 'to shine' < PIE **H₂us-sk-*, cf. Av. *usaiti* 'id.', Hitt. *uškiz(z)i* 'to see';

r̥chátі 'to reach' < PIE **H₁r-sk-*, OP *rsa-* 'to come', Gr. ἔρχομαι 'I go', Hitt. *aršкit* 'to arrive';

gáchati 'to go' < PIE **gʷm-sk-*, cf. Av. *jasaiti* (with secondary palatal *j-*), Gr. βάσκε 'go!';

pr̥chátі 'to ask' < PIE **prḱ-sk-*, cf. Av. *pərəsaite* 'id.', OP *aprsam* 'to ask, punish', Lat. *poscō*, Arm. *harcʿanem*, MW *archaf*;

yáchati 'to hold, lead' < PIE **im-sk-*, cf. Av. *yasaite*, OP *ayasatā*;

vā́ñchati 'to desire' < PIE **unH-sk-* (with restored nasal in Skt.), cf. OHG *wunsk*.

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[22] As to *churādini-*, found in AVP(K) 17.14.10, it is a misspelling for *krūrādinī-*. The Orissa version reads: *āmādinīḥ krurādinīḥ* [recte: *krūrādinīḥ*] *anagnigandhyādinīḥ* 'eating the raw (meat), eating the bloody (meat), eating (meat) not smelling of fire', epitheta of the female demons Sudanvās.

We find no parallels in other IE languages for only two etymologically unclear roots, viz. *mū́rchati* (AV+) 'to become thick, solid'[23] and *yúchati* 'to ward off' (cognates of the root outside IIr. are unknown).[24] Secondary is *hū́rchati* (Br.) 'to go crookedly, astray' (PIE *√$g^{\acute{h}}$u̯er-), as can be inferred from its vocalism (see Lubotsky 1997: 143). Very uncertain is *michamāna-* (Kh.) 'rührig (?)' (PIE *√*miḱ-*), cf. Sharma 1959: 232 with references. 38

6.1.2. In Iranian, *sk*-presents became productive in the inchoative function (see Kellens 1984: 156ff.). If the *sk*-suffix was added to a root in *-d* or *-š*, the new clusters were simplified to *-s-* (LAv. *x^{v}id-* 'to sweat': *x^{v}īsa-*, GAv. *ižd-* 'to demand': *išasa-* /išša-/; LAv. *tarš-* 'to fear': *tərəsa-*). If the root ended in *-b* or *-p*, the cluster *-b/p* + *ss-* yielded *-fs-* (LAv. *xšub-* 'to tremble': *xšufsa-*, *narp-* 'to diminish': *nərəfsa-*, *tap-* 'to be warm': *tafsa-*).

6.1.3. Reviewing the evidence, we see that, from a synchronic point of view, the suffix of old *sk*-presents only appears in postvocalic position.[25] We may now ask ourselves the question as to whether *sk*-presents could be formed in PIIr. from roots ending in an obstruent, and if the answer is positive, what happened to them? The whole issue depends on the interpretation of several Indo-Iranian roots containing awkward consonant clusters, which have been explained as original *sk*-presents.

6.1.4. Skt. √*vr̥śc-* (pres. *vr̥ścáti*, 1sg. inj. aor. med. *vr̥kṣi*, pass. *vr̥ścyate*, *na*-ptc. *vr̥kṇá-*) 'to cut off, cut down' is typically a presentic root. Its aorist is a late productive formation (see Narten 1964: 251) and is indistinguishable from the *s*-aorist of √*vr̥j-* 'to turn off, remove' (cf. Narten 1959: 39 = 1995: 1 with references). There can hardly be any doubt that *vr̥ścáti* is originally a *sk*-present, the question being only to which root. Mayrhofer follows an old connection with Gr. ῥάκεα 'rags' and reconstructs the root as *u̯rEk*, seeing in *vr̥kṇá-* the original form of the root. This last point cannot be correct. In Sanskrit, *-na*-adjectives are generally late, replacing those in *-ta-* (AiGr. II/2: 553ff.), often in order to disambiguate the forms. Further, they are only derived from roots ending in a laryngeal (√*dā-* 'to cut off': *dinā́-*, √*hā-*: *hīnā́-*, √*pr̥̄-*: *pūrṇá-*, √*gr̥̄-*: *gīrṇá-*, etc.) or in mediae *-d* and *-g* (√*chid-*: *chinnā́-*, √*skand-*: *skannā́-*, √*ruj-*: *rugṇá-*, etc.), *vr̥kṇá-* being

[23]PIE **mrH-*?, cf. *mū́rti-* f. (Br.) 'embodiment', *mūrtá-* 'solid, coagulated', for *mūrkhá-* 'stupid' see fn. 9. Connection with Gr. βρότος 'coagulated blood' is phonetically difficult.

[24]According to Jamison (1983: 175), "*yúchati* is a secondary form, built back to *yắváyati*, perhaps on the model of semantic opposites *gắmáyati* 'makes come/go' : *gáchati* 'comes, goes'." This explanation accounts for the unusual root accentuation of *yúchati* (cf. Gotō 1997: 1033, fn. 181).

[25]It is quite probable that the clusters **-s-sk-* (in Skt. *ichā́ti*, Av. *isaite* < PIE *$H_2$is-sk-* and Skt. *uchā́ti*, Av. *usaiti* < PIE *H_2us-sk-*) and **-ḱ-sk-* (in Skt. *pr̥chā́ti*, Av. *pərəsaite*, OP *aprsam* < PIE **prḱ-sk-*) of these verbs were simplified at an early stage. As is well known, **-ss-* had become single *s* already in PIE, while the present of the verb for 'to ask' never shows traces of **-ḱ-* (cf. especially MW *archaf* vs. *mysgu* 'to mix' < **miǵ-sk-*).

the only exception to this rule in old Vedic.[26] It thus seems more probable that *vr̥kṇá-* is a new formation, replacing *vr̥ktá-*, which belongs to the root *vr̥j-*.[27] 39

The present *vr̥scáti* has no parallels in other languages and is likely to be rather recent. It then is not very appealing to derive *vr̥sc-* from the doubtful root **u̯rek-*, which is unattested in Indo-Iranian. Why not take *vr̥sc-* as a *sk*-present of *vr̥j-*? The two roots are semantically close: the primary meaning of *vr̥sc-* is 'to hew, fell (trees)', while that of *vr̥j-* is 'to twist off, to remove', and in many contexts it is difficult to tell the two roots apart. This derivation further directly accounts for *vr̥kṇá-*, which has replaced *vr̥ktá-* (the *ta*-participle of *vr̥j-*), and for the identical aorist forms of the two roots.[28]

6.1.5. Skt. *ubjáti* (RV+) 'to keep under, subdue', LAv. *ubjiiāite*[29] 3sg. pass. subj. 'to press down' was explained by Osthoff (1884: 33) as a *sk*-present to Skt. √*ubh-* 'to bind, to chain', PIE **(H$_1$)u̯eb^h-* 'to bind, weave'. Osthoff's analysis is impeccable both from a semantic and a phonetic point of view. **Hub^h-ské-* would yield PIIr. **Hubzǰ^{h}á-* after Bartholomae's Law and palatalization. In Sanskrit, the group **zǰ^h* loses aspiration and *z* assimilates to the following *ǰ* (cf. *majján-* 'marrow' < **mazǰ$^{(h)}$an-* < **mozg^h-en-*), so that we expect PIIr. **Hubzǰ^{h}á-* to give Skt. *ubjá-*. It is further significant that *ubj-* is exclusively attested as a present in the RV, and only later do we find forms like AV *sám-ubjita-*, JB *°ubjya*. As far as the Avestan form is concerned, the phonetic development of **Hubzǰ^{h}á-* to Av. *ubja-* is quite straightforward.

6.1.6. Avestan *ϑβązj-* 'to be aroused' (*+ϑβązjaiti* Yt 19.58,61, cf. also *ašə-ϑβō.zgatəma-* Y 13.2 'der allerdrängendste') was analyzed by Bartholomae as a *sk*-present. He compared *ϑβązj-* with OHG *dwingan*, OIc. *þvinga* 'to compel, press' and reconstructed PIIr. **tu̯anzg^h- < *tu̯eng^h-sk-*. For a recent discussion of this root and present see Hintze 1994: 295f. with references.

6.1.7. Bartholomae assumed the same origin for *siiazj-* 'to drive forward, to chase', attested in F 25a (Klingenschmitt 695) *frasiiazjaiti*[30] and A 3.13 *fraca siiazjaiiōiṯ*[31]. Kuiper (1934: 237), followed by Kellens (1984: 147), has proposed to emend F 25a *frasiiazjaiti* to *x frasiiazjaiieiti*, so that we are probably dealing with a single causative formation. Bartholomae has set up for these forms a separate root *(fra-)syazg-* 'propellere', 'fort-, verjagen', but this root has neither any 40

[26] For analogical forms in *(°)akna-* from *añ̃j-* (Br.+) see Kuiper 1952: 37f. = 1997: 37f.

[27] Wackernagel's suggestion (AiGr. I: 270) that *vr̥kṇá-* comes from **vr̥skṇa-* is totally *ad hoc*, since the proposed sound law *-skn- > -kn-* is only operative in this particular word.

[28] Evidently, forms like *°vraská-* in RV *yūpa-vraská-* 'hewing sacrificial posts' have arisen when *vr̥sc-* was considered a separate root.

[29] Attested in a citation in the Pahlavi translation of V 7.52.

[30] Pahlavi translation *pr'c-spwcšnyh* 'to push, drive forward'.

[31] In the passage *auuaēzō +dim pascaēta fraca xraosiiōiṯ fraca siiazjaiiōiṯ* 'without (committing) any sin, he may then shout at him and drive him forward'.

parallels in Iranian, nor a reasonable etymology.[32] The meaning of *frasiiazjaiieiti* is so close to that of *siiazd-* 'to chase away, (med.) to flint' that Kuiper 1934: 236f. considered *siiazd-* and *siiazg-* parallel root enlargements. In view of the status of the texts where *frasiiazjaiieiti* is found, it seems more likely that this form is a corruption for [x]*frasiiazdaiieiti*, a causative to *siiazd-*. As I hope to show elsewhere [[see now Lubotsky 2004]], a causative participle [x]*siiazdaiiō* must also be emended for Yt 19.84 *siždiiō* (v.ll. J10 *šožđaiiō* and D *šozdaiiō*).

6.1.8. Av. √*srasc-* (*srasciṇtaē(-ca)* 3pl.med. Yt 5.120, caus. *vī-srascaiiən* V 7.29, ptc. *srasciṇt-*) 'to drip, drizzle', often used in the meaning of 'drizzling rain', has been connected with Lith. *šlakéti* 'to drip', *šlakìnti* 'to sprinkle', *šlãkas* 'drop', Latv. *slacît* 'to make wet' (Pokorny 957, 1002; here probably also Russ. *sljakot'* 'snow mixed with rain' < Slav. **slęk-* with secondary nasal infix). We may reconstruct **ḱlek-sk-*, which would account for the Avestan verb, although the etymology remains of course doubtful. The substantive *sraska-* (V 1.8) 'tears, crying' is likely to be an analogical formation, based on the present.

6.1.9. As we can see, all *sk*-presents derived from roots in a stop show a different reflex, viz. a palatalized cluster **sč/*zǰ*, which is in need of explanation. Hoffmann (apud Eichner 1982: 22, fn. 31 and Hintze 1994: 286, fn. 45) explained *vr̥ścáti* by "assimilatorischer Velarisierung", which Hintze (op.cit.) also applied to *θβązjaiti*. This suggestion seems rather *ad hoc* to me and, furthermore, cannot account for Avestan *-j-* in *ubjiiāiti*.

The presented material is of uneven etymological value, but it provides a clear pattern. We find the PIE *sk*-suffix reflected as follows:

PIr. **-sć-* in the position after a vowel (assuming that clusters **-s-sk-* and **-ḱ-sk-* were simplified very early, perhaps already in PIE);[33]

PIr. **-zǰʰ-* (Skt. *-(j)j-*, Av. *-(z)j-*), if the root ended in a voiced aspirate; 41

PIr. **-sč-* elsewhere.

6.2. Sanskrit adverbs in *-chā* and *-(ś)cā*.

With this distribution in mind, we may now try to analyze a group of Sanskrit adverbs in *-chā* and *-(ś)cā*, which always were puzzling. The only adverb in *-chā* is *áchā* 'to, towards'. The best phonetic correspondences to *áchā* are found in Slavic and Armenian, viz. OCS *ešte* 'ἔτι, οὔπω', Russ. *eščë* 'again, yet' < PIE **(H₁)esk[(w)]e*, and Arm. *c'-* prep. (+ Acc.) 'to' < **(e)skV*. The initial **e-* has disappeared in Armenian, due to the proclitic nature of the word, cf. *əst* 'after'

[32]The often proposed connection with Skt. *śīghrá-* adj. (VS+) 'quick, swift' (Kuiper 1934: 237, Kellens 1984: 147) is not very attractive. For Russ. *sigát'* 'to jump' and OE *hīgian* 'to exert oneself, strive, hasten' see below, § 13.4. Bartholomae's connection with OHG *jagōn* cannot nowadays be seriously considered.

[33]The difference between *pr̥chắti* and *vr̥ścáti* is then due to the different age of the formations: the former is PIE, whereas the latter is Proto-Indo-Iranian or Proto-Indo-Aryan.

< *post*, *ənd* 'to' < **anti*, etc.[34] The Slavic word shows that *-ch-* in *áchā* stood before a palatal vowel and can thus be a product of palatalization. This becomes even more evident if we consider Sanskrit adverbs of a similar structure, viz. *uccā́* 'high, up', *paścā́* 'after, later', *tiraścā́* 'across'. This obvious parallel could not be seriously considered earlier because Skt. *-ch-* was held to be incompatible with *-(ś)c-*. Let us look at these adverbs more closely.

Skt. *uccā́* (also *uccáiḥ*), derived from *úd*, corresponds to Av. *usca*, *uskāṯ* 'id.' and points to PIIr. **udsčā / udskāt* < PIE **udsk*$^{(w)}$*eH*$_1$ / **udsk*$^{(w)}$*ōd* [35]. Theoretically speaking, we do not need an *-s-* for the Proto-Indo-Iranian reconstruction of this group of words, since Sanskrit is ambiguous, and for Avestan we may surmise that e.g. Av. **utkāṯ* has taken over the *-s-* from the adverb *us* 'high, up' (generalized from contexts where PIIr. **ud* stood before dentals). If, however, we assume that all these adverbs are formed in the same fashion, the *-s-* in PIIr. is indispensable. Schmitt (1968: 140), following the traditional analysis (cf. Grassmann s.vv., Kuryłowicz 1935: 42), reconstructed *uccā́* and *tiraścā́* directly from PIE **ud-*$\underline{ə}_3$*k*$^{\underline{u}}$*-ē* and **tr*$\underline{̥ə}_2$*os-*$\underline{ə}_3$*k*$^{\underline{u}}$*-ē*. This reconstruction is open to two objections: first, we expect the interconsonantal laryngeal to be vocalized in Sanskrit, and secondly, in the RV these two adverbs clearly stand outside the other formations in *-añc-*, and only later do we find forms like *tiryáñc-*, matching *paryáñc-* (cf. Mayrhofer EWAia I: 648).

Skt. *paścā́* 'after, later' corresponds to Av. *pasca*, OP *pasā* 'after' (< **pasča*, cf. Med. **pasča-* 'vice-' as a borrowing in Elamite), Oss. *fæstæ* 'later' (< **fæscæ* < **pasčā*), etc. Skt. *paścā́t* 'from behind' has a match in Av. *paskāṯ* (the palatal cluster in Sanskrit must be analogical after *paścā́*). The etymon of this group can hardly be separated from Lat. *post*, Lith. *pãskui* 'after, behind', *pãstaras* 'last', etc. The Indo-Iranian formation can then be reconstructed as **pas(t)sčā*, *pas(t)skāt*. 42

Finally, Skt. *tiraścā́* 'across, transversely' is identical with Av. *tarasca* and is derived from PIIr. **trHas* (Skt. *tirás* 'through, across', Av. *taras*).

We arrive at the following PIIr. reconstructions: Skt. *áchā* < PIIr. **a-scā́*; Skt. *uccā́*, Av. *usca* < PIIr. **ud-sčā*; Av. *uskāṯ* < PIIr. **ud-skāt*; Skt. *paścā́*, Av. *pasca*, OP *pasā* 'after' < PIIr. **pas(t)-sčā*; Av. *paskāṯ* < **pas(t)-skāt*; Skt. *tiraścā́*, Av. *tarasca* < PIIr. **trHas-sčā*.

The distribution between *-sć-* and *-sč-* in these adverbs is in agreement with the distribution established for the *sk*-suffix: we find *-sć-* after a vowel and *-sč-* after an obstruent. The difference between *ichá́ti* < **H*$_2$*is-ske-* and *tirascā́* can be explained by the different age of these formations: the former is of PIE age, so that the cluster had already been simplified by the PIIr. period, whereas the latter is an Indo-Iranian formation.

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[34] Gr. ἕστε 'until', which was connected with this etymon by Bloomfield 1897: 57ff. on the basis of Ionic ἕσκε, is probably unrelated, see Schwyzer 1939: 629f.

[35] If Lat. *ūsque* belongs here, its *ū-* may be due to Lachmann's Law. Germ. **ūt* is likely to be due to lengthening in monosyllaba.

Accordingly, we can finally substantiate the old idea that all these adverbs are formed in an identical way. A thorough discussion of the IE antecedents of this formation goes beyond the scope of the present publication, so I shall limit myself to a short remark. The element *-*sk*$^{(w)}$*e* is often analysed as *-*s* added to local adverbs (cf. Gr. ἐϊς < *H_1*en-s*, OP *patiš* < **poti-s*, etc.) plus the particle *-k^w*e*. The consistently long vowel of IIr. adverbs rather points to a different analysis, viz. as an instrumental in *-*eH*$_1$ of the root noun *$^\circ$*sek*^{w}- 'to follow', meaning something like 'in a continuous movement in the direction of X'. The initial *a*- of Skt. *áchā* is likely to represent the base of the anaphoric pronoun *H_1*e*-, cf. Skt. *á-tas* 'away from here/there', *á-tra* 'here/there', *a-dyá* 'today', etc.

6.3. Skt. *tuchyá*- adj. 'empty, vain', MPers. (Turfan) *tuhīg*, Khot. *tuśśaa*-, Oss. (Iron) *tyssæg* 'empty', etc. point to PIIr. **tusc̯i̯o*-, which seems to be a *i̯o*-derivative of PIE **tusk(o)*-[36], reflected in ORuss. *tъska* 'grief, longing' ← 'emptiness'. The traditional analysis, which derives Skt. *tuchyá*- from a *sk*-present attested in LAv. *tusən* (V 3.32), seems less likely to me. I would not know of any other old example of an IE nominal derivative containing a present tense suffix. Note further that LAv. *tusən* does not prove the antiquity of a *sk*-present to this root: it is a productive formation in Iranian (see above, § 6.1.2).

Balto-Slavic shows a similar formation. Slavic (OCS *tъštь* adj. 'empty, vain', Russ. *toščij* 43
adj. 'lean', etc.) can reflect both **tuskį̯o*- and **tustį̯o*-, but Lith. *tùščias* 'empty, idle, vain' seems to point to **tustį̯o*-. In view of ORuss. *tъska* 'grief, longing' and the Indo-Iranian parallel, the reconstruction **tustį̯o*- is highly improbable, and I believe we have to assume with Kuryłowicz (1935: 20) that Lith. *tùščias* is an old borrowing from Slavic.[37]

7. PIIr. *-*sč*- in inlaut

Skt. *śc* and Av. *sc* in inlaut are of various origin:

– PIIr. *-*sč*- after obstruents: Skt. √*vṛ́sc*-, *paścā́*, Av. √*srasc*-, etc. (see above).

– Sandhi: In Skt., *śc* is attested in compounds like *manaś-cit*-, *vipaś-cit*-, *huraś-cit*-, *duś-cyavanā́*- etc. In Av., *sc* is very frequent, too, cf. gen.sg. *drūjas-cā*, nom.sg. *zyå̊s-ciṭ*. OP has *šc* in a similar position, cf. *kašciy* < **kas-čid* and *manaš-c[ā]*. This *šc* analogically spread to the

[36]The original root **tus*- is reflected in LAv. *taošaiieiti* 'to leave hold of, to drop'. The connection with Lat. *tesqua, tesca* 'deserted place' is only possible if we assume an *ad hoc* dissimilation of **tusqua* to *tesqua*.

[37]Unless we assume with Būga 1922 that **skj* > Lith. **stj*, cf. Lith. *čiáudėti*, Latv. *šķaudāt* 'to sneeze' < **skjaud*- < **skeud*-.

Theoretically, we may consider the reconstruction **tusk-tį̯o*-, which may also be the proto-form of Indo-Iranian **tusc̯i̯o*- (with an early loss of the second *-t*-). However, the suffix *-tį̯o*- usually forms adjectives from local adverbs (Skt. *nítya*- 'one's own, continuous', Goth. *niþjis* 'relative'; Skt. *níṣṭya*- 'foreign, strange', OCS *ništь* 'πτωχός', etc., cf. AiGr. II,2: 697ff.). This would mean that **tusk*$^{(w)}$- was a kind of a local adverb 'at an empty, deserted place', which is improbable.

neuters *cišciy* 'anything', *avašciy* 'that', *aniyašciy* 'other' < *-*dc*- (cf. phonetically regular *aciy* 'then' : Av. *aṯciṯ*, *yaciy* 'when' : Av. *yaṯciṯ*).

– Reduplicated forms of the root Skt. *sac*- / Av. *hac*- 'to follow' (Skt. red. pres. 3pl. act. *saścati*, middle *sasce*, 3pl. inj. *saścata*; them. pres. *saścata*, impf. *ásaścatam*, inj. *saścat*, ptc. *sáśca(n)t*-, pf. *saścima*, *saścur*, *saścire*; GAv. *hišcamaidē*) and of the root Skt. *sac*- 'to be dry, barren': 2sg. pres. (or pf. subj.) *saścasi*; *ásaścuṣī*- 'not barren', *asaścat*-, *ásaścantī*- 'id.'.

– As I hope to show elsewhere [[see now Lubotsky 2002]], Av. *ascu*- 'shin' is rather a thematic stem *ascuua*- < **ascīu̯a*-, which is etymologically related to Skt. *aṣṭhīvá(nt)*- 'id.' and goes back to a compound **Hast-čiHu̯a*- 'bone-pipe'.

– Etymologically unclear are: Skt. *māṁścatú*- '?', *vṛ́ścika*- 'scorpion', *āścarya*- 'appearing rarely, extraordinary' (Up.+). Further, we find unclear Skt. *upāścarat* (MS 4.2.9) instead of regular *upācarat* and onomatopoeic *ciścā*.

– For the Skt. intensive *canicadad* see below. Here we can only mention that *a* in *-scad*- 44
goes back to vocalic **n̥* and can in no way be the source of palatalization.

8. PIIr. *sć and *sč: distribution

The distribution of PIIr. *sć and *sč clearly shows that palatalized **sk* normally yields PIIr. *sć (Skt. *ch*, Iranian **s*), except after an obstruent, where we find *sč (Skt. śc, Av. *sc*, OP *s*). Otherwise, Skt. śc, Av. *sc* are of secondary origin, due to analogy (zero grade of the root **sac*- / *hac*-, analogical initial palatalization in Iranian causatives) or secondary contact (sandhi). In other words, all Indo-Iranian reflexes can be explained from PIE **sk*: there is no need for reconstructing PIE **sḱ*. The theory of Zubatý – Meillet thus proves to be correct.

What we still have to do is to account for the different treatment of the palatalized **sk* in Indo-Iranian and look more closely at the reflexes in the separate branches.

9. PIIr. *sć and *sč: phonology

9.1. The distribution of palatalized reflexes of PIE **sk* can be summarized in the following rules:

PIE **sk* > PIIr. **sć* / #,*V*__*ĕ*, *i*

PIE **sk* > PIIr. **sč* / *C*__*ĕ*, *i* (where C = any obstruent)[38]

Since the reflex of palatalized PIE **k*$^{(w)}$ is PIIr. **č*, we must assume the sound change PIIr. **sč* > **sć*, which was blocked by a preceding obstruent. In other words, **č* merged with the IIr. reflex of PIE **ḱ* (i.e. **ć*) in the position after *s*. A different treatment of palatalized **k* and

[38] A similar development can be assumed for voiced stops:
PIE **zg*$^{(h)}$ > PIIr. **zj́*$^{(h)}$ /#,*V*__*ĕ*, *i*
PIE **zg*$^{(h)}$ > PIIr. **zǰ*$^{(h)}$ / *C*__*ĕ*, *i* (where C = any obstruent),
although we only have clear evidence for the second part of this rule (Skt. *ubjáti*, Av. *ubjiiāte*). In Skt., both **zj́*$^{(h)}$ and **zǰ*$^{(h)}$ have merged into *jj*, but I have been unable to find unambiguous examples in Iranian.

*sk has a parallel in Slavic, where as a result of the first palatalization PIE *$k^{(w)}$ > PSlav. *č, but PIE *sk > PSlav. *sč > *šč > *šć > SCr. št, šć, OCS št, Czech št', e.g. PSlav. *dьsčica (a diminutive of dьska 'table, plank') > OCS dьštica, SCr. dȁštica, dȁšćica; PSlav. *tiščenъ 'pressed' > OCzech tiščen > Czech tištěn [tišt'en]. Similarly, palatalized *zg yields PSlav. *zdž > *ždž > *ždź > SCr. žd, žđ, OCS žd, Czech. žd' (Vaillant 1950: 48f., Kortlandt 1989: 48, 53 = 1994: 100, 106, stages C1, C3, C11 of Kortlandt's chronology). 45

9.2. Phonetic details of the sound change PIIr. *sč > *sć are difficult to establish, since we do not exactly know what kind of obstruents PIIr. *č and *ć actually were. According to the Prātiśākhyas, Sanskrit *c* (< PIIr. *č) was a palatal stop (e.g. Whitney 1862: 23), i.e. [ć], and I see little reason to doubt that this was also the case with PIIr. *č.

As to the reflexes of PIE palatal stops *ḱ ǵ ǵʰ, i.e. PIIr. *ć ǰ ǰʰ, they must have been pronounced with the tongue in a position closer to the teeth, something like [t' d' d'^{h}] = [t^{ś} d^{ź} d^{źh}]. This pronunciation best suits the reflexes in Indo-Iranian, such as:

– PIIr. *ć ǰ ǰʰ > Iranian dental *s z (i.e. *t^{ś} d^{ź} > *ś ź > *s z, cf. *ts > Ir. *s);
– PIIr. *ćt = *t^{ś}t > *śt > Iranian *(x)št* (Kellens 1976: 60ff.), Skt. *ṣṭ*;
– PIIr. *-ćn- = *-t^{ś}n- > Iranian -šn-;
– PIIr. *ćs = *-t^{ś}s- > *-t^{ś}ś- > *-t^{ś}š- > *-tš- > Iranian *š, Skt. *ṭṣ > *kṣ*, etc.

Further, *ǵ [d'/d^{ź}] accounts for the sound change *di > *ǰi in specific environments, cf.

– PIE *$dH_3ǵʰ$-mo- (Gr. δοχμός) > *dǰ^{ʰ}ma- > *ǰǰ^{ʰ}ma- > Skt. *jihmá-* adj. 'athwart';
– PIE *dn̥ǵʰu̯eH$_2$- > *dǰ^{ʰ}vā- (with secondary *i*) > *ǰǰ^{ʰ}vā- > Skt. *jihvā-*, Av. *hizuuā-* 'tongue';
– PIE *dieut- > *di̯aut- > *ǰi̯aut- > Skt. *jyótati* 'to shine', *jyótiṣ-* n. 'light', *jyótsnā-* 'moonshine', *jyók* adv. 'for a long time' (but not in *di̯ut-, *di̯ēut- > Skt. *dyút-*, aor. *dyaút*; full-grade forms *dyot-* are secondary, cf. aan de Wiel 2000).

9.3. The interpretation of PIIr. *ć as [t^{ś}] also makes sense from a historical point of view. When Indo-Iranian palatalization led to the rise of new palatal stops *č ǰ ǰʰ, the old palatals had to move more to the front in order to remain distinct.

In the clusters *sč and *sć, *s* was most probably pronounced as [ś]. This explains why there was no opposition between *s* and *ṣ/š* in this environment: Skt. *ch*, Iran. *s is the reflex of *sć both after RUKI and elsewhere. In Avestan, we find LAv. *paiti-scaptaiiaē(ca)* inf. 'to crush' with unaffected *s* next to GAv. *hišcamaidē* 'we follow'. There are even reasons to believe that RUKI was not operative in a strongly palatal environment, cf. RV 3.32.15 *sisice*, 2.24.4 *sisicuḥ* (exception: 7.33.13 *siṣicatuḥ*) and Av. *paiti.hiṇcaiti*.

If we now apply the proposed phonetic values to our rule, we get PIIr. *sč [ść] > *sć [śt'], which is essentially the same kind of development as OCzech *tiščen* > Czech *tištěn* [tišt'en], mentioned above. The further development of PIIr. *sć in Indic and Iranian is discussed in the following sections. 46

10. Skt. *ch*: sources and accidence

10.1. Before we analyse the development of PIIr. **sć* in Indic, let us first take a closer look at Skt. *ch*, which also has other sources, beside PIIr. **sć*.

10.2. In most Vedic texts, we find *-ch-* as the result of the external sandhi *-t + ś-*, e.g. *tác chréṣṭham*[39] from *tát śréṣṭham*. The same development is found in compounds, e.g. RV *ucchvāsá-* m. 'effervescence' < **ud-śvāsa-*. In the texts of the Maitrāyaṇīya school, however, the juncture *-t ś-* remains unaltered (cf. Lubotsky 1983: 172ff.).

10.3. Initial *ś-* becomes *ch-* after final *-n*, e.g. RV 1.100.7a *raṇayañ chū́rasātau* (from *raṇayan śū́rasātau*). According to the Ṛgveda-Prātiśākhya (232), Śākalya Jr. prescribes not to change *ś* to *ch* and to pronounce *-t ś-* and *-n ś-* as *-c ś-* and *-ñ ś-* respectively. Pāṇini 8.4.63 allows both pronunciations. In some Vedic texts, the sandhi *-n ś-* > *-ñ ch-* does not apply: for instance, in the texts of the Maitrāyaṇīya school, *-n ś-* appears as *-ñ ś-* (Lubotsky 1983: 176).

There are different explanations of this sandhi rule. Whitney (1862: 80, cf. also AiGr. I: 332) assumes that "the conversion of *nç* into *ñch*, on the supposition of the compound nature of the palatal, as made up of a mute and a sibilant element, would be almost precisely analogous with that of *ns* into *nts* ... and would be readily and simply explainable as a phonetic process". The difficulty with this explanation is that in the RV, for instance, *-n s-* remains unchanged, whereas *-ñ ś-* yields *-ñ ch-*. In my opinion, more promising is the approach of Oldenberg (1888: 426f), who assumed that the sandhi *-n ś-* > *-ñ ch-* was phonetically regular only when *-n* reflected original **-nt*. Leumann (1942: 16) later suggested that the same is valid for *-n* < **-ns*. The other cases (e.g. RV 1.63.5d *vajriñ chnathihi*) are then due to generalization.

10.4. The Prātiśākhyas and our handbooks are amazingly vague about the sandhi of initial *ś* after a stop other than *t* [40]. Therefore, I here give a short sketch of the situation in the oldest Vedic texts, which is based on an electronic search.[41] 47

In the RV, *ś-* > *ch-* / *-ṭ#, -k#__* (1.66.6a *ábhrāṭ chveto*, 1.71.8ab *ā́naṭ chúci*, 3.33.1d *vípāṭ chutudrī́*, 5.40.4ab *turāṣā́ṭ chuṣmī́*, 7.90.2ab *ā́naṭ chúciṃ*; 1.72.7b *ānuṣák churúdho*, 2.39.3ab

[39] In manuscripts also *táchréṣṭham*, cf. Renou 1952: 96.

[40] The handbooks follow Whitney (1889: 68), who writes: "Some authorities regard the conversion of *ç* to *ch* after *t* or *n* as everywhere obligatory, others as only optional; some except, peremptorily or optionally, a *ç* followed by a mute. And some require the same conversion after every mute save *m*". Cf. Wackernagel (AiGr. I: 329): "*ś* kann *ch* werden, was die Handschriften hinter *c* aus *t* durchführen, hinter andern Verschlusslauten nur sporadisch geben"; Renou (1952: 96): "D'après Śākalya l'Ancien (RPr. IV 4), l'aboutissement *ch-* se présente après toute occlusive; de fait, on le trouve sporadiquement, au moins après un *-ṭ*", etc.

[41] I made use of the electronic version of Vedic texts prepared within the framework of the TITUS-project under supervision of J. Gippert.

arvā́k chaphā́v, 4.22.8c *asmadryàk chuśucānáśya*, 10.91.7cd *pŕ̥thak chárdhāṃsi*). No examples are found of the juncture *-p ś-*.

In the AVŚ, *ś-* remains unaffected in these contexts (9.5.21 *virā́ṭ śíraḥ* vs. AV 20.12.7 *turāṣā́ṭ chuṣmī́*, which is a RV-ic repetition; 19.24.3 *jyók śrótre* = AVP 15.5.10). The same is valid for the AVP(O) (1.37.3 *ṣaṭ śatā*; 2.83.4 *vāk śiṣaktu*).

Likewise, *ś-* remains unaffected in the VS (24.33 *puruṣavā́k śvāvíd*; 20.5 *virā́ṭ śrótram*, 33.11 *ā́naṭ śúci*; 13.57 *anuṣṭúp śāradī*) and ŚBM (11.4.3.17 *virā́ṭ śrīr* (2x), *virā́ṭ śriyā́ṃ*, 14.4.2.27 *viṭ śūdraḥ*).

In the JB, we find the junctures *-k ś-* and *-p ś-* unaffected (3.88 *pr̥thak śardhāṃsi*; 1.261, 269 (2x) *triṣṭup śrotraṃ*), but the juncture *-ṭ ś-* shows both treatments (2.58 *virāṭ śarīrāṇi* vs. 2.46 *viṭ chastram*, 2.48 (2x) *ṣaṭ chataṃ*).

The text of the TS does not contain these junctures (outside RV-ic repetitions where the sandhi is applied).

In the AB, the sandhi does not apply in the juncture of *-k ś-* (2.4.6 *vāk śaṃsaḥ* = 6.27.10, 32.3; 3.35.2 *r̥k śaṃstavya*). No examples of the other junctures are found.

At the moment, the electronic version of other old Vedic texts is not yet available,[42] but searching by hand in the MS for examples of *-p ś-* I found MS 4.8.8 (116,25) *triṣṭúp śukró*, with unaffected *ś-*.

In compounds, we find *r̥k-śas* (AB, GB) 'verse by verse', *parar̥kśatagātha-* (AB) 'containing the Gāthās next to hundred r̥c-verses', and only in the late texts *r̥kchas* (ŚŚS).

As we can see, the sandhi rule *ś-* > *ch-* / *-ṭ, -k___* is only attested in the RV and partly in the JB. In the case of *-ṭ*, it is tempting to apply Oldenberg's explanation of the sandhi *-n ś-* > *-ñ* 48
ch-, viz. that *-ṭ* represents an original cluster with an *s*, but in the case of final *-k* this reasoning presents difficulties: all examples are adverbs going back to old neuters where we do not expect final *s* (cf., however, GAv. *ānušhaxš* = Ved. *ānuṣák*). At any rate, we must reckon with generalizations on a large scale, so that it is difficult to get a clear picture of the original situation.

10.5. In the original compound *duchúnā-* f. 'misfortune', *-ch-* comes from *-ṣ* + *ś-* (< **duṣ-cúnā*, cf. *śunā́-* n. 'prosperity').[43] In other compounds with *duṣ-*, the cluster is restored (*duḥ-śáṃsa-*, etc.).

10.6. On the basis of the presented evidence we may formulate the following phonetic rule:

ś- > *ch-* / *-t #, -s #*

[42]In the extant portion of the electronic KS I found no junctures of this type.

[43]For the name *Páruchepa-*, which is often cited as another example of the same sound change, see Hoffmann 1974: 20, fn. 10 (= 1975: 332).

For the phonetic explanation of the development *sć > ch, we can point to a parallel in Middle Indic, where the original consonant clusters ps, ts, psy, tsy, śc, kṣ yielded ch (cf. Leumann 1942: 7f, 19). This parallel is illustrative because it demonstrates that the disappearing sibilant (s ś ṣ) of the original cluster yields aspiration in the resulting ch. The same correlation show Middle Indic kkh < *sk, ṣk; tth < *st, ṣṭ; pph < sp, ṣp and the Vedic root khyā- < kśā- 'to look, observe' (√kśā- in the texts of the Maitrāyaṇīya school and Av. xsā-).[44] Phonetically, unvoiced fricatives can be described as air-stream combined with friction in the mouth cavity. Since voiceless h is nothing but air-stream with slight narrowing of the larynx, unvoiced fricatives often turn into h (cf. s > h in Iranian and Greek, ϑ > h in Middle Persian, etc.) when buccal friction becomes weaker.

This account of the prehistory of Skt. ch is not significantly different from that of Leumann, except for one important detail. Leumann (p. 16) assumes a development *śś > ch, but it is hard to imagine that a combination of two sibilants would have yielded a stop. It is much likelier that ch arose from *śc, i.e. when ś had not yet become assibilated, but still was a stop. As we shall presently see, disintegration of the series of palatal stops *ć ǰ ǰh into Skt. ś j h was a comparatively recent phenomenon, posterior to Grassmann's Law.

11. Development of PIIr. *śc in Iranian

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In OP, PIIr. *śc yields -s- in inlaut and ϑ- in anlaut. The most plausible explanation for the double treatment in OP was proposed by Nyberg (1931)[45], who assumed that PIIr. *śc developed into *ss already in Proto-Iranian. In Old Persian, this -ss- was preserved as -s-, but in anlaut was simplified to s-, which became OP ϑ together with PIr. *s < PIE *ḱ. This means that OP ϑ did not develop directly from PIIr. *ć, but went through the stage of PIr. *s. The development Ir. s > OP ϑ further follows from Nyberg's analysis of Middle Persian māhīg 'fish', which points to OP *māϑiyaka- < *māϑyaka- with -ϑ- from a simplified PIr. cluster *-ssi̯- < PIIr. *-tsi̯- (Skt. matsya-, Av. masiia- and Middle Parthian māsīg 'fish'). Similarly, MP tuhīg, Phl. tuhīk 'empty' must reflect OP *tuϑiyaka- < *tuϑyaka- < *tusyaka- < PIr. *tussyaka- (Skt. tuchyá-). Given the phonetic values discussed in § 9, Nyberg's scenario presupposes the following chain of developments: PIIr. *ć [tˢ] > [ś] > PIr. *s and PIIr. *śc [śtˢ] > [śś] > PIr. *ss, which is perfectly understandable in view of the fact that PIIr. *s yielded Ir. *h in most positions.

12. Special cases I: *sk- and s-mobile

The rule PIIr. *sč > *śc has important consequences for roots with s-mobile. For the first time we are in a position to explain the relationship between the Skt. roots chand- 'to appear, please',

[44] This is a decisive argument against Hiersche's theory (1964) that Skt. skh sth sph constitute an intermediate stage between *sk st sp and Middle Indic kkh tth pph (Kuiper 1966: 220, 222).

[45] Also accepted by Hoffmann (1976: 637, fn. 25).

(ś)cand- 'to shine', and *śad-* 'to excel'. Many scholars toyed with the idea that these roots are etymologically related (cf. Mayrhofer EWAia: 556 with references), but up till now this suggestion was considered phonetically impossible.

The root **(s)kend-* without *s-* in the *e*-grade became **kend-* > **čand-*, whereas forms with *s-* yielded **skend-* > **sčand-* > **ścand-*, in accordance with our rule. At the moment when the latter variant was reanalysed as *s*-mobile + √*ćand-*, the two allomorphs became dissociated, giving rise to two different roots, reflected in Skt. *cand-* 'to shine' and *chand-* 'to appear, please'. Presumably, both roots preserved their "*s*-mobileness", as it were, i.e. the speakers somehow knew that *cand-* could have forms with *s*-mobile, which may account for secondary *s*-accretion in Skt. *(°)ścandrá-*, *caniścadat*, although the exact mechanism escapes me. On the other hand, √**ścand-* (before **śc* developed into Skt. *ch*) could lose its *s-*, which led to the creation of *s*-less forms like *śāśaduḥ* 'they excelled', etc.

The developments can be represented in the following diagram: 50

**kend-* >		**čand-* >	Skt. *candrá-*
		(+ *s-*) **sčand-* >	Skt. *(°)ścandrá-*, *caniścadat*
**skend-* >	**sčand-* >	**ścand-* >	Skt. *chand-*, Ir. **(s)sand-*
		(– *s-*) **ćand-* >	Skt. *śa(n)d-*

13. Special cases II: Skt. *ch* and Grassmann's Law

13.1. As is well known, the root structure *T...D*^{h} was not tolerated in PIE, whereas *(s)T...D*^{h} is abundantly attested (Meillet 1912, 1937: 174). Therefore, we must reconstruct an initial *s-* or *s*-mobile for Skt. roots of the type *ś...D*^{h}. This concerns the following roots[46]:

13.2. *śárdha-* m. 'host (of Maruts)', LAv. *sarəδa-* n. 'species' < PIE **(s)kerd*^{h}*o-* (Lith. *(s)kẽrdžius* 'shepherd', OCS *črěda* 'herd', OPr. *kērdan* 'time', Goth. *hairda* 'herd', *hairdeis* 'shepherd', etc.). Mayrhofer rejects the connection, assuming with Grassmann that the original meaning of Skt. √*śardh-* is 'to be strong, to show strength', which is then incompatible with the meaning of the IE family 'Reihenfolge, Wechsel'. In reality, there is hardly any evidence for the original meaning 'force, power'[47]. The verbal root *śardh-* means 'to boast, intimidate (before the fight)' (the ptc. *śárdhant-* often refers to an impudent enemy). To this root there are a few nominal derivatives, viz. *śr̥dhyā-* (RV 2.2.10) 'arrogance', *śárdhya-* (RV 1.119.5) 'rivalling', *bāhuśardhín-* (RV 10.103.3) 'boasting of his arms',[48] *praśardha* voc. (RV 8.4.1), which refers to Indra and means 'boasting, audacious' (PW translates s.v. *śardh-* 'keck, trotzig') rather than 'gewaltig, sehr stark'.

[46]The reader is referred to a more elaborate discussion of the matter in Lubotsky 1998.

[47]It must be emphasized that the semantic development 'force, power' → 'to show force' → 'to boast', advocated by Mayrhofer (KEWA III: 309f., EWAia II: 620), is far from evident.

[48]The meaning 'armstark' is improbable (cf. PW s.v., Geldner ad loc., AiGr. II,2: 346).

On the other hand, *śárdha-* m. and *śárdhas-* n. mean 'host, troop', often 'a host of Maruts'.[49] The hapax *śárdhastara-* (RV 1.122.10) is a *-tara-* derivative from the substantive *śárdhas-* of the type *vīrátara-*, *vṛtrátara-*, etc. (cf. AiGr. II,2: 601ff.), and must mean something like 'more similar to a host (of Maruts)'.[50] 51

It follows that *śardh-* never means 'to be strong', but rather has two meanings, viz. 'to boast' in the verbal root, and 'troop, host' in *śárdha(s)-*. In Avestan, we find two similar meanings: *sarədanå̊* acc.pl. (Y 43.14) 'opponents, despisers' (Humbach 1991: 114 'challenge') and *sarəiδiia-*, possibly 'challenging', belong to the semantic sphere of Skt. √*śardh-*, whereas LAv. *sarəδa-* 'sort, kind (usually, of cattle)' is comparable to *śárdha-* 'troop'. Bal. *sar* < **sard-*, Pashto *saṛai* < **sarda-ka-* 'man' do not testify to the original meaning 'strength, power', but may have developed from 'a man of (our) kind, sort'.

The question is whether these two meanings are compatible. Toporov (1980: 315ff) extensively analysed the semantics of this word family and concluded that the original meaning of the IE root was 'to be divided into (equal) parts' (for 'to boast' he offered a semantic parallel in German *vermessen – Vermessenheit*; another possible parallel is Russ. *rjad* 'row, rank' – *otrjad* 'detached force' – *rjadit'sja* 'to dress, disguise oneself'). Furthermore, he convincingly argued that √**(s)kerd*^{h}- is an enlargement of √*(s)ker-* 'to cut'. As to Skt. *ś-* vs. PIE **(s)k-*, see below (Toporov only mentions the phonetic problem on p. 323).

13.3. √*śudh-* 'to make clean, purify', √*śubh-* 'to adorn, beautify'. These two roots are different enlargements of the PIIr. root √**ćau-*.[51] No certain cognates of this root have been found outside IIr. It seems plausible, however, to connect the PIE root **(s)keu(H$_1$)-* 'to observe' (Gr. κοέω 'to notice', OHG *scouwōn* 'to look at', Skt. *ā́kūti-* f. 'intention'). It is well known that verbs for 'to look, observe' can also mean 'to look (or be) beautiful, shine', cf. PIE **leuk-* 'to see, look' (e.g. Gr. λεύσσω) and 'to shine' (e.g. Skt. *rócate*). The root **(s)keu(H$_1$)-* is found in the meaning 'to look beautiful' in Goth. *skauns*, OHG *scōni* 'beautiful'.

13.4. The other forms are etymologically obscure:

śibhrá- (AV 7.90.2) '?'.

śīghrá- adj. (VS+) 'quick, swift'. The connection with Russ. *sigát'* 'to jump' and OE *hīgian* 'to exert oneself, strive, hasten' is very doubtful. OE *hīgian* is cognate with MiD *hīgen*, MoD *hijgen* 'to pant'. As already indicated in Franck – van Wijk's Dutch etymological diction-

[49]The translation 'Stärke', used by Geldner for *śárdha-* in 2.1.5 and 8.93.16, and for *śárdhas-* in 6.68.8, is dispensable (cf. Renou EVP X: 59, XII: 41).

[50]At any rate, this comparative can hardly mean 'stärker', given by Geldner and adopted by Mayrhofer.

[51]Cf. also Arm. *surb* 'pure, holy', which is a borrowing from Iran. **subra-* (Khot. *suraa* 'clean, pure', Emmerick – Skjærvø 1997: 155) and Skt. *śuc-*, Av. *suk-* 'to shine'. It is unclear whether Skt. *śóṇa-* 'red, crimson' belongs here, too.

ary, the meaning ‘to pant’ seems to be primary for the Germanic words, so that they are probably 52
of onomatopoetic origin. The Russian word is suspect because there are no other cognates in Slavic (except for Byelorussian *sihać*). Furthermore, it is only attested in the Southern and Western dialects, i.e. exactly in those dialects where *i* merged with *’a* (< *ę*) in pretonic position. It is therefore very likely that Preobraženskij’s (2, 284) etymology explaining *sigát’* from **sęgati* is correct (*pace* Vasmer s.v.). Many years before Preobraženskij, V. Dal’ wrote in his dictionary (I used the second edition of 1880) that "*sigat’, signút’* is derived from *sjagat’*" and added: "also pronounced *sjagát’, sjagnút’*, combining two meanings: to jump and to reach smth." (translation mine).

śībham ‘swiftly, quickly’ (RV+). In Br., also *śībhá-, śībhya-* adj. are attested, used as a synonym of the preceding word, cf. MS II,9,5: 124.14 *námaḥ śībhā́ya ca śīghrā́ya ca.*

śūghaná- (RV 4.58.7) ‘?’.

√*śrambh-* ‘to trust’ (ep.+). The meaning of *ni-śṛ́mbha-* (RV 6.55.6) is uncertain. Renou (EVP XV: 150) translates ‘soumis’ and remarks "nuance possiblement comparable à *nímṛgra nímiśla níkāma*". Geldner put "stolzierende" with a question mark in his text.

√*ślāgh-* ‘to confide, trust’ (Br.+).

śvábhra- m. ‘gap, hole’, Ir. √*sub-*: MP, MoP *suftan, sumb-* ‘to pierce, bore’ (MacKenzie 1971: 78), Pashto *sūrai* < **subra-ka-* ‘hole’ (Morgenstierne 1927: 69f.). The IE etymology is unclear (but cf. below).

13.5. We may now address the problem of the initial consonant in *śárdha-* and the other roots where the comparative evidence points to **(s)ke-*. I assume the following chain of events (taking √*śardh-* as an example): PIE **skerd*^{h}- > **sčard*^{h}- (palatalization) > PIIr. **scárd*^{h}- (assimilation of the initial cluster) > **c*^{h}*árd*^{h}- > **cárd*^{h}- (Grassmann’s Law) > *śardh-*. The first three steps are discussed above. The only remaining point is the outcome of Grassmann’s Law.

Our handbooks (cf. AiGr. I: 124) tell us that when *ch-* loses its aspiration due to Grassmann’s Law it becomes *c-*, but the roots with initial *c-* and a media aspirata are conspicuously absent in Sanskrit. Furthermore, the alleged development *ch-* > *c-* /__*C*^{h} is based on ambiguous evidence. The only argument in favour of this sound change is the perfect reduplication *ca-/ci-* of roots beginning with *ch-* (*cachanda, cicheda*), but this reduplication is secondary by any account. Even within the framework of the traditional theory, where Skt. *ch* < **sḱ*, the perfect **ske-skond-* should have yielded Skt. **śachand-*, since roots with initial *sT-* 53
clusters reduplicate only the stop in Sanskrit, cf. *tastámbha, caskanda*, etc.[52]

Disintegration of the Proto-Indo-Aryan series **ć c*^{h} *j́ j́*^{h} (< PIE **ḱ ski/e ǵ ǵ*^{h}), which eventually yielded Skt. *ś ch j h*, is a relatively recent phenomenon in Sanskrit, posterior to Grassmann’s Law, as follows from reduplicated formations like *ja-hā-* < **j́*^{h}*a-j́*^{h}*ā-*, etc. (otherwise

[52]On the other hand, Iranian roots of this shape only reduplicate the *s*, cf. *(vi-)šastarə* to *stā-*, so that *(auua-)hisiδiiāṯ* < **s(k)i-skid-* to *sid-* is regular.

h would never have become *j* through loss of aspiration). When **ć* became assibilated to *ś* and **ǰ́(h)* merged with **ǰ̌(h)* (< palatalized PIE **g(w)* and *g(w)h*), **ć́h* remained the sole representative of the original palatal series and was dragged into the series **č ǰ̌ ǰ̌h*, where a voiceless aspirata was lacking. At the time of Grassmann's Law, however, **ć́h* still belonged to the palatal series and became **ć* (> *ś*-), when the Law was operative.

13.6. The proposed development directly accounts for the initial *ś*- of *śárdha-* < **skerdʰo-* and for the verbal roots √*śudh-* and √*śubh-* < **skeudʰ-* and **skeubʰ-*, respectively (with generalization of the palatalized variant of the initial as, for instance, in √*carʲ-*). We must then assume that the initial *ś*- of √*śudh-* and √*śubh-* later spread to √*śuc-*, the phonologically regular reflex of which would have been **chuc-*. A comparable solution can be surmised for *śvábhra-* m. 'gap, hole', Ir. √**sub-*, if we connect this root with PIE √*skeubʰ-* 'to push, tear' (Goth. *afskiuban* 'to reject', OHG *scioban* 'to shove', etc., cf. Lubotsky 1988: 92), although the *Schwebeablaut* in the Sanskrit word remains unexplained.[53]

14. Conclusions

1. The analysis of the Indo-Iranian evidence shows that the theory of Zubatý – Meillet is correct. There is no ground for reconstructing PIE **sḱ*: all facts can be explained from the reflexes of **sk*.

2. The distribution of palatalized reflexes of PIE **sk* in Indo-Iranian can be summarized in the following rules:

PIE **sk* > PIIr. **sć* (Skt. *ch*, Av. *s*) / #,*V*__*e̯*, *i*

PIE **sk* > PIIr. **sč* (Skt. *śc*, Av. *sc*) / *C*__*e̯*, *i* (where C = any obstruent)

Since the reflex of palatalized PIE **k(w)* is PIIr. **č*, we must assume the sound change PIIr. **sč* > **sć*, which was blocked by a preceding obstruent. In this way, the presents Skt. *vr̥ścáti* < **u̯r̥g-ske-*, Skt. *ubjáti*, LAv. *ubjiiāite* < **Hubʰ-ske-*, Av. $^{+}$*ϑβązjaiti* < **tu̯engʰ-ske-* can be accounted for. Also the adverbs Skt. *áchā* < PIE **(H1)eskʷeH1* vs. *uccā́* < **ud-skʷeH1*, *paścā́* < **pos(t)-skʷeH1*, *tiraścā́* < **trHos-skʷeH1* receive a natural explanation. 54

3. The Sanskrit sandhi rule *ś*- > *ch*- / -*t̪*, -*k*__ is only attested in the RV and partly in the JB.

4. Sanskrit *ch* reflects earlier **ć́h* < **sć/ść*, which is still reflected in Vedic metrics.

5. The desaspiration of Skt. *ch* (**ć́h*) in accordance with Grassmann's Law yields Skt. **ć* > *ś*.[54]

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[53]Yet another, albeit less certain, example of Skt. *ś*- which is due to Grassmann's Law, may be Skt. *śapháś*- m. 'hoof', Av. *safa*- m., OHG *huof* 'id.', if these words are related to Russ. *kopyto*, SCr. *kòpito* 'hoof'. The Slavic forms point to PIE **(s)k*- (cf. Kortlandt 1978: 238), so that we can reconstruct for Indo-Iranian **skepHo-* > **sčapHa-* > **sćapHa-* > IA **ć́hapʰa-* > Skt. *śapháś*-.

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