SOUND SYNTHESIS

IN

INDO-EUROPEAN, INDO-IRANIAN

AND

SANSKRIT

(HISTORY OF SANSKRIT SANDHI)

Satya Swarup Misra M. A., Ph. D.

Sound Synthesis in IF, IIr and Sanskrit presents a full-fledged history of the development of sandhi (or Sound Synthesis) from the IE stage upto Sanskrit, through IIr.

Although Sandhi in Skt has been worked out by Panini etc in ancient days and by Whitney and Macdonell etc. in recent times, a full-fledg d historical treatment was lacking. This work presents a comprehensive picture af the historical treatment of Skt. sandhi. Firstly the author has presented the development of sandhi in the IE stage and its further development in the IIr stage, and finally he has clearly shoun the innovations to be attributed to Skt. The author has also worked out the historical back ground of the exceptional sandhi forms of Skt, which is no doubt an additional attraction of this work.

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Oṃ

To

The sacred memory of

Professor Jagannath Upadhyay

The dedicated researcher

and inspirer of Oriental research

Preface

The present work Sound Synthesis in Indo-European, Indo-Iranian and Sanskrit is finally published now, and scholars who are wating for it since so many years will be happy to see it.

The word sound-synthesis is used by me as a technical term translating and rather rendering Skt sandhi which has an alternative form saṃhitā. Gk Synthesis is equivalent to Skt saṃhitiḥ < IE sem-thətis. I have used the word sound-synthesis to keep its use free from confusion, as the word synthesis has been used for other purposes.

Sandhi in Skt has been well worked out by Panini etc. in ancient days and by Whitney and Macdonell etc. in recent times. But a full-fledged historical treatment was rather lacking. In this work I have made a faithful attempt to draw a comprehensive picture of the historical treatment of Skt sandhi. I first of all had to work out as to how much sandhi developed in the IE stage and how far the picture changed in the IIr stage and how much innovation is to be attributed to Skt.

IE sandhi was worked out by me long before and was published in the form of two articles, IE Vowel Synthesis and IE Consonant Synthesis in the pages of Linguistic Researches Vol. I and Vol. IV respectively. The rest of the material was unpublished. I have worked out details of the history of the exceptional sandhi forms of Skt, which is an additional important part of this work.

I will be happy if my labour is of use to the scholary world.

I am grateful to M/S Ashutosh Prakashan Sansthan for taking interest in publication of this work.

Varanasi
11.12.86
(Gītā Jayantī)

Satya Swarup Misra

CONTENTS

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ABBREVIATIONS

Abl/abl	Ablative
Acc/acc	Accusative
Aor/aor	Aorist
Att Ion	Attic-Ionic
AV	Atharva Veda
Av	Avesta
CGIGL	Comparative Grammar of the Indo-Germanic Languages
GSGH	Comparative Grammar of Sanskrit, Greeek & Hittite
Cl/cl	Classical
cp	Compare
Cypr	Cyprian
Dat/dat	Dative
e.g.	exempli gratia
Fem/fem	Feminine
gAv	Gathic Avestan
Gen/gen	Genitive
Gk	Greek
Goth	Gothic
Hom	Homeric
Ht	Hittite
IE	Indo-European
i.e.	id est
IIr	Indo-Iranian
Impf/impf	Imperfect
Impv/impv	Imperative
KVG	Kurze Verglei-chende Grammatik der indo- germanischen sprachen
Lat	Latin
Lesb	Lesbian

lit	literally
Lith	Lithuanian
Loc/loc	locative
Masc/masc	Masculinc
MIA	Middle Indo-Aryan
MS	Maitrāyaṇī Saṃhitā
Neut/neut/nt	Neuter
Nom/nom	Nominative
nt (=neut)	Neuter
OHG	Old High German
OIA	Old Indo-Aryan
Olcel	Old Icelnndic
OIrish	Old Irish
OP	Old Persian
Osc	Oscan
p.	page (s)
PB	Pancaviṃśa Brāhmaṇa
perf	perfect
Pl/pl	Plural
RV	Rig Veda
SB	Śatapatha Brāhramaṇa
Sg/sg	Singular
Skt	Sanskrit
SV	Sāma Veda
TA	Taittiriya Āraṇyaka
TS	Taittiriya Samhita
Vd (vd)	Vedic
1st	first person
2nd	second person
3rd	third person
√	root
>	becomes
<	comes from

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CHAPTER I

INDO-EUROPEAN SOUND SYNTHESIS

1. Indo-European Sound Synthesis

Synthesis is used here as synonymous with the Sanskrit term **Sandhi**, which has been used in Sanskrit Grammars in the technical sense of combinatory sound changes pertaining to contact of sounds including contraction, diphthongization, change of a vowel to a consonant & of a consonant to a vowel etc. in vowel synthesis, and assimilation etc. in consonant synthesis. The Sanskrit term *sandhi* (< IE *som-dh-i* > √*dhē* 'put') is best rendered synthesis (cp Gk *sún-thesis*), which may be used as a technical term for sound synthesis.

There are sufficient evidences in the IE historical languages, to show that sandhi or sound synthesis is an inherited feature from the IE proto-speech. The evidences are also in favour of the assumption that external sandhi was less developed in IE than internal sandhi. It is probable that sandhi was extended from internal to external, through the intermediate stages of sandhi of upasargas with verb forms, and sandhi of compounds.

It may be pointed out, in this connection, that the western scholars normally classify sandhi as internal sandhi and external sandhi. But the traditional Indian grammarians describe four categories : (1) Sandhi within a word (= internal sandhi), e.g. Skt *bhav-a-ti* < *bho+*

a-ti; (2) Sandhi of a upasarga with a verb from, e. g. Skt *upāsate* < *upa*+*āsate*; (3) Sandhi in compounds, e.g. Skt *maheśaḥ* < *mahā*+*īśaḥ*; and (4) fourthly Sandhi of a word (= an inflected form) with another word in a sentence, e.g. Skt *ko gacchati* < *kaḥ*+*gacchati*. The first three types are categorized as *nitya* sandhi or compulsory sandhi and the last one is called *vivakṣā* sandhi or optional sandhi. (sandhir ekapade nityā, nityā dhātūpasargayoḥ; nityā samāse, vākye tu, sā vivakṣām apekṣate). The division of sandhi into internal & external is supposed to cover all these four types. But the history and development of sandhi shows that the first category is to be taken as internal sandhi, the second as semi-internal sandhi (i. e. more of internal sandhi type than of external sandhi type), the third, i.e. sandhi in compounds, may be termed as semi-external sandhi (i.e. more of external sandhi type, than of internal sandhi type), and the fourth is to be taken as external sandhi proper.

It is interesting to note that the western scholars categorise the first as internal and the second, third & fourth as external, whereas the traditional Indian grammarians categorise the first three as nitya (lit. eternal) or compulsory and the last one as vivakṣā (lit. according to speaker's desire), or optional. This clearly show that the first type is the most ancient one. Sandhi first of all started with these forms. In other words internal sandhi is the oldest one and the internal sandhi forms were directly inherited by the historical languages with due phonetic changes and they were more compulsory than the rest. From this it passed on to the second and third types, where the second type followed the internal sandhi more rigidly than the third and finally the fourth type of sandhi

or external sandhi also developed in the proto Indo-European speech, but it was not compulsory. The earliest evidences in IE historical languages show that sandhi in compounds was also originally optional; cp vd *yukta-aśvaḥ*, Av *yuχta-aspo*, 'yoked-horse' OCS *dobro-okŭ* 'beautiful-eyed' etc. (vide Brugmann : CGIGL I p. 454) beside Skt *yuktāśvaḥ*, Av *yuχtāspo* etc.

Sentence sandhi was more optional in IE and it was independently operative in the historical languages, for a pretty long time.

In a very early stage of IE even internal sandhi was optional. This is to be assumed because of the two different types of dialectal treatment of IE voiced aspirate $+t$ & s (vide below **14**, **15**, **16**), which have continued for some time before it could give rise to the two different types of forms like *bhit-tos* (**14**) & *bhiddhos* (**15**). But in course of time, towards a later stage of IE, internal sandhi was compulsory, although at that stage, sandhi in compounds was not compulsory. Its optional character continued upto to an older stage of the individual historical languages.

In internal sandhi also combination of a root and a suffix to form a stem and combination of a stem with a case-ending should preferably be treated as two different categories of sandhi, from the point of view of history and development of sandhi. In one stage of proto Indo-European, sandhi of a root and a suffix, to form a stem, 'was more rigid than sandhi of a stem and a case-ending Vedic and Avestan, which represent two very old IE historical languages, sometimes show forms, where case-endings are used without sandhi; cp early RV *parastaāt* (VI 54.90) for late RV (and cl) *parastāt* (vide RV X.

129.5); cp Av *āat̰* (Haoma yast, verse 2) for *āt̰* (=Vd *āt*), adverb but originally abl sg of pronoun *a-*. Separation of *bhis*, *bhyas* etc. with avagraha in RV padapāṭha (e. g. *aśvābhiḥ* as *aśvā-bhiḥ* etc) just like two members of a compound (e.g. *aśva-dāḥ*) is also a pointer to the fact that, the endings were not fully treated as internal part of a word for a considerable period. Thus for some length of time, they might have had optional sandhi.

The fourth type of sandhi or the pure external sandhi, might have first of all started in IE, in combinations of one accented form with an unaccented form like a proclitic or enclitic, where from the accentual treatment, the unaccented form came to be treated as a part of the accented form. In other words, the two words were treated like one compound word from accentual point of view.

To sum up : Sound Synthesis first of all started in proto Indo-European with some forms and gradually spread to others in course of time. The above analysis shows that sound-synthesis was absent in an earliest stage of proto Indo-European, say in the 1st stage[1]. In the next stage (i.e. the 2nd stage) internal sandhi first of all started with a root + affix to form stems. Then (in the 3rd stage) there was sandhi of stems+case-endings and side by side also verb stems+personal endings. In the next (i.e. 4th) stage there was sandhi of upasargas with verb forms. In the next (i.e. 5th stage) sandhi was extended to compound forms. Towards the end of this (last) stage of proto Indo-European, sandhi was extended

1. Vide Fresh Light on Indo-European Classification & Chronology for details of the distribution of the five stages of proto Indo-European (pp. 50-62).

to all words in a sentence. But it was not fully established at this period and thus remained optional even in the historical languages like Sanskrit, Greek etc.

For practical purposes IE sound synthesis may be classified as IE vowel synthesis and IE consonant synthesis, on the basis of the combinatory sound changes affecting the vowels and the consonants respectively.

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CHAPTER II

INDO-EUROPEAN VOWEL SYNTHESIS

2. Indo-European Vowel Synthesis

Combinatory sound changes of IE vowels are presented here, duly classified, with supporting comparative evidences from IE historical languages.

3. Combination of IE Primary Vowels With Primary Vowels

Synthesis of IE primary vowels includes (a) Combination of a primary vowel with a primary vowel of the same quality, and (b) Combination of a primary vowel with a primary vowel of a different quality.

1) Combination of a primary vowel with a primary vowel of the same quality resulted in a long primary vowel of the same quality; viz, $\check{a}+\check{a}>\bar{a}$, $\check{e}+\check{e}>\bar{e}$ and $\check{o}+\check{o}>\bar{o}$.

IE $\check{a}+\check{a}>\bar{a}$

IE $a+a\hat{g}->\bar{a}\hat{g}-$ (perfect stem < $\sqrt{a\hat{g}}$ 'move') cp Skt *āja*, OIcel *ōk*, Gk *ἦge*

IE $a+an->\bar{a}n-$ (perfect stem < $\sqrt{an}$ 'breathe') cp Skt *āna*, Goth *ōn*, *ōnun*

IE $e\hat{k}w\bar{a}+a>e\hat{k}w\bar{e}$ (Inst sg of $\bar{a}$ stem) cp Skt (vd) *aśvā*, Av *haēna*, Gk (Cypr) *arâ*, (Lesb) *állā*, (Dor) *kruphâ*, (Att-Ion) *kruphê*.

IE $e\hat{k}w\bar{a}+ai>e\hat{k}w\bar{a}i$ (Dat sg of $\bar{a}$ stem) cp Skt (pron) *asyai*, Av *ahyāi*, Gk *khôrai*, *theâi*, Lat *equae*,

OLat (dialectal) *Fortunā*, Osc *d e í v a í*, Goth *gibái*, Lith *rañkai*, (pron) *taĩ*, OCS *rękě*.

IE *ě*+*ě*>*ē*

IE *e*+*esm̥*(*m*)>*ēsm̥*(*m*) (1st sg impf< √*es* 'be') cp Skt *āsam*, OP *aham*, Av *ās* (<**āst* 3rd sg), Gk (Hom) *ἦa*.

IE *e*+*eym̥*(*m*)>*ēym̥*(*m*) (1st sg impf< √*ei* 'go'), cp Skt *āyam*, Gk *ἦia* for **ἦa* <**ἦya*.

IE *e*+*ed*- >*ēd*- (perf stem< √*ed* 'eat'), cp Skt *ādima*, Lat *ēdimus*, Goth *-ētum*, Lith *·ėdę́s*, OCS *jadŭ*.

IE *ne*+*esti*>*nēsti*, cp Skt *nāsti*, Lith *nèsti* OCS *nĕsti*.

IE *e*+*ēp*- >*ēp*- (perf stem < √*ēp* 'get'), cp Skt *āpa*, OLat *coēpi* (beside Skt *āpnoti*, Ht *epsi* 'he gets').

IE *ŏ*+*ŏ*>*ō*

IE *o*+*od*- >*ōd* (perf stem < √*od* 'smell'), cp Lith *ūd-ę́s*, Gk *ód-ōde* for **ōde*.

IE *bher-o*+*ō*>*bherō* (pres 1st sg), cp Skt *bharāmi*, Gk *phérō*, Lat *fero*, Goth *baira*, OHG *biru*, Lith *bežù*, gAv *spasyā*

IE *wl̥q*^{w}*o*+*ōm*>*wl̥q*^{w}*ōm* (gen pl of *-o* stem), cp Skt (vd) *carathām*, Gk *lúkōn*, Lat *deum*, OHG *wolfo*, Lith *vilkú*.

2) Combination of a primary vowel with a primary vowel of a different quality resulted in a long primary vowel, assuming the quality of the first primary vowel. Thus : *ă*+*ĕ*/*ŏ*>*ā*, *ĕ*+*ă*/*ŏ*>*ē*, *ŏ*+*ă*/*ĕ*>*ō*.

IE *ă*+*ĕ*/*ŏ*>*ā*

IE *ek̑wā*+*es*>*ek̑wās* (nom pl of *ā* stem), cp Skt *aśvāḥ*, Av *haēnå̄*, Goth *gibōs*, OHG *gebā*, OIcel *giafar*, Lith *rañkos* (*tós*) OIrish *tuatha*, Osc *scriftas*.

IE *ekwā* + *ōm* > (perhaps) *ekwām* (gen pl of *ā* stem). But this from could not survive because of its apparent identity in form with the acc sg; hence the historical languages present different innovations; cp Skt *aśvānām*, Av *haēnanam*, Gk *theáōn*, Lat *equārum*.

IE *ĕ* + *ă/ŏ* > *ē*

IE *e* + *aĝ–e–t* > *ēĝet* (impf 3rd sg < √*aĝ* 'move'), cp Skt *ājat*, Gk *ḗgon*.

IE *e* + *odyet* > *ēdyet* (impf 3 sg < √*od* 'smell'), cp Gk *ôze* for **êze* (analogical formation after *e* : *ē* in impf).

IE *ŏ* + *ă/ŏ* > *ō*

IE *wl̥q*^{w}*o* + *ai* > *wl̥q*^{w}*ōi* (dat sg of *o* stem), cp Av *vəhrkāt*, Gk *lúkōi*, Lat *lupō*, OLat *Numasiōi*, Lith *vil̃kui*.

IE *wl̥q*^{w}*o* + *es* > *wl̥q*^{w}*ōs* (nom pl of *o* stem), cp Skt *vr̥kāḥ*, Av *vəhrkå*, Osc *n ú v l a n ú s*, Goth *wulfōs*.

4. Combination of Primary Vowels with *ə* or the Reduced Primary Vowel

IE does not present any evidence for combination of any primary vowel with *ə*. *ə* is found as a neuter plural ending with stems ending in consonants and secondary vowels. Thc neuter pl of *o* stem is *ā*; e. g. sg *yugom* : pl *yugā*. This *–ā* (as in *yugā*) is not at all vowel synthesis. This is an originally independent stem ending in *–ā* which was generalised later on for neuter pl and fem sg (vide Misra : New Lights on IE Comparative Grammar p. 87). The two different explanations offered by Osthoff and Brugmann are less probable (vide CGIGL : Vol I p. 107 Rem.)

5. Combination of IE Primary Vowels with Secondary Vowels

Combination of IE primary vowels with secondary vowels may be classified under three categories : (a) IE short primary vowels + *ĭ/ŭ*, (b) IE long primary vowels + *ĭ/ŭ*, and (c) IE short/long primary vowels + *r̥̆/r̥̄/m̥̆/m̥̄*.

When the secondary vowel was *ĭ/ŭ* the resultant was a diphthong and accordingly IE shows twelve diphthongs. Thus *a/e/o* + *ĭ* > *ai, ei, oi*; *a/e/o* + *ŭ* > *au, eu, ou*, and *ā/ē/ō* + *ĭ* > *āi, ēi, ōi, ā/ē/ō* + *ŭ* > *āu, ēu, ōu*. But when the second element of a diphthong was followed by a vowel it became consonantal. Thus it IE *ai* + (a vowel, say) *e* > *aye* and so on. Otherwise (i.e. when followed by a consonant or finally) the second element of an IE diphthong was a vowel and not a consonant[2]. Some scholars

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2. The second element of a diphthong is as a rule vocalic before consonants. But it is observed in several examples that before consonantal secondary vowels (viz *y, w, r, l, m, n*) the second element of diphthongs (which are also secondary vowels : *i, u*) often become consonantal. This type of double treatment of a secondary vowel before another (consonantal) secondary vowel was mostly possible when the combibination was : primary vowel + secondary vowel + secondary vowel + primary vowel; Thus *e* + *i* + *i* + *e* could be on the basis of the general rule of diphthongization *eiye* and on the basis of the special rule for combination before secondary vowels *eyye*. Similarly also *eiye* : *eywe, euye* : *ewye* etc. The following forms illustrate the double treatment of IE diphthongs before consonantal secondary vowels. (Contd. in p, 10)

are misguided by the representation of diphthongs in Brugmann's first edition such as *ei* (=*ey*)etc. (Vide CGIGL: I p. 48 footnote). But Brugmann revises subsequently as *ei* etc. (vide KVG p. 82). As a matter of fact *i, u* differ from the rest of the secondary vowels in this treatment only. The other secondary vowels always remain consonantal after primary vowels and donot form diphthongs.

1) *a/e/o* + *ĭ/ŭ* > *ai, ei, oi, au, eu, ou.*

IE *wl̥q^{w}o* + *i* (loc sg) > IE *wl̥q^{w}oi*, cp Skt *vr̥ke*, Av *vəhrkaē-ca*, Gk *oíkoi*, OCS *vlŭcě*.

IE *bhero* + *ī-s* (opt 2nd sg) > IE *bherois*. cp Skt *bhareḥ* Av *barōiš*, Gk *phérois*, Goth *baírais*.

IE *eḱwa* (short from of *eḱwā*) + *i* (nom dual of *ā* stem) > IE *eḱwai*, cp Skt *aśve*, Av *haēnē*. Gk (pl) *khôrai*, Lat *duae*, Lith *rankì*, OCS *rǫcě*.

IE *y-e* + *iĝ-ai* (perfect middle) > IE *yeiĝoi*, cp Skt (AV) *yeje*.

IE *e-w-e* + *uq^{w}-e-t* (reduplicative aorist 3rd sg) > IE *eweuq^{w}et*, cp Skt *avocat*, Av *vaocaṯ* Gk *éeipon* (for * *éeuɾon*).

(contd. from p. 9)

Skt *śayyā* (IE *ḱey-yā*), *jayya* (<IE *q^{w}ey-yo*) beside *jeya-* (<IE *q^{w}eiyo*), *kṣayya* (<IE *q^{w}θey-yo*), *beside kṣeya* (<IE *q^{w}θei-yo*), *Skt gavya* (<IE *g^{w}ow-yo-*) *beside Av gaoya-* (<IE *g^{w}ou-yo-*), *Skt kravya-* (<IE *qrew-yo-*), beside Lith *kraũjas* (<IE *qreu-yo-*) *Skt navyaḥ* (<IE *new-yo-s*) beside Lith *naũjas*, Gk *pleĩē* (<IE *plew-yō*) beside Lith *pláuju* & OCS *plują* 'I flow' (< IE *pleu-yō*); Similarly Skt *grāvṇaḥ* (< IE *g^{w}rēw-n-os*) qeside Skt *maghonaḥ* (<IE *meghou-n-os*)etc.

2) $\bar{a}/\bar{e}/\bar{o}+\check{\imath}/\check{u} > \bar{a}i, \bar{e}i, \bar{o}i, \bar{a}u, \bar{e}u, \bar{o}u$

IE *akwā+i* (loc sg) > IE *ekwai*, cp Gk (dat) *khórai* (shortened to *ai* before consonants, remained *-āi* finally, vide Brugmann : CGIGL III p. 167), Lat *equae*.

IE *ĝnō+ī-men* (opt 1st pl) < IE *gnòimen*, cp Gk *gnoîmen* (for * *gnōimen*; beside Gk *gnóskō gignóskō*, Lat *gnōsco*, *nōsco*, Skt √*jñā* <IE *ĝnō*).

IE *drā+ī-men* > IE *drāimen*; cp Gk *draîmen* (for **drāimen*; beside Gk *édrān* 'I run'

IE *sā+u* > IE *sāu* cp Av *hāu* (fem) 'these', Gk *hautē* (beside IE *sā* 'she' cp Skt *sā*, Gk (Dor) *hā*). (IE *sāu* may also be derived from IE *sā+au*).

3) IE $\check{a}/\check{e}/\check{o}+\underset{\circ}{r}/\underset{\circ}{l}/\underset{\circ}{m}/\underset{\circ}{n}$.[3]

IE *e-bher-o+ṃ* > IE *ebherom*, cp Skt *abharam*, Gk *épheron*.

IE *ekwa+ṃ* > IE *ekwām*, cp Skt *aśvām* Lat *equam*.

IE *s-yē+ṛ* > IE *syēr*, cp Av *hyārə* (beside IE *s-y-ṛr* cp Skt *syuḥ*).

IE *e-dhidhē+ṃ* > IE *edhidhēm*, cp Skt *adadhām*, Gk *étithēn*.

IE *edidō+ṃ* > IE *edidōm*, cp Skt *adadām*, Gk *édidōn*.

IE *e-bher-o+ṇt* > IE *ebheront*, cp Skt *abharan*, Gk *épheron*, Av *barən*.

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3. In these cases the phonemic names of the endings are traditionally *r*, *l*, *m*, *n*, but if *i*, *u* are to be used as phonemic names of endings, *ṛ ḷ ṃ ṇ* are also to be so used (vide New Lights on IE Comparative Grammar p. 17).

6. Combination of IE Reduced Primary Vowel *ə* with Secondary Vowels.

IE *ə*+*ĭ*/*ŭ*>diphthongs *əi*/*əu* and IE *ə*+*r̥*/*l̥*/*m̥*/*n̥* >*ər*, *ər*, *əm*, *ən*. But examples for combination can be cited only for *ə*+*ĭ*. The rest of the combinations are to be conjectured on the basis of the occurrences of IE *əu*, *ər*, *əm* etc. in radical forms. Even in case of disyllabic roots ending in *ə* (=Skt *ĭ*, Gk *a*), *ə* is attested only before personal endings with initial consonants[4] (vide Brugmann CGIGL : IV p. 114). e. g. Skt *vamimi* (<IE *wemə-mi*), Gk *ágamai* (<IE *m̥ĝəmai*). But Skt *abravam*, Av *mraom* (<IE (*e*)*mrew-m̥m*) beside Skt *abravīt*, *bravīti*, *bravīmi* etc.

Examples of *ə*+*ĭ*>*əi*

IE *stha*+*ī-men* (opt 1st pl) > IE *stha͡imen* cp Gk *sta͡imen*.

IE *du-nə*+*ī-to* (opt mid 3rd sg) > IE *dunə͡ito* cp Gk *dúnaito* (cp Skt *vr̥ṇīta*).

7. Combination of IE Secondary Vowels with Primay Vowels

Combination of IE secondary vowels with primary vowels resulted in loss of syllabicity of the preceding secondary vowels. Thus *ĭ*, *ŭ*, *r̥̆*, *l̥̆*, *m̥̆*, *n̥̆*+*ă*. *ĕ*, *ŏ*> *y*, *w*, *r*, *l*, *m*, *n*+*ă*, *ĕ*, *ŏ*. But if the preceding syllable was heavy the secondary vowel became syllabic cum consonantal and consequently the above combination resulted in *iy*, *uw*, *r̥r*, *l̥l*, *m̥m*, *n̥n*+*ă*, *ĕ*. *ŏ*. This treatment (viz. *iy*, *uw* etc.+

4. This futher strengthens the assumption (vide footnote 2 above) that *-m̥* is the ending (and not *-m*,) because *ə* is regularly lost before *-m̥* just like other vowel endings. cp Skt *arodam*, *abravam* etc. and never *arodīm*, *abravīm* although Skt shows *rodīmi*, *bravīmi*, *vamimi* etc.

ă, ĕ, ŏ) is also attested in initial syllables of several IE forms. It is quite likely that such treatments were also effected by preceding forms. A short vowel also followed by two consonants forms a heavy syllable. Several IE forms ended in consonants. They were also treated as heavy syllables when the following form had an initial consonant in the same sentence. Subsequently of course generalizations must have taken place and particular forms were fixed as a result of which initially sometimes *y* etc. and sometimes *iy* etc. are attested.

Examples are cited below, with reconstructions on the basis of cognates; the original positional variation is not strictly followed in the reconstructions. Because generalizations must have started in IE proto-stage.

1) *ĭ, ŭ, ṛ̆, ḷ̆, m̥̆, n̥̆* + *ă, ĕ, ŏ* > *y, w, r, l, m, n* + *ă, ĕ, ŏ.*

IE *owi* + *os* (gen sg) > IE *owyos*, cp Skt (vd) *avyaḥ*, Gk *óios* (Gk shows *i* for *y*, because *y* would be lost).

IE *owei* + *es* (nom pl) > IE *oweyes* cp Skt *avayaḥ* Av *garayō* (=Skt *girayaḥ*), Gk *óies* (Odyssey IX 425).

IE *pe*̂*ku* + *ōm* (gen pl) > IE *pe*̂*kwōm*, cp Skt (vd) *paśvām*. Av *pasvąm*, Gk *goúnōn*, *gónōn* < *gonwōn* < IE *ĝonwōm*.

IE *mātṛ̥* + *so* (gen sg) > IE *mātros*, cp Av *māθrō*, Gk *mētrós*.

IE *re*̂*gn̥* + *so* > IE *rēĝnos* cp Skt *rājñaḥ*.

2) *ĭ, ŭ, ṛ̆, ḷ̆, m̥̆, n̥̆* + *ă, ĕ, ŏ* > *iy, uw, ṛr, ḷl, m̥m, n̥n* + *ă, ĕ, ŏ.*

IE *dhī* + *os* (gen sg) > IE *dhiyos* cp Skt *dhiyaḥ* Gk *kiós*.

IE *bhrū* + *os* > IE *bhruwos*, cp Skt *bhruvaḥ* Gk *ophrúos*, Lat *suis*.

IE $p\underset{\circ}{l}+so>$IE $p\underset{\circ}{l}los$, cp Skt *puraḥ* (Beside Gk *pólis*$<$ IE $p\underset{\circ}{l}l$-*i*-*s* and Skt *purī* $<$IE $p\underset{\circ}{l}l\bar{\imath}$).

IE $g\underset{\circ}{r}+os>$IE $g\underset{\circ}{r}ros$, cp Skt *giraḥ* Av *garə* (beside Lat *garriō* 'I chatter Gk *gērúō* 'I speak' etc.)

IE $\bar{a}tm\underset{\circ}{n}+os>$IE $\bar{a}tm\underset{\circ}{n}nos$, cp Skt *ātmanaḥ* (beside Skt *ātmasu*$<$IE $\bar{a}tm\underset{\circ}{n}$-*su* and Lat *atmos*$<$IE *atmos*.

8. Combination of IE Secondary Vowels with Reduced Primary Vowel *ə*

IE $\check{\imath}$, $\check{u}$, $\check{\underset{\circ}{r}}$, $\check{\underset{\circ}{l}}$, $\check{\underset{\circ}{m}}$, $\check{\underset{\circ}{n}}+ə>\bar{\imath}, \bar{u}, \underset{\circ}{\bar{r}}, \underset{\circ}{\bar{l}}, \underset{\circ}{\bar{m}}, \underset{\circ}{\bar{n}}$ after **Light syllables and** *iyə*, *uwə*, $\underset{\circ}{r}rə$, $\underset{\circ}{l}lə$, $\underset{\circ}{m}mə$, $\underset{\circ}{n}nə$ **after heavy syllables (vide New lights on IE Comparative Grammar p. 18). The assumption of the variation caused by the light and heavy syllables are applied here following the general pattern of positional variation of secondary vowels. But the historical present generalizations in different morphological patterns. Besides a third type (viz. *yə*, *wə* etc.) is apparently needed to explain the forms like Gk *phérousa* $<$*pherontya*$<$IE *bherontyə* beside IE *bherontī*$<$*bherontiə* cp Skt *bharantī* (pres pple fem). But it is quite likely that IE had originatly only two types (viz. *ī* & *iyə* types) and the third one (viz. the *yə* type, as needed by Gk) may be an analogical formation in Gk (or in late-IE) after the strong grade forms in the following manner $\bar{a} : ə :: y\bar{a} : yə$ (instead of the original $y\bar{a} : \bar{\imath}$ as represented in Skt etc.).**

Treatment of *ə* after secondary vowels was effected by several factors in different IE historical languages. To take for example $ə>i$ in IIr and therefore $i+ə$ is almost regularly represented as *ī* in IIr even when the *iyə* type is expected. But IE *uwə*$>$IIr *uvi* and $u+ə>$IE $\bar{u}>$IIr $\bar{u}$. The neuter plural forms of $\underset{\circ}{r}$ stems must have had $\underset{\circ}{r}+ə>\underset{\circ}{\bar{r}}$ in the proto-speech. But because IE $\underset{\circ}{\bar{r}}$ was not retained in any IE historical language[5], the forms in

neuter plural mostly present *r̥rə* type. Same case is also with other stems such as *n̥nə* for *n̄* etc. The examples presented below therefore mostly represent IE reconstructions based on actually attested forms in IE historical languages, disregarding the positional variation and with an attempt to explain the formations in the historical languages.

IE *tri*+*ə*>*trī* cp Skt (Vd) *trī*, MIA (Asokan) *tī*, Av *cī* (*ci*–*ca*)<IE $q^{w}ī$, Lat *trī*– (as in *trī*–*gintā*), OIrish *trī*, *tri*, Lith *try*–*lika*, OCS *tri*.

IE *tri*+*ə*>*triyə* cp Gk *tría*, *ídria*, Lat *tria*, *maria* cp also Goth *þrija*, (where *a* < IE *ə* is retained after *a*<IE *ā* neuter plural of *–o stem*); cp Gk *phérousa* (<**pherontya* > IE *bherontyə* (?); cp Skt *bharantī* Av *barənti*) beside Gk *pótnia* (IE *potniyə*, cp Skt *patnī*<IE *potnī*).

IE *medhu*+*ə*>*medhū*, cp Skt (Vd) *madhū*, *purū* (<IE *pl̥lū*), Av *pouru*, gAv *vohū* (=Skt (Vd) *vasū*).

IE *ĝenu* + *ə* > *ĝenuwə* cp Gk (Hom) *gouna*, (Lesb) *gónna*, Lat *genua*, Goth *kniwa* (*–a*<*ə* retained after *a*<IE *ā* in neut pl).

IE $q^{w}etwr̥+ə>q^{w}etwr̄$ cp Gk (Dor) *tetrṓ*–(*konta*), Av *caθwarə*–(*sat*–) (<*caθwar*–<IIr *catvr̥*), Arm *kaṙasun* (*kar*–< $q^{w}twr̄$; for Arm *ar* < *r̄* cp Arm *arm*–*ukn*= Skt *īrma*, and Av *arəma*– (vide Brugmann I 306 p. 241), Lat *quadrā*–(*gintā*).

IE $q^{w}etwr̥+ə>q^{w}etwr̥rə$, cp Gk (Att) *téttara*, (Boot) *pétara*; But Gk (Dor) *tétora* may be from an earlier **tetor*<**tetr̄*, which has added *–a* after *tría* or after *téttara*, etc. as a dialectal borrowing. Gk *téttares*

5. Not even in Skt where it has become *īr*/*ūr* and Skt *r̄* is a new analogical creation in the *r̥*–stems.

(masc) has extended the stem *tettar-* from neuter *téttara*; similarly Skt *catvāri* (apparently from IE *q^{w}etwōrə*; so Brugmann : CGIGL IV p. 10) has extended the masculine stem *catvār-* (cp *catvāraḥ*) to neuter plural; Gk *písura* < IE *q^{w}tur-ə* shows merely a variation of syllabicity forom *q^{w}etwr̥* with *w* replaced by *u* or *r̥* replaced by *r*, with contraction of *ə* as if to a consonant.

IE *nōmn̥+ə>nōmn̄*, cp Skt (vd) *nāmā*, Av *dąma*.

IE *nōmn̥+ə>nōmn̥nə* cp Av *nāmənī* <IIr *nāmani* cp also Skt *nāmāni* for **nāmani* with *ā* after *yugā(ni)* etc.

IE *g^{w}hn̥+ə-to-s>g^{w}hn̄tos* cp Skt *ghātaḥ*, Gk (Dor) *thnātós* (Att) *thnētós*.

IE *g^{w}hn̥+ə-tos>g^{w}hn̥nətos* cp Gk *thánatos*.

9. Combination of IE Secondary Vowels with Secondary Vowels

1) Combination of a secondary vowel with a secondary vowel of the same quality naturally resulted in a long secondary vowel of the same quality. i.e. *ĭ+ĭ>ī*, *ŭ+ŭ>ū*, *r̥̆+r̥̆>r̄*, *l̥̆+l̥̆>l̄*. *m̥̆+m̥̆>m̄*, *n̥̆+n̥̆>n̄*. But illustrations can be cited for the first two types. For the rest, because of the lack of frequency and because of the non-inheritance of these sounds in exact proto form in the historical languages, illustrations are impossible. Skt however presents sandhi of *r̥+r̥>r̄* in traditional grammars with artificial examples e.g. *pitr̥+r̥ṇa>pitr̄ṇa*. But since historical *r̄* has become *īr/ūr* in Skt, the grammatical illustrations are of no use to IE comparative grammar. Examples therefore are cited below for the combinations *ĭ+ĭ>ī* and *ŭ+ŭ>ū*.

IE *i+iĝ-ai* (perfect middle 1st sg) > *īĝai* cp Skt *ije*, gAv *īžā* (< IE *i+iĝh-so* Impv).

IE *oqsi* + *ĭ* (neuter dual) > IE *oqsī* cp Skt *akṣī*, Av *aši*, OCS *oči*, Lith *akì* etc.

IE *u* + *uqʷ* – *r̥r* > IE *ūqʷr̥r* cp Skt *ūcuḥ*.

IE *u* + *uĝh* – *r̥r* > IE *uĝhr̥r* cp Skt *ūhuḥ*.

2) Combination of two secondary vowels of different qualities normally resulted in loss of syllabicity of the first secondary vowel. Thus :

ĭ + *ŭ*/*r̥̆*/*l̥̆*/*m̥̆*/*n̥̆* > *y* + *ŭ*/*r̥̆* etc.

ŭ + *ĭ*/*r̥̆*/*l̥̆*/*m̥̆*/*n̥̆* > *w* + *ĭ*/*r̥̆* etc.

r̥̆ + *ĭ*/*ŭ*/*l̥̆*/*m̥̆*/*n̥̆* > *r* + *ĭ*/*ŭ* etc.

and so on.

IE *doru* + *ĭ* > *dorwĭ*, cp Skt *darviḥ*, *darvĭ* (beside Skt *dāru*, Gk *dóru*).

IE *gʷr̥* + *u* (√*gʷer*) > *gʷru* (beside *gʷr̥ru*, see next 3) cp Skt *a-gru-*, Av *aγru-* 'unmarried'.

3) When a heavy syllable preceded, the first secondary vowel became syllabic cum consonantal i.e. *iy*, *uw*, *r̥r*, *l̥l*, *m̥m* and *n̥n* instead of *y*, *w*, *r*, *l*, *m*, *n*. Initally however *iy*, *uw* etc. are often attested instead of *y*, *w* etc probably because of generalizations of forms from frequent occurrences after heavy syllables, the heavy syllabicity being caused by a preceding form.

IE *gʷr̥* + *u-s* > *gʷr̥rus* (beside IE *gʷru-* see above 2), cp Skt *guruḥ* 'heavy', Av *gouruš* 'adverse', Gk *barús* 'heavy', Goth *kaúrus* 'heavy'.

IE *bhrū* + *i* > *bhruwi*, cp Skt *bhruvi*, Gk *ophrúi*.

IE *bhrū* + *n̥s* > *bhruwn̥s* cp Skt *bhruvaḥ*, Gk *ophrúas*.

IE *dhi* + *n̥s* > *dhiyn̥s* cp Skt *dhiyaḥ*, Gk *kías*.

IE *gr̥* + *n̥s* > *gr̥rn̥s* cp Skt *giraḥ*.

IE *pl̥* + *n̥s* > *pl̥ln̥s* cp Skt *puraḥ*.

SSM : SS 2

4) Sometimes the preceding secondary vowel became syllabic cum consonantal even when it was followed by a similar secondary vowel. Thus $\check{\imath}+\check{\imath}$ (which normally became $\bar{\imath}$) could also become *iy–ĭ*, $\check{u}+\check{u}>uw–\check{u}$, $\underset{\circ}{\check{r}}+\underset{\circ}{\check{r}}>$ *r̥r–r̥̆* etc., although such forms were evidently quite rare, being avoided from the earliest stage.

IE *dhi+i>dhiyi* cp Skt (loc) *dhiyi*, Gk *kiĭ* (dat) (beside forms like Skt (vd) *sarasī* (RV VIII 103.2) $<$ *sarasī+i*, showing IE $\check{\imath}+\check{\imath}>\bar{\imath}$).

10. Law of Relative Syllabicity and Vowel Synthesis.

Some varitions in sandhi seem to have been effected by the law of relative syllabicity. IE sounds differ from each other on the basis of their relative strength to form a syllable. To take for examples in order of strength : *a/e/o*, *i/u*, *r̥/l̥*, *m̥/n̥*. This sometimes disturbed other rules. Despite the general pattern of loss of syllabicity of the preceding syllable, sometimes the syllabicity is retained, if the sound is more powerful than the following sound to retain syllabicity.

Therefore beside IE *owy–m̥* (cp Skt (vd) *avyam*, IE also shows the more frequent form *owim* (cp Skt *avim* Gk *óin* etc.). Similarly beside *owyn̥s* (Skt *avyaḥ*) IE shows *owi–ns* (Skt *avīn*). Besides Gk *téttara* ($<q^{w}etwr̥+ə$) cp *pisura* ($<q^{w}etur+ə$).

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CHAPTER III

INDO-EUROPEAN CONSONANT SYNTHESIS

11. Indo-European Consonant Synthesis

Consonant Synthesis chiefly includes assimilation of consonants. IE protospeech shows a marked preference of regressive assimilation. In other words the first consonant is assimilated by the second, i.e. if the second is voiced the first becomes voiced and if the second is voiceless the first becomes voiceless and so on. But progressive assimilation is also attested in a few cases. Sometimes also a glide appears as a connecting link between two consonants. This is more certain in case of *s* glide between dentals and rather uncertain in other cases due to poverty of comparative evidence.

12. IE voiced non-aspirate + voiceless stop or *s* > IE voiceless non-aspirate + voiceless stop or *s*.

IE *yug* + *to-s* > IE *yuktaḥ*, Av *yuχtō* cp Gk *zeúktos* (< IE *yeuq-to-s*), Lat *junctus* (< IE *yuŋg-to-s*).

IE *bhag* + *ter* > IE *bhaq-ter* > Skt (*vi*)-*bhaktar*, Av *baχtar*.

IE *tyeg*^{w} + *to-s* > IE *tyeq*^{w}*-to-s* > Skt *tyaktaḥ*, Gk *septós*.

IE *iĝ* + *to-s* > IE *iḱ-to-s* > Skt *iṣṭaḥ*, Av *ištō*.

IE *wid* + *to-s* > IE *wit-to-s* > Skt *vit-taḥ*, cp Av *vista-* (< IE *wit*^{s}*to-*).

IE *yod* + *q*^{w}*id* > IE *yot-q*^{w}*id* > Skt *yaccit*, Av *yatcit*, Gk (Hom) *hótti*.

IE *rēĝ* + *s* > IE *rēk̂s* > Lat *rēx*, cp Skt *rāṭ* (< IE *rēk̂t-s*), cp Gk *aiks* (< IE *aiĝ* + *s*).

IE *ped* + *su* > IE *pet-su* > Skt *patsu*, cp Gk *possi*.

IE *weid* + *sye-ti* > IE *weit-sye-ti* > Skt *vetsyati* cp Gk *eisomai* (IE *weit-so-mai* < *weid-so-mai*).

IE *ed* + *sye-ti* > IE *et-sye-ti* > Skt *atsyati* cp Lith *·ésiu*.

13. IE voiceless non-aspirate or *s* + voiced stop > IE voiced stop or *z* + voiced stop.

IE *pd* (< *ped* after loss of *e* in weak grade) > IE *bd* > Skt *upa-bd-a*, Av *fra-bd-a*, Gk *epí-bd-ai*.

IE *wōq*^{w} + *bhis* > IE *wōg*^{w}*-bhis* > Skt *vāgbhiḥ*, cp Av *vāγžibiš* (for **vāgbiš*) cp Lat *vōc-i-bus*.

IE *op* + *bhyos* > IE *ob-bhyos* > Av *aiwyō* < **abbyō*) cp Skt *adbhyaḥ* (*ab*^{d}*bhyaḥ*).

IE *bhr̥ĝhn̥t* + *bhyos* > IE *bhr̥ĝhn̥d-bhyos* > Skt *br̥had-bhyaḥ*, Av *bərəzaδbyō*.

IE *sd* (< *sed* after loss of *e* in weak grade) > *zd* (cp IE *ni-zd-o-s*) > Skt *nīḍaḥ*, Lat *nīdus* Arm *nist*, OHG *nest*.

14. IE voiced aspirate + *t* or *s* > normally IE voiceless non-aspirate + *t*/*s* (just like voiced non-aspirate + *t* or *s*). But dialectally there was a different treatment of these combinations, given below in 15 & 16. Examples of the normal treatment are cited here.

IE *seĝh* + *to-s* > IE *sek̂-to-s* > Gk *-ektós* (beside Skt *sāḍhaḥ* 'overcome' 15).

IE *weĝh* + *ter* > IE *wek̂-ter* > Lat *vec-tor*, Av *vaš-tar-* (cp Skt *voḍhar* 15).

IE *bhidh* + *to-s* > IE *bhit-to-s*/*bhit*^{s}*tos* > Lat *fissus*, cp Gk *pistós* (cp Skt *biddhaḥ* 15).

IE *srobh+to-s*> IE *srop-to-s* > Gk *hrop-tó-s* (beside *hrópheo*, Lith *srebiù*, Lat *sorbeō*).

IE *bhs*> (*√bhes*, with *e* lost in weak grade)>cp Skt *psāti*, Gk *psṓō*.

IE *bheudh+sye-tai*>IE *bheut-sye-tai*>Skt *bhotsyate*.

IE *dh* (< *√dhē*)+*sk̂e-ti* > IE *tsketi* > Ht *tsketsi* beside Skt *dadhāmi* & Gk *títhēmi*).

IE *weĝh+se-t*> IE *weĥ-se-t*>Skt *vakṣat* (aor < *√vah* <IE *√weĝh* (beside Av *važat* 16).

IE *dhi-^{dh}bh-se-ti* (desiderative < *√dhebh*) > IE *dhipseti* >Skt *dipsati*|*dhipsati*, 'desires to cheat, injure' (beside Av *dīwžaidyāi* 16).

15. Indo-Iranian languages present a special development out of IE voiced aspirate +*t*, although they also show a few forms of the normal development as given in 14 above. This special IIr treatment may as well be an optional treatment in proto-IE, although examples are citable from IIr only. Accordingly IE voiced aspirate +*t*>(optionally or dialectally) IE voiced non-aspirate+*dh*.

IE *bhidh+to-s* > IE *bhiddhos*>Skt *biddhaḥ* (beside Gk *pistós* 14).

IE *sēĝh+to-s* > IE *sēĝdhos* > Skt *sāḍhāḥ* (beside Gk *-ektós* 14).

IE *weĝh+ter-* > IE *weĝdher-* > Skt *voḍhar-* (< IIr *vaẓdhar-*), cp Av *važdri-š* 'promoter' (<IIr *vaẓdhri-š* < IE *weĝdhris* < *weĝh+tr-is* (beside Lat *vector* 14).

16. Similarly IE voiced aspirate +*s* had a special treatment in Old Iranian languages. Besides Old Iranian also inherits the normal treatment as given in 14 above.

IE voiced aspirate $+s$ > IE voiced aspirate $+z$. The reconstruction by Brugmann etc. is voiced non-aspirate $+zh$, is just a patternization after the type given in 15. The type in 15 i.e. voiced non-aspirate $+dh$, is actually attested in Skt, but voiced non-aspirate $+zh$ cannot to established on the basis of Old Iranian evidence. Hence this reconstruction which need one step further change is not preferable to voiced aspirate $+z$.

IE *dhi^{dh}bh+se-* > IE *dhi^{dh}bh-ze-* > Av *diwžaidyāi* 'to wish to deceive', cp Skt *dhipsati* (14).

IE *weĝh+se-t* > IE *weĝhzet* > Av *važat* cp Skt *vakṣat* (< IE *weĥset*).

IE *eugh+so* < IE *eughzo* > gAv *aoγžā* cp Gk *eúksomai* (< IE *euq-so-mai* < *eugh+so-*) beside Gk *eúkhomai* (IE *eughomai*).

17. A sibilant often developed as a glide between two dentals in IE. But this was an optional treatment in IE, as a result of which the historical languages present forms with or without the sibilant glide.

IE *sed+to-s* > IE *set-tos*/*set^{s}tos* > Skt *sattaḥ*, Av *hasta-*, Lat *ob-sessus*.

IE *wid+dhi* > IE *wid-dhi*/*wid^{z}dhi* > Skt *viddhi*, Gk *ísthi*

IE *ded+dhi* > IE *ded-dhi*/*ded^{z}dhi* > Skt *dehi* (< IIr *dad^{z}dhi*), Av *dazdi*.

18. IE n > $\hat{n}$ when followed by the IE palatal stops $\hat{k}$, $\hat{k}h$, $\hat{g}$, $\hat{g}h$ and it became η when followed by velars q, qh, g, gh and labiovelars q^w, q^wh, g^w, g^wh.

IE *enĥ* (weak grade of *eneĥ*), > IE *eηĥ*, cp Skt *ānaṃśa* 'I attained' (< IE *ēneηĥa*) cp Gk *énenkon* 'I brought' (< IE *ēneηĥom*).

IE *bhe-n-g* (weak grade of *bhe-ne-g*) < IE *bheηg*, cp Skt *bhaṅga-* (< IE *bheηgo*) beside Skt *bhanakti* (< IE *bheneqti*), cp OIrish *com-boing*.

19. IE *s*+*s*>IE *s* normally, although *ss* was also sporadically retained. This treatment is responsible for the so called mobile *s* (vide 20).

IE *es*+*si*>IE *esi/essi*, cp Gk *eî*, (Hom.) *essí*, Skt *ási*, Lat *es*, *ess*.

IE *menes*+*su*>IE *menesu/menessu*, cp Skt *manasu*, *manaḥsu*, *manassu*, Gk *ménessi*, *ménesi* Av *manahu*.

IE *dus*+*stutis*>IE *dus(s)tutis*>Skt *duṣṭutiḥ*.

IE *dus*+*sthānos*>IE *dus(s)thānoś*>Gk *dústēnos*.

20. IE shows a number of cognates, where an initial *s* is sometimes dropped. This *s* is conveniently termed as mobile *s* or *s* movable. It may be assumed that originally the word had an initial *s*. The forms showing loss of the initial *s*, might have originally followed words ending in *–s*. A large number of IE words actually ended in *–s*. In the noun declension all nominative singular forms (except *–n/–r* stems, fem *–ā/ī* stems & neuter stems), all abl-gen sg forms (except *–o* stems; earlier *–o* stems also ended in *-s* in gen[6]), all nom & acc plural forms (except neuter), perhaps also all inst, dat, abl plural forms, and gen-loc dual forms ended in *–s*. Besides several forms for pronouns, numerals & verbs ended in *–s*. Therefore when a following word had an initial *–s*, it could easily drop it as per rule above (19) and generalization of such forms without initial *s*, resulted in the so called mobile *s*.

6. Originally IE *–o* stems also has –s ending in gen. sg., as is evident from the vedic forms like *rathas-patiḥ*, *vanas-patiḥ* etc.; Hittite regularly uses *–s* ending with these stems; cp Hittite gen. sg. *arunas*, *antuḫasas* etc., In late proto IE, however, *–s* was replaced by *so/–syo* (vide Misra : New lights on IE Comparative Grammar, pp. 90-93).

21. Back formation out of assimilated consonants resulted in creation of parallel cognate forms out of which one shows an aspirate and another shows a non-aspirate or one shows a voiced whereas the other shows a voiceless stop. There are even cases where one shows a voiceless stop, another a voiced stop and a third a voiced aspirate. In such variations all the variants cannot be original. Only one must be original and the rest owe their origin to back-formation of the radical consonant from a sandhi-form after the original consonant before assimilation was forgotten. Thus out of IE *meḱ* (cp Ht *mekis* 'great'), *meĝ* (cp Gk *mègas* 'great') & *meĝh* (cp Skt *mahān* 'great'), only one form was original and the other two were new formations; the new formations may be back formations from like **meḱ-to-*, which could theoritically result form *meḱ* or *meĝ* or *meĝh+to*. Almost a concerete example is found in IE *dhuqtēr* (cp Gothic *daúhtar*) where the consonant is assimilated, beside the other two probable forms *dhugətēr* (cp Gk *thugatēr*) and *dhughətēr* (cp Skt *duhitā*), out of which one form is original and the other is a back-formation. In this case, of course the from anticipated on Greek evidence may be a back formation, since Avestan evidence also favours *dhugh*. Av *duγδa*, gAv *dugədā* are from IE *dhugdhēr* < *dhugh+tēr*. IE *dhuqtēr* may be from *q*, *g* or *gh* but IE *dhugdēr* must be from IE *gh*.

In several cases however it is difficult to ascertain the original consonant and the back formation cases. In such cases Sanskrit evidence may be taken to be more authentic, at least tentatively, because Skt shows a marked tendency to maintain the contrast of the voiceless non-aspirate, voiceless aspirate, voiced non-aspirate and voiced aspirate not only before vowels but also to some extent before the

suffixes *-ta/tar* etc. Thus in a combination of voiceless aspirate *—ta/tar*. Skt freely uses the connecting vowel *-i* and in combination of voiced aspirate *+ta/tar* Skt generalizes the type voiced non-aspirate *+dha/dhar* which clearly avoids the chances of back-formation and root-confusion. Even Avestan presents both the types of assimilation of voiced aspirate *+ta/tar*, e.g. *bh+t* is sometimes represented in Av as *bdh* & sometimes as *pt*.

CHAPTER IV
INDO-IRANIAN SOUND SYNTHESIS

22. Innovations in the Indo-Iranian Stage

Indo-Iranian retained the Indo-European sound-synthesis in general. But certain innovations in sound-synthesis are also found in Indo-Iranian which are mostly due to phonetic changes of individual sounds and extension of sound-synthesis of certain positions to other positions.

23. Indo-Iranian Innovations in Vowel Synthesis

Innovations in vowel synthesis in IIr have resulted mostly due to the phonetic changes of individual sounds; i. e. IE *ă, ĕ, ŏ* > IIr *ă*. IE *r̥, l̥* > IIr *r̥* and IE *m̥, n̥* > IIr *ă*. Such innovations are discussed below.

24. IE *ă, ĕ, ŏ* > IIr *ă*. This simplified the IE complicated type of the sound, synthesis of primary vowels given above in **3**. Thus in IIr *ă*+*ă* > *ā*. In IE however there is question of sound synthesis of primary vowels of same qualities (3–1) and of primary vowels of different qualities (3–2). But IIr is free from this variant treatment due to merger of *ă, ĕ, ŏ*.

Some examples are cited below to illustrate the simpler system of sound-synthesis of primary vowels in IIr. More examples are cited above in **3–1** & **3–2**. e.g.

IIr *a*+*až*– > *āž*– (< IE *a*+*aĝ* > *āĝ* **3–1**) (perfect stem) cp Skt *āja* (cp Av *az*– 'move'), cp OIcel *ōk*, Gk *ἄγε*.

IIr *vr̥ka*+*as* > *vr̥kās* (< IE *wl̥q*^{w}*o*+*es* > *wl̥q*^{w}*ōs*) cp Skt *vr̥kāḥ*, Av *vəhrkå*, cp Goth *wulfōs*.

25. Theoretically also it may be assumed that because IE $\overset{\circ}{\underset{\circ}{l}} > \overset{\circ}{l}$ in IIr, the contraction of IE $\overset{\circ}{\underset{\circ}{l}} + \overset{\circ}{\underset{\circ}{l}} > \bar{l}$ was replaced in IIr by $\overset{\circ}{l} + \overset{\circ}{l} > \bar{l}$, which also represents IE $\overset{\circ}{l} + \overset{\circ}{\underset{\circ}{l}} > \bar{l}$. But sure examples cannot be cited even for IE $\overset{\circ}{\underset{\circ}{l}} + \overset{\circ}{\underset{\circ}{r}} > \bar{r}$ and $\overset{\circ}{\underset{\circ}{l}} + \overset{\circ}{\underset{\circ}{l}} > \bar{l}$ as shown above (vide 9).

26. IE $\overset{\circ}{\underset{\circ}{m}}$, $\overset{\circ}{\underset{\circ}{n}} > $ IIr $\bar{a}$. Consequently in sound-synthesis IE $\overset{\circ}{\underset{\circ}{m}}$, $\overset{\circ}{\underset{\circ}{n}}$ fell together with the Sandhi of $\check{a} + \check{a} > \bar{a}$. Thus IIr $\check{a}$ (< IE $\check{a}$, $\check{e}$, $\check{o}$, $\overset{\circ}{\underset{\circ}{m}}$, $\overset{\circ}{\underset{\circ}{n}}$) + IIr $\check{a}$ (< IE $\check{a}$, $\check{e}$, $\check{o}$, $\overset{\circ}{\underset{\circ}{m}}$, $\overset{\circ}{\underset{\circ}{n}}$) > IIr $\bar{a}$. This type of Sandhi was responsible for certain peculiar formations which are not justifiable from IE point of view. To take one example Skt nom-acc pl *jāḥ* < stem *jā* (< IIr *ǰā* < IE $\hat{g}\overset{\circ}{\underset{\circ}{n}}$) + nom pl ending *-as* (< IIr *-as* < IE *-es*) or accusative pl ending *-as* (< IIr *-as* < IE $-\overset{\circ}{\underset{\circ}{n}}s$). But these forms are apparently anomalous since in such forms the IE type was nom pl $\hat{g}\overset{\circ}{\underset{\circ}{n}}n-es$ & acc pl $\hat{g}\overset{\circ}{\underset{\circ}{n}}n-\overset{\circ}{\underset{\circ}{n}}s$; cp Skt *dhiyaḥ* < IIr *dhiyas* < IE *dhiy -es* & *dhiy-*$\overset{\circ}{\underset{\circ}{n}}s$ in nom & acc respectively. Thus the IIr forms here are clearly innovations.

27. IIr Innovations in Consonant Synthesis

In consonant synthesis IIr shows a few innovations. Some of them are due to changes in individual sounds; e.g. IE $s + q/q^w$ followed by palatal vowels ($\check{e}/\check{i}$) > $\check{s} + c$ in IIr, because $q, q^w > c$. Some of the innovations are extension of voicing of voiceless plosives from one situation to another situation. In IE the voicing of voiceless plosives occurred before voiced plosives only. But in IIr the voicing was effective even before vowels and consonantal secondary vowels[7]. But this extension was not effective in internal sandhi.

These innovations in IIr are presented below with suitable illustrations.

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7. *y, w, r, l, m, n* are consonantal secondary vowels (vide CGSGH p. 15).

28. IE voiceless stops & *s* > voiced in IIr before vowels & consonantal secondary vowels (vide **27**), along with the original voicing before plosives as in IE (vide **29** below); e.g.

IE *edōt+epi* > IE *edōt-epi*, but IIr *adāt+epi* > IIr *adād-api*, cp Skt *odād-api*.

IE *dus+ito-* > IE *dus-ito-*, but IIr *duš+ita-* > IIr *duž-ita-*, cp Skt *dur-ita-*, Av *duž-ita-*.

IE *dus+uq^{w}to-* > IE *dus-uq^{w}to-*, but IIr *duš+ukta-* IIr *duž-ukta-*, cp Skt *dur-ukta-*, Av *duž-ukta-*.

IE *dus+weq^{w}es-* > IE *dus-weq^{w}es-*, but IIr *duš+vacas-* > IIr *duž-vacas-*, cp Skt *dur-vacas-*, Av *duž-vacah-*.

IE *dus+menes-* > IE *dus-menes*, but IIr *duš+manas-* > IIr *duž-manas-* cp Skt *dur-manas*, gAv *duž-manah-*.

29. In IE the voiceless stops & *s* > voiced before voiced plosives only, and this is also inherited in IIr (vide above **13** for illustrations), beside the innovations shown in **28**.

30. IE *s+q/q^{w}* followed by a palatal vowel > *š+c* in IIr (i.e. *s* > *š* before *c*) (Vide **27** above); e.g.

IE *q^{w}os+q^{w}id* > IIr *kaš-cid* > Skt *kaś-cit*, Av *kas-cit*, OP *kaš-ciy*.

IE *yos-q^{w}e* > IIr *yaš-ca* > Skt *yaś-ca*, Av *yas-ca*, cp Gk *hós-te*.

IE *monos-qve* > IIr *manaš-ca* > Skt *manaś-ca*, Av *manas-ca*, cp Gk *ménos-te*.

30a. Similarly IE *s+q^{h}/q^{w}h* followed by a palatal vowel might have become *š+ch* in IIr, but no sure example can be cited.

31. IIr *s* > *š* after *ĭ/ŭ/ṝ/š/r*;
and IIr *z* > *ž* after *ĭ/ŭ/ṝ/ž/g*; e.g.

IIr *ašva-i+su* > IIr *ašva-išu* (< IE *ek̂wo-i-su*) cp Skt *aśveṣu*, Av *aspaēšu*, cp also OP *mādaišuvā*, cp Gk *hippoisi*.

IIr *vak+syā(mi)* > IIr *vakšyā(mi)* (< IE *weq^{w}-syō*), cp Skt *vakṣyāmi* Av *vaxšyā*.

IIr *ni+zd-a-* > IIr *ni-žd-a-* (< IE *nizd-o-*) cp Skt *niḍa-*.

32. IIr *š* (<IE *k̂*) > *š* before *t/th* and

IIr *ž* (<IE *ĝ*) > *ž* before *d/dh*; e.g.

IIr *spaš+ta* > IIr *spaš-ta* (< IE *spek̂-to-*), cp Skt *spaṣ-ta-*, Av *spaš-ta-*, Lat *spectus*.

IIr *už-dha* (< *užh+ta*) > IIr *uždha* (< IE *ug̑dho-* <*ug̑h+to-*), cp Skt *ūḍha*.

IIr *mṛ̥ž+dhi* > IIr *mṛ̥ž-dhi* (<IE *mṛ̥ĝ-dhi*), cp Skt *mṛ̥ḍḍhi* (Impv < √*mṛj+dhi*), cp gAv *mərəždātā* (Impv < √*mərəždā+ta* <IIr *mṛ̥ž-dhā-ta* <IE *mṛ̥ĝ-dhē-to*).

33. IE *m*+dental stops/*s* > IIr *n*+dental stops/*s*; e.g.

IE *g^{w}em-tu/g^{w}om-tu* > IIr *jan-tu/gan-tu* > Skt *jan-tu* (aor impv 3 sg), gAv *jantū*.

IE *rem-tum* (Inf) > IIr *ran-tum*, Skt *ran-tum*.

IE *yem-dhi* (aor impv 2 pl) > IIr *yan-dhi* > Skt *yan-dhi*.

IE *dem-s* > IIr *dan-s* > Skt *dan*, gAu *dəng* (>*dạns*), Gk *despótēs* <*dens-potēs*.

34. EI *m+v* > IIr *n+v* (?)

IE *m+v* Skt *n+v*. IIr also might have had *n+v*. But Iranian evidence is uncertan. Brugmann prefers IIr *n+v*, where as Bartholomae perhaps prefers *m+v* as he

reconstructs Av *jaγmvah* as the strong form for perfect participle of √*gam* cp Skt *jaganvas* (Vide Bartholomae p. 602 & Brugmann Vol I p. 168).

35. IE *m*+*r* > IIr *ṃ*-*r* (=nasalisation of the preceding vowel+*r*) in external sandhi, cp Skt *ṃr* (**61** below) & Av *ˌr*; e.g.

IIr *ram*+*ram* > IIr *ram*-*ram*- > Skt *raṃ*-*ram*-[8] (as in *raṃ*-*ramīti*, Av *rą*-*rəm* (as in *rąramą*).

35a. Avestan shows internal sandhi form *ˌnr* < IE *mr*; cp Av *dvąn*^{a}*ra*- < IIr *dhvāmra* (vide Misra : Avestan, Hist & Comp. Gram. p. 17), but Skt retains *mr* in such forms e.g. Skt *nam*-*ra*-. Therefore it is likely that IIr retained IE *mr* in internal sandhi.

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8. The reduplicated syllable was treated like a prefix, as for as sound-synthesis is concerned.

CHAPTER V

OLD INDO-ARYAN VOWEL SYNTHESIS

36. Old Indo-Aryan Sound Synthesis

Old Indo-Aryan inherited the IE sound synthesis through Indo-Iranian. But OIA also has its own share in innovations, because of several linguistic changes of individual sounds and extension of one type of sandhi to other forms etc.

37. Old Indo-Aryan Vowel Synthesis

In vowel synthesis OIA has inherited the IIr type, with simplification of the sandhi of primary vowels due to merger of *ă, ĕ, ŏ* > *ă*.

OIA also presents some innovations in vowel synthesis. They are mainly due to shortening of vowels in some cases (e.g. *ā*+*ĭ* > *e*, *ā*+*ŭ* > *o*, *ā*+*r̥* > *ar*), elision of a vowel in some cases (e.g. *e*+*a* > *e'*, *o*+*a* > *o'* etc) and due to analogical extensions of certain sandhis to others (i.e. *l̥*+*l̥* > *l̥̄* is an artificial creation of grammarians after *ă*+*ă* > *ā*, *ĭ*+*ĭ* > *ī* etc since original *l̥̄* has become *īr*, *ār* in OIA).

The cases may be taken up now one by one.

38. OIA shows *ā*+*ĭ* > *e*, *ā*+*ŭ* > *o* & *ā*+*r̥* > *ar* which are cases of shortening of preceding *ā* before sandhi. This type of change is not found with internal sandhi. They are found with sandhi of upasarga and verb and sandhi in compounds and in external sandhi. e.g. *mahā*+*īśaḥ* > *maheśaḥ*, *tadā*+*iha* > *tadeha*, *tadā*+*uvāca* > *tadovāca*, *mahā*+*r̥ṣiḥ* > *maharṣiḥ*.

This shortening of *ā* is an innovation in OIA and this may be partly due to prakritism (cp OIA *ai* > MIA *e*) and partly due to an intention of maintaining a contrast of the sandhi of *ă*+*ĭ*/*ŭ*/*r̥* with the sandhi of *ă*+*e*/*ai*/*o*/*au*/*ar*. *The later combination also results in ai, au and* *ār* and the former also historically should have become *ai*, *au* and *ār*, and the contrast of *ă*+*ĭ* etc with *ă*+*e*/*ai* etc would have been lost. This might have motivated the change of *ā*+*ĭ* to *e* etc (after the sandhi of *a*+*i* to *e* etc) instead of the historical *ai*. It should be remembered here that *a*+*ĭ* > *e*, *a*+*ŭ* > *o*, *a*+*r̥* > *ar* is quite historical and *ā*+*ĭ* > *e* etc. show innovations.

On the contrary the reverse is also sometimes found i.e, *a*+*ĭ*/*ŭ*/*r̥* is sometimes found as *ai*, *au*, *ār* instead of the historical *e*, *o* & *ar* respectively. e.g. *paiṣayuḥ* (< *pra*+*iṣayuḥ*) (in RV I. 120.5), *upārchati* (*upa*+*r̥cchati*). There are also historically justifiable forms *aindra* (< *a*+*indra*) (SV I. 2.1.45), *ārti* (< *ā*+*r̥ti*) (VS). This clearly proves that there was a conscious effort side by side to retain the historical development of the *ā*+*ĭ*/*ŭ*/*r̥* in the form *ai* (=IIr *āi*), *au* (=IIr *āu*) and *ār* instead of *e*, *o*, *ar*. This was more enthusiastially extended to forms where there was an original *e*(< *a*+*i* etc), *o*(< *a*+*u*) or *ar* (< *a*+*r̥*). In course of time when the *e* type of form was established for both *a*+*i* and *ā*+*i* a few forms which were established in the language with *ai* etc also remained as sporadic cases.

39. In external sandhi, OIA shows loss of *a* after *e*, *o*. In internal sandhi of course *e*/*o*+*a* > *aya*/*ava*, which is quite historical being from IIr *ai*/*au*+*a* > *aya*/*ava* etc.

The loss of *a* is comparatively late. In RV often this *a* is to be read as needed by metre. This loss of *a* after *e*, *o* in external sandhi is compulsory in Cl Skt. This

change may be a case of prakritism, since in MIA *aya* and *ava* became *e* and *o*. The cases where RV restores the unwritten *a* in pronunciation, the preceding *e* & *o* are to be read as short vowels. This presupposes that at one time instead of *ĕ–a* and *ŏ–a*, the forms were perhaps read as *ay–a* and *av–a* respectively. This is clearly shown in *stotava ambhyàm* (RV VIII. 72.5) for *stotava(y)ambhyàm*. Otherwise the readings show *ĕ–a* as in *sūnavĕ agne* (RV I 1.9) or *ŏ–a* as in *viśve devāsŏ apturaḥ* (I. 3.8).

40. Sanskrit has once again developed the sandhi of $\underset{\circ}{r}+\underset{\circ}{r} > \underset{\circ}{\bar{r}}$. This is given in grammars with illustrations such as $pitr_{\circ}+r_{\circ}ṇa > pit\underset{\circ}{\bar{r}}ṇa$ etc. But since IIr $\underset{\circ}{\bar{r}} > \bar{\imath}r$, $\bar{u}r$ in Skt such examples are merely artificial illustrations modelled after $\check{a}+\check{a} > \bar{a}$, $\check{\imath}+\check{\imath} > \bar{\imath}$, $\check{u}+\check{u} > \bar{u}$.

41. Macdonell etc. cite one peculiar innovation in Skt, i.e. contraction of vowels after the loss of a *m*. e. g. *rāṣtram+iha > rāṣtreha*. But such change is almost impossible in Skt and it is never attested in the later phase of the language. These cases have been explained by me elsewhere (New Lights on IE Comparative Grammar p. 87). There I have shown that the sandhi form *rāṣtreha* is to be analysed as *rāṣtra+iha*, where the form *rāṣtra* indicates a neuter sg form with nil ending instead of the later and more usual *–m* ending. Another similar form is *durgrahaitat < durgraha+etat* for *durgraham+etat*.

CHAPTER VI

OLD INDO-ARYAN CONSONANT SYNTHESIS

42. Old Indo Aryan innovations in Consonant Synthesis

Innovations in consonant synthesis in OIA are mainly due to some fresh assimilations and some analogical remodellings. The earlier assimilations in IE and IIr were rather partial assimilations, simply changing a voiceless to voiced or a voiced to voiceless, without disturbing the place of articulation of any one of the two sounds. But in OIA the assimilation was rather complete assimilation in several cases; e.g. *d*+*l*>*ll*, *d*+*j*>*jj* etc. But this complete assimilation is mostly found in external sandhi in OIA. In a few cases internal sandhi also shows complete assimilation; e.g. *kṣullaka* (AV) <*kṣud*+*la*-*ka*, *anna*<*ad*+*na* etc. Anological remodelling is found in the change of *r* to *s*, *ś*, *ṣ*, *ḥ*, modelled after the change of *ṣ* to *r* before voiced sounds.

Individual cases of assimilation may be taken up now.

43. A nasal assimilated a preceding plosive into its class nasal. Traditional grammars alternatively prescribe a corresponding voiced stop, side by side with the class nasal; e.g. *vāk*+*moya* > *vāṅmaya*; alternative prescribed form is *vāgmaya*. The only exceptional form showing *g* instead of *ṅ* is *vāgmī*, which may also be analysed as *vāk*-*gm*-*ī*, (*gm*< √*gam*).

44. *t*/*d*+*l*>*ll* instead of *dl* (in IE *d*+*l*>*dl*); e.g. *tallabdham*<*tad*+*labdham*>IE *tod*-*lebdhom*. In internal sandhi also OIA shows *ll* instead of *tl*, *dl*; e.g. *kṣullaka*

<kṣud-la-ka, beside *kṣudra-*. Similarly *pallava<pat-la-va*, beside *pat-ra*.

45. *t/d + c(h) > cc(h)*; *t/d + j(h) > jj(h)*, *t/d + ś > cch*; e.g. *ucca < ud + ca <* IE *ud-q^{w}e*, cp Av *usca*; *tajjalam < tad + jalam <* IE *tod < gelom*; *tacchrutam < tad + śrutam <* IE *tod + k̂lutom*.

The complete assimilation here is purely of OIA innovation. In IE the sandhi forms only devoice the preceding voiced plosive before a voiceless plosive; e.g. *ut-q^{w}e > ud + q^{w}e*, *tot-k̂lutom < tod + k̂lutom* etc.

46. *t/d + ṭ(h) > ṭṭ(h)*; *t/d + ḍ(h) > ḍḍ(h)*; e. g. *adāṭ-ṭīkām < adāt + ṭīkām*; *uḍḍīna < ud + ḍīna*.

This is quite a new development in Skt, since cerebrals are new sounds in OIA. The assimilation, of course, is modelled after the similar assimilation of dentals in IE, e.g. *t/d + t(h) > tt(h)*; *t/d + d(h) > dd(h)*.

47. *t/d + h > ddh*; *k/g + h > ggh*; *p/b + h > bbh*; e.g. *tad + hi > tad-dhi <* IIr *tad + žhi <* IE *tod + ĝhi*; *prāg-ghavanam <prāk + havanam* > IIr *prākš + žhavanam <* IE *prōq^{w}s + ĝhewenm̥m*.

This sandhi is also a new development in Skt, since *h* is a new sound in OIA.

48. Final nasals *n*, *ṅ*, *ṇ* are reduplicated in OIA, when the preceding sound was a short vowel and the following sound was a vowel; e.g. *bhavan + api > bhavann-api*, *pratyaṅ + āsīe > pratyaṅṅ-āste*. They were not reduplicated when the preceding vowel was a long vowel; e. g. *bhavān-api*, *mahān-asau*. *m* was not reduplicated; e.g. *kam-api*, *ayam-atra*.

This reduplication of *n*, *ṅ*, *ṇ* has the following linguistic history. In most of the forms, final *n ṅ ṇ* were originally followed by other consonants, which were, as a rule, lost

in final positions. It is likely that these consonants, which originally followed the nasals, had a very weak articulation, before being lost; and they were assimilated to the preceding nasal before vowels. This assimilated nasal was maintained only after short vowels, to retain the original heavy syllable and not after the long vowels, as the preceding long vowel could itself form the heavy syllable; e.g *gacchan + aśvaḥ > gacchann aśvaḥ*. The original IIr form was *gaššants-ašvas* < IE *g^{w}ṃsḱonts-eḱwos*. In Skt **gacchants > gaccan*; but in an intermediate stage *gacchan* might have been **gacchan^{n}*, with an weakly articulated reduplicated nasal, which originally resulted from assimilation of the very weak final *t* after *n*.

The form *vṛṣaṇ-aśvaḥ* is no real exception, as it represents an original single *n*, coming from IIr *vṛšan-ašvas* <IE *wṛsen-eḱwos* (i.e. *-n* stem not *-nt* stem).

49. Final *-n* preceded by a long vowel and followed by vowels has no change in cl Skt; e.g. *bhavān-api, tān-eva, munīn-iva* etc.; but in vedic Skt *ān > ā, īn > īr, ūn > ūr, ṝn > ṝr* before vowels; e.g. *sargān + iva > sargā-iva* (cl Skt *sargān-iva*), *avīn + iva > avīr-iva* (cl Skt *avīn-iva*), *paśūn iva > paśūr-iva* (cl Skt *paśūn-iva*), *nṝn + abhi > nṝr-abhi* (cl Skt *nṝn-abhi*).

The sandhi in these forms is quite historical in vedic and innovation in cl Skt. The forms of acc pl originally had the ending *-ns*, which became *-nz* before voiced sounds (in IE before voiced plosives, but in IIr before voiced plosives, consonantal secondary vowels and vowels) Thus historically *āns > ānz > āz > ā, īns > īnz > īž > īr, ūns > ūnz > ūž > ūr, ṝns > ṝnz > ṝž > ṝr* in these situattons It should also be remembered that the nasal shows merely nasalization of the precending vowel and not an anusvāra. Moreover, it should also be noted that *-ṝnž* was an analogical creation, after *īnž, ūnž*.

50. *ān, īn, ūn* (with *-n* < *-ns*) > *ā̂, ī̂r, ū̂r* sometimes before *y, v, r* & *h* in RV; e. g. *annā̂ rayivr̥dhaḥ* < *annān* + *rayivr̥dhaḥ* (RV VII. 91.3); *paṇī̂r hatam* < *paṇīn* + *hatam* (RV. I. 84.2); *dásyū̂r yónau* < *dásyūn* + *yónau* (RV.I. 63.4).

It sould be remembred that *ā̂, ī̂r* etc. were originally restricted to a position with following vowels and these were not found before following voiced consonants, since in these cases IIr *z* was lost leaving only *n* to survive. The above peculiar development in RV shows extension of the situation to a following consonantal secondary vowel *y, v, r* which often alternate with *iy, uv* & *r̥r*. But extension of the situation to a following *h* is altogether an innovation in RV.

51. *ān* (<**ānt* 3pl subjunctive) does not become *ā̂*, but remains *ān* before vowels in vedic also, since originally there was no following **z* (<*s*); e.g. *āvahān āśu; gacchān uttarā.*

52. *n* + *s* > *ṃ-s* in internal sandhi in Skt; this is purely an OIA development; e.g. *han* + *si* > *haṃ-si* (<IIr *jhan-si* <IE *g*^{w}*hen-si*, cp Ht *gwesi* <**gwensi*).

53. *n* + *l* > *l̂* (=nasalized *l*) + *l*; but this is normally represented in the texts, with a nasalization of the preceding vowel & *l̂* + *l*; e. g. *tān* + *lokān* > *tāl̂-lokān* (written *tāl̂-lokān*).

This is purely an innovation in Skt.

54. *n* + *s* > *n-s* in external sandhi; in vedic Skt *n* + *s* > *nts* often in external sandhi. This often shows a historically justifiable form and sometimes an analogical formation; e.g. *ahan* + *sahasā* > *ahant-sahasā*; the form is traceable to IIr *ajhont-sažhasā* and IE *eg*^{w}*hent-seĝhesa*; but forms like *tān* + *sam* > *tānt-sam* are analygical formations.

55. In combinations of $n+c(h)/ṭ(h)/t(h)$, a sibilant glide often intervenes, consequently changing $n>ṃ$. Thus the above combinations result in *ṃś-c(h)*, *ṃṣ-ṭ(h)* & *ṃs-t(h)*. But in fact the sibilant is quite historical in most cases; e.g. *tān+ca* > *tāṃś-ca* (< IIr *tānš-ca* < IE *tons-q^{w}e*, cp Gk (Cretan) *tóns-te*; *tān+tān* > *tāṃs-tān* (<IIr *tāns-tāns*>IE *tons-tons*); *mahān+taruḥ*>*mahāṃs taruḥ* (<**mahāns-taruḥ*<IIr *mažhānts-taruš̌*).

But in several other forms the sibilant is not historical but analogical e.g. *kasmin+cit*>*kasmiṃś-cit*, *rājan +tatra*>*rājaṃs-tatra*. But RV shows the sibilant only in forms from original *-ns*, where as other Samhitās often extend it to cases, where there was no original *-ns*. In cl Skt it is extended to all forms with *-n*, whether it was originally *-ns* or *-n*.

56. $n+j(h)/ḍ(h)/d(h)$ donot show the sibilant glide, but change *n* to *ñ* before *j(h)*, to *ṇ* before *ṭ(h)* and retain *n* before *d(h)*.

This is so, because the historical sibilant becomes voiced before these voiced stops and consequently it is lost; e.g. *tān+janān* > *tāñ-janān* (IIr *tānz-žanāns* >IE *tonz-ĝenons*); *tān-dasyūn* (<IIr *tānz-dasyūns*) etc.

57. *n*(<IIr *ns*)+*p*>*ṇ̃ḥ* with nasalization of the preceding vowel, sometimes in vedic; e.g. *nṝn+pahi*>*nṝ̃ḥ pāhi* (vide RV VIII. 84.3). In this case *n* has become nasalization and *s*>*ḥ* before *p*.

58. *m* > class nasal before stops in internal sandhi and class nasal or *ṃ* (=anusvāra) before stops in external sandhi; e. g. Skt *ran-tum*<*ram+tum* (IIr also *ran-tum* vide above 33) <IE *re n-tum*. Skt *tan-tam* or *taṃ-tam* <*tam+tam*; Skt *tañ-kavim* or *taṃ-kavim*<*tam+kavim*. The alternative treatment of *m* as *ṃ* in external sandhi is an innovation and may be a Prakitism.

59. *m*+*n* > *nn* or *ṃn* in external sandhi; this is an OIA innovation; e. g. *bhadram*+*naḥ* > *bhadran-naḥ*/*bhadraṃ-naḥ*. But in internal sandhi *m*+*n*>*mn*; this is historical; e. g. *śam-nā-ti* < IE *ḱm̥m-nā-ti*, cp Gk *kám-nō* < IE *ḱm̥m-nō*.

60. *m*>*ṃ* before *ś*, *ṣ*, *s* & *h* both in external & internal sandhi; e.g. *taṃ-śiśum*<*tam*+*śiśum*, *saṃ-saktaḥ*<*sam*+*saktaḥ*, *saṃ-hataḥ*<*sam*+*hataḥ*.

In IIr *m*>*n* before *s*; IIr *ns*>Skt *ṃs*; the other sandhi changes such as *mś*>*ńś*>*ṃś* etc. have followed the change of *ns* > *ṃs*.

61. *m*>*ṃ* before *r* always in external sandhi, excepting only one form *sam rāṭ*; e.g. *saṃ-ramate* < *sam-ramate*. But in internal sandhi *m* remains *m* before *r*; e.g. *nam-ra*.

Change of *m*>*ṃ* before *r* may be a new formation in Skt; This may also be an IIr sandhi (vide **35**)

62. *m*>*ṃ* before *y*, *v* & *l* in external sandhi. In vedic *m*>*ỹ* *ṽ* *l̃* (=nasalized *y v l*) respectively before *y v l* in external sandhi. But vedic manuscripts also show *ṃ* instead; e.g. *saṃ-yudhi* or *sa*ỹ*-yudhi*<*sam-yudhi*. *yajñaṃ vaṣṭu* < *yajñam-vaṣṭu*, *saṃ-vartate* < *sam-vartate*, *saṃ-tāpaḥ* < *sam-tāpaḥ*.

m>*n* before *v* in internal sandhi; e. g, *jagan-vān*< *jagam*+*vān*. But *m* rewains *m* before *y*; e.g. *gam-ya-te*. Perhaps also *m* remains *m* before *l*; e.g. *am-la*; this is of a doubtful root, no other suitable example is attested, for internal sandhi of *m* & *l*. The example *apa-mlukta* cited by Wackernagel & quoted by Macdonell (vide Vedic Grammar p. 68) is not an example of internal sandhi of *m* & *l* but that of conjunct *ml*.

It is probable that $m > n$ before v in external sandhi in IIr stage, but no sure evidence is citable outside OIA.

63. IIr Final s, $š$, $r > ḥ$ in Skt; e.g.

aviḥ < IIr *aviš* < IE *owis* cp Gk *óis*,

kaḥ < IIr *kas* < IE $q^{w}os$ cp Lat *quus*,

antaḥ < IIr *antar* < IE *enter*, cp Lat *inter*, Av *antarə*.

64, Because final r has become $ḥ$ in Skt, in several forms it shows a sandhi treatment common with $s/ṣ$, which also have become $ḥ$ finally. This is due to confusion of the origin of $ḥ < r$ & $ḥ < s/ṣ$. But in several forms the $ḥ < r$, shows a different treatment independent from the treatment of $ḥ < s/ṣ$, where in fact the historical sandhi treatment of $ḥ < r$ has been preseved.

The following sections (**64a–68**) present a complete picture of the various sandhi treatments of $ḥ < r/s/ṣ$ and their historical background.

64a. $ḥ < s$ is lost before voiced sounds. In fact $s > z$, before voiced sounds in IE & IIr. This is lost in Skt. IE z remained z in IIr only after $ă$ (aftet $ĭ/ŭ/ṛ̆$, IE $z > ž$ in IIr; see **64b**). This z was lost in Skt. IIr $āz <$ Skt $ā$, IIr $a >$ Skt a before vowels except a; IIr $az >$ Skt o in external sandhi and Skt e in internal sandhi before the vowel a and before the voiced consonants; e.g.

tāḥ gacchanti > *tā gacchanti* (=IIr *tāz gaššanti* < IE *tāz* $g^{w}m̥sk̂onti$).

devaḥ avadat > *devo avadat* > *devo' vadat* (= IIr *daivaz avadat*).

devaḥ āyāti > *deva āyāti* (=IIr *daivaz āyāti*).

devaḥ gacchati > *devo gacchati* (=IIr *daivaz gaššati*).

as + *dhi* > **az* + *dhi* > *edhi* (=IIr *azdhi*).

śās + *dhi* > **śāz* + *dhi* > *śādhi* (= IIr *šāzdhi*).

64b. *ḥ*(<*ṣ*)>*r* before voiced sounds. In fact Skt *ṣ* (<IIr *š* = IE *s* preceded by *ĭ*/*ŭ*/*r̥*/*k*/*š*) >**ẓ* (<IIr *ž*) >*r* before voiced sounds. e.g. IE *dus*+*itə*>IIr *duš*+*ita*>IIr *duž*-*ita*>Skt *dur-ita*, cp Av *duž-ita*.

Thus Skt *paśuḥ gacchati* > *paśur gacchati*, is historically *paśuṣ*+*gacchati* > **paśuẓ gacchati* < IIr *pašuš gaššati* >*pašuž gaššati* < IE *pe*ḱ*us g*^{w}*n̥s*ḱ*eti*.

In internal sandhi **ẓ* was often lost, cerebralizing a dental. In one or two cases this has been extended to a combination of an upasarga with a following stem or verb stem. e. g. IIr *duž-dabha-*> Skt (RV) *dūḍabha*, later *durdabha*.

65. *ḥ*+*t*(*h*)>*st*(*h*); historically this is *s*+*t*(*h*); e.g.

yaḥ+*te*>*yas-te*< IIr *yas-tai*<IE *yos-toi*.

kaḥ+*tvām* > *kas-tvām* < IIr *kas-tvām* < IE *q*^{w}*os-twēm* cp Av *kasəẋwąm*.

ḥ<*r* also becomes *s* before *t*(*h*). This is an innovation in Skt; e.g. *punaḥ*+*te*>*punas-te* (=actually *punar-te*).

ḥ+*t*(*h*) if preceded by *i*/*u*/*r̥* etc. >*ṣṭ*(*h*) in vedic often, but in classical Skt rarely. e.g.

agniḥ+*te*>(vd) *agniṣ-ṭe*, (cl) *agnis-te*;

catuḥ+*taya*> (vd & cl) *catuṣṭaya*; but *catuḥ*+*triṃśat* >(vd & cl) *catustriṃśat* (with *st* instead of *ṣṭ* prevented by following *r*).

66. *ḥ*+*c*(*h*) > *śc*(*h*); historically this is same as *s*+*c*(*h*) >*śc*(*h*); but this also includes cases of *r*+*c*(*h*), which are inovations, due to confusion of *ḥ*<*r* & *ḥ*<*s*; e.g.

kaḥ+*ca* (=*kas*+*ca*) > *kaś-ca*, cp Av *kas-ca* (< IE *q*^{w}*os-q*^{w}*e*);

pūḥ+*ca* (=*pūr*+*ca*) *pū*>*ś-ca*;

punaḥ+*ca* (*punar*+*ca*)>*punaś-ca*.

But *svar-cakṣas* retains original *r*.

67. *ḥ*+*k*(*h*)/*p*(*h*) > *ḥ*-*k*(*h*)/*ḥ p*(*h*) and alternatively *ḫk*(*h*)/*ḫp*(*h*).

(*ḫ* is used here for Skt *jihvāmūlīya* 'sound produced at the root of the tongue' and *ḥ* is used here for *upadhmānīya* 'sound approaching puff').

e.g. *devaḥ kaḥ* or *devaḫ kaḥ*; *divaḥ putraḥ* or *divaḫ putraḥ*.

Historically this shows *s*/*ṣ*+*k*(*h*)/*p*(*h*) > *ḥ*+*k*(*h*)/*p*(*h*) or *h*+*k*(*h*) & *ḫ*+*p* (*h*). Actually also alternatively *s*/*ṣ* remain instead of becoming *ḥ* in several forms. Often in compounds *s* is retained; e.g. vedic *paras-pā́* 'far-protecting', *haviṣ-pā* 'drinking the offring'; (vd & cl) *duṣ-kṛt* 'evil-doing'; (cl) *paras-param*, *puras-kāraḥ*.

67a. Since *r* has become *ḥ* finally, and is partly confused with *ḥ* < *s*/*ṣ*, there are several cases, where *r* > *ḥ* or *s* besides remaining *r* before *k*(*h*)/*p*(*h*); e.g. *punaḥ kaleḥ* (<*punar*), *punaḥ punaḥ*, *svaḥ-patiḥ* (for & beside *svar-patiḥ*), *antaḥ-pātra* (<*antar-*), *antas-pathā* (<*antar-*). As shown above *r*>*ḥ* or *s* here is obviously an innovation, due to iufluence of *s*(>*ṣ*>*ẓ*)>*r*.

68. *ḥ*+*s*/*ś*/*ṣ*>*ḥs*/*ḥś*/*ḥṣ* or *ss*/*śś*/*ṣṣ* or *s*/*ś*/*ṣ*. In other words *ḥ* is retained, or assimilated or (rarely, specially in vedic) dropped, when a sibilant follows; e.g. *manaḥsu*/*manassu*/*ahasu*; *haviḥṣu*/*haviṣṣu* etc.

Besides this is also frequent in external sandhi; e. g. *kṛtaḥ-sarvaḥ*/*kṛta-sarvaḥ*; *niḥ-svaram*/*nissva am*/*nisvaram*.

Historically IE shows optionally *s* for *ss* (vide above 19); Skt has an inovation in showing *ḥs* as an optional form. This *ḥs* is more frequent in later phase of the language,

69. In Skt *s+s>s/ss/ḥs* normally (Vide **68**), but in internal sandhi sometimes *ss>sts>ts*, with a *t* glide between two *ss* sounds; e.g. *ji-ghas+sa-ti>ji-ghat-sa-ti* (<IIr *jhighassati* < IE *ghi-ghos-se-ti*.

70. Similarly *ṣ+s > ṣṣ/ṣ/ḥs* normally (vide **68**), but in internal sandhi, sometimes *ṣṣ>ṣṭṣ>ṭṣ*, with a ṭ glide between two *ṣṣ* sounds; e.g. *dviṣ+ṣu>*dviṣṭṣu>dviṭṣu* (IIr *dviš-šu* < IE *dwis-su*).

71. Sometimes also in internal sandhi *ṣ+ṣ>ṣkṣ>kṣ*, with a *k* glide; e.g. *dveṣ+ṣi>*dveṣkṣi > dvekṣi*.

72. In internal sandhi *ś+s>ś+ṣ>ṣṣ>ṣkṣ > kṣ* in Skt, with a *k* glide; e. g. *diś+su>diś-ṣu>diṣ-ṣu>diṣkṣu> dikṣu* (<IIr *diš-šu*<IE *dik-su*).

73. Sometimes also in internal sandhi, the above combination (**72**) *ś+s>ś+ṣ>ṣ+ṣ >ṣṭṣ>ṭs* in Skt, with a ṭ glide; e.g. *viś+ṣu>viṣ-ṣu>viṣṭṣu>viṭṣu*.

74. The later Saṃhitās (TS, MS) sometimes show compensatory lengthening after loss of one of the sibilants; e.g. *ayāśayā<ayaś-śayā<ayas-śayā; rajāśayā>*rajaś-śayā< rajas-śayā; harāśayā<*haraś-śayā<haras-śayā*.

This innovation is modelled after the similar compensatory lengthening, after the loss or *r* before *r* (vide **76**).

75. *r* remains *r* when preceded by *ă, ĭ, ŭ* and followed by a voiced sound (i.e. a vowel, semi-vowel, nasal or stop) excepting only *r*; e.g. *prātar-adya, gīr-eṣā, punar-naḥ* etc.

76. *r* is lost before a following *r* with compensatory lengthening of the preceding vowel; e.g. *punar+ramate>punā-ramate*. This innovation may be due to the fact that Skt does not tolerate a sound combination *rr-*. When *rr>r* there was compensatory lengthening.

77. In a few cases *r* before *r* is treated like *s*, through the confusion of *ḥ*<*r* & *ḥ*<*s*, e. g. *aho-rātrāṇi*<*ahar*+*rātrāṇi*, *ūdho-romāśam* < *ūdhar*+*romāśam*, Originally both these stems *ahar* (<IIr *ažhar*<IE *eĝher*) and *ūdhar* (<IIr *ūdhar*<IE *ūdher*) had heteroclitic alternative forms *ahan*(<IIr *ažhan*<IE *eĝhen*) and *ūdhan* (<IIr *ūdhan*<IE *ūdhen*). Skt shows further heteroclitic forms *ahas* & *ūdhas*, which are back formations respectively from *ahaḥ* & *ūdhaḥ*, which in turn have developed from *ahar* & *ūdhar*.

78. Since Skt *h* comes from various sources, combination of *h* with a following sound shows various resultants in Skt. In Skt *h* is not found as a final sound of any inflected form. It is found as a final sound of roots or radical stems. Therefore combinations, with *h* as the initial element is attested only in internal sandhi in Skt.

The difference in sandhi treatment is due to the heterogenetic charactor of *h*; *h* comes from the following sources in Skt.

(1) h^1<IIr *jh*<IE *gh*/g^wh followed by palatal vowels.

(2) h^2<IIr *žh*<IE *ĝh*

(3) h^3 (sometimes)<Skt *dh*<IE/IIr *dh*

(4) h^4 (rarely) <Skt *bh*<IE/IIr *bh*

79. *h*+*t*>*gdh*(<IIr *gdh*), (*ḍh*<IIr *ẓdh*), *ddh*(<IIr *ddh*).

h^1(< IIr *jh*) + *t* > *gdh*; e.g.

dah+*to*- > *dagdha*- (IIr *dhagdha*- < *dhagh*+*ta*-<IE *dheg*^{w}*dho*- < *dheg*^{w}*h*+*to*-).

h^2(< IIr *žh*)+*t* > *ḍh*; e.g.

dṛh+*ta*- > *dṛḍha*-(< IIr *dhṛžd*ha-<*dhṛžh*+*ta*, <IE *dhrĝdho* < *dhrĝh*+*to*-).

h^3(< IIr *dh*)+*t* > *ddh*; e.g.

nah+*ta*- > *naddha*- (< IIr *naddha*- < *nadh*+*ta*-<IE *neddho*- <*nedh*+*to*-).

All these show historical developments, which is clear from the IIr & IE forms.

80. *h*+*s* > *kṣ*/*tṣ*/*ts*

h^1 (< IIr *jh*)+*s* > *kṣ* always; e.g.

dah+*syāmi* > *dhakṣyāmi* (< IIr *dhakšyāmi* < *dhagh*+*syā*(*mi*) < IE *dheq*^{w}-*syō* < *dheg*^{w}*h*+*syō*).

h^2(< IIr *žh*)+*s* > *kṣ* very often & *tṣ* sometimes, like *ś*+*s*; e. g.

vah+*syāmi* > *vakṣyāmi* (< IIr *vaš*-*šyā*(*mi*) < *vaš*+*syā* (*mi*) < IE *weĥsyō* < *weĝh*+*syō*), cp Av *vašata*(>IIr *vašṣata*<*važh*+*sa*-*ta*<IE *weĥ*-*so*-*to*<*weĝh*+*so*-*to*).

vāh+*su* > *vāṭṣu* (< IIr *vāššu* < *vāžh*+*su* < IE *weĥsu* < *weĝh*+*su*).

h^3 (< IIr *dh*)+*s* > *ts*; e.g.

upānah+*su* > *upānatsu* (< IIr *upānatsu* < *upānadh*+*su* < IE *uponetsu* < *uponedh*+*su*).

The above developments are quite historical.

81. *h*+*bh* > *gbh*/*ḍbh*/*dbh*

h^1(< IIr *jh*)+*bh* > *gbh* always; e.g.

dah+*bhiḥ* > *dhagbhiḥ* (< IIr *dhagbhiš* < *dhagh*+*bhiš* < IE *dheg*^{w}*bhis* < *dheg*^{w}*h*+*bhis*).

h^2(< IIr *žh*)+*bh* < *ḍbh*

-*vāh*+*bhiḥ* > -*vāḍbhih* (< IIr *vēžbhiš* < *vāžh*+*bhiš* < IE *wēĝbhis* < *wēĝh*+*bhis*).

h^3 (IIr *dh*) + *bh* > *dbh*

upānah + *bhiḥ* > *upānadbhiḥ* < IIr *upanadbhiṣ* > *upānadh* + *bhiṣ* < IE *uponedbhis* < *uponedh* + *bhis*).

82. Sometimes there is confusion of the sandhi of *h* + *t*/*s*/*bh*, since *h* comes from various sources.

Thus *muh* + *ta* > *mugdha* & *mūḍha* (representing as if both IIr *žh* & *jh*). In fact *mūḍha* is a late form found first in AV. *mugdha* represents the original form.

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CHAPTER VII

SOME EXCEPTIONAL TREATMENTS IN OIA SOUND SYNTHESIS

A. PROHIBITION OF SANDHI IN SANSKRIT

83. Prohibition of Sandhi in Sanskrit

Sandhi is disallowed by traditional Sanskrit grammarians, with reference to certain forms, which is also corroborated from the use of the language in vedic & classical litrature.

A critical examination of the forms clearly reveals that, this prohibition of sandhi is an innovation in the Indo-Aryan stage, to avoid ambiguity and obscurity, which would otherwise come, if sandhi would be allowed in these forms. Prohibition of sandhi applied to external sandhi only, where sandhi was optional in IE and optional even in Skt. Therefore prohibition of sandhi, althongh a new system in Skt, does not disturb the IE system in any way, since it was optional there.

The cases are enumerated below.

84. The final vowels of duals ending in *ī*, *ū*, *e* are not combined with a following vowel, in vedic as well as in classical Skt; e. g. *munī* (+) *imau*, *sādhū* (+) *asmai*, *aśve* (+) *ime*.

85. The pronominal form *amī* (nom pl masc) is not combined with a following vowel; e.g. *amī*(+)*aśvāḥ*.

86. The rare vedic locatives in *ī*, *ū* are also not combined with a following vowel. But the meter seems to show that *ī* is to be read *i* here.

87. Nom sg *ī* in *pṛthivī*, *pṛthujrayī*, *samrājñī* and the inst *suśamī* and *ūtī* optionally show lack of sandhi in vedic. These simply retain the optional character of external sandhi.

88. The particle *u* is not combined with a following vowel in vedic; e.g. *u(+)uttiṣṭha*.

Other particles also which contain this particle *u* as the second element are not combined with a following vowel; e.g. *atho uto*, *mo* (*atha/uta/mā+u*) etc. also contain this *u* as the second element.

89. The vedic peculiar pronominal forms *tve* (loc), *asme*, *yuṣme* are not combined with a following vowel.

90. The pronominal forms *sa* & *eṣa*, which are actually nom sg forms with nil ending beside the alternative forms *saḥ* & *eṣaḥ* with *-s* ending, are not combined with a following vowel, e.g. *sa eṣa āgacchati*. These forms are not originally *saḥ* & *eṣaḥ*, but they are *sa* and *eṣa*, they donot change to *so* and *eṣo* before voiced consonants; e. g. *sa gacchati*, *eṣa dhāvati*. The forms with *-ḥ* are restricted to final position in a sentence. In Gk *ho* < IE *so* (=Skt *sa*) is proclitic. Before the vowel *a* however the sandhi treatment shows the forms *saḥ* & *eṣaḥ*; e.g. *saḥ+ayam= so'yam*, *eṣaḥ+api=eṣo'pi*. This however is a late and new development. The Sanskrit grammarians have taken the basic forms as *saḥ* and *eṣaḥ* and they take *sa* and *eṣa* as the product of sandhi with loss of visarga. But comparative evidence shows that IE had both types : IE *so* with nil ending (cp Gk *ho* and Skt *sa*) and IE *sos*, with *-s* ending (cp Ht *sas*, Av *ho* and Skt *saḥ*). Sandhi of *sa* and *eṣa* with a following vowel are not always disallowed in Vedic. In Classical Sanskrit also sometimes *sa* aud *eṣa* are combined with a following vowel e.g. *saiṣadāśarathī rāmaḥ*.

B. EXCEPTION

91. A Critical examination of the Exceptional cases of OIA sound-synthesis, enumerated by Traditional grammarians

Traditional Sanskrit Grammarians enumerate certain forms showing the loss of a preceding syllable in sandhi. In fact a few forms might have been influenced by MIA sound synthesis. But some of the forms may not be exceptional and might be needing a different analysis, than the traditionally accepted one.

The exceptional forms may be taken up now.

92. $a+a>a$ (instead of normal $\bar{a}$).

Most of the exceptional forms are found under this category.

mārtaṇḍa 'sun' (analysed as *mārta*+*aṇḍa*); the vedic form is *mārtāṇḍa* (vide RV II 38.8. & X 72.8 & 9, also quoted as *mārtāṇḍa* in MS 4.6.9.2; PB 24. 12. 6, SB 3.1.32. TA 1.13.3). Since *mārtāṇḍa* is the earlier form for *mārtaṇḍa*, analysis of *mārtaṇḍa* as *mārta*+*aṇḍa* is hisorically correct, with a borrowing form MIA sandhi.

Similar forms are : *mārkaṇḍa* 'name of a sage' (*mārka*+*aṇḍa*); *sāraṇḍa* (*sāra*+*aṇḍa*) meaning perhaps 'snake's egg'; *kāraṇḍa* (*kāra*+*aṇḍa*) 'a bird'. These forms also might be showing similarly MIA sandhi, but all the forms are of doubtful etymology.

Similarly *sāraṅga* 'dear' has also been analysed as *sāra*+*aṅga*; but *sāra* is found in forms like *kṛṣṇa-sāra* 'black deer'; *sāraṅga* may be placed with other similar forms like *kuraṅga* 'deer', *mātaṅga* 'elephant' *pataṅga* 'insect', as well as even *bhṛṅga* (cp *bhramara*) bee',

Similarly also *karkandhu* 'jujube berry' (also found in Vedic) has been analysed as *karka*+*andhu*. In RV this is name of a person. This word may be perhaps better analysed as *karkam-dh-u*. The word *śakandhu* also has been analysed as *śaka*+*andhu*. The word *śakan* means 'dung' and *andhu* has been said to mean a well'. The word *śakandhu* is a late form, therefore this may be case of MIA sandhi or may be analysed as *śakan-dh-u*.

The form *kulaṭā* 'an unchaste woman', has been placed under this category, with the analysis *kula*+*aṭā*; Masc *kulaṭa* means 'adopted son'. The form may be a loan word from 1st MIA *kulaṭā* <**kula-tr-ā* (< √*tṛ* 'cross'), 'going astary from the family or house' or from *ku-ratā* 'badly attached'.

93. *as* + *ī* > *ī*

A few words come under this analysis.

manīṣā has been analysed *manas*+*īṣā*. The form is attested even in RV. The correct analysis should be *man*+*īṣā*, with the root noun *man* (not attested in Skt; but cp *mān-dhā-tā*). The late forms *halīṣā* and *lāṅgalīṣā* follow this pattern, and therefore are analogical formations.

94. *an* + *a* > *a*

Very few forms are found under this category.

sīmanta 'a line on the head showing parting of the hair', has been analysed as *sīman*+*anta*. *sīman*+*anta* actually becomes *sīmānta* 'boundary'. The word *sīmanta* is as old as AV; this might be originally having a meaning 'a line drawn by furrow', which was secondarily extended to the above sense; thus *sī-manta* <**sī* 'plough'; cp *sīra* 'plough' *sītā* 'plough'.

patañjali 'a name', has been analysed as *patat*+*añjali*. The form, in fact, may be connected with *pat^{a}ṅga* (orig. 'flying'>) 'insect, sun' cp RV *pat^{a}ṅga-ra*. For similar phonetic changes, cp *piṅga*, *piṅgala*, *piñja*, *piñjala* *piñjara* etc.

C APPARENT EXCEPTIONAL FEATURES OF VEDIC SANDHI

95. Apparent exceptional features of Vedic Sandhi

Traditional Sanskrit Grammars take vedic peculiarities of sandhi as exceptional in comparison to the classical norm.

But vedic sandhi is more historical, whereas classical sanskrit shows several innovations.

Some important features of vedic sound-synthesis where it considerably differs from classical Sanskrit are shown below. Since they have already been included in previous sections, they are just briefly mentioned here.

96. Accusative plural *ān, īn, ūn, r̥n* > *ā̆, ī̆r, ū̆r, r̥̆r* before vowels in vedic, but in classical Sanskrit they remain *an, īn, ūn,* and *r̥n* respectively (vide **49** above).

97. *n* + *c(h)/ṭ(h)/t̥(h)* > *ṃśc(h), ṃst(h), ṃst̥(h)* only in the historical forms in the vedic, which originally had a sibilant; e.g. nominative sg forms like *gacchan* + *ca* > *gacchaṃś -ca* (< original *gaccants* + *ca*), *devān* + *ca* > *devāṃś-ca* (< original *devāns* + *ca*) etc. But in cl Skt the *s* (which was originally *s* of the ending acc *-ns* or nom *-s*) was extended to forms which were not historically justified, i.e. which did not contain *s* originally; e. g. *kasmin* + *cit* > *kasmiṃś-cit.*

98. In classical Skt *a* is always lost after *e, o.* In vedic it is often retained; e.g. classical *te'vadan* < *te* + *avadan*; *devo'gacchat* < *devo* + *agacchat*; but vd *sūnave agne* < *sūnave* + *agne, devāsō apturaḥ* > *devāso* + *apturaḥ.*

99. Sandhi of an upasarga with a noun stem or verb, often show internal sandhi in Vedic. In classical Skt such forms always show external sandhi; e.g.

IIr *duẓ+dabha*>Vd (sometimes) *dūḍabha*, cl (always) *durdabha*.

IIr *duẓ+nāsă* > vd (sometimes) *dūṇāsā*, cl (always) *durnāsā*.

100. Vedic did not allow sandhi with the following :—

(a) with the rare locatives in *ī*, *ū* (vide **86** above).

(b) Nom sg *ī* of *pṛthivī* & *samrājñī* and Instr sg *ī* of *utī* & *suśamī* were often not combined with a following vowel, (vide **87** above).

(c) The vedic pronominal forms *tve*, *asme* & *yuṣme* were not combined with a following vowel (vide **89** above).

101. Sometimes vedic retains some historical forms of sandhi which are influenced by MIA sandhi in classical Skt, e.g. *mārta+aṇḍa* > vd *mārtāṇḍā*, cl *mārtaṇḍa* (vide **92** above).

102. Early Vedic show lack of sandhi in compounds in a few rare instances, but in classical Skt sandhi is compulsory in compounds, e.g. RV. (V. 41.5) *yukta-aśvaḥ* (although printed *yuktāśvāḥ*, metre needs *yukta-aśvaḥ*), RV (III 32.5 etc) *hari-aśvaḥ* (although printed *haryaśvaḥ*, metre needs *hari-aśvaḥ*).

103. Early Vedic shows lack of sandhi in internal sandhi also in highly rare cases, and therefore presents evi ence for option even in internal sandhi in early IE, e.g. RV (VI. 54.10) *paraśtāt* is to be and read *parastaāt* metri casusa (cp Av *āat* = Skt *āt*).

WORD INDEX

References are to pages

SANSKRIT

1. The Gk letters have been transcribed in Roman ;— *a b g d e* (*w*) *z ē th i k l m n ks o p r s t u ph kh ps ō*. *h* has no place in Gk alphabet, therefore *h* in the text has been printed ^{h} in the Index. *e*, *o* with cirumflex accent indicate *ē ō* always in Gk.

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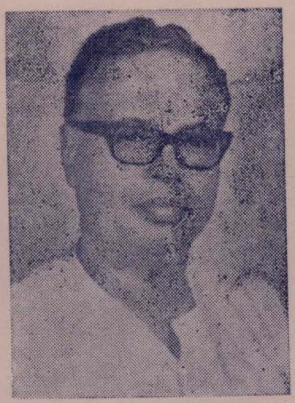
ERRATA

(btm = from bottom)

page	line	for	read
10	17	*yeigoi*	*yeigai*
28	10	*dužukta*	*dužχta*
28	8-9 btm	*irherited*	*inherited*
28	5 btm	*monosq^{p}e*	*monosq^{w}e*
28	3 btm	*q^{h}*	*qh*
29	2 btm	*uncertan*	*uncertain*
30	1 btm	for	far
35	13	anological	analogioal
35	5	*tod* >	*tod* +
35	12	> IIr	< IIr
36	5	situattons	situations
37	1 btm	analygical	analogical
39	7 btm	rewains	remains
42	5 btm	*nissva am*	*nissvaram*
43	9 btm	or	of
44	8	*āhaḥ*	*ahaḥ*
47	11	applied	is applied
51	4 btm	*devāsō apturaḥ* >	*devāsō apturaḥ* <
53	3 btm	*ātmanaḫ*	*ātmanaḥ*
56	6	*nr̥̄ḥ pāhi*	*nr̥̄ḥ pāhi*



Professor Dr. Satya Swarup Misra, is well known as a scholar of Indo-European linguistics in India and abroad for his several substantial contributions to IE linguistics, continuously since last three decades, in form of many research articles and several books, demonstrating research of very high standard.

Prof. Misra has a sound knowledge of several languages, including several Modern Indian and European languages and many ancient IE Historical languages which can be attested from the list of his publications overleaf.

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