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メタデータ	言語: en 出版者: 関西外国語大学・関西外国語大学短期大学部 公開日: 2019-09-18 キーワード (Ja): キーワード (En): As´okan Rock Edicts, assimilation, coalescence, vowel epenthesis, palatalization 作成者: 鈴木, 保子 メールアドレス: 所属: 関西外国語大学
URL	https://doi.org/10.18956/00007873

The development of *y*-final clusters in Aśokan Rock Edicts

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Abstract

This paper examines the development of *y*-final clusters in the six dialects, i.e. three western and three eastern, of Aśokan Rock Edicts. The outcomes of *y*-final clusters are different depending on the dialects and the phonetic properties of the consonant that precedes *y*. In terms of the manner of articulation of the preceding consonants, nasals, sibilants and *l* tend to trigger assimilation in all dialects while stops, *r*, and *v* typically induce vowel epenthesis. As for the place of articulation of the preceding consonants, voiced dental stops and coronal nasals induce assimilation of *y*. Adjacent consonants that share more phonetic properties with *y* are more likely to assimilate than consonants that are dissimilar from *y*. In terms of dialectal variations, the original clusters are preserved or undergo assimilation or coalescence more often in the western group than in the eastern group, where the clusters are affected by vowel epenthesis instead. Additional dialectal differences suggest that the conventional west-east dichotomy does not necessarily coincide with the isoglosses of the development of the different *y*-final clusters.

Keywords: Aśokan Rock Edicts, assimilation, coalescence, vowel epenthesis, palatalization

1. Introduction

Middle Indo-Aryan is known for extensive changes of consonant clusters including medial cluster assimilation, initial cluster simplification, vowel epenthesis, and metathesis. Assimilation and cluster simplification are governed by the consonant hierarchy whereby the weaker consonant is assimilated or lost whether it precedes or follows the stronger consonant (Mehendale 1948: xxiv; von Hinüber 2001: §226; Suzuki 2002b: 64; Oberlies 2003: 178; Bubenik 2003: 217–218). Among four major groups of consonants, i.e., stops, nasals, sibilants, and semivowels, stops are the strongest while semivowels are the weakest. The semivowels show a further hierarchical relationship: $l > v > y > r$. That is, *y* is the weakest next to *r* and thus assimilates to any consonant other than *r* (Pischel 1981: §§279, 282, 286, but 285; Masica 1991: 171–180; von Hinüber 2001: §226; Suzuki 2002a, 2014: 12–14; but Pischel 1981: §285 observes that *y* is assimilated to *r*). Due to the phonotactic restrictions of Old Indo-Aryan, *y*

occurs only as the last member of consonant clusters. Thus, the input clusters that involve *y* are restricted to those with *y* as the final member.

To illustrate the changes of *y*-final clusters, some examples from Pali are given in (1). As shown, *y* assimilates to the preceding stop, nasal, semivowel (*l* or *v* but not *r*), and sibilant in (1a), (1b), (1c), and (1d), respectively.

- (1) a. Skt. *śakya* > Pa. *sakka* ‘possible’
 Skt. *ucyate* > Pa. *vuccati* ‘say, 3SG.PRES.PASS.’
- b. Skt. *samyak* > Pa. *sammā* ‘properly’
- c. Skt. *kalyāṇa* > Pa. *kallāṇa* beside *kalyāṇa* ‘morally good’
 Skt. *kartavya-* > *kattabba* (via *vv*) ‘to be done’
- cf. Skt. *ārya* > Pa. *ayya* ‘worthy’
- d. Skt. *paśyati* > Pa. *passati* ‘see, 3SG.PRES.IND.’
 Skt. *manuṣya* > Pa. *manussa* ‘man’
 Skt. *etasya* > Pa. *etassa* ‘this, GEN.SG.’

When the dental stop or coronal nasal (also anusvāra) precedes *y*, the outcome is palatal stop or nasal by mutual assimilation or coalescence, as in (2) (Mehendale 1948: xxiii; Pischel 1981: §280; von Hinüber 2001: §§247, 250).

- (2) Skt. *apatya* > Pa. *apacca* ‘descendant’
 Skt. *adya* > Pa. *ajja* ‘today’
 Skt. *hiranya* > Pa. *hirañña* ‘gold’
 Skt. *manyate* > Pa. *maññati* ‘think, 3SG.PRES.IND.’
 Also Skt. *samyama* > Pa. *saññama* beside *samyama* ‘self-control’

Instead of assimilation, certain clusters may be split up by an epenthetic vowel, as in (3) (Pischel 1981: §131; von Hinüber 2001: §§152–153). Note that the last example in (3) shows metathesis in addition.

- (3) Skt. *ārya* > Pa. *ariya* beside *ayya* ‘noble’
 Skt. *vyāñjana* > Pa. *viyañjana* beside *vyāñjana* ‘attribute’
 Skt. *syāt* > Pa. *siyā* ‘be, 3SG.OPT.ACT.’
 Skt. *paryupāsana* > Pa. *payirupāsana* ‘worship’

Despite the above-mentioned generalization based purely on phonological factors, the first consonant after the prefix *ud-*, including *y*, normally persists even when it is weaker than stops in the hierarchy, e.g. Skt. *udyānam* > Pa. *uyyāna* ‘garden’ (von Hinüber 2001: §§237, 249; Suzuki 2002a: 117–118; Oberlies 2003: 180, 183).

Among various consonant clusters, this paper examines the development of *y*-final clusters in the Aśokan Rock Edicts in Gīrnār/G. in the west; Shāhbāzgarhī/Sh. and Mānsehrā/M. in the northwest; Kālsī/K. in the north; and Dhaulī/Dh. and Jaugaḍa/J. in the east. In the conventional dichotomy of these dialects, the western group consists of Gīrnār, Shāhbāzgarhī, and Mānsehrā while the eastern group includes Kālsī, Dhaulī, and Jaugaḍa. Preservation or assimilation of the original clusters are more often observed in the western group than in the eastern group where consonant clusters are affected by vowel epenthesis instead (Ghatage 1962; Norman 1990: 132).

Sections 2–5 below examine stop-*y* clusters, nasal-*y* clusters, semivowel-*y* clusters, and sibilant-*y* clusters in turn. The transliterated texts are cited from Hultzsch (1925: 183–213). In the original scripts, geminates are generally not marked with a few exceptions of geminate *m* such as *samma* ‘properly’. Thus, for example, *aja* ‘today’ (< *adya*), *aña* ‘other’ (< *anya*), *kalāṇam* ‘good deed’ (< *kalyāṇam*), and *piyasa* ‘dear’ (< *priyasya*) most probably represent *ajja*, *añña*, *kallāṇam*, and *piyassa*. Anusvāra together with the following nasal such as *aṁñña* ‘other’ and *maṁññate* ‘think, 3SG.PRES.IND.’ represent a geminate nasal, thus the two cited examples are phonetically identical with *añña* and *maññate*. In the inscriptions from Mānsehrā and Shāhbāzgarhī, vowel length is not marked. For a summary of developments of the *y*-final clusters, see Hultzsch 1925: lviii, lx–lxii for Gīrnār, lxxii, lxxiv–lxxvi for Kālsī, lxxxvi, lxxxviii–xc for Shāhbāzgarhī, xcvi for Mānsehrā, and cii–civ for Dhaulī and Jaugaḍa.

Phonologically, *y*-final clusters show different developments depending on the manner, place, and, in part, voice of the preceding consonant, and the positions where the cluster occurs in the word. Various developments are classified into three major groups. First, the clusters are preserved without any change. Second, the clusters are assimilated, simplified, or fused, in which case *y* is not preserved in parallel with (1) and (2) above. Third, the clusters

are split up by an epenthetic vowel in parallel with (3) above. Vocalization of *y*, sometimes replacing the following vowel or metathesized with the preceding consonant, is also included in this third group.

2. Stop + *y*

The stop preceding *y* in the input is predominantly dental in the vocabulary of the Rock Edicts. If the dental is voiceless, the outcomes typically result from coalescence or cluster simplification in Gīrnār, either coalescence or vowel epenthesis in the other two western dialects, i.e., Shāhbāzgarhī and Mānsehrā, and vowel epenthesis in the three eastern dialects, as in (4a) (Hultzsch 1925: lxxiv; Mehendale 1948: 22–23; von Hinüber 2001: §153). In the second example in (4a), *y* is vocalized and replaces the following vowel (Hultzsch 1925: lxxii, lxxxvi, ci). The original tri-consonantal cluster *rthy* in the third example in (4a) shows the same development with vowel epenthesis between the stop and the following *y* in the dialects other than Gīrnār. Words with the original clusters of *y* following a stop other than dental are very few in the Rock Edicts; the clusters of a velar, retroflex, or labial stop and *y* show similar developments to the clusters of a voiceless dental stop and *y*, as in (4b) (Hultzsch 1925: lxxiv). There is only one word with the original sequence of a palatal stop and *y*; *y* is assimilated to the preceding stop, attested only in Shāhbāzgarhī and Mānsehrā, as in (4c), in accordance with the general patterns of Middle Indo-Aryan assimilation (Pischel 1981: §279).

(4) a. Skt. *apatya* > 5E ‘descendant, NOM.SG.N./?PL.M.’

G. [a]pacaṃ, K. *apatiye*, Sh. *apaca*, M. *apatiye*, Dh. *apatiye*

Skt. *parityajitvā* > 10E ‘renounce, ABSL.’

G. *paricajitpā*, K. *palitiditu*, Sh. *paritijitu*, M. *parit[i]i]tu*, Dh. *palit[i]i]tu*,

J. ...[i]itijit[u]

Skt. *nirartham/nirarthyam* > 9C ‘useless, ACC.SG.’ cf. Woolner 1924: 104f

G. *nirath[am]*, K. *nilathiyā*, Sh. *nirathiyam*, M. *nirathriya*, Dh. [nilathiyam]

b. Skt. *śakya* > 9K ‘possible, NOM.SG.’

G. *sak[a]*, J. *sakiye*

Skt. *Pāṇḍya* > 2A ‘the Pāṇḍyas, NOM.PL.M.’

G. *Pādā*, K. *Pam[ḍī]yā*, Sh. *Pamḍiya*, M. *Pa[mḍī]ya*, J. *Pamḍiyā*

Skt. *ārabhyisu* > 1F ‘kill, 3PL.AOR.PASS.’

G. *ārabhisu*, K. *alambhīyisu*, Sh. [*arabhī*]yis[*u*], M. [*arabh*]isu,

Dh. [*ā*]labhīyisu, J. *ālabhīyisu*

c. Skt. *ucyate* > 13N ‘say, 3SG.PRES.PASS.’

Sh. *vucati*, M. *vucati*

There is one apparently aberrant outcome in Kālsī: *nikyam* 14C ‘constantly’ (< Skt. *nityam*). However, in the Kālsī version of the Rock Edicts, the velar stops *k* and *g* are occasionally represented as *ky* and *gy* after *i* as in K. *-nātikyān[am]* 3D ‘relative, GEN.PL.’ (cf. Sh. *ñatikanam*), K. *Kaligyā* 13A ‘Kalinga’ (cf. G. *Kalimḡā*), and K. *Alikyāṣudale* 13Q ‘Alexander’ (cf. M. *Alikasudare*) (Hultzsch 1925: lxxi; Ghatage 1962: 121). If *ky* represents a palatalized velar stop, rather than a consonant cluster, as assumed by Ghatage (1962: 121), then the orthographic *ky* as an assimilated outcome of *ty*, which is typically a palatal stop, is not as aberrant as it first appears. Because this interpretation, though highly plausible, lacks enough supporting evidence, the above-mentioned form in Kālsī is excluded from the table below as an exception.

On the other hand, when a voiced dental stop precedes *y* in the original cluster, the outcome tends to be a palatal stop in all dialects, as in (5a), although there are also some outcomes with vowel epenthesis (Mehendale 1948: 17–18; von Hinüber 2001: §247). When there is a compound boundary between the stop and *y*, however, the stop is lost, as in (5b) (Mehendale 1948: 18; von Hinüber: §249). While the loss of stops next to *y* is contrary to the general rule of assimilation, the predominance of the initial consonant of the second element of compounds is observed in Middle Indo-Aryan assimilation in general, as previously discussed (von Hinüber 2001: §§237, 249; Oberlies 2003: 180, 183).

(5) a. Skt. *adya* > 4B ‘today’

G. *aja*, K. *ajā*, Sh. *aja*, M. *aja*, Dh. *aja*, J. *aja*

Skt. *adhyaḥṣa-* > 12M ‘overseer, STEM’

G. *-jhaḥka-*, K. *-dhiyaḥka-*, Sh. *-[dhi]yaḥṣa-*, M. *-jaḥṣa-*

b.Skt. *ud-yānam* > 6D ‘garden, LOC.PL./SG.’

G. *uyānesu*, K. *[u]y[ānasi]*, Sh. *uyanaspi*, M. *uyanaspi*, Dh. *[u]y[ā]n[asi]*,

J. *uyānasi*

Table 1 below summarizes the development of stop-*y* clusters depending on the dialects and the types of the preceding stops. The outcomes are categorized into three groups as stated in section 1. In the table, (i) *Cy* is used when the original cluster is preserved; (ii) *C* follows from assimilation, cluster simplification, or coalescence; and (iii) *Ciy* represents a result of vowel epenthesis but includes that of vocalization of *y*. The table does not include the development of clusters across a compound boundary such as (5b). As the table indicates, Girnār shows a very high ratio of assimilation irrespective of the preceding consonant. On the other hand, the other five dialects show a contrast between assimilation after a palatal stop and voiced velar stops as opposed to vowel epenthesis after other stops. The contrast is complementary in Dhaulī and Jaugaḍa, but there are some assimilated outcomes of *ty* and *bhy* in Kālsī, Shāhbāzgarhī, and Mānsehrā. The observed contrast suggests that *y* is more liable to assimilate to, or coalesce with, phonetically closer stops. Thus, in dialects other than Girnār, a dental stop tends to coalesce with the following *y* only when the stop shares voice with the following *y*, i.e., when the stop is voiced. Also, the palatal stop, though voiceless, assimilates the following *y* but not velar and labial stops. Among coronal stops, however, the retroflex resists assimilation or coalescence as exemplified in the second example in (4b) while the dental stops often become palatal before *y*. This apparent paradox may be associated with the cross-linguistic tendency to preserve marked properties. The notion of the “Preservation of the marked” is evoked to account for the fact that coronal consonants are more likely to be assimilated than labial and velar consonants (de Lacy 2006: 173; Hall 2011). To apply the notion to the present case, it would be reasonable to assume that the retroflex is close enough to palatal, but is clearly marked as opposed to the dental, and, thus, is more resistant to coalescence or mutual assimilation than the dental.

TABLE 1 : The development of stop-*y* in the six dialects of the Rock Edicts

Preceding stop	<i>c/d/dh</i>	other	TOTAL
Girṅār	<i>j/jh</i> 7	C 10, <i>Ciy</i> 1	C 17, <i>Ciy</i> 1
Kālsī	<i>j/jh/jhi</i> 5, <i>Ciy</i> 1	C 2, <i>Ciy</i> 12	C 7, <i>Ciy</i> 13
Shāhbāzgarhī	<i>c/j/jh</i> 6, <i>Ciy</i> 1	C 6, <i>Ciy</i> 9	C 12, <i>Ciy</i> 10
Mānsehrā	<i>c/j/jh</i> 7	Cy 1, C 3, <i>Ciy</i> 11	Cy 1, C 10, <i>Ciy</i> 11
Dhaulī	<i>j/jh/jhi</i> 6	<i>Ciy</i> 9	C 6, <i>Ciy</i> 9
Jaugaḍa	<i>j/jh/jhi</i> 4	<i>Ciy</i> 11	C 4, <i>Ciy</i> 11
TOTAL	<i>c/j/jh</i> 35, <i>Ciy</i> 2	Cy 1, C 21, <i>Ciy</i> 53	Cy 1, C 56, <i>Ciy</i> 55

3. Nasal + *y*

In all six dialects, the original nasal-*y* clusters undergo assimilation or coalescence when the nasal is retroflex or dental, as in (6) (Mehendale 1948: 26; von Hinüber 2001: §250). The outcomes are typically palatal in the western dialects and dental in the eastern dialects with very few exceptions. M. [hi]ṅā- in the first example is aberrant in that the medial syllable is lost, which is irrelevant to the present concern. One apparently deviant form of G. *puñam* in the second example arises when *y* is vocalized and metathesized with the preceding nasal (Hultsch 1925: lx).

(6) Skt. *hiranya* > 8E ‘gold, STEM’

G. *hiramṅa-*, K. *hilaṁna-*, Sh. *hirañā-*, M. [hi]ṅā-, Dh. h[i]laṁna-, J. *hilaṁna-*

Skt. *puṅya* > 11E ‘merit, ACC.SG.’

G. *puñam*, K. *puṅā*, Sh. *puñā*, M. *puṅam*

Skt. *anya* > 4D ‘other, NOM.SG.N.’

G. *añe*, K. *aṁne*, Sh. *añam*, M. *añ[e]*, Dh. *aṁne*, J. *aṁne*

Skt. *manyate* > 10A ‘think, 3SG.PRES.IND.’

G. *mañate*, K. *manati*, Sh. *mañati*, M. *mañati*, Dh. *mañn[ate]*

On the other hand, when the nasal that precedes *y* is labial in the original cluster, *y* is assimilated in Shāhbāzgarhī, but the cluster is unchanged in the other five dialects as in (7a) (Mehendale 1948: 26; von Hinüber 2001: §250). The writing suggests that the nasal is geminated in Dhaulī, Jaugaḍa, and possibly Shāhbāzgarhī. In compounds that consist of *sam* and a *y*-initial word, *y* is consistently preserved with occasional loss of the preceding anusvāra as in (7b).

(7) a. Skt. *sam***y***ak* > 9G ‘properly’

G. *samya-*, K. s[*a*]m**y**ā-, Sh. *samma-*, M. *samya-*, Dh. *sam***m***myā-*, J. *sam***m***myā-*
cf. 11C Sh. *sam***m***ma-*

b. Skt. *sam***y***yama* > 7E ‘self control, NOM.SG.’

G. *sayame*, K. *sayame*, Sh. *sayama*, M. *sayeme*, Dh. [s**a**]y**a**m**e**
cf. 9G K. *sam***y***yame*

Skt. *anu-sam***y***āna* > 3C ‘traveling, ACC.SG.’

G. *anusam***y**[ā]n**a**[m], K. [a]n**u**s**a**[m]y**ā**n**a**m, Sh. *anusam***y***anam*,
M. *anusam***y***ana*[m], Dh. *anusay***ā***nam*, J. *anusay***ā***nam*

Table 2 summarizes the development of nasal-*y* clusters. When the nasal in the input is retroflex or dental, the outcome is a nasal, which may either be single or geminate, in all dialects—with one exception of *ṇy* > *iñ* in Gīrnār. When the nasal in the original cluster is labial, the cluster undergoes assimilation in Shāhbāzgarhī, but remains unchanged in the other five dialects. None of the nasal-*y* clusters is split up by an epenthetic vowel. The contrastive developments of the coronal nasal + *y* and the labial nasal + *y* suggest again a greater tendency to assimilate when the nasal is phonetically closer to *y* in place, as with the stop-*y* clusters discussed in section 2. To compare oral and nasal stops, nasals are phonologically closer to *y* than stops in that both nasals and *y* are sonorants; a greater proportion of assimilation of nasal-*y* clusters than stop-*y* clusters can also be associated with phonetic closeness.

TABLE 2 : The development of nasal-*y* in the six dialects of the Rock Edicts

Input clusters	<i>ny/ny</i>	<i>my</i>	TOTAL
Girnār	C 25, <i>iñ</i> 1	<i>my</i> 2	Cy 2, C 25, <i>iC</i> 1
Kālsī	C 27	<i>my</i> 3	Cy 3, C 27
Shāhbāzgarhī	C 27	<i>mm/ṁmm</i> 3	C 30
Mānsehrā	C 25	<i>my</i> 2	Cy 2, C 25
Dhaulī	C 11	<i>ṁmy</i> 1	Cy 1, C 11
Jaugaḍa	C 7	<i>ṁmy</i> 1	Cy 1, C 7
TOTAL	C 122, <i>iC</i> 1	Cy 9, C 3	Cy 9, C 125, <i>iC</i> 1

4. Semivowel + *y*

The original semivowel-*y* clusters are *ry*, *ly*, and *vy*, each showing different developments. The original cluster *ry* occurs in the two forms with the suffix *-ya-*. The cluster is affected by vowel epenthesis, as in (8a) (Hultsch 1925: lx, lxxiv; Mehendale 1948: 23; von Hinüber 2001: §152). Girnār has no relevant form with the original *ry*, except for one form with *ry* across a compound boundary; the outcome given in (8b) is *y* as expected.

(8) a. Skt. *mādhurya* > 14D ‘sweetness, INS.SG.’

K. *madhuliyāye*, Sh. *madhuriyaye*, M. [*madhu*]*riyaye*, J. *mādhuliyāye*

b. Skt. *niryātu* > 3C ‘go out, 3SG.IMPV.’ G. [*n*]*iyātu*

The original cluster *ly* occurs only in one word: *kalyāṇa*. In all six dialects, *ly* undergoes assimilation, as in (9). The outcome is *l* in Girnār and Shāhbāzgarhī, but *y* in Kālsī, Mānsehrā, Dhaulī, and Jaugaḍa, with one outcome of *l* in Mānsehrā (Mehendale 1948: 23). The outcome *l* with perseverative assimilation is in accordance with the generalization of Middle Indo-Aryan assimilation, illustrated in section 1 above. On the other hand, the outcome *y* requires anticipatory assimilation. Cross-linguistically, anticipatory assimilation is more common than perseverative assimilation (Hock 1991: 63; Jun 2011; Zsiga 2011: 1934; Bybee 2015: 475–477; Gordon 2016: 124). This tendency has been variously accounted for as the saliency of prevocalic consonants over preconsonantal consonants (Blevins 2004, Jun

2011), the dominance of the prosodic position of the onset over the coda (Jun 2011), or “the dominance of anticipatory retiming” (Bybee 2015: 475). The vacillating outcomes may be accounted for based on which factor is dominant. If the consonant hierarchy or the oral contact of *l* is prioritized over the unmarked direction of assimilation, then the outcome is *l*. On the other hand, if the more salient consonant in the cluster is chosen, the result is *y* in the prevocalic position. In addition, both *l* and *y* belong to the same group of semivowels, and, thus, the strength relation between the two is not as stable as that between, for example, stops and *y*.

(9) Skt. *kalyānasya* > 5C ‘good deed, GEN.SG.’

G. *kalāṅ[a]sa*, K. *kay[ā]nasā*, Sh. [*kala*]ṅasa, M. *kayaṅasa*, Dh. *k[ay][ā]n[a]sa*

cf. 5B M. *kalaṅam* NOM.SG.

Lastly, the original cluster *vy*, better represented than the other two semivowel clusters, occurs in the gerundive suffix *-tavya-*, the *v*-final root followed by the stem-forming suffix *-ya-*, and the sequence of the prefix *vi-* and a vowel-initial element. The cluster remains mostly unchanged in Girnār, is affected by assimilation or vowel epenthesis in Shāhbāzgarhī and Mānsehrā, and mostly becomes *vīy* by vowel epenthesis in the eastern dialects, as in (10) (Hultsch 1925: lxix, lxxiv, lxxxiii, xcvi, cxii, Mehendale 1948: 23, Bloch 1965: 85). The assimilated outcome *v* is in accordance with the consonant hierarchy of Middle Indo-Aryan assimilation. There is one form in Girnār with the assimilated outcome of *y* in the second example in (10)—G. *pūjetayā*—though, otherwise, Girnār preserves the original cluster. This outcome might be attributed again to the prominence of the prevocalic *y* as opposed to the preconsonantal *v*.

(10) Skt. *kartavya-* > 6I ‘to be done, STEM’

G. *kartavya-*, K. *kaṭ[a]vīya-*, Sh. *kaṭava-*, M. *kaṭavīya-*, Dh. *kaṭavīya-*

Skt. *pūjayitavya* > 12E ‘to be honored, NOM.PL.M.’

G. *pūjetayā*, K. *pūjetav[ī]ya*, Sh. *pūjetavīya*, M. *pūjetavīya*

Skt. *vyāprta* > 5L ‘busy, NOM.PL.M.’

G. *vyāpatā*, K. *vīy[ā]patā*, Sh. *vīyapata*, M. *vīyapraṭa*, Dh. *vīyāpatā*

Table 3 summarizes the changes of the three semivowel clusters, each showing different types of developments. The cluster *ly* is assimilated in different directions, i.e., either perseverative or anticipatory, depending on the dialects. The original cluster *vy* remains unchanged nearly consistently in Girnār, in addition to one example in Kālsī. Part of *vy* is also affected by assimilation depending on the dialects, i.e., in the descending order, half of 26 in Shāhbāzgarhī, eight out of 26 in Mānsehrā, and two out of 25 in Kālsī. Otherwise, *vy* is affected by vowel epenthesis. The original cluster *ry*, though there are only a few relevant examples, is also split up by an epenthetic vowel in all dialects—other than Girnār, which lacks relevant examples. In contrast to stop-*y* and nasal-*y* clusters, different outcomes of the three types of semivowel clusters cannot be associated with the shared phonetic properties.

TABLE 3 : The development of *ly*, *vy*, and *ry* in the six dialects of the Rock Edicts

Input clusters	<i>ry</i>	<i>ly</i>	<i>vy</i>	TOTAL
Girnār		<i>l</i> 4	<i>vy</i> 24, <i>y</i> 1	Cy 24, C 5
Kālsī	<i>liy</i> 2	<i>y</i> 4	<i>vy</i> 1, <i>v</i> 2, <i>viy</i> 22	Cy 1, C 6, Ciy 24
Shāhbāzgarhī	<i>riy</i> 2	<i>l</i> 4	<i>v</i> 13, <i>viy/vi</i> 13	C 17, Ciy 15
Mānsehrā	<i>riy/liy</i> 2	<i>y</i> 3, <i>l</i> 1	<i>v</i> 8, <i>viy</i> 18	C 12, Ciy 20
Dhauī	<i>liy</i> 1	<i>y</i> 3	<i>viy</i> 15	C 3, Ciy 16
Jauḡaḡa	<i>liy</i> 2		<i>viy</i> 10	Ciy 12
TOTAL	Ciy 9	C 19	Cy 25, C 24, Ciy 78	Cy 25, C 43, Ciy 87

5. Sibilant + *y*

The original sibilant-*y* clusters occur in the genitive singular suffix *-sya*, the future suffix *-iṣya/-sya-*, a sibilant-final root followed by the verb-stem forming suffix *-ya-*, and the optative forms of *as* ‘to be’. Note that *y*, and often also the preceding sibilant, belong to the grammatical morpheme. In the medial position, *y* is assimilated to the preceding *ṣ* or *s* almost consistently, as in (11a) (Mehendale 1948: 23, 28, 42–43; von Hinüber 2001: §463). In (11b), *y* leaves its trace in the vowel that precedes the sibilant; this is the only example of this type. In two verb forms, the future suffix *-sya-* yields the original clusters of three or four consonants, together with the root-final consonant; *y* is assimilated in both forms, as in (11c).

(11) a. Skt. *manuṣya* > 2A ‘man, STEM’

G. *manusa-*, K. *manusa-*, Sh. *manuśa-*, M. *manuśa-*

Skt. *vardhayaṣyati* > 4E ‘increase, 3SG.FUT.CAUS.’

G. *vaḍhayisati*, K. *vadhīyisati*, Sh. *vaḍhiśati*, M. *vadhrayiśati*, Dh. *vaḍhayis[a]ti*

Skt. *-priyasya* > 8F ‘beloved, GEN.SG.’

G. *-piyasa*, K. *-piyasā*, Sh. *-priyasa*, M. *-priyasa*, Dh. *-piyasa*, J. *-piyasa*

b. Skt. *etasya* > 12N ‘this, GEN.SG.’

G. *etasa*, K. *etiśā*, Sh. *etisa*, M. *etisa*

c. Skt. *drakṣyati* > 1D ‘see, 3SG.PRES. (< FUT.)’ cf. Woolner 1924: 91r

K. *dakhati*, Sh. *[da]khati*, M. *[da]kha[ti]*, J. *drakhati*

**kartsyati/karṣyati* > 5F ‘do, 3SG.FUT.’

G. *kāsati*, K. *kachati*, Sh. *kaṣati*, M. *kaṣati*, Dh. *kachati*

On the other hand, some of the sibilant-*y* clusters are split up by an epenthetic vowel under certain specifiable conditions, as in (12). That is, there are two occurrences of the offshoots of *prativeśya*, both of which are affected by vowel epenthesis (Hultzsich 1925: lx). However, the same cluster in *paśyati* undergoes assimilation, which occurs only once in Girnār. In addition, the outcomes of *syāt* with initial *sy*, attested in all dialects other than Girnār, are also subject to epenthesis (Hultzsich 1925: lxxiv) while medial *sy* from **asyāt* and **asyuḥ* is assimilated (Hultzsich 1925: lxxvii; Mehendale 1948: 41) in parallel with the medial *sy* in the genitive singular suffix, as exemplified in (11a). Because both belong to the grammatical category, the difference between epenthesis and assimilation is likely to follow from whether the cluster occurs in the initial or medial positions. In the word-initial position, which is a prominent position, both consonants of the cluster are preserved by epenthesis, whereas, in the medial position, the cluster is simplified by assimilation.

(12) Skt. *prativeśya* > 11D ‘neighbor, INS.PL./SG.’

G. *paṭivesiyehi*, K. *ḥ[a]ṭivesiyen[ā]*, Sh. *prativeśiyena*, M. *paṭivesiyena*

cf. G. *pasati* 1D ‘see, 3SG.PRES.IND.’ < Skt. *paśyati*

**asyāt*/Skt. *syāt* > 10C ‘be, 3SG.OPT.ACT.’

G. *asa*, K. *ṣiyāti*, Sh. *siyati*, M. *siyati*

**asyuh* > ‘be, 3PL.OPT. ACT.’

12J G. [*a*]*su*; 13X K. *a[su]*, Sh. *asu*, M. *a[su]*

Table 4 is a summary of the outcomes of the sibilant-*y* clusters. It includes clusters of three or four consonants such as those in (11c), in which case the table shows only whether or not *y* is assimilated and not how many of the other consonants survive. There are two courses of development with no discernable dialectal differences and with very few exceptions: first, epenthesis of *śy* and the initial *sy* and, second, assimilation of other sibilant-*y* clusters. None of the sibilant-*y* clusters remain unchanged. Again, phonetic similarity may account for a high ratio of assimilation: sibilants and *y* are both continuants. However, the palatal cluster *śy*, both sharing the same place, is affected by an epenthetic vowel instead of the expected assimilation. In addition, distinct developments in word-initial and -medial positions add a factor that leads to variations. As has been shown, sibilant-*y* clusters occur in the high frequency grammatical morphemes, including the genitive singular suffix *-sya* and the future suffix *-iśya/-sya*. Lack of variations may be attributed to the high frequency of these morphemes (Phillips 2006, 2015).

TABLE 4 : The development of sibilant-*y* in the six dialects of the Rock Edicts

Input clusters	<i>śy</i> and initial <i>sy</i>	other sibilant- <i>y</i>	TOTAL
Girnār	C 1, <i>Ciy</i> 1	C 64	C 65, <i>Ciy</i> 1
Kālsī	<i>Ciy</i> 9	C 73, <i>iC</i> 1	C 73, <i>Ciy</i> 10
Shāhbāzgarhī	<i>Ciy</i> 11	C 86, <i>iC</i> 1	C 86, <i>Ciy</i> 12
Mānsehrā	<i>Ciy</i> 10	C 71, <i>iC</i> 1	C 71, <i>Ciy</i> 11
Dhauḷī		C 37	C 37
Jaugada		C 18	C 18
TOTAL	C 1, <i>Ciy</i> 31	C 349, <i>iC</i> 3	C 350, <i>Ciy</i> 34

6. Conclusion

While the total numbers of relevant examples are, by no means, large enough in most cases, the results show clear tendencies. Conditions for different developments are of two kinds: phonological and dialectal. Disregarding sporadic examples, the clusters *my* in all dialects, other than Shāhbāzgarhī, and *vy* in Girnār are preserved. The following five types of clusters are assimilated or coalesced, in which case *y* fails to survive as it is: (i) stop-*y* clusters in Girnār; (ii) *cy*, *dy*, and *dhy* in the other five dialects; (iii) *ny*, *ny*, *ly*, *sy*, and *sy* in all dialects; (iv) *my* in Shāhbāzgarhī; and (v) part of *vy* in Shāhbāzgarhī and Mānsehrā. Other clusters tend to be split up by an epenthetic vowel, i.e., most of stop-*y* clusters in dialects other than Girnār, *ry* in all attested dialects, *vy* in the eastern dialects and partly in Shāhbāzgarhī and Mānsehrā, and *śy* and initial *sy*. Of the four groups of *y*-final clusters, nasal-*y* clusters, *ry*, and sibilant-*y* clusters show little or no variations. Of all the *y*-final clusters, *vy* is the most variegated in its development, undergoing no change in Girnār, either assimilation or vowel epenthesis in Shāhbāzgarhī and Mānsehrā, and vowel epenthesis in the three eastern dialects. Some morphemes such as *anya* and the genitive singular suffix *-sya* show no variations, which may be attributed both to word frequency and the type of consonant that precedes *y*. It is true, as is generally stated and as the development of *vy* in the Rock Edicts shows, that the western dialects preserve consonant clusters better and tend more towards assimilation than the eastern dialects, where consonant clusters are typically affected by vowel epenthesis, and that the eastern dialects are relatively uniform in the developments of *y*-final clusters. However, the accurate descriptions of various developments require more detailed conditioning factors based on manner, place, and voice of the consonant that precedes *y*, possibly the word-initial vs. non-initial distinction, and word frequency. The east-west dichotomy does not necessarily coincide with demarcating lines between different developments. Interdialectal influences can be surmised but are difficult to prove.

Acknowledgements

This work was supported by JSPS KAKENHI Grant Number 17K02702. I thank two anonymous reviewers for comments on an earlier version of this paper. The paper has been proofread by SCRIBENDI.

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