Before enclitics, a final nasal which would otherwise be written, is retained: *gātān = gātān-ā, zāgam-ān, paraum-āy, adām-ān.

For -niy and -niy, -niy and -niw are written (§ 25-6): anīy = anīya, Skt. anīya; ten-wm = tum-wtam, for tum-wtam.

§40. OLD PERSIAN REDUCED FINAL CONSONANTS were omitted in writing; these were s (after š), t, d, n, nt; s had become š and nt had been reduced to n in pAryan. That they were still pronounced, though with a minimal value, at least after short š, is shown by the fact that they prevented the representation of a preceding š by a long vowel (§ 36. III): thus voc. martiya for -ya, Skt. -ya; but nom. martiya for -ya, Skt. -yāh. The unwritten consonants may be represented by raised letters in normalized transcription, when desirable: thus hya, haya, abara, bara for -nd, nāma; nom. pl.martiyā, abl. sg. Pārašā. There is one example of such a reduced consonant after t: enlétique -ciy, = Av. -cī, Skt. cid, Lat. quid. There is no example of the reduced final consonants after u.

§41. REPEITION OF THE SAME CONSONANT SIGN is permitted only when the inherent vowel of the prior character is a pronounced vowel: adāša = adādā, inam = inam. Any long consonants which had developed by assimilation had been shortened in Iranian; even the doubles that came from enclisis were graphically reduced to simples: āptem DB 195f = āptem, taumaniša DNB 25f = taumaniša, [r]a[x]kama A64a 4 = niyākam-maiy (§ 52. I). An error in cutting the characters, or in the grafting of the model copy, has given a repeated m in ciga[ar]me, twice in DNB 51-2, for me[ar]miy, = ciga[karamcamaiy.

§42. THE IDEOGRAPHES are five in number, standing respectively for zāgādīya `king', dahāyās `province', bāmiš `earth', Auramazād `Auramazda', and baqa `god'; they are transcribed by XŠ, DH, BU, AM, BG. In DSK 4 there is what seems to be a ligature for AM-ha.

The ideograms, without addition of syllabic characters, stand for the nominative singular;

other forms are indicated by writing after the ideogram the last character or characters of the full word. Thus acc. zāgādīyam is written XŠ-m or XŠ-ym = XŠm or XŠyam; gen. zāgādīyahā is written XŠ-y-a XŠ-ya-ya XŠ-yeh-y-a = XŠyā XŠyā XŠyā XŠyā; but XŠ-ahyā A61d 2 is a misspelling, since this should mean XŠyā rather than the intended XŠyā.

The use of ideograms had its limitations in time and place, to judge by the extant inscriptions. Darius I used no ideograms at Behistan, Naqš-i-Rustam, Elend, and on the weights; Xerxes used none at Elend and Van. Darius I used only XŠ at Suez, and varied between XŠ and none at Persepolis; Xerxes also varies between XŠ and none at Persepolis, but in XPj has XŠ and DH, but not BU. At Susa, Darius I varied from the use of none to the use of XŠ only, and that of XŠ DH BU AM, so far as they occur (on DSe DSf DSM DSt, see below); Xerxes in his two short inscriptions gives no proof of using any ideogram, but Darius II seems to have used all five, including BG which appears only in DPs; Artaxerxes II certainly used four ideograms, but may also have entirely avoided their use in another inscription. At Hamadan, Ariarmannes has no ideogram; Darius I has only XŠ; Xerxes has only XŠ, but happens not to use the other words; Artaxerxes II has four (but see below on A7 He), but writes baqa in full in A7He. The other texts are too brief or defective to warrant special remark.

In general, then, more ideograms appear in later texts, and they were more used at Susa than elsewhere. Further, XŠ was the ideogram of most widespread use, and the order of introduction into texts was DH, BU, AM, BG. Few texts have any irregularity in this respect, and few use both ideogram and full writing for the same word; there are the following exceptions:

DSe contains all five words, with a regular use of XŠ, and the rest in full, except that after four occurrences of Auramazād and its forms AM is found in line 50 (restored but certain). DSf has both bāmim and BU BUyād; otherwise XŠ and DH, but Auramazād and baqa in full.

DSm, as restored by Brandenstein, WZKM 39.55-8, has XŠ and zāgādīyam, DHnām and dāhāysu, bāmiyā, AMhā and AMmay; it is probable that all the words should be written
in full, but in presenting the text it seemed hardly worth while to make the alterations, since only a few slight fragments are preserved.

DSř, as restored, has XŠ and zāyāštiram (both entirely restored), and bānim Auramazda bāgībhō; this should not be, but I fail to see any alternative.

AŚe seems to have XŠ and zāyāštiram; but this is a much mutilated text, and also the inscriptions of Artaxerxes II are not accurately written.

AŚ agrees with DSř; it has bānim and BUyā, otherwise XŠ and DH, but Auramazda and baya.

APa has zāyāštiram, DH, būmān (sic) and BUyā, Auramazda, baya; a state of variation which is attributable to the inaccuracy of OP writing at this period.

§43. NUMERALS: The cardinals are not written in full (except aino- ‘one’ in a formulaic phrase), but are indicated by signs: 1, a single long vertical wedge; 2, two short vertical wedges, one above the other; 3, two short verticals with a long vertical to the right, and so on; 10, an angle with point to the left; 20, two small angles, one above the other; 100, two short horizontal wedges meeting at their points, above a single vertical wedge. Smaller units are placed to the right of larger units. But the ordinals are written in full, with the regular characters.

The cuneiform characters for the numerals are given at the end of the Lexicon, where their occurrences also are listed.

§44. The Separation of Words is made in OP by a word-divider, which in the Behistian text has the form of an angle with the point to the left, and in other texts is a single slanting wedge running from upper left to lower right. The divider stands at the beginning of each column and of each section and each smaller inscription at Behistian, and at the end of Behistian a-g, i-j; elsewhere it does not stand at the beginning, but it stands at the end of DPD, of some copies of XPd, of APa, and of some of the items in AŚ. It is frequently lacking between words in Scheil’s texts from Susa, notably in DSa, DSc, DSD, DŠg, DSi, DŠj, DŠy, AŚd; these texts have been published not in mechanical reproductions, but only in hand-drawn copies, but the reliability of the copyist is confirmed by similar omissions in DSY, our text of which has been read from a carbon rubbing of the original. In other inscriptions omission of the divider is extremely rare: examples are yadimanišyā XPh 47 = yadi(y) : maniyā(ha)iy, and yūd Artaxazā-gām] Sf. The gen. Auramazdaḵa is replaced in XPa 10 by Aurahyā Mazdaḵa, with declension of both parts of the compound, but no divider.

The emphatic adverb apiy is sometimes attached to the preceding as an enclitic, and sometimes separated from it by a divider. The enclitic pronoun dīz is preceded by a divider in DB 4.34, 35, 36. At DB 5.11, uā : dāyā : marda is probably to be emended to uā : vijmardā, with wrongly inserted divider; other peculiarities in connection with enclitics are given in §133.

Two compound words are sometimes cut by the divider; these are Arīya : cīā and Arīyagā, paru ā : zānānām and parwzanānām parwzanānām. There is also variation between the phrasal adverb paradrāya and the prepositional phrase para : drāya. But in Fragment Theta of DSř, the...y<n.> : k<n> ... supposed to belong to dāranīyarkārā 49 should be read...y<n> : k<n>... as part of avaiy : Spardiyā 51-2.

§45. The Normalization of OP Texts. The first step is to make a close transcription of the text, representing the inherent vowels of the consonantal characters by raised letters. Then in normalizing...
A. The vowel character a initial becomes (normalized) ā or ā, or the prior part of a diphthong  āi or āu; medial, ā or the prior part of āi āu: final, ā.
B. The vowel characters i and u become ī or  i, ā or ā; or the second part of a diphthong.
C. The consonantal characters with inherent i and u, if standing before i or u, lose the inherent vowel.
D. The consonant characters with inherent a
   (a) keep the a to show the vowel sound before a medial consonant, or as part of the diphthongs ai and au, or final before an unwritten minimal consonant (t d n h);
   (b) lose the a when the consonant sound is immediately followed by another consonant, or by the character a (= ā), or when the consonant is final in the word (§ -m -r -y -w), or when the a-inherent character functions for an i- or u-inherent character before the characters i or u.
E. Raised i u a are used in the normalized text to show:
   (a) i and u, to show i- and u-inherent characters after which the i and u failed to be written.
   (b) a, to show a-inherent characters functioning for i-inherent characters after which i failed to be written.
F. Raised n and h medial, t d n h final, may optionally be supplied to mark sounds not indicated in the writing:
   (a) medial n, before a consonant not y nor v.

borrowed words in non-IE languages. Although some scholars use other symbols to represent certain OP syllabic characters (§20), there is no important disagreement in method, and there is no gain in using those other characters. A goodly amount of ambiguity still remains in connection with initial a and with a-inherent characters (§21, §22), and with the value of (normalized) ar, which is phonetic or r (§29-§35); such problems must be settled by etymological comparison or by comparison with borrowings in other languages; but these are only problems relating to individual words or forms, not affecting the general method of normalization. On these, one should consult the Lexicon, where divergent views are cited under the words concerned. Some scholars, it is true, normalize or rather ‘interpret’ OP ai and au as e and o, but the only result is to obscure the relation between the word and its cuneiform representation; it is quite simple, if one so desires, to regard ai and au as symbols for the sounds e and o.

(b) medial h, before u and rarely before i and m.
(c) final t d n h, after ā and ā.

§46. The Reduction of OP to Writing. The scribes, in analyzing the OP words into sounds, must have spoken the words slowly, prolonging them until the sound-units could be clearly distinguished and receive each a symbol. This procedure was, apparently, responsible for the most conspicuous of the peculiarities of the syllabary, notably the following: every consonant which stood before a consonant or final was equipped with the common vowel a; postconsonantal y and v became iy or w (§25, §26); final ā was prolonged to ā (§36), though the reduced final consonants, even though they were never written, checked the prolongation and caused the keeping of ā (§40): final i and u were prolonged to iy and uw (§37, §38; after i and u the reduced final consonants seem to have been entirely lost, §40); anticonsonantal ī and ū were occasionally prolonged to iy and āw (§23); medial ay and aw occasionally became aiy and aaw (§48).

This procedure, however, does not explain the peculiarities in the writing of h before i and u (§27, §28), nor the omission of the anticonsonantal nasal and of certain reduced final consonants (§39, §40); the most that we can say is that they were disregarded in writing because they were weak sounds, yet most of them survived into later periods of Persian.

§47. Irregularities and Errors in OP Writing are, of course, to be found; in the preceding sections we have listed the examples of the following irregular phenomena:
Lack of ā or ā after a consonant with inherent ā or ū, to denote ā or ū; §22.
Lack of i after a consonant with inherent a, to denote ā; §22.
Lack of a final, to mark absolutely final ā as ā; §36.
Writing of hi by hō or by ī or by hē; §27.
Writing of iy and its forms by iyē instead of by iyē; §25.
Occasional writing of iyē and uwē to denote ī and ū; §23.
Variation between ideograms and full writing in the same inscription; §42.
Irregularities in word division and in the use of the word-divider; §44.

Other irregularities and errors will be discussed in §§48–§57.

§48. Medial ay and av were occasionally prolonged in the analysis for reduction to writing, so that they became aiy and auv (cf. JAOS 62:271–2); the examples are the following:

adāraya DB 1.85, 2.9, 3.23, DNa 41; adāraiyā DNA 22.
amānaya DB 2.48, 2.63; amānaiyā DB 2.28.
paradraya DNA 28f; paradraya A?P 24 (cf. draya, drayhaya, drayahiya).

Perhaps [var]taiyaiy DB 4.44, for vartayaiy.

Cf. also the sandhi phenomena of dārayapiy DNA 12, dārayapiy DNA 46, and the same as two words, dāraiy apiy.

bawaiy DNA 14, bawaiy DNA 14.
gūhwāy DB 1.62f, etc.; dāhwayā DB 1.34.
tawiyā DSe 39, cf. Skt. sthāyīgas.
yawiyā DZe 8f, 10; cf. Skt. yāyī.
hawam DB 1.29, for *hav-am, from hauw + enclitic -am.

§49. Variations in Consonants sometimes appear in the writing, though this can usually be explained as the product of special causes: lateness, dialect, borrowing from other languages.

(a) t/d, in the late Ardaxaśa AVsa, for Artaxaša.

in borrowed tacaram DPa 6, XPj, and dacaram DSD 3.

(b) c/s, in late inscriptions:

haša ASe 4, for the usual hača.
Xšayairahya A'Sa 2 bis, for Xšayairha etc.
[usta]canām A'Se 5f, for ustašanām A'Pa 22.
Ardaxaśa AVsa for Artaxaša.

(c) ç and variants: in late Ardaxaśa AVsa, for Artaxaša.

in late Mītṛa, M'tra, M'ṭra (see Lexicon), and the Persian personal name Vau-misa DNA 2.49 etc.

Other variants are explained in the phonology as being due to admixture of Median forms; cf. §8.

§50. The Errors of Writing can be divided into the following heads:

1. Metathesis of characters; §51.
2. Omission of characters and of groups of characters; §52.
3. Addition of characters or of groups of characters; §53.
4. Alteration of characters by omission or addition of a stroke; §54.
5. Miswritings less easily classified; §55.
6. Syntactical misuse of forms; §56.
7. Creation of new incorrect forms; §57.

Some examples might be classified under more than one of these headings, but will be arbitrarily assigned to the places which are most appropriate. As will be seen, most of these errors belong to late inscriptions, that is, after those of Xerxes. For by this time the development to Middle Persian was under way; sounds were undergoing changes, new words and meanings were coming in, the final syllables were being lost. OP had ceased to be a vernacular, and the scribes who composed the inscriptions had no experience of the language as it had been. They were thrown back upon the use of words and forms found in the older records, the use of which they often failed to understand. The result was inevitably an inaccurate orthography, most notably in the final syllables.

§51. Metathesis of Characters. The examples are the following:

ciyākarammarcyīya DNA 51, 51f, for c'mryɪya, = ciyākaram-ca-mayy.

imryɪ A'P 22, for ir'myɪ, = iym.

Dārayaṭauhauš nom. XPF 25, Dārayaṭauš gen. XPF 28: the original copy had -wus in both places, and the corrector, finding the error in 28, made the insertion in the word where it stood in 25.

Skudrā XPF 27, Kūṣiya XPF 28: a similar error; the lacking a should have been added to k-wus, but was actually added to s'kwardr, which stood just above it.

śarstibara DNe 2, written s'sarstibara; the original copy had ar'śarstibara = arstibara, and in endeavoring to change to ar'sarstihara = arstibara, the scribe altered the first character instead of the third.

Hazamāršiya A'Sa 3, with -smaran- for -sramen-. daivadāvan XPhb 37f for the correct -dānam in copy a; the r for r stands at the end of line 37, and is copied from line 36, where the last character is r.
§52. OMISSIONS OF CHARACTERS: The omissions fall into several classes.
I. The characters iy at the end of a word are sometimes omitted after an a-inherent consonant:

\[ \text{ty} = \text{tya} \text{(iy)} \] XPh 23; \text{ar\text{iy}a}\text{ṣ} = \text{aniya\text{ṣ} (iy)}

XPh 41f; \text{par\text{iy}ait} = \text{par\text{iy}ait (iy)} \text{XPh 52.}

\[ \text{ap\text{iy}ak} = \text{ap\text{iy}ak\text{ma}} \text{(iy)} \text{A\text{S}a} 3; \]
\[ \text{ṣ} = \text{ṣa\text{ma}} \text{(iy)} \text{A\text{S}a} 4.} \]

\[ \text{par\text{iy}ait} = \text{(loc.) Pārs\text{a} (iy)} \text{A\text{S}h} 3.} \]

\[ \text{a\text{v\text{a\text{ma}}} = a\text{v\text{a\text{ma}}} \text{mc} (iy)} \text{DB 5.2f (probable restoration).} \]

II. The -i- may be omitted in final -aïy:

\[ \text{Auramadding-tay DB 4.58, for -aïy.} \]

\[ \text{man\text{iy}ahay DPe 20, for -aïy.} \]

\[ \text{uta-may A\text{S}dc 4, for uta-maiy (which is in db).} \]

Cf. forms of dārnyâ, with enclitic apiy (§136).

III. The character o was sometimes omitted where it marked length:

\[ \text{XŚyānām DP 1, DH 1, xāyābyānām A\text{S}c 2f, A\text{Pa} 10, for -yānām.} \]

\[ \text{avāhā XPh 30, for the common avāhā.} \]

\[ \text{Auramadding XPh 34, 43, XPh 14, 33, 37, 44,} \]
\[ \text{A\text{Pa} 18f, for -āhā.} \]

\[ \text{ahāniy XPh 47, 48 (1st sg. subj.) = Skt. dṣāni;} \]

\[ \text{unless the a is analogical to the ā in other forms, as 3d sg. ahāniy.} \]

\[ \text{stāniy A\text{S}a 1, A\text{Hb}, perhaps 1sf. for -āyā;} \]

\[ \text{frāmāray A\text{Pa} 8, for the common frāmārayam.} \]

\[ \text{Anāhātā, Anāhātā, in A\text{S}a, A\text{Sd}, A\text{Ha}, for (Av.)} \]

\[ \text{Anāhātā.} \]

\[ \text{hyā waspā AmH 6, for hyā.} \]

\[ \text{tyā ukrām waspām AmH 9f, for tyām ukrām waspām (cf. §56. V).} \]

IV. The character a, representing the augment, seems to be lacking in avāhā[da] DB 2.94. On an apparently unaugmented mara DB 5.11, cf. §44 and Lex. s.v. mara-.

V. Final m is lacking in iya DB 4.90; twa

XPh 46; XŚyānā A\text{S}b; apadāna A\text{S}a 3, A\text{Ha} 5;

\[ \text{apārīparā A\text{S}a 4. For all but the last, the forms with -m are found in other passages. Cf. also tyā} \]

\[ \text{A\text{S}h} 9, 13f, for tyām (§52. III, §56. V).} \]

VI. Miscellaneous characters are lacking as follows; for brevity we put the omitted value in the word, in parenthesis:

\[ \text{Aurama\text{da}(d)ām DB 1.54f; u(l)ā DB 3.77; perhaps} \]

\[ \text{ava\text{(o)ā DB 4.51; i(y)a)m DB 4.91; in Uṭāna:nā DB 4.83, according to KT, the gap is} \]

\[ \text{inadequate for -n: -n; imē DB 4.89 (Cameron), for} \]

\[ \text{(i)mām; Nabu\text{ku}(d)arāra DBi 5f.} \]

\[ \text{Auramazdā(ma)yi DN 50; ayā(ma)iniš DNb 59.} \]

\[ \text{yē\text{dīm\text{n}ē\text{y}a\text{i}y} XPh 47, for yadi(y) : man\text{vē\text{a}}(ha)\text{i}y.} \]

\[ \text{ahā(y) A\text{S}dc 1 = ahā(y) A\text{S}db 1.} \]

\[ \text{utama\text{i}y: kartam A\text{S}d 4 (-may dc), for ut(ā):} \]

\[ \text{tya\text{ma}i: kartam.} \]

\[ \text{Dārnyāvav(u)akhā A\text{H}a 2, 2°, 4, 4°.} \]

\[ \text{marī(ya)hyā A\text{Pa} 4f; avāga(y)nām A\text{Pa} 22.} \]

VII. A serious haplography occurs, according to Bv. MSLP 23.182-3, in DB 1.66, where he would read adīnā : adam : (pati\text{y}abāram : adam :)

\[ \text{kāram; but his assumption is not necessary for an} \]

\[ \text{interpretation.} \]

§53. ADDITION OF CHARACTERS: in almost all examples the addition is of the character a:

\[ \text{avājāniy DB 1.51, 52, perhaps for avajāniy; cf.} \]

\[ \text{JAOS 62.274.} \]

\[ \text{pati\text{y}abāram DB 1.68, perhaps for pati\text{y}abāram; cf.} \]

\[ \text{JAOS 62.275.} \]

\[ \text{Hāxāmān\text{ī}śiya XPh 10, for Hazāmān\text{ī}śya. } \]

\[ \text{ahām XPh 15f, for ahām.} \]

\[ \text{akunavū SX 4b, for akunavū, as in SX 4b.} \]

\[ \text{Artax\text{ā}gāhā A\text{S}a 2, for Artax\text{ā}gāhā (or as in §172).} \]

\[ \text{XŚhē\text{y}rā = XŚhē\text{y}rā A\text{S}d 2, for XŚhē\text{y}rā = XŚhē\text{y}rā} \]

\[ \text{XŚhē\text{y}rā = XŚhē\text{y}rā = XŚhē\text{y}rā.} \]

\[ \text{akunāvam A\text{S}db 3, for akunāvam.} \]

\[ \text{gātā A\text{S}da 4, db 4, for gastā (as in A\text{S}dc, and elsewhere).} \]

\[ \text{puça A\text{Hb}, for puça (after napā, acc. to Brd.} \]

\[ \text{WZKM 39.92).} \]

\[ \text{Pārsā AmH 5, for Pārsā.} \]

\[ \text{asmānām A\text{Pa} 3, for asmānām.} \]

Doublet forms, one with and the other without the character a, sometimes occur, when doubt may exist as to whether two pronunciations actually existed, or one of the two writings is erroneous:

\[ \text{uāpāsiyām DB 1.47, but wāpāsiyāhā DN 15.} \]

\[ \text{ciyākāram DNb 50, 51, 51f, but ciyākāram DN 39.} \]

\[ \text{gen. Cīśpāț DB 1.5f, but Cīśpāț DBa 8, AmH} \]

\[ \text{3; cf. §179. IV, Lg. 19.222.} \]

\[ \text{acc. da\text{hl}āvum DPd 15, 18, DN 53; but -y\text{n}ūm\text{e} = -yānu or -yūm, in visadah\text{y}um\text{e} XPh 12,} \]

\[ \text{DHyu\text{m}ūm A\text{Pa} 26.} \]

\[ \text{In A\text{S}b an extra XŚ is inscribed after XŚyānā;} \]

\[ \text{unless indeed the engraver has omitted the word} \]
DHyunām immediately after the apparently extra XŠ.

§54. Alteration of Characters by omission or addition of a stroke sometimes occurs, altering the value; the error may be either in original engraving, or in the reading by the modern observer:

I. The stroke is lacking; the corrected form is given first:

[A]lamaita DB 5.5, formerly read [mōmrā]; see Lexicon.


ulawa DB 4.71f, for KT’s ʾrāsā.

obaraa XPh 17, inscribed abramw.

θalagiuwya, perhaps to be read for Thalagiuwya

A?P 11; see Lexicon.

II. The stroke is in excess:

agawbaša DB 3.55, inscribed agurra, acc. to KT.

abara DB 3.67, inscribed arurā, acc. to KT.

akariyātha DB 3.92, inscribed asurā, acc. to KT.

vikanādy DB 4.71, 73, inscribed vdsā, acc. to KT.

vikanāhids DB 4.77, inscribed visā, acc. to KT.

pašā : hadā : kārō DB 5.21, correction from KT’s hadā : kārō : Sākām.


§55. Miscellaneous Errors of Writing are in the following:

I. The word is recognizable, but is considerably changed from the writing known in other passages:

škurmē = škaurim DB 4.65, for škurmē = škaurim.

yadaiyāśa XPh 39, for yadaiyāśa = yadaiyāśa.

yadaiyāśa = yadaiyā XPh 39, apparently for yadaiyā.

vispā = vispā A?Sd 4, for vispā = vispā (so A3 Sda, dc 4).

bumām = būmām A?Pa 2, for būmām = būmām.

šiγama = šiγama A?Pa 4, for šiγama = šiγama.

akwuru = akunām XSc 3 and A?Ha 5f (only ōm visible), A?Sa 4 and 5 (restored); akwu = akunā A?Ha 7; akwu = akunāša A?Sd 3 (and akwu = akunāša = akunawām A?Sd 3, see §53); all for akwu = akunawām.

akwu = akunāš A?Sa 3f, D?Sbb 3, for akwu = akunawā.

II. The word is itself problematic or obscure:

a+ra+ DB 4.89, as read by KT; see now Cameron’s reading.

amurwa DB 4.92, as read by KT; perhaps hamaxmatā (JAOS 62.269).

akwaγa D?Nb 38, perhaps for aruγa (JNES 4.44, 52).


juγiγa : juγiγa : paradaγadām A?Sd 3; uncertain words.

All the words on Seals b, c, d, e; uncertain.

§56. Errors in Syntext may be either the product of an intentional writing of a form other than that called for by the use of the word in its context, or the product of a fortuitous miswriting which accidentally yields a form not called for by the context. Those occurring in the OP inscriptions may be classified as follows:

I. The nominative form, in a group of two or more words, is used as appositive or as predicate to a noun in another case or to an adverb; see §312, §313, §247E.

II. The nominative is apparently misused for the genitive, or the genitive for the nominative, in genealogies of Artaxerxes I–II–III; these misuses are explainable as examples of anacoluthon; see §313.

III. The labels of the throne-bearers in DN and A?P are sometimes written with the plural of the ethnic, or with the province-name for the ethnic; we give the examples, with a literal translation:

DN xv iyam : Sākā : tigraxa[udā] ‘this is the Pointed-Cap Scythians’.

DN xxix iyam : Mαcyā ‘this is the men of Maka’.

A?P 9 iyam : Zrākā ‘this is the Drangians’.

A?P 14 iyam : Sākā : haunavargā ‘this is the Amyrgian Scythians’.


A?P 23 iyam : Yaunā ‘this is the Ionians’.

A?P 24 iyam : Sākā : paraγaiya ‘this is the Scythians across the sea’.

A?P 26 iyam : Yaunā : takabarā ‘this is the Ionian (sg.), petasos-wearers (pl.)’.

DN xvi iyam : Bābīrūš, A?P 16 iyam : Bābīrūš ‘this is Babylon’.

IV. The use of masculine plural pronouns with
collective antecedents either masculine or feminine, exemplifies the constructio ad sensum rather than syntactical error; examples in §258.III.

V. Miscellaneous errors concerned with cases and genders:
AmH 2 Pārsā for loc. (§314.b); 5 tya as asf. (= tyām); 8f iyam dahīaš, nom. for loc. (§314.b).
AsH 2 Pārza, nsm. for lsf. (§52.I); 9f tyā ukāram waspam, nt. for fem. tyām ukāram waspām (possibly by imitation of the phrasing seen in DSf 11, where the agreement is with nt. xšaçaṃ).
XPh 33 avā (for avām) dahīavām.
A¹I hya (nsm. for gsm.) imam (asm. for nsm. iyam) bätugara siyāmam (asm. for nsm. -ma).
A²Sc 4f īnym (asm. for asf. ima) hadiš; 6 tya (for asf. tyām) oḥaqaṇāṃ.
A³Sd 3 imām (asm. for nsm. ima) hadiš.

A³Ha 7 imām (asm. for asn. ima) tya; so also A³Sa 5 (restored).
A³Pa 22f imām usṭaśaḥāḥ oḥaganam (for nom. iyam ušaṇāḥ oḥaqaṇāḥ) mām (perhaps for manā) upā mām karī.
A³Pa 26 tya mām karī (perhaps for manā karīm).

§57. NEOLLOGISMS IN THE LATER INSCRIPTIONS, that is, after Xerxes, may perhaps be counted as errors, though susceptible of explanation. There are the following, all new formations for the genitive—presumably after the gen. xšaṣaṭaḥ, with which the genitives of the royal name were constantly associated, and gen. Arataṣaḥaḥ:
Hazamaniṣaḥyā AmH 3f.
Dārayavuṣaḥyā in A¹I, A³Sa, A³He, and restored in A³Sc; Dārayavuṣaḥyā in A³Ha.
Xšaṭarṣaḥyā in A³Pa, A²I, A³Ha; Xšaṭarṣaḥyā (§49b) in A³Sa; Xšaṭarṣaḥyā (§187) in A³He.

CHAPTER III. PHONOLOGY

§58. THE PIE SOUNDS, whose history will be traced down into OP, were the following:

I. Vowels: pure semi-consonantal
short: e o a i u r ṭ n
reduced: o a a i u r ṭ n
long: ē o ā ī u ā ṭ n

II. Diphthongs:
short: ei oi ai i ni en ou au eu
long: ćę īa ē ou āu

III. Consonants:

<table>
<thead>
<tr>
<th></th>
<th>voiceless</th>
<th>voiced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>non-aspir.</td>
<td>asp.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>labial</td>
<td>p</td>
<td>ph</td>
</tr>
<tr>
<td>dental</td>
<td>t</td>
<td>th</td>
</tr>
<tr>
<td>palatal</td>
<td>k</td>
<td>kh</td>
</tr>
<tr>
<td>pure velar</td>
<td>q</td>
<td>qh</td>
</tr>
<tr>
<td>labiovelar</td>
<td>q²</td>
<td>q²h</td>
</tr>
<tr>
<td>Clusters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dental</td>
<td>tst</td>
<td>tsth</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuants (voiced, except s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sibilants</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td>liquids</td>
<td>l</td>
<td>r</td>
</tr>
<tr>
<td>semivowels</td>
<td>i</td>
<td>ŋ</td>
</tr>
</tbody>
</table>

Remarks on the list of PIE sounds:

A. I have omitted from this list (a) Brugmann's ḫ ph ṛ ḍḥ,1 sounds of problematic nature which are posited to explain the occurrence of dental stops in Greek corresponding to sibilants in other IE languages; (b) Sturtevant's ẑ and prespirasited continuants,2 which also explain only certain peculiarities of development in Greek; (c) Brugmann's šh and zh,3 from s after voiceless and voiced aspirated stops, no distinctive product of which appears in any IE language; (d) short and long vocalic ň and ŋ, since they were nonphonemic, and so rare that they seem not to occur in the extant words of OP.

B. Not all the sounds in the list were phonemic: ň and ŋ developed only from a nasal standing before palatal and velar stops respectively; Ž developed only from s before voiced stops and after voiced aspirated stops, and in the voiced dental clusters.

C. There is no need for a special symbol to denote velar q, since the Aryan developments (§73.I–III) distinguish velar q from palatal ğ.

D. The dental clusters were clusters consisting

---

of three phonemes each, but of such peculiarity in their developments in the separate languages as to deserve places in the list; they originated in pre-Indo-Hittite from the following combinations:

\[ \text{tst} < \text{t-d-t} \]
\[ \text{tsth} < \text{th-t-th-th-d-th} \]
\[ \text{dzd} < \text{t-d-d} \]
\[ \text{dzdh} < \text{dh-t-th-dh-dh-th-dh-th-dh} \]

The most important of these are the combinations of \( t \) \( d \) \( dh \) with \( t \) of a suffix.

E. Of the 'reduced vowels', \( \ddot{a} \) is a reduction of \( e \); \( \ddot{a} \) is a reduction of \( o \); \( \ddot{\varepsilon} \) is a reduction of \( \ddot{\varepsilon} \) \( \ddot{a} \).

§69. The Old Persian Sounds are represented, in the normalized orthography, by the following equipment of graphic signs:

Vowels: \( a \ i \ u \ a \ddot{i} \ddot{u} \)

Diphthongs: \( a i a a \ a i \ddot{u} \a u \)

 Stops and corresponding Spirants and Nasals:

\( \text{Labial} \ p \ b \ f \ m \)
\( \text{Dental} \ t \ d \ \theta \ n \)
\( \text{Palatal} \ c \ j \)
\( \text{Velar} \ k \ g \ x \)

Other Continuants \( r \ l \ y \ v \ h \)

The sounds represented by these symbols cannot be defined with entire precision; but in general they may be said to be those usually represented by these symbols, with the following limitations:

(a) \( b \ d \ g \) were probably voiced spirants when intervocalic, rather than voiced stops.\(^1\)

(b) \( c \ j \) were not stops, but the affricates \( \ddot{c} \) and \( \ddot{j} \) (as in Eng. church and judge); but \( j \) represented also \( \ddot{\varepsilon} \) (as in azure).

(c) \( f \ \theta \ x \) were voiceless spirants.

(d) \( \ddot{\varepsilon} \) appears to have been a voiceless sibilant between dental \( s \) and alveolar \( \ddot{s} \).

(e) \( v \) was the voiced labial semivowel, as in Eng. we.

(f) The sound \( r \) was indicated by \( \text{r}^* \) preceded by the character \( a \) or an \( a \)-inherent consonantal character, and is indistinguishable graphically from phonetic \( ar \); see §29.

(g) For other sounds present in the spoken language and not represented in the writing, see §§27, 28, 39, 40, 103.II, 118.II.

(h) Other details will be presented in connection with the history of the sounds concerned.

(i) There is no evidence as to the position and nature of the syllabic accent of OP, except that the presence of enclitic words shows that there was an accent.

§60. The Position of Sounds and Sound-Clusters in OP Words.

I. The vowels \( a \ \ddot{a} \ i \ \ddot{i} \ \ddot{a} \ \ddot{u} \ \ddot{r} \) and the diphthongs \( a \ddot{i} a \ddot{i} a \ddot{u} \ddot{a} u \), may occur anywhere in the word; there are extant examples initially of \( a \ \ddot{a} i \ \ddot{a} r \)
\( a \ddot{i} a \ddot{u} \), medially of all, final of \( a \ \ddot{a} i \ \ddot{a} i \ \ddot{a} i \ \ddot{a} u \).

II. All the consonants occur initially before vowels, except \( j \); all occur medially intervocalic.

III. The following clusters of two consonants occur initially before vowels: \( x \ddot{x} \ddot{x} d \ddot{x} d \ddot{v} \ddot{r} s \ddot{k} s \ddot{p} s p x r h y \); \( t y \) only in the stem \( tya- \) (see Lex. s.v.). The only initial cluster of three is \( x \ddot{s} h \).

IV. The following clusters of two consonants occur medially between vowels: \( x \ddot{t} x \theta ^* x x x m x ^* x x \ddot{x} s \ddot{x} d \ddot{g} n g m g r j y \ddot{t} p ^* t r ^* \ddot{b} h ^* b m \ddot{b} r ^* d r a \ddot{u} n y \ddot{n} n f r b m n m y g \ddot{r} k \ddot{r} x r g r c r c r r c r d r t d r b m r y r r r s r s l d ^* s t s p s m s k s \ddot{z} \ddot{d} z ^* s h \ddot{s} p \ddot{s} m \ddot{s} k i \ddot{v} n z ^* n g n t n d m p b b m h m h k u \), all of which actually occur, the prior sound is omitted in the writing. Of those marked with *, \( \ddot{b} h \) occurs by analogical formation; \( x \ddot{b} \) only in an uninterpretable word; \( x m \), \( b r \), and \( z b \), only in Median words; \( n z \) only in a Scythian name; \( t p \), \( t r \), \( l d \) only in non-Iranian names of persons and places; \( \ddot{s} d \) only in apparently corrupt writings.

V. Clusters of three or four sounds occur medially intervocalic, as follows: \( x \ddot{s} h n \), transferred from the initial position (III); \( x t r \) and \( x \ddot{s} b r \), which are Median; \( n k m \), written \( g m \); \( r \ddot{k} t \), \( r \ddot{s} h a \), \( r \ddot{b} y \); \( r v y \), unless this is phonetically \( r w y \).

VI. In final position only single consonants are found, and of these only \( m r \ \ddot{s} \) are written; but peculiarities of the script show that final \( t \), \( d \), \( n \) (from \( n a \) and \( n l \)), \( b \) (from \( s a p l \) \( a \)) survived in the speech as faintly pronounced (i.e., minimal or reduced) sounds.

§61. PIE \( e o a \) fell together into one sound \( a \) in pAr., and this situation remained unchanged in pFr. and OP.\(^4\)

---

1Some scholars argue that OP \( a \) was pronounced \( e \) and \( o \) before \( y \) and \( v \) respectively, and that the OP diphthongs \( a t \) and \( au \) were pronounced \( e \) and \( o \) respec-
there are the following probable examples of ṣ, where other languages, notably the Skt. ṣ, seem to indicate that the reduction is from ọ rather than from e:

*paros, OP para, Skt. purás, Gk. ἀράς.

*pulē, OP parul, Skt. purul, Gk. πολύς.

II. pIE ʊ was the reduction of ŏ or ơ or a; it became i in pAr., but a in all other IE branches.¹

*petēr ‘father’, OP petā, Skt. pitā, Gk. πατήρ.

*seḍa, OP hādiś ‘abode’, but *sedos, Gk. ἕσσα ‘seat’.

*menos, OP -maniś in personal names, but *menos, Gk. μένος ‘vigor (of spirit)’.

In hādiś and -maniś the ʊ varies with a short vowel, which indicates another origin; the problem is too complicated for adequate discussion here.

But before i or y of the same or the next syllable, pIE ʊ became a even in pAryan; see §71.

§64. pIE i and u have undergone very few changes in the various languages; they appear unchanged in OP:

*quid, OP -ciy, Skt. cida, Gk. ρί ‘what’, Lt. quid.

*peri, OP pariy, Skt. pṛi, Gk. πρό ‘around’.

*ēsīta, OP a-ōśtā, cf. Skt. ātīṣṭata.  

*su- ‘good, well’, OP u-frasām, Skt. su-, Gk. ἅγιος ‘healthy’.

*pulō-, OP puça, Skt. putrā, Osc. puco-.  

*suska-, OP aśiska-, Skt. sūkṣa-, Lith. saūsra-s ‘dry’.

Final -i was in OP always followed by the character ṡ, and final -u by the character r; this was true whether the i and u were monophthongal or in diphthongs. See §37, §38.

For the method of writing i and u in OP, and irregularities therein, see §22; for the method of writing hi and hu, see §27, §28.

§65. pIE ĭ and ě survived into most IE languages, including OP, without change; but because of the nature of the OP system of writing they can with rare exceptions be distinguished from ĭ and ě, only by etymological considerations:

*קרא ‘living’, OP kāra, Skt. jīva, Lt. vivos.

*dhi-dhi (§129), OP inv. dīdy ‘see’, cf. NPers. ḍīdān ‘to see’, Skt. root dhī- ‘think’.

¹ To identify pIE ʊ, it is necessary to have two cognates, one in Aryan and the other outside; or to have a cognate with the long-vowel grade.

*tetherom, OP abaram, Skt. ābharam, Gk. ἄφρων.

*tēkum, OP asam, Skt. āśam, Lt. aequum.

*pro, OP fra-, Skt. prā, Gk. πρᾶ.

*apō, OP prefix apa-, Skt. āpā, Gk. ἀρό ‘from’, Lt. ab.

*aḵmōn-, OP acc. āṃkānām, Skt. āṃkānām, Gk. nom. ἀκμᾶω ‘anvil’.

In many words it is impossible to determine from what pIE vowel the OP ā has developed; a cognate outside Aryan, from a language which preserves the distinctions among the original vowels, is necessary, except where a pIE front vowel has palatalized a preceding velar stop and has thus indicated its own original quality (§73. III).

Absolutely final ā in OP was written -ā; that is, with addition of the character a, as though it were lengthened. This does not apply where the -ā was protected by a following unwritten minimal consonant. See §36.1, §40.

For -ay- becoming -aiy- and -av- becoming -aw-, see §48; for contraction of abah to āḥ after dissimilative loss of the prior h, see §131.

§62. pIE ē ĕ ā ē, like the corresponding short vowels, fell together in pAr. in the one quality ā, and remained in this value in OP:

*e-dhē-ē, OP adā ‘he made’, Skt. adhāt, Lt. fē-cit.

*mātē[r], OP -mātā, Skt. mātā, Gk. (Dor.) ἁράτηρ.


subj. *gnō-skē-ti, OP xīmāsātiy ‘he shall know’, Lt. (fut.) nōset ‘he will learn’.

*bhrātēr, OP brātā, Skt. bhrātā, Gk. φίληρ ‘clanbrother’.

§63. pIE Reduced Vowels.

I. pIE ʊ was the reduction of full-grade e, and ʊ the reduction of full-grade ơ; in the remains of OP they are convincingly seen only as the vowel remaining before liquid or nasal + vowel, in situations in which the liquid or nasal might be expected to assume merely vocalic value. Examples are given of ʊ in connection with vocalic l and ṭ, and vocalic m and n (§66.II, §67.I-11);
PHONOLOGY

*bhūmí-, OP acc. bāmim ‘earth’, Skt. bhūmīm. pAr. *dāra-, OP adv. dārai ‘afar’, Skt. dārā-
‘far’.

For the occasional use of *w* = w, and possibly as *iy* = iy, to denote ā and i, see §23.

§66. PIE r and l fell together in pAr. in the sound r, which remained unchanged in Skt., and so apparently in OP, though its written representation is by *r* preceded by a or by an a-inherent consonant: thus kr-rtm, normalized krtam, is kṛtam, Skt. kṛtām; ar-rt-, normalized arta, is ṛta, Skt. ṛtā. For details, see §29–§35.

I. Apparently PIE *r* became OP u before n, though this value is seen only in forms of kar-
make, do; and this peculiar development is rather to be attributed to the influence of other verbs with ụ in the root before the -nau- suffix:1

pAr. *kṝnau, OP kunāutīg, Skt. kṝṇātī; so also other forms of the present and imperfect, such as 1st sg. impf. akunavan, 1st sg. subj. m. kunānāiyī, etc.; and by extension in the strong aorist: 3d sg. mid. akūtā, etc.

II. When *r* (of either origin) is expected to stand before a vowel, it must be either as consonant *r*, or as the reduced vowel ụ + consonant *r*.

The latter combination2 appears in OP as -ar-: pie *ǵhul-enc-, OP darāniya- “gold”, Skt. hiranya-
pie *ekṛṣṇanta, OP akarika-ṛtā, cf. Skt. ākṛṣṇantā.3

Before ī and ū there seems to have been the same development as before a vowel; it is possible that OP akarika-ṛtā is based rather on *ekṛṣṇanta.4

§67. PIE ṇ and ṇ became pAr. a before consonants.

*ṇbhi, OP abhy, Skt. abhī, oHG umbi (but see Lex. s.v. abhī).

*kṛntom ‘100’, in Θeta-guṇ (uncertain etymology, see Lex. s.v.).

*bhundh-, OP basta- (§85), Skt. baddhā-, cf. Eng. bound.

negative prefix *ṇ- in a-xṣāina-, a-xṣāla-, etc.

*ṃ-dhe, OP hadā, Skt. saḥa ‘with’.

I. Before a vowel or ī or ū, PIE ṇ and ṇ must,

like r (§66.II), appear as ʊm and ūm, which became OP an and am:

*ṛ-yṃ-iṛt, Skt. gān̄yāt, OP ā-jāmiyā ‘may it come’
(with analogical ṣ, §101).

neg. prefix *sn- in An-ōhītā (never so written, see Lexicon) ‘The Spotless Goddess’.

In a-yau(ma)iniś, negative of yaumainiś, the prefix has been generalized in the antecohesonal form.

II. When final in the word, pIE ṇ and ṇ became pAr. a, which of course was written ā in OP (§66.I):


But if -ṇ was the ending of the acc. sg. of a noun or of the 1st sg. of a verb, the value -am for -ṣm which was proper before an initial vowel of the next word, was generalized: doubtless this -am was fixed as normal by the subsequent influence of the -am in the acc. sg. of -ō stems and in the 1st sg. of the imperfect of thematic verbs: acc. viś-ām, oṣmān-ām; cf. kāra-ām, marṭhya-ām.

*ēṣ-ṇ ‘I was’, OP āḥ-ām, Skt. āṣ-ām, Gk. (Hom.) āṣ-a; cf. OP abara-ām, Skt. abhara-ām, Gk. ἀπέσον.

§68. PIE ī l ū ṇ ǎ relate to the corresponding pIE short vowels as ī ą to ī u; the first two became OP ar, Skt. īr or ūr, the latter two became ā in OP and Skt. alike. A few examples only can be recognized with some probability, on the basis of the Skt. equivalents:

*ḍhr原有的 ‘long’, OP daryam, Skt. dirghā-, Gk. ἀδόξος.

*ṛṛh-tu- ‘place’, OP ḍhru-, Skt. gṛh- to the root *ṛem- ‘come’.

*e-ṛṇ-ṇa- t ‘he knew’, OP adāṇā, Skt. dānāt, to root *ṛṇa-; unless this tense-formation really be *ṛṇa-ṇa-, with pAr. dissimilative loss of the prior n.

*pṛyom, OP paruvam ‘formerly’, Skt. pūrvam.

§69. The PIE Short Diphthongs in ī, namely ī or oi,1 all became pAr. ai, which remained in OP,2 but became Av. aē or oē, and Skt. e; they remained distinct in Greek, with virtually no change, and in Latin, where they became respectively ī, oe or ū, ae. The ambiguity of OP

---

1 Lg. 18.79-82. 2 Phonetically proper when the r was preceded by two consonants, or by one consonant which was itself preceded by a long vowel or a diphthong; Edgerton, Lg. 10.257. 3 The OP must not be normalized akr- (like the Skt.), since kr became x in Iranian; §103.I.

---

1 No certain examples of pIE ai can be identified in the OP vocabulary; for pIE ai, see §71. 2 On the theory that OP ai was sounded ē, see §61.n1.