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Author/s: SVETISLAV KOSTIĆ

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Development of verb stem derivation in Indo-Aryan

SVETISLAV KOSTIĆ
Institute of South and Central Asia
Prague
Czech Republic

Abstract: The essay deals with the derivation on the level of verb stem and concerns either stems derived directly from the verb root (primary derivatives), or from the already derived stems. On the other hand, it also includes denominative verb stems. It follows formal, i.e. morphonological processes, as well as semantics of the verbs, during all three stages of the development of Indo-Aryan (OIA, MIA, NIA). In the OIA stage, classification of verbs according to their semantic properties shows entire system of verb classes based on morphological means of derivation. Gradually the language loses ability of morphological derivation, hence in the latest stage of NIA many semantic properties of verbs are expressed periphrastically, i.e. by means of verbo-verbal and verbo-nominal expressions.

Keywords: Sanskrit, verb stems, denominative, Prakrt, Apabhramśa, causative, derivation.
0. Introduction

The aim of this essay is to describe the development of morphologic and phonologic tools taking part in verb derivation. The repertoire of types of derived verbs contains primary derivatives, i.e. present tense verb stems derived from the root and classified into nine classes, and also secondary derived verbs, either from the already derived stems, or from the nominal bases.

The first kind is entirely developed in Sanskrit and OIA, while in later language (MIA and NIA) derivational tools are simplified and highly reduced.

The essay concentrates primarily on the so called secondary derived verb stems. These derivatives include three kinds of deverbative verbs and one kind of denominatives:

– Verbs denoting actions caused by an agent, but pursued by another performer, who usually remains unapparent, i.e. unmarked as a participant of the action. This kind of verbs is named causative or causal verbs.

– Verbs denoting intensified, or rapid, or multiplied, i.e. frequent action, so called frequentative verbs.

– Verbs denoting desired actions, so called desiderative verbs.

– Some verbs have their origin in nominal bases, which are verbalized by special affixes. These verbs, called denominals or denominatives, also include a type of verbs, which resemble class of verbo-nominal compounds.

– Passive voice stems are derived either from the verb root, or they may be related to the above mentioned four kinds of derived verbs and so regarded as tertiary derivatives, e.g. causative passives, desiderative passives, etc.
1. Sanskrit and OIA verb stem derivation

The verb derivation system of Indo-Aryan languages is very complex and includes numerous morphonologic devices. Formation of conjugational stems from verb roots, known as primary derivation, is based on some formative elements, as well as phonological processes. Thus in Sanskrit, according to formation of present tense stem, all verbs are divided into two groups: thematic and athematic, according to presence or absence of the basic formative element, connecting or thematic vowel অ. All verbs are classified into ten classes, which differ in other morphonological elements and processes, such as strengthening (गुप्त and वर्धि processes) besides the adding of thematic vowel (first class), insertion if -y- before the thematic -a (fourth class), lengthening of the root vowel (e.g. क्रम- >क्राम- to step (first class, or क्राम्या- (fourth class). In the athematic conjugation nasal insertion in different shapes takes place in several classes: as series of allomorphs in the seventh class: ना, न, न, न (e.g. युज- to join >युनज-, युन्न-; रुद्ध- to obstruct > रुपाठ्ठ-, रुपथ-), as म with several verbs of the thematic sixth class (लिप- >लिम्प- to smear, लुप- >लुम्प- to steal, as well as in eighth class as -मु and -मो alomorphs (सु- to press out >सुन-, सुनो-), and in the ninth class: -ना and -नी (क्री- to buy >क्रीप-, क्रीङ्-).

Another important device of derivation is the process of reduplication in the third class (दान >ददान- to give, धान >ददहान- to put), which also occurs in some stems of the first class: सत- >स्तिन्न- to stay, ख्रान- >ख्रीग्र- to perceive odour (Whitney 231-276).

The so called secondary derivations in Sanskrit involves formation of verb stems from already derived verb stems for the sake of expressing factitive or causative, intensive or multiplied, i.e. frequent action, or desire to perform an action.

There is one more large class of verbs, which are derived from nominal (substantive or adjective) stems, the denominative verbs.
2. Secondary verb derivatives

2.1. The above mentioned secondarily derived verb stems arise due to more complex morphonologic procedure. Verbs of the so called 10th class, where also causative and denominative verbs belong, are thematic, i.e. they are formed by using thematic vowel -a, which is added not directly to the root, but after the vowel –i, which comes with the root. This –i is *gurved*, and then the *guṇa* vowel –e- before the thematic –a- appears in its original short diphthong shape (ai) and changes into –ay. Thus the verb √*cint-* (to think) forms present tense stem in the following way: √*cint-* to think + -i>cint-i-+ a>cint-e-a >cint-ai-a >cintaya to cause somebody to think (Kielhorn 171).

In case the root-vowel is short (a, i, u, ū), it is substituted by its *guṇa*-stage vowel (a, e, o, ar), e.g. √*cur-* to steal +i>cor-i- + a >cor-e-a- >cor-ai-a- >coraya- to cause somebody to steal (Kielhorn 171). If the root ends in vowel, it takes *varddhi* stage form (a > ā, i>āi; u >āu), e.g. √*bhū-* to be + i->bhāu-i- >bhāv-i + a- >bhāv-e + a>bhāv-ai-a>bhāvaya- to cause to be (Kielhorn 181). Penultimate short root-vowel -a is lengthened, otherwise process is the same, as it shows derivation from the root √*man-* to think, to imagine: √*man-*+i>mān-i + a >mān-e + a >mān-ai-a >mānaya- to cause somebody to think (Kielhorn 171); √*pat-* to fall + i>pāt-i + a >pāt-e +a >pāt-ai-a >pātaya to cause to fall (Kielhorn 181).

The causative bases of roots ending in –ā, -e, -ai, -o, as well as verbs ending in –i, e.g. √*mi-* to throw, √*mī-* to destroy, √*dī-* to perish, which change into –ā, take one more causative formant morpheme, i.e. the consonant –p between the final vowel and the mentioned vowel –ā, -e, -ai, -o, –i-. Thus the formative process has the following shape: √*dā-* to give + p + i>dāp-i + a >dāp-e-a >dāp-ai + a >dāpaya- to cause to give; √*dhe-* to suck + -i>dha+p+i>dha-p-i + a >dha-p-e+a>dha-ai-a>dha-paya- to cause to suck (Kilehorn 183).

The extension element –i by means of vowel gradation (*guṇa*, *varddhi*) before the thematic vowel -a- developed into –āya, which had more complex function in the oldest stage of IA, i.e. in Vedic. Jamison (40) shows that it was a means of derivation not only of causatives, but
also of transitive and even of 31 intransitive verbs traced in RV and AV.

2.2 Other kinds of deverbatives are intensives or frequentatives (Whitney 362-365), which signify the repetition or the intensification of the action expressed by the primary conjugation of the root. The intensive verbs stem may be formed from nearly all the roots. The exception are roots of more than one syllable, those conjugated only causatively, and in general those beginning with a vowel, i.e. frequentative or intensive strong verb stem may be derived from any monosyllabic root of the nine verb classes which begins with consonant. The derivative process includes strong reduplicative changes with several specific rules. The root may be simply reduplicated (\(\sqrt{\text{car-}}\), to walk, to roam, to move about \(\rightarrow\text{carcar-}\)), or only partially (\(\sqrt{\text{bhū-}}\) to be \(\rightarrow\text{babhū-}\)), or with insertion of -\(\text{i-}\) vowel (\(\sqrt{\text{vṛ-}}\) to turn \(\rightarrow\text{var-ī-vṛ-}\)) (Kielhorn 364). One more stem with the meaning of intensive or frequentative action, which is used in middle voice conjugation, may be derived by adding accented -\(\text{yá}\) syllable. It has either simple forms (e.g. \(\sqrt{\text{bhū-}}\) \(\rightarrow\text{bhūya-}\)) or forms with reduplicated root (\(\sqrt{\text{bhū-}}\) \(\rightarrow\text{babhūya-}\)) (Kale 385).

2.3. Desiderative stems signify a desire for the action or condition denoted by the simple root. The desiderative stem is formed from the simple roots by morphonological process of reduplication and by appended -\(\text{sa}\), which sometimes takes before it the auxiliary vowel -\(\text{i}\) (becoming \(\text{iša} – \) according to Pedersen’s phonological rule, named ruki rule). E.g.: \(\sqrt{\text{jīv-}}\) to live \(\rightarrow\text{ji-jīv-} + \text{i} + \text{sa-} \rightarrow\text{jijīviša-}\) to desire to live, to long for life (Whitney, p. 372).

2.4. Sanskrit and Old Indo-Aryan verb morphology includes also the passive voice stem, which is formed simply by the adding of the formant -\(\text{yā}\) to the weak form of the verb root. E.g. \(\sqrt{\text{vad-}}\) to speak, to say > weak stem \(\text{ud} + -\text{ya} \rightarrow\text{udya-}\) to be spoken, to be said; \(\sqrt{\text{gam-}}\) to go > weak stem \(\text{gam-} + -\text{ya} \rightarrow\text{gamya-}\) to be gone.

Yet the already derived secondary stems may further derive passive stems, appearing as tertiary verb stem derivatives. Thus, for example, the passive stem is allowed to be formed by adding the
passive sign -yá to the desiderative stem after elision of the final -a: √āp- cl. 5. to obtain, to reach > desiderative stem īpsa- to wish to obtain, or reach > desiderative passive stem īps-ya- to wish to be obtained.

Not only the passive verb stem derivation, but also other kinds of the secondary derivation are allowed to form tertiary verb stems. Thus the causative form of the mentioned verb √āp- to obtain, i.e. āp- > āpaya- to cause to obtain, may derive a stem denoting desired action or process: āpipayiṣa- to cause somebody to desire to obtain.

2.5. Along the above mentioned deverbative stems, there are in OIA and in Sanskrit many verbs derived from nouns and adjectives, i.e. the denominative verbs.

Also here formation of the verb stems may be achieved in several manners, as it is shown in the following paragraphs.

2.5.1. In the first place there are simply derived verb stems, i.e. formed from nominal bases “without special derivative affix, the characteristic signs of the tenses and moods and the personal terminations being added immediately to the nominal base. They are conjugated in the active voice and convey the notion that a person or thing behaves or is like that which is expressed by the nominal base” (Kielhorn 209).

Whitney says, mentioning grammarians’ teaching, that “any noun-stem in the language may be converted, without other addition than that of an -a (as union-vowel enabling it to be inflected according to the second general conjugation) into a present-stem, and conjugated as such” (Whitney 387).

Nominal base in the special tenses is treated like a root of the first class; if it contains more than one vowel, its last vowel only undergoes the changes which the vowel of the root of the first class has to undergo. A final -a of a nominal base is dropped before the -a which is added to it in the special tenses. E.g. mālā a garland > mālā- (3.sg. pres- mālāti) to be like a garland; pītṝ- father > pītṝ- > the last vowel > guṇa stage – ar > pitar- + a > pitarā- (3. sg. pres. pitarati) to behave
like a father; rājan a king >rājān- (3.sg. pres. rājānati) to behave like a king.

2.5.2. A possible morphological means to derive denominal verbs is also the affix –ya together with the following morphonological changes:

- final -al-ā > ī, e.g. putra a son >putrī+ya- to do efforts to obtain a son; varṇa a colour >varṇa-ya- to colour, to depict;

- final –i>i; kavi a poet >kavī-ya- to do efforts in poetry, to behave like a poet;

- final –u > -ū: śatru an enemy, a foe >śatrū-ya- to do somebody enemy; Viṣṇu- Vishnu >Viṣṇū-ya- to treat like Vishnu;

- final penultimate –i and –u of nominal stems ending in -r or -v are generally lengthened: gir a voice, speech >gīr-ya- to make effort to speak, to praise; pur a wall, fortress, city >pūr-ya- to fortify;

- final -t>rī: kartṛ a doer, an agent >kartrī-ya- to do efforts like a doer;

- a final –o > -av: go a cow or an ox >gau-ya- >gavya- to wish for a cow or an ox;

- final –au > -āv: nau a boat, a ship >nāv-ya- to float like a boat or ship;

- final nasal is dropped and the preceding vowel changed as an originally final vowel would be changed: rājan a king >rāja- >rājī-ya- to treat somebody like a king;

- nominal bases with the final consonant take the affix –ya directly, with no internal phonological changes. E.g. samidh fuel >samidh-ya- to effort for fuel (Kielhorn 211).

Thus formed verb stems denote a transitive action conveying the notion of effort or wish for something. In other terms they may be defined as factitive verbs, and they are even formally similar to another
kind of factitives, i.e. deverbative factitives or causatives (see 2.1.), since they are derived also by using affix –ya.

2.6. There are many denominal verbs in Sanskṛt consisting of a noun or adjectival stem and the verb root with a general meaning ‘to be’ and ‘to do’, ‘to make’. The constructions look rather like verbo-nominal compounds, as the two lexical stems are conjoined. The second component, i.e. the verb, is highly grammaticalized and the whole conjunction conveys the meaning of the nominal component, i.e. substantive noun or adjective, whereas the verbal stem is conjugated. This phenomenon is described by Pāṇini in the sūtra 5.4.50: \(kṛ\)-bhū-ās- ti-yoge sam-pad-yakartāri cviḥ. It speaks about a nominal stem which is the agent of the verbal stem sāmpadya- (become), co-occurring with the verbal stem \(\sqrt{kṛ}\)- to do, to make, \(\sqrt{bhū}\)- to become, or \(\sqrt{as}\)- to be. Later Kātyāyana in Vārttika restricted application of the rule to abhūtatadbhāvē, i.e. ‘becoming what it was not before’: aśuklaḥ śuklaḥ sampadyate > śukla+Cvi+bhū > śuklī-bhū to turn or become white, and similarly śuklī+kṛ- to make white. Also Vasu says that “the affix Cvi comes after a word, when the agent has attained to the new state expressed by the word, what the thing previously was not, and when the verbs \(kṛ\) ‘to make’ bhū- ‘to be’ and as- ‘to be’ are conjoined with it” (Vasu 1000).

Other examples for this verbo-nominal conjunct expressions include mainly adjectives (\(krṣṇa\)- black + \(ī\) + bhū- >\(krṣṇibhū\)-, to become black, \(krṣṇa\)- black + \(ī\) + \(kṛ\) >\(krṣṇikṛ\)- to blacken, etc.), but also many nouns in connection with \(\sqrt{kṛ}\)- to do, express new meanings, e.g.: hasta a hand + \(ī\) + \(\sqrt{kṛ}\)- hastikṛ -, to hand over, to deliver; muṣṭi a handful + \(ī\) + \(\sqrt{kṛ}\)- >muṣṭikṛ- to close the hand, to clench the fist; vaśa will, wish, power + \(ī\) + \(\sqrt{kṛ}\)- >vaśikṛ- to subdue, to subject, to reduce to; kara tax, tribute + -\(ī\) + \(\sqrt{kṛ}\>-karīkṛ-> to offer as a tribute.

As an alternative, the nominal stem may remain unchanged (as in 2.5.2): hasta- > hasta- or hastī- + kṛta- >hastakṛta- or hastīkṛta- (past passive participle derived from the mentioned compound): relating to hand, done by hand, manual, made with the hand, etc (MW 1294).
The nominal component also may occur in a case form, e.g. in Locative: haste-krə to take in hand, to take possession of, to make one's own; to take by hand; to marry (MW 1296).

3. Development of the derivative process in MIA

Compared to OIA, dialects of the MIA period show a marked tendency towards simplification. Thus the primary derivation is much reduced, that is caused by:

– phonological simplification through reduction of vowels in quality and quantity; reduction of single consonants; assimilation of consonant clusters; disappearance of some OIA vowels; viz r̥, r̥, a and au; disappearance of some OIA consonants, viz. y, ś, ś, -h, -m, and -n;

– morphological simplification through reduction of conjugation to one type, i.e. -a (or -e) conjugation; disappearance of the imperfect, the perfect, the numerous forms of the aorist and of the middle voice (Bossche 14).

Due to this development during the middle period of Indo-Aryan, not only verb root changed, but also affixes.

3.1. Formative affix –aya, which developed in –e, and –(ā)paya, which developed into –ve/-āve, both have identical treatment in MIA, since one or another may form causative, as well as denominative stems. The specific MIA formation was with second type of affix, i.e. –ve/-āve<-(ā)paya>2. Along with the developed affixes, in many Prākṛts the older affixes (i.e. –aya, - (ā)pyaya), are preserved.

3.1.1. Causative derivatives are formed by the adding of –e (<-ay-a) to the strong form of the root. E.g. Sanskrit √kṛ- to do > caus. kāraya- (3. sg. pres. kārayati) >Prakṛt kāre- (3. sg. pres.kārei), to cause; √pāth- to read > Sanskrit caus. pāṭhayya- (3. sg. pres. pāṭhayati) >Prakṛt caus.

1 Pischel speaks of three possible affixes: –e, -ve and –va (Pischel 380).
2 In OIA it occurs only with monosyllabic roots in –ā (e.g. √dā->dāpaya, √sthā->sthāpaya-, √mā->māpaya-, √jā- ->jāpaya-), etc.
pāḍhe- (3. sg. pres. pāḍhei). (Pischel 376). Alongside with the form vaḍhe- to cause to increase (Śaurasenī Prākṛt), there are forms in older Prākṛts, i.e. in the language of Ashokan inscriptions, with –aya, -iya: Sanskrit √vṛdh- >vardhaya- to increase, to augment, to strengthen, to cause to prosper > Prākṛt vaḍhaya (Girnar inscriptions, Mansehra inscriptions) and vaḍhiya- (Kalsi inscriptions) (Sen 169).

3.1.2. Denominative derivatives with –aya> -e, similarly to causatives, occur either in its older form: duḥkha pain, sorrow, trouble, difficulty>dukhaya- (Dhauli inscriptions), or in developed form dukhe- (in later Prākṛts) to pain (3. sg. pres. dukhei). Another similarity in formation with causatives shows that deverbalization can take place with no substantial change of the nominal stem, e.g. dukkha- (1s. sg. dukkhāmi I feel sorrow) in Māhārāṣṭrī Prākṛt; putra- a son >putrati he begets sons, kathā a story > *katha- >kathati to tell a story > Apabhraṃśa: kahai 3 (Sen 170).

3.1.3. Sanskrit affix -(ā)paya, forming causatives of roots ending in –ā, -i, -ī becomes -ve, e.g. √sthā- to stay >Sanskrt caus. sthāpayati (3. sg. pres. sthāpayati) >Prākṛt caus. ṣṭhāve- (3. sg. pres. ṭhāvei) to cause to stay. In many Prākṛts the constituent -(ā)ve, also occurs with other roots, not only with those ending in the mentioned vowels –ā, -i, -ī, e.g.: nir√vap- to sprinkle, to pour out, to offer oblation>Sanskrt caus. nirvāpayati (3.sg. pres. nirvāpayati) >Prākṛt caus. nīvēve- to cause to sprinkle (3.sg. pres. nīvvedi) (Woolner 47).

3.1.4. Denominative stems formed with – (ā)ve, developed from OIA - (ā)paya, have the same treatment as causatives. E.g. Sanskrit śabda sound, voice, noise > caus. śabdāpayati to sound, to produce noise >Prākṛt saddāve- (Ardhamagadhī) (Pischel 382).

3.1.5. Besides substantive nouns, the process of verbalization also includes adjectives and pronouns, e.g. sukha pleasant >Sanskṛt

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3 Alternatively, this stem may be derived also from Sanskrit causative kathaya- >MIA kahe (3.sg. pres. Kahei).
sukhaya- to make happy (3. sg. pres. sukhayati) > Prākṛt sukhe- (3.sg. sukhei).

3.2. The desideratives are not regular features in Prākṛt conjugation. Some isolated examples occur in different dialects. They are rather inherited from OIA and adapted according to Prākṛt phonology of the early and middle periods. Pischel and Sen quoted some forms from Prākṛt texts, e.g. Sanskrit jugupsate he dislikes > Māhārāṣṭrī juuchaī, juuchasu; Ardhamagadhī dugucchāi, dugamchāi, duucchāi, duurmchāi; Śaurasenī juguccedi, jugucchanti; Sanskrit ērūṣātate he wishes to hear > Ardhamagadhī susūsaī, Śaur. susūsaśaṃ; Sanskrit lipsate he desires to gain >Hemacandra licchaī (Pischel 379); Sanskrit ērūṣātate> Ashokan (from Girnar) sususera, Ashokan (from Kalsi) ṣuṣāgyu, Ashokan (from Mansehra, Shahbazgarhi) susruṣayu (opt.), Ashokan (from Dhauli, Jaugaḍa) susūsatu, sususuṣu (imper.) (Sen 170) etc.

3.3. The intensive verbs are formed like in Sanskrit, but again, the phonological changes of different MIA dialects or Prākṛts affect real shape of inherited forms: Sanskrit √kram- to step, to walk > intens. Cākramyate he walks swiftly >Prākṛt *cākammaī > cakkammaī (Pischel 378).

In the late Prākṛts and Apabhramśas a denominative stem (generally onomatopoetic) sometimes carries the sense of the intensive. E.g. mahamahai it emits heavy fragrance, khusakhusai he prompts repeatedly, taḍapphaḍai he works hastily, gammāgammai he goes and comes repeatedly (Sen 170).

3.4. The passive stems in Prākṛts are still formed morphologically, but the passivizer affix –ya is added to the Sanskrit seṭ-roots, and –iya, -īya to the anīṭ-roots. While in OIA the passive stem was formed from the special kind of the weak form of the root, by adding the mentioned passivizer affix, in older Prākṛts, e.g. in Pāli, differentiation of root allomorphs disappeared. E.g. Sanskrit √kr- to do, to make > pres. tense stem kar- ; weak root kr- > pass. stem kr-īya- to be done. In Pāli the only root is kar-, from which the passive stem is formed by adding affix
-īya–: kar-īya-\(^4\). In later Prākrts the passive marker –ya/ -iya/ -īya, due to assimilation process and afterwards by affricativization of –y-element, developed into: -jja, -ijja. Bubenik incorrectly explains this morphophonological change as “reduplication (from C + ya-)” (Bubenik 118).

Thus, the passive forms of the verb kṛ- had been developed in Pāli, Ardhamāgadhī and Māhārāstrī as: kariya- (3.sg. kariyati it is done), in Apabhraṃśa as karijjā- (3.sg. karijjai), and in Avahaṭṭha as kijja- (3.sg. kijjai, or kīai).

3.5. The stage of new Prākrts, or Apabhraṃśas, which precedes the emergence of NIA, still knows the mentioned morphological derivative stems of denominative, intensive, desiderative and causative (Prakash 259), although they are sharply reduced. Only the passive and causative are quotable extensively.

3.5.1. The older forms of causatives are just recasting of the Sanskrit forms on Prākrts pattern, e.g. sāmānaya- > sāmāne- to show respect; varjaya- > vajje- to desert; māraya- > māre- to kill, etc.

But the typical Apabhraṃśa causative stems are formed by affix –āva, e.g. nac- > naccāva- to cause to dance; hr- > harāva- to cause to take away, dekh- > dekkhāva- to cause to see, to show.

3.5.2. Denominatives are derived very simply: any noun ending in –a can be used as a verb with a- base. E.g. Sanskrit tıkṣṇa- sharp > Apabhraṃśa tikkha- sharp > tikkhe- to make sharp (3. sg. tikkheī he makes sharp). In some cases the verbalization includes phonological change -a > -ī, which resembles corresponding change in Sanskrit (see 2.5.5.). But here in Apabhraṃśa instead of the compounded verbo-nominal forms (e.g. kṛṣṇikṛ- to blacken), emerge syntagmatic constructions of nominal forms and verbs, e.g. cuṇṇa powder > cuṇṇī- + ho- to be: cuṇṇī hoi it is crushed in powder (Mishra 41).

\(^4\)One more difference is that the set of active endings: mi, si, ti, etc. are used in Prākrts for passive too, while the Sanskrit passive uses the middle voice endings: -e, -se, -te, etc (Bubenik 118).
3.5.3. As it is said in 3.4., the passive stem in Apabhramśa may be formed by affix -ia (and esp. in Avahattra): jān-ia- to be known, pāvi-ia- to be got, but passive stems formed from Apabhramśa verb roots by adding affix –jjia/ -ijja, e.g. sumar-iijja- to be remembered, jā-ijja- to be gone, etc. are more frequent. Because of high frequency these forms lost their passive force towards the end of Apabhramśa period. Hindī and other MIA languages inherited them with no passive meanings.

4. Decreasing of derivation ability in NIA

Development of the derivative processes during the Apabhramśa period implies increasing of simplification of forms and decreasing of their number. The only morphologically derived verb stem in Hindī and other NIA languages remain causative, as well as transitive stems, which are derived from intransitive verb stems. Seldom, in NIA nominal bases are verbalized, forming the so called denominative class of verbs.

4.1. Almost all basic verb stems in NIA are developed from OIA verb roots. They are manly intransitives, as well as transitives without intransitive counterpart, e.g. kar- (in Hindī, Bāṅglā, Paṅjābī) to do; de- (Hindī, Bāṅglā, Paṅjābī) to give; le- (Hindī), ne- (Bāṅglā) to take, etc.

Derivational process in NIA shows direction from intransitive and basic transitive stems to derived transitive and causative verbs, by strengthening root vowel (similarly to the earlier process in OIA derivation, where the root vowel has been gradated before the causative affix –aya). It does not mean that all intransitive verb stems are weak, and all transitive strong. There are primary intransitives with long vowels, as well as primary transitive stems with short vowels, e.g. bhāg- Vi. to flee; nāc- Vi. to dance (Smekal 172), and kah- Vt. to say, kar- Vt. to do, rakh- Vt. to put, etc. (Smekal 170). But generally, the pattern weak stem – intransitive and strong stem – transitive is considered as basic. Further “it was extended by analogy in both directions, above all in Hindī, where a whole series of derived intransitives has been produced by ‘re-weakening’ a root which had not been strengthened in the first place: Hindī mājh- to be scoured, from mājh- to scour < OIA mārjati. (Because of the obligatory English
translation, these are sometimes miscalled Passives, or Passive-Neuters, but they are reduced-valence verbs rather than passives.” (Masica 318).

4.2. Causative morpheme -aya did not survive in NIA, except indirectly in transitive endings in some dialects. “The strengthened grade of the root entailed by the lost morpheme, however, survived as a mark of transitivity in most languages – albeit a 100 per cent reliable one, since primary intransitives with long vowels as well as primary transitives with short vowels also existed” (Masica 317).

The basic causative marker in NIA remained –āv, which developed from –(ā)p-aya- in MIA through the process of changing –p- > -v-. It occurs today in some languages and dialects, e.g. Bhojpurī, Avadhī, Gujarātī and Western Rājasthānī, and also in a slightly modified shape –āu in Nepālī, Pañjābī, Brāj etc. In some dialects of Bihar, e.g. Maithilī, where -b is allomorph of –v, the marker sounds āb. Its vowel is shortened in Marāthī entailing –av. In Konkanī only the long vowel -u remains to serve as a causative formant.

Further changes take place in NIA with –āu marker, where –u disappears before –i-, e.g. in Pañjābī, so the only marker remains –ā: ban- to take shape >banāu- to make + -iā >banā-iā. The loss of –v/-u is entire in many NIA, e.g. Hindī, Urdū, Bāṅglā, Oṛiyā, Sindhī, Lahndā, Eastern Rājasthānī, Bundelī and Sinhalese, so the remained –ā takes place of transitive stem marker: kar- to do, to make >karā- to cause to make; kah- to say >kahā- to cause to say, etc. Its latent alternative in Bāṅglā may be -ol/-u marker, which occurs in isolated examples also in Hindī (e.g. bhig-o- to wet, to drench <bhīg- to get wet. In Assamese, an alternative form of the suffix –uvā is still present (Masica 318).

There are also competing causative suffixes of more obscure origin. Chief among them are –ār/-ar in Shina, Kaśmīrī and Sindhī. E.g. uṭh-Vi. to rise >uṭhār- Vt. to raise; ḍhu- Vi. to be washed >ḍhuār- Vt. to wash. According to Masica (318) there are allomorphs of the previous one, i.e. –āḍ in Avadhī and Chattīsgarhī, and –āl/-l in Hindī, Nepālī and Siraikī. Combination of the suffixes also is possible, and it gives sense of double causative, e.g. –āvdāv in Gujarātī; -āḍāv in Maithilī, –ārā(i) in Sindhī and –(a)vāv in Bhojpurī. As a means of causative derivation
in Bāṅglā affix –āno functions: uth- to get up > uthāno to raise, to lift; kar- to do >karāno to cause to do (Thompson 332).

The procedure has preserved -v- even in those languages which have had lost it, by resegmentation, as the initial of a second causative marker: *-āv + āv>*-(a)vā(v)>-vā. Some NIA languages: Bāṅglā, Oṛiyā and Nepālī, have no second causatives in this sense (Masica 318).

At least some NIA languages have two causative forms. Kachru (74) shows that in Hindī there are differences between causatives derived from Vi. and causatives derived from basic Vt. Thus the primary derivatives (or first causatives) from Vi. (derived by using affix –ā) function as transitive verbs: gir- to fall +ā >girā- to fell, while secondary derived (by using affix -vā) function as ditransitives, since they take two objects: gir-vā- to cause someone (O2) to fell something (O1).

On the other hand, primary derivatives of Vt. stems already function as ditransitives or the first causatives: sun- Vt. to listen > sunā- to make someone (O1) to listen something (O), to tell. Their secondary derived stems function as second causatives, i.e. they take one more argument to the argument structure of the verb: sun-vā- to cause someone (O1) to tell (or to cause to listen) someone else (O2) something (O).

4.3. Denominatives belong to the old types of verbs. As a means of verbalization should be mentioned at least two: transformation of the nominal bases into verb stem, and derivation by using affixes (Černyšev 52).

4.3.1. Often nouns are verbalized in a very simple way, i.e. the nominal basis is not changed, but it serves as verb stem, or in other words: it is transformed by the ‘zero morph’: dük- pain + 0>dük- (inf. dük’nā) to feel pain, etc.

In case the noun ends in -ā, during the transformation it disappears: tāgā thread > tāg- (inf. tāg’nā) to thread (through), to
string; *parohā* (leathern) bucket > *paroh-* (inf. *paroh’nā*) to water by using leathern bucket, etc (Černyšev 52).

4.3.2. Derivation by suffixes includes primarily suffixes –ā and –iyā. But suffixation causes some phonological changes inside the derived verb stem, i.e. shortening of all long vowels, and possibly reduplication (Černyšev 51).

– suffix -ā added to the nominal with short stem vowel(s), does not cause any other change: *śarm* shyness, prudency + -ā > *śarmā-* (inf. *śarmānā*) to be shy, to be ashamed.

– suffix -ā added to adjectives in masculine (ending in -ā), overlaps the ending, but simultaneously a long stem consonant is shortened, or degraded, if it is guṇa or vṛddhi grade vowel. E.g. ēcā tall, high > ēcā- (inf. ēcānā) to elevate; *moṭā* fat, thick > *muṭā-* (inf. *muṭānā*) to get fat, etc.

– suffix -ā added to the noun ending in –ī, causes its change into –ii, and afterwards this amalgamation of vowels, i.e. –iiā, results into –iyā: φorī a rope + -ā > φorī-ā- > φorīi-ā- > φorīyā- (inf. φorīyānā) to lead somebody by the rope; lāṭhī a rod + -ā > lāṭhīi-ā- > lāṭhīyā- (inf. lāṭhīyānā) to beat by the rod, etc.

– suffix -iyā added to monosyllabic nouns ending in consonants, causes shortening of the stem vowel: nāk nose + -iyā- > *nak-iyā-* (inf. *nakiyānā*) to pronounce, to speak through the nose; hāth a hand + -iyā- > *hath-iyā-* (inf. *hathiyānā*) to take by hand.

– suffix -iyā added to nouns ending in –ā, deletes and replaces it: kādhā shoulder + -iyā > kādhiyā- (inf. kādhiyānā) to shoulder, to shoulder somebody aside, to shoulder one’s way; ādhā a half + -iyā > adhiyā- (inf. adhiyānā) to divide in two halves; jūtā a shoe + -iyā > jutiyā- (inf. jutiyānā) to kick someone by shoe.

4.3.3. There are examples of such verbs from several sources: First, indigenous nouns are verbalized directly, with a ‘zero verbalizer’ morph: dukh- pain + 0 > dukh- (inf. dukh’nā) to feel pain;
pracār propagation, promotion + 0 > pracār- (inf. pracār’nā) to propagate; vicār thought + 0 > vicār- (inf. vicār’nā) to think, etc. In the same way even pronouns may be verbalized, e.g. ap’nā one’s own + 0 > ap’nā- (inf. ap’nānā) to adopt, to accept, etc.

Second, hybrid derivation occurs in Urdu, Hindī, Pañjābī and other NIA languages, since some frequent nouns, adopted from Persian, Arabic, and possibly English, very simply were verbalized, e.g. talāś search, quest + 0 > talāś- (inf. talāś’nā) to search, to look for; kharīḍ purchase + 0 > kharīḍ- (inf. kharīḍ’nā) to purchase, to buy; qabūl admission (or adj. admitted) + 0 > qabūl- (inf. qabūl’nā) to admit, etc.

Third, in NIA vernaculars, esp. in the central NIA area, e.g. in Bhojpuri and Avadhī dialects, there are denominal verbs derived from nouns denoting body-parts. Obviously body-parts and organs serve as instruments of action; so as a result, their verbalized forms denote actions performed by the organs. E.g. dāt tooth > dātiyā- to bite with teeth; kādha shoulder > kādhiyā- to shoulder, to shoulder somebody aside, to shoulder one’s way; ąkh eye > ąkhiyā- to eye somebody up, to give the eye, to give a look, etc.

4.4. During the NIA period many morphonologic derivation means fell away, but instead of them arose other means arose. Thus instead of morphologic reduplication as a formative means of intensive verb stems, repetitive formations of the onomatopoetic origin appeared. They convey similar function, but not the same, since as imitation of natural sounds and visual phenomena, often named idiophones, they transmit extra-linguistic elements into language. They function either as nouns or verb stems. In this sense we also may speak of verbalization of onomatopoetic nouns. Besides their intensive and frequentative function, to a large extent their expressive and affective role is apparent.

The onomatopoetic repetition taking part in verb derivation process is either full, or complete, i.e. a syllable, or lexical morph, is repeated with no change. The only verbalizer is affix -ā. E.g. san-san-+-ā > san’sanā- to produce a whizzing sound; chal-chal+-ā- > chal’chalā- to be filled to the brim with liquid; sar-sar- + -ā- >
4.5. Most kinds of derivatives denoting intensified action, passive voice and desiderative mood, are not present in NIA, but these verbal forms were replaced by several kinds of syntagmatic expressions.

4.5.1. The above discussed newly arisen NIA intensives are alternatively expressed in an analytic manner, i.e. as verbo-nominal syntagma, again based on repeated onomatopoeic word and grammaticalized verb instead of the affix. E.g. in Hindi, usually the verb kar-(kar’nā) and in Bāṅglā karā to do, is utilized: Hindī cēcē kar- to chirp; bak’bak kar- to jabber; Bāṅglā bi’bi’ karā- to talk rapidly, to jabber (Biswas 583).

In this sense in Hindī the whole forms, i.e. infinitive, participle, etc. can be repeated,

- either completely without changes,

- or partially, when one of the elements of the resultant expression, usually the second, lacks meaning and the privilege of independent occurrence. In some compounds the first component is the empty item.

Examples for the frequentative verb syntagmas are found in participial constructions: kar’te-kar’te during continuous action; cal’te-cal’te during continuous walking. Similarly absolutive or transgressive forms are repeated for the sake of expressing intensive action. E.g. paṭh- to read > paṭh-paṭh having read completely, khā- to eat > khā-khā(kar) having eaten one’s fill, etc.

The second type of repetition of verb forms is represented by so called echo-formations, where infinitive, transgressive, or participle is partially repeated and one or more sounds are replaced by other sound(s). E.g. infinitive khānā-vānā to eat and the like, cal’nā to walk > cal’nā-val’nā to walk and the like, likh’nā to write > likh’nā-vikh’nā to
write end the like (Kachru 129); khīc’nā to pull > khīc’nā–khāc’nā to pull and stretch; pūch’nā to ask > pūch’nā-tāch’nā to inquire, etc.

Another manner to express intensive, multiplied or frequent action in Hindī is based on utilization of adverbialized past participle in –ā with the inflected (grammaticalized) verb kar-, e.g. ā- to come + kar- > āyā kar- to come frequently or usually; paḥh- to read + kar- to read frequently or usually, etc.

4.5.2. The process of verbalizing nouns on the syntagmatic level includes the so called verbo-nominal syntagmas, which are either complementary to the simple verbs, or the only onomasiologic means of action or process (Kostić 3). They are distinct from denominative verbs, not only because of their analytic manner, but also due to the number of verbs having verbalizing function.

4.5.3. Also passive stem, as it is well known in Sanskṛt, cannot be derived morphologically in NIA, but it is expressed mainly analytically. E.g. in Hindī, Gujarātī, Bāṅglā, Oṛiyā, etc. (Beams, III, 73) it is based on past (passive) participle with inflected motion-verb jā- to go, which behaves as a passive auxiliary (Montaut 131). In Marāṭhī and Gujarātī passive is formed by adding “the substantive verb” (Beams III, 73), i.e. auxiliary verb, to the past participle, e.g. gāī bāḍhlī hotī the cow was tied (Beams III, 73).

4.5.4. Desiderative manner expressed morphologically, entirely disappeared in NIA, and only periphrastic syntagmas with the verb ‘to want to, to wish, to desire’ serve to express this manner. As a main verb it is related to common verbs, as its object, obviously substantivized (nominalized), like in Hindī, Pañjābī, Bāṅglā etc.

5. Conclusion

The history of development of morphonologic means of verbal derivation shows their prime and full heyday in the oldest stage of Indo-Aryan, which were described by ancient grammarians and classified as special conjugational categories.
Further we follow gradual decrease of this language ability during the middle period, and finally in New Indo-Aryan languages only some remnants of the old verbal derivatives are preserved.

Along with the fall of old morphonological properties, we can notice adoption of some reconstructed derivational means, but the new manners of periphrastic or analytical expression of the semantic categories of denominative verbs, desiderative and intensive and passive voice are far more widespread in the area.

**ABBREVIATIONS**

adj., adjective
caus., causative
inf., infinitive
MIA, Middle Indo-Aryan
NIA, New Indo-Aryan
OIA, Old Indo-Aryan
pp., perfective participle
pres., present tense
sg., singular
Vi., intransitive verb
Vt., transitive verb
O, direct object
O1, O2, indirect objects (of causatives)
REFERENCES


