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Derivational Morphology of Assamese Lexical Word Categories

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Abstract: Word formation by derivation is very productive in Assamese. A significant amount of words in Assamese owe their origin to derivation. The analysis in this paper takes into account the derivational processes related with lexical word categories, and, numerous bound morphemes that are used in the derivational process in the language. This analysis helps us to understand some of the important aspects of Assamese morphology. These aspects are - role of class maintaining and class changing morphemes, derivation of word from synonyms, productivity of derivational morphemes, morphophonemic changes in root as a result of affixation of derivational morphemes, presence of allomorphs of various bound morphemes, ability of a morpheme to derive words from different word categories. The significance of this paper lies in the fact that these word formation processes could help develop morphological rules that can be used for developing computational morphological tools like- stemmer, spell checker, tagger etc.

Keywords: Assamese, Lexical words, Derivation morphology, Class maintaining, Class changing.



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1. Introduction

It is assumed that the origin of the Assamese language is from the Magadhan group of the Indo-Aryan language family. G. C. Goswami (1982) states: "It is supposed that like other Aryan languages, Assamese was also born from Apabhramsa dialect developed from Magadhi Prakrit of the eastern group of Sanskrit language".

North East India is the home of five language families: Indo-Aryan, Austro-Asiatic, Tibeto-Burman, Tai Kadai and Dravidian. Speakers of these languages have been maintaining a close socio-political-economic relationship from a very long time. Kakati (1941:57- 89) discusses at length about the non-Aryan neighbouring languages impacting on Assamese. Close contact between these language families, especially between the Indo-Aryan and Tibeto-Burman language families have led to convergence. Before the reorganization of North East India into seven states the entire North East India was known as Assam. Assamese was the official language and Assamese was used as the lingua franca by speakers of different language groups. Due to years of contact and eventual convergence Assamese language has acquired some distinct properties which make it distinct from other Indo-Aryan languages.



1.1 Scope of the analysis

Assamese, with about 15 million¹ native speakers, is the Eastern-most language of the Indo-Aryan language family. Typologically speaking the morphology of Assamese exhibit both agglutinating and inflectional features. The analysis in this paper takes into account the derivational processes related with lexical word categories in Assamese. This helps us to find out different bound morphemes that are used in the derivational process. An important insight into a major word formation process is provided by the analysis. The analysis will also be helpful for developing morphological rules for Assamese. Morphological rules can be used for developing computational morphological tools like- stemmer, spell checker, tagger etc. for Assamese. In this age of information technology languages need to keep pace with the digital world. Assamese does not have a very strong digital presence. Hence the present analysis will help to bridge the gap to some extent by facilitating morphological rule development which is very crucial for a language like Assamese that lack digital resources.

2. Derivation

Trask (1999: 47) defines derivation as a way of constructing new words by adding affixes to existing words. Derivation is one of the basic ways of obtaining new words in most languages. According to Booij (2012:51) derivational process enables the users of a language to create new lexemes. Payne (2006:38) explains derivation in its difference from inflection which is another major word formation process. Derivation is best explained in its difference from inflection which is another major branch of morphology. Inflection is a word formation process that helps us to get grammatically distinct form of the same word. On the other hand derivation helps us to get new words. For example the inflected forms of the word write- writes, writing, written are only grammatically distinct form of the same word. On the other hand writer is a new word obtained with derivation from the word write. Inflectional affixes add grammatical information to the root, but derivational affixes contribute meaning to the root. Haspelmath and Sims (2010:86-89) listed common derivational meanings of word categories using terms like deverbal noun, deadjectival noun, denominal verb, deverbal adjective etc.

Derivation is closely linked with the notion of lexicon in Anderson (1995: 180-184). Lexicon here is not analogous to a dictionary or a kind of list or database. It is the knowledge a speaker has of how words can interpret positions in a syntactic structure. As part of the lexicon this knowledge forms derivational rules. The function of these rules is to establish relation among stems to create new lexical stems on the basis of the existing one when required. Anderson further defines derivation as a class of word formation rules within the lexicon. These rules contain information about the lexical category, syntactic sub-categorization, semantics and argument structure, etc. of the stems to which they apply. Thus, there is not much difference between inflectional and derivational word formation rules. But there is a core difference between both of them. Inflection brings structural changes affecting the phonological form of the word. On the other hand derivation results in the semantic as well as syntactic modification of a word. Derivational pattern in languages can be broadly understood from the schema in Fig. 1.

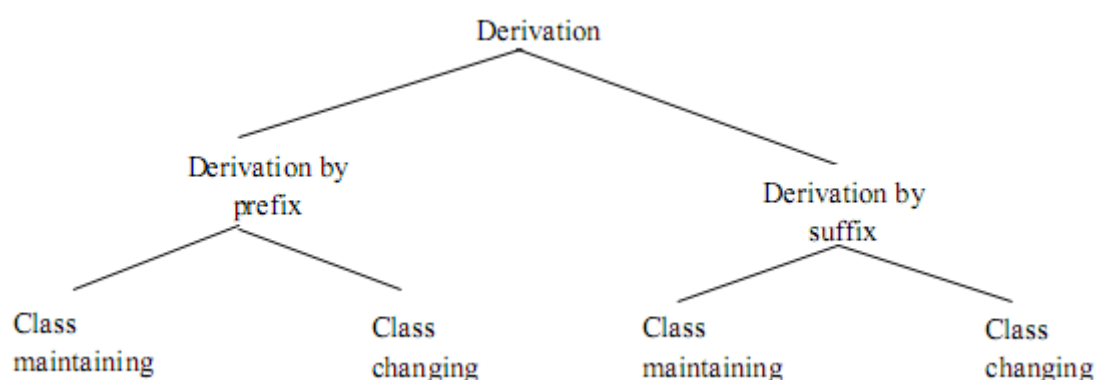


Fig 1 Derivation pattern in Assamese

¹ According to 2011 population census



3.0 Derivation in Assamese

A significant amount of words in Assamese owe their origin to derivation. Knowledge about the morpheme structure of Assamese words is very important to understand the derivational word formation process in Assamese. Categories like nouns, adjectives, verbs and adverbs are open class words. These words take derivational suffixes to form new words which may belong to the same category or may form a new category. These derived words can take inflections to indicate its status as a noun, verb, adjective or adverb. In the lines of Hasplemath and Sims (2010: 87) we are going to look into the deverbal noun, deadjectival noun, denominal verb, deverbal adjective etc. These derivational patterns in case of Assamese are discussed below.

3.1 Derivation of Assamese Nouns

Creating new words for new concepts is one of the chief functions of derivational morphology. We also have a greater need for naming diverse nominal concepts; this explains why languages generally have more means for deriving nouns than for deriving verbs and adjectives (Hasplemath and Sims 2010: 87). In Assamese, both prefixes and suffixes are used to derive nouns. Use of prefix to derive nouns in Assamese is shown in Table 1.

Table 1 Derivation in Assamese

Prefix	Root	Gloss	Prefix+root	Gloss
৩-	খ৩ম৩i _N	time	৩খ৩ম৩i _N	wrong time
ৱ-	কৱi _N	time	ৱকৱi _N	famine
ৱত-	বৱt _N	path	ৱতবৱt _N	wrong path
৩৩-	৩৩x _N	pride	৩৩৩৩x _N	malign
৩nu-	৩৩i _N	time	৩nu৩৩i _N	fraction of time
৩nu-	ৱতd ^h _N	obstacle	৩nuৱতd ^h _N	request

From Table 1 it can be seen that the prefixes in the table have both negative as well as positive connotation. **খ৩ম৩i**, **৩৩** and **কৱ** are synonyms i.e. different words with same meaning. However, the difference in their usage is shown in (1).

1. (a) tumi ৩খ৩ম৩i ৩-৩খ৩ম৩i নত-হতৱ-koi মত-loi ৩হতন ন৩-কৱ-ib-ৱ
 you time wrong time NEG-be-ADVS me-DAT phone NEG-do-FUT-ৱ
 Lit. 'You don't call me without considering appropriateness of time.'
 'You don't call me at wrong time.'

- (b) tumi ৩-৩খ৩ম৩i-t তা-loi না-৩ৱ-ব-ৱ
 you DNOM-time-LOC there-DAT NEG-go-FUT-2
 Lit: 'You do not go there at wrong time.'
 'Don't come at an inconvenient time.'

- (c) k^h৩ৱ৩৩-৩ বাবে ৱ-কৱ হ৩i
 draught-GEN for DNOM-time be
 'Famine is caused by draught.'

- (d) ৩৩ ৩nu-৩৩ হৱ-i ৩খ৩ম৩i ৩ৱ হ৩i
 time fraction of time be-NF time pass be
 'Time passes in fraction.'

From (1a-d) it can be seen that although the meaning of both **খ৩ম৩i**, **কৱ** and **৩৩** are same the derived nouns **৩খ৩ম৩i**, **ৱকৱ** and **৩nu৩৩** have different connotation. **৩খ৩ম৩i** means 'wrong time' **ৱকৱ** means 'famine' and **৩nu৩৩** means 'fraction of time'. (1.a) shows that **৩খ৩ম৩i** is not followed by any other bound morpheme. But in (1.b) **৩খ৩ম৩i** is followed by the locative case marker **-t**.



3.1.1. De-verbal noun (V → N)

Crystal (2008:141) defines de-verbal noun as noun that originates as a verb but used as noun in sentence structure. Deverbal noun in Assamese is shown in Table 2.

Table 2 Deverbal nouns in Assamese

Root	Gloss	Suffix	Root+ Suffix	Gloss
nas _v	dance	-ɔni	nasɔni _N	dancer
kʰɛlv	play	-uoi	kʰɛluoi _N	player
kʰa _v	eat	-ɔjia	kʰaɔjia _N	eater
koj _v	do	-ũta	kojũta _N	doer
ga _v	sing	-jɔk	gajɔk _N	singer

Table 2 shows how the derivational suffixes **-ɔni**, **-uoi**, **-ɔjia**, **-ũta** and **-jɔk/ɔk** derive nouns from a verb. For example, suffixation of **-ɔni** to the verb **nas** 'dance' derives the noun **nasɔni** 'dancer'. Suffixation of **-uoi** to the verb **kʰɛl** 'play' derives a noun **kʰɛluoi** 'player', and, when **kʰa** is suffixed by **-ɔjia**, it derives the noun **kʰaɔjia** 'eater'. Suffixation of **-ũta** to the verb **koj** 'do' derives the noun **kojũta** 'doer'. Suffixation of **-jɔk** derives the noun **gajɔk** 'singer' from the verb **ga** 'sing'. Deverbal nouns in Assamese are shown in (2a-b).

2. (a) nas-ɔni-ɛ bihu nas-is-ɛ (b) kʰɛl-uoi-xɔkɔl ah-il
 dance-NMZ-ERG b ihu dance-PRG-3 play-NMZ-COL come-PST
 'The dancer is dancing Bihu dance.' 'The players came.'

In (2a) and (2b) the verbs **nas** 'dance' and **kʰɛl** 'play' are nominalised by the suffixes **-ɔni** and **-uoi** and the derived nominals can function like pure nouns. The derived nominals which occur in the subject position in (2a-b) takes the ergative case marker **-ɛ** in **nasɔniɛ** (2a) and in (2b) **kʰɛluoi** takes the collective suffix **-xɔkɔl** to indicate that it patterns like regular nouns. In (2a) the subject is an 'agent' i.e. doer of an action and in (2b) the subject is a 'theme' to which the reference is made.

3.1.2. Deadjectival noun (A → N)

De-adjectival noun involves derivation of a noun from an adjective and Crystal (2008:130) defines it as noun that originates as an adjective but used as noun in sentence structure. Table 3 shows deadjectival nouns in Assamese.

Table 3 Deadjectival nouns in Assamese

Root	Gloss	Suffix	Root+suffix	Gloss
ni.ɔb _{ADJ}	silent	-ɔta	ni.ɔbɔta _N	silence
bixɛx _{ADJ}	special	-ɔtwɔ	bixɛxɔtwɔ _N	specialty
shɛstʰɔ _{ADJ}	superior	-twɔ	shɛstʰɔtwɔ _N	superiority

As evident from Table 3 the derivational suffixes are attached directly to the adjectives in order to derive nouns. These suffixes are further elaborated in (3).

3. (a) ami mɔndiɔ-ɔt ni.ɔb-ɔta ɔkʰja koj-a usit
 we temple-LOC silent-DNOM maintain do-NF should
 'We should maintain silence in temple.'



- (b) sah ɔxom-ɔɔ ek bixex-ɔtwɔ (hɔi)
 tea assam-GEN one special-DNOM be
 'Tea is a specialty of Assam.'

The derived deadjectival noun takes plural marker and classifier as shown in (4a-b).

4. (a) beja-bɔɔ tʰo-i di-a
 bad-PL keep-CP give-2
 'Keep the bad ones.'
- (b) tumi bʰal-kʰini lɔ.a
 you good-QTF take.2
 'You take the good ones.'

(4a-b) shows derivation of nouns from adjectives in Assamese. In (4a) the plural marker **-bɔɔ** is suffixed to the adjective **beja** 'bad' to derive noun. In (4b) the quantifier **-kʰini** is suffixed to the adjective to derive the object noun **bʰalkʰini**. The derived nouns **bejabɔɔ** and **bʰalkʰini** function as direct object of verb in the sentence structure.

From (3) and (4) we find two types of deadjectival nouns: those in Table 3 which take suffixes like **-ɔta**, **-twɔ** etc. and those which do not take a derivational suffix as in (4a-b). But in both (3) and (4) the derived nouns function as nouns. **niɔnbɔta** and **bixexɔtwɔ** in (3a-b) are nouns derived from adjectives and function as nouns in sentence structure. Similarly, **teɔnbɔɔ** (4a) and **kola-twɔ** (4b) can be considered as noun as they sit in the subject and object position in the sentences without taking a derivational suffix.

3.1.3. De-nominal nouns (N → N)

De-nominal nouns are nouns derived from another noun. Derivation of denominal nouns in Assamese is shown in Table 4.

Table 4 Derivation of denominal nouns in Assamese

Root	Gloss	Suffix	Root+Suffix	Gloss
gɔɔpɔɔN	story	-kaɔ	gɔɔpɔɔkaɔN	story writer
gɔɔɔkɔɔN	globe	ikaɔnɔn/kaɔnɔn	gɔɔɔkɔɔikaɔnɔn	globalization
basɔɔN	steam	-bʰaɔkɔɔn	basɔɔbʰaɔkɔɔnN	act of converting liquid to steam
naɔN	boat	-ɔɔia	nawɔɔiaN	boatman
bjɔɔktiN	person	-twɔ	bjɔɔktitwɔN	personality
nagɔɔikN	citizen	-ɔtwɔ	nagɔɔikɔtwɔN	citizenship

Table 4 shows derivation of nouns from nouns in Assamese with the help of suffixes **-kaɔ**, **-ikaɔnɔn/kaɔnɔn**, **-bʰaɔkɔɔn**, **-ɔɔia**, **-ɔtwɔ/twɔ**. From the table it can be seen that the derived nouns are different from the source noun in meaning. For example, suffixation of **-kaɔ** to the noun **gɔɔpɔɔ** 'story' derives the noun **gɔɔpɔɔkaɔ** 'story writer'. Suffixation of **-ikaɔnɔn** to the noun **gɔɔɔkɔɔ** 'globe' derives another noun **gɔɔɔkɔɔikaɔnɔn** 'globalization', **-ikaɔnɔn** has an allomorph **-kaɔnɔn**. When the morpheme **-bʰaɔkɔɔn** is suffixed to nouns like **basɔɔ** 'steam' it derives the noun **basɔɔbʰaɔkɔɔn** 'act of converting liquid to steam'. The morphophonemic change /ɔ/→/i/ can be seen as a result of this suffixation. When the morpheme **-ɔɔia** is suffixed to the noun **naɔ** 'boat' it derives the noun **nawɔɔia** 'boatman'. Suffixation of the morpheme **-ɔɔia** to **naɔ** triggers the morphophonemic change /ɔ̃/→/w/. Similarly the suffix **-twɔ** derives the noun **bjɔɔktitwɔ** 'personality' from the noun **bjɔɔkti** 'person'. **-twɔ** is one of such suffixes



which can be used to derive words from more than one word categories. **-twɔ** has an allomorph **-ɔtwɔ** which derives **nagɔjikɔtwɔ** from **nagɔjik**. **-twɔ** can derive noun from adjective (Table 3) and noun from noun (Table 4). The examples in (5a-b) show some denominal nouns in the subject position of the declarative clauses.

5. (a) giti-kaɯ-zɔn mɔɯ bʰal bɔndʰu (hoi)
lyric-DNOM-CLF my good friend be
'The lyricist is my good friend.'

(b) zɔddʰa-xɔkɔl-ɛ zɔddʰɔ aɔmbʰɔ kɔɯ-il-ɛ
warrior-COL-ERG war start do-FUT-3
'The warriors started the war.'

3.1.3.1. De-nominal nouns with negative connotation

Bound morphemes **ɔ-**, **duɯ-** and **du-** derive nouns which have negative connotation as shown in Table 5, 6 and 7. These bound morphemes are prefixes and they are class maintaining prefixes. Table 5 shows derivation of denominal nouns with the help of the prefix **ɔ-**, followed by Tables 6 and 7 with the **duɯ-** and **du-** prefixes respectively.

Table 5 Derivation by **ɔ-** morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
ɔ-	biswax _N	trust	ɔbiswax _N	Distrust
ɔ-	nidɾa _N	sleep	ɔnidɾa _N	Sleeplessness

Table 6 Derivation by **duɯ-** morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
duɯ-	bʰagjɔ _N	fate/fortune	duɯbʰagjɔ _N	misfortune
duɯ-	din _N	day	duɯdin _N	bad day
duɯ-	nam _N	name	duɯnam _N	bad name

Table 7 Derivation by **du-** morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
du-	sinta _N	thought	du-sinta _N	worry
du-	xɔŋbad _N	news	duxɔŋbad _N	bad news
du-	xɔɔx _N	courage	duxɔɔx _N	audacity
duh-	xɔmɔi _N	time	duhxɔmɔi _N	bad time

3.2 Derivation of Assamese Verbs

In Assamese verbs can be derived both by prefixation and suffixation. In the sections to follow we will look into the derivation of verbs in the language.

3.2.1. De-nominal verb (N→V):

Crystal (2008: 135) defines de-nominal verb as verb that originates as a noun but used as verb in sentence structures. De-nominal verb formation is not very productive in Assamese.



Table 8 De-nominal verbs in Assamese

Root	Gloss	Suffix	Root+Suffix	Gloss
g ^h ʊsa _N	fist	-ija	g ^h ʊsija _v	hit with fist
ʂʌ _N	slap	-ija	ʂʌija _v	to give a slap
p ^h ʌni _N	comb	-ja	p ^h ʌnija _v	to comb hair

Table 8 shows derivation of a verb from a noun with the derivational suffix **-ija**. Suffixation of **-ija** derives the verbs **g^hʊsija** 'hit with fist', **ʂʌija** 'to give a slap' **p^hʌnija** 'to comb hair' from nouns **g^hʊsa** 'fist', **ʂʌ** 'slap' and **p^hʌni** 'comb' respectively. Morphophonemic change /a/→/i/ can be seen as a result of the suffixation of the morpheme **-ija** with the noun **g^hʊsa**. There is an instance of vowel assimilation when **'-ija'** suffixes with **p^hʌni**. /i/ in **-ija** gets assimilated with the word final /i/.

In (6) we have instance of de-nominal verbs functioning as a main verb.

6. (a) ʒdu-ε mɔd^hu-k g^hʊsija-l-ε
 jadu-ERG madhu-ACC fist.DVRB-PST-3
 'Jadu hit Madhu with fist.'

(b) tumi sulik^hini p^hʌni-ja-i lɔa
 you hair-QTF comb-DVRB-CP take.2
 'You comb your hair'

The sentences in (6) show derivation of a verb from a noun with the derivational suffix -- **ija /-ja**. In (6a) the derivational suffix **-ija** derives the verb **g^hʊsija** 'hit with fist' from the noun **g^hʊsa** 'fist'. The back open vowel /a/ of the second syllable in **g^hʊsa** is dropped and the deverbal morpheme **-ija** is suffixed to derive the verb **g^hʊsija**. In (6b) the derivational suffix **-ja** which is an allomorph of **-ija**, follows the noun **p^hʌni** 'comb' to derive the verb **p^hʌnija**. **-ja** is followed by the conjunctive participle **-i** to form the compound verb **p^hʌni-ja-i lɔa** 'comb' which includes the tense and agreement features

3.2.2. Deverbal verbs (Negative verbs)

Barbora (2001:101) states that negatives in Assamese are bound morphemes. The bound morpheme **n-** prefixes to a root verb and copies its vowel as shown in Table 9.

Table 9 Derivation by the n- morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
n-	ʌ _v	take	nʌʌ _v	do not take
n-	ʀʌh _v	read	nʀʌh _v	do not read
n-	k ^h a _v	eat	nak ^h a _v	do not eat
n-	lik ^h _v	write	nilik ^h _v	do not write

Table 9 shows derivation of verbs with the help of negative morpheme **n-**. Barbora (2001:101) explains in detail that negative prefix **n-** copies the vowel of the root word. In (7a-b) we have examples of negative sentences in Assamese.

7. (a) xi am na-k^ha-i
 he mango NEG-eat-3
 'He does not eat mango'



- (b) ram-ε b^hal-koi nɔ-pɔɪh-ε
 ram-NOM good-DADV NEG-read-3
 'Ram does not study properly.'

(7a-b) shows derivation of negative verbs in Assamese. In (7a) the derivational morpheme **n-** is prefixed to the verb **k^ha** to derive the negative verb **nak^ha**. Here the negative morpheme is **n**. **n** takes /a/ as a result of vowel copying from the verb root **k^ha**. In (7b) the derivational morpheme **n-** is prefixed to the verb **ɔɪh** to derive the negative verb **nɔɔɪh**. Here also we see instance of vowel copying when the negative morpheme **n-** copies the vowel /ɔ/ from **ɔɪh**.

3.2.3. De-adjectival verb

De-adjectival verb is an instance of derivation of a verb from an adjective. Crystal (2008: 130) defines de-adjectival verb as a verb that originates as an adjective but used as verb in sentence structure. In Assamese there are some adjectives which sit in the position of a verb without taking any derivational suffix. However, when they sit in the position of a verb, they take inflectional morphemes like causative, tense, aspect and person markers as shown in (8a-b).

8. (a) pani-k^hini tɔɔt-ɔa
 water-QTF hot-CAUS2.2P
 'Boil the water.'
- (b) nitu-ε saul-bɔɪ kumɔl-a-is-ε
 nitu-ERG rice-PL soft-CAUS1-PRG-3
 Lit: 'Nitu is softening rice.'
 'Nitu is soaking the rice to soften.'

In (8a) the causative **-ɔa** is causing indirect causation and in (8b) we have direct causation, where the subject is doing the job of softening the rice. Barbora (2016:115) labels the direct causative **-a** as CAUS 1 and the indirect causative **-ɔa** as CAUS 2.

3.3 Derivation of Assamese adjectives

Derivation of adjectives in Assamese is a very productive process. In Assamese adjectives are derived from noun, adjective and verb.

3.3.1. De-nominal adjective

Denominal adjectives are adjectives derived from a base noun. Crystal (2008: 135) defines denominal adjective as adjective that originates as a noun but used as an adjective in a sentence. In Assamese adjectives are formed from nouns by the following class changing derivational suffixes as shown in (9).

9. (a) xi kɔa kahini-tɔ kalɔn-ik (hoi)
 he say.NF story-CLF imagination-DADJ (be)
 'The story he told is imaginary.'
- (b) am b^harɔt-ɔɪ ɹastriyɔ p^hɔl (hoi)
 mango India-GEN national fruit (be)
 'Mango is the national fruit of India.'
- (c) ɹitu-ε sɹisti-mulɔk kam b^hal pa-i.
 ritu-ERG creation-DADJ work good get-3



'Ritu likes creative work.'

(d) ৱংগহৰ দেশ-ৰ মূল্যহীন সম্পত্তি
 rongghor country-GEN DADJ-price property

'Rongghor is country's priceless property.'

(9a-d) shows how adjectives are derived from nouns in Assamese. In (9a) the noun **কাল্পনা** 'imagination' is suffixed with the derivational suffix **-ik** to derive the adjective **কাল্পনিক** 'imaginary'. Derivation of the word **কাল্পনিক** from **কাল্পনা** shows morphophonemic change where the where the back vowel between close and half close changes to a back open vowel that is, /ɔ/→/ɑ/. The word final **ɑ** of **কাল্পনা** is dropped before suffixing **-ik**. In (9b) the adjective **জাতীয়** 'national' is derived from the noun **জাতি** 'nation'. Here, when the derivational morpheme **-ijɔ** is suffixed to the noun **জাতি** vowel dropping takes place as a result of which the word final /ɔ/ of **জাতি** is dropped before suffixing **-ijɔ**. The derivational suffix **-mulɔk** that derives the adjective in (9c) is a typical bound morpheme that is actually derived from a noun **মূল** 'root' by suffixing the **-ɔk** morpheme. However, **-mulɔk** is a bound morpheme that derives an adjective from a noun **সৃষ্টি** 'creation' in (9c). (9d) gives an instance of a derivational prefix **ɔ-** that derives the adjective **মূল্যহীন** 'priceless' from a noun **মূল্য** 'price'.

3.3.1.1. De-nominal adjective with negative connotation

When bound morphemes **ni-**, **niɔ-** and **-hin** are affixed to a noun they derive adjectives and the derived adjectives give the sense of 'devoid of / without something that is referred by the noun'. These are shown with examples in Table 10, 11 and 12.

Table 10 Derivation by ni- morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
ni-	শব্দ _N	sound	নিশব্দ _{ADJ}	silent
ni-	খুল _N	fee	নিখুল _{ADJ}	free of cost
ni-	সিন্তা _N	worry	নিসিন্তা _{ADJ}	worry-less
ni-	সন্দেহ _N	hesitation	নিসন্দেহ _{ADJ}	without hesitation

Table 11 Derivation by niɔ- morpheme

Prefix	Root	Gloss	Prefix+root	Gloss
নিɔ	জিৱ _N	life	নিɔজিৱ _{ADJ}	lifeless
নিɔ	গুণ _N	quality	নিɔগুণ _{ADJ}	something that cannot be attributed with any quality
নিɔ	পাপ _N	crime	নিɔপাপ _{ADJ}	innocent
নিɔ	জ্ঞান _N	knowledge	নিɔজ্ঞান _{ADJ}	innocent/dull

Table 12 Derivation by -hin morpheme

Root	Gloss	Suffix	Root+suffix	Gloss
budd ^h _N	intelligence	-hin	budd ^h ihin _{ADJ}	dull/stupid
খক্তি _N	strength	-hin	খক্তিhin _{ADJ}	weak
অর্থ _N	meaning	-hin	অর্থhin _{ADJ}	meaningless
শব্দ _N	sound	-hin	শব্দhin _{ADJ}	soundless/silent



3.3.2. De-verbal adjectives

As the name suggests, de-verbal adjectives are adjectives realized through derivational process by suffixing a derivational morpheme to a verb. In Table 13, we have instances of derivation of adjectives from verbs.

Table 13 De-verbal adjectives in Assamese

Root	Gloss	Suffix	Root+Suffix	Gloss
ᱠᱟᱱᱤᱨ	compose	-itᱟ	ᱠᱟᱱᱤᱨitᱟADJ	composed
kandᱤ	cry	-ᱠᱤᱱᱤ	kandᱤᱠᱤᱱᱤ ADJ	cry baby
ᱠᱟᱢᱤ	flee	-ᱠᱤᱱᱤ	ᱠᱟᱢᱤᱠᱤᱱᱤ ADJ	one who flees / escapist

Table 13 shows derivation of adjectives from verbs in Assamese with the suffixes **-itᱟ**, **-ᱠᱤᱱᱤ**, **ᱠᱤᱱᱤ**. Suffixation of **-itᱟ** derives adjective **ᱠᱟᱱᱤᱨitᱟ** 'composed' from the verb **ᱠᱟᱱᱤᱨ** 'compose'. Suffixation of the derivational suffix **-ᱠᱤᱱᱤ** to the verb **kand** 'cry' derives the adjective **kandᱤᱠᱤᱱᱤ** 'cry baby'. Suffixation of **-ᱠᱤᱱᱤ** to the verb **ᱠᱟᱢᱤ** 'flee' derives the adjective **ᱠᱟᱢᱤᱠᱤᱱᱤ** 'one who flees'. This derivation in Assamese is shown in examples (10a-d).

10. (a) tumi lik^h-itᱟ ᱠᱟᱢᱤᱨ dia
you write-DADJ proof give-2

Lit: 'You give written proof.'

'You provide written proof.'

(b) tẽᱤ-ᱤ ᱠᱟᱱᱤᱨitᱟ kᱟᱠᱤᱨ is-ᱟ
he-GEN compose-DADJ poem read-PRF-1

'I have read poem/poems composed by him.'

(c) ᱠᱟᱱᱤᱨ-ᱟᱠᱤ ᱠᱟᱢᱤᱨitᱟ (ᱠᱟᱢᱤᱨ)
boy-CL very cry- DADJ.M (be)

'The boy is a crybaby.'

(d) ᱠᱟᱢᱤᱨitᱟ-ᱠᱤᱱᱤᱨitᱟ ᱠᱟᱢᱤᱨitᱟ (ᱠᱟᱢᱤᱨ)
girl-CL-F very cry- DADJ.F (ᱠᱟᱢᱤᱨ)

'The girl is a crybaby.'

In (10a) and (10b) the derivational suffix **-itᱟ** derives an adjective from a verbs **lik^h** 'write' and **ᱠᱟᱱᱤᱨ** 'compose'. Derivational suffix **-ᱠᱤᱱᱤ** derives an adjective **kandᱤᱠᱤᱱᱤ** 'a boy who is a crybaby' from a verb **kand** 'cry' in (10c). The feminine counterpart of **-ᱠᱤᱱᱤ** is **-ᱠᱤᱱᱤᱨitᱟ** which derives **kandᱤᱠᱤᱱᱤᱨitᱟ** 'a girl who is a crybaby' from the verb **kand** 'cry' in (10d).

3.3.3 De-adjectival adjective

De-adjectival adjectives are adjectives derived from adjectives. Affixation of a bound morpheme with adjective changes the meaning of the root adjective and in this process derives another adjective which is shown in Table 14:

Table 14 shows derivation of adjectives from adjectives in Assamese with the prefix **-ᱠᱤ**. The prefix **ᱠᱤ** derives adjectives like **ᱠᱤᱠᱟᱢᱤᱨ** 'uncivilised', **ᱠᱤᱠᱟᱢᱤᱨ** 'unreasonable' **ᱠᱤᱠᱟᱢᱤᱨ** 'extraordinary' and **ᱠᱤᱠᱟᱢᱤᱨ** 'incomparable' from another adjective **ᱠᱟᱢᱤᱨ** 'civilized', **ᱠᱟᱢᱤᱨ** 'reasonable' **ᱠᱟᱢᱤᱨ** 'ordinary' and **ᱠᱟᱢᱤᱨ** 'comparable' respectively. Thus **ᱠᱤ**- is a class maintaining derivational prefix. Thus we can see that prefix **ᱠᱤ**- derives an adjective having a negative meaning as well as positive meaning.



Table 14 Deadjectival adjectives in Assamese

Root	Gloss	Prefix	Prefix+Root	Gloss
xcɔb ^h ɔ _{ADJ}	civilized	ɔ-	ɔxcɔb ^h ɔ _{ADJ}	uncivilized
zuktikɔ _{ADJ}	reasonable	ɔ-	ɔzuktikɔ _{ADJ}	unreasonable
xad ^h aɔ _{ADJ}	ordinary	ɔ-	ɔxad ^h aɔ _{ADJ}	extraordinary
tulɔnɔ	comparable	ɔ-	ɔ-tulɔnɔ _{ADJ}	incomparable

However, the morpheme is more productive in deriving adjective having a negative meaning. Sentences (11 a-b) show the derived adjectives occur as a complement in the predicate phrase.

11. (a) tɛʔɔ bjɔktitwɔ ɔ-xad^haɔ (hoi)

his personality DADJ-common (be)

'His personality is exceptional.'

(b) ɡwɛxɔnɑ-t tɛʔɔ ɔ-b^hutɔpɔɔɔɔ xɔp^hɔɔɔɔ lab^h kɔɔ-il-ɛ
research-LOC he DADJ-former success gain do-PST-3

'He got unprecedented success in research.'

From the above analysis it is evident that ɔ- is a very productive derivational morpheme that derives adjective from adjective (see Table 15) and noun from noun (see Table 1). This prefix is more productive in deriving an adjective from another adjective.

3.4 Derivation of Assamese Adverbs

Adverbs in Assamese are derived from word categories like noun and adjective by affixing derivational morphemes. In Table 16 we have instances of derived adverbs from nouns:

3.4.1. Denominal Adverbs

Denominal adverb is an adverb derived from a noun. Derivation of an adverb from noun is very frequent in Assamese. Morphemes -ɛ, and -ai are suffixed with a noun to derive an adverb from a noun which is shown in Table 15.

Table 15 Denominal adverbs in Assamese

Root	Gloss	Suffix	Root+Suffix	Gloss
bɛɡ _N	Speed	-ai	bɛɡai _{ADV}	speedily
nɪpɔnɔ _N	Skill	-ɛ	nɪpɔnɔɛ _{ADV}	skilfully

Table 15 shows derivation of adverbs from nouns in Assamese with the suffixes **-ai**, and **-ɛ**. Suffixation of **-ai** derives the adverb **bɛɡai** 'quickly, fast, speedily' from the noun **bɛɡ** 'speed'. Suffixation of **-ɛ** to the noun **nɪpɔnɔ** 'skill' derives the adverb **nɪpɔnɔɛ** 'skilfully'. In examples (12 a-b) we have adverbs in the imperative sentence (12a) and (12b).

12. (a) bɛɡ-ai zɔ-a
speed-DADV go-2P
'Go quickly.'

(b) baɪɛu-ɪ-dɔɛ likh-a
SISTER-GEN-LIKE WRITE-2
'Write like your sister.'



The morpheme **-ai** can be directly suffixed to the noun to derive an adverb as in (12a). But (12b) shows that the morpheme **-koi** cannot be suffixed directly to the stem. The genitive morpheme **-i** is suffixed first with the noun stem which is followed by the derivational suffix **-koi**.

3.4.2. Deadjectival adverbs

Following Crystal (2008:130) de-adjectival adverb can be explained as an adverb that originates as an adjectival but can be used as an adverb in a sentence. De-adjectival adverbs is formed with the derivational suffixes **-koi** and **-ai**. These two bound forms are very productive in the language

Table 16 Deadjectival adverbs in Assamese

Root	Gloss	Suffix	Root+Suffix	Gloss
sizil _{ADJ}	neat	-koi	sizilkoi _{ADV}	neatly
k ^h ɔɔ _{ADJ}	fast	-koi	k ^h ɔɔkoi _{ADV}	speedily
g ^h ɔɔn _{ADJ}	dense	-ai	g ^h ɔɔnai _{ADV}	densely/frequently
bɔɔhɔɔl _{ADJ}	broad	-ai	bɔɔhɔɔlai _{ADV}	broadly

Table 16 shows derivation of adverbs from adjectives in Assamese with the suffixes **-koi**, and **-ai**. Suffixation of **-koi** to the adjectives **sizil** 'neat' and **k^hɔɔ** 'fast' derives the adverbs **sizilkoi** 'neatly' and **k^hɔɔkoi** 'speedily' respectively. Suffixation of **-ai** to adjectives **g^hɔɔn** 'dense/frequent' and **bɔɔhɔɔl** 'broad/wide' derives adverbs **g^hɔɔnai** 'densely/frequently' and **bɔɔhɔɔlai** 'broadly' respectively. In (13a-c) we have sentences where the adverbs derived by **-koi** and **-ai** function as adverb of manner.

12. (a) tumi gan-tɔ b^hal-koi gɔ.a
 you song-CL good-DADV sing-2
 'You sing the song nicely.'
- (b) biɛn g^hɔɔn-ai bɔɔzɔɔ-ɔloi go-i ɔs-ɛ
 biren dense-DADV market-DAT go-NF exist-3P
 'Biren is going to the market frequently.'
- (c) tumi k^hɔɔ-koi lik^h-ibɔɔloi sɛsta kɔɔ-a
 you fast-DADV write-INF try do-2
 'You try to write fast.'

3.4.3. Complete reduplication

In Table 17 we have a few examples of complete reduplication in Assamese. The suffix **-ɛ** adjoins to the adjective and the reduplicated form functions as an adjective

Table 17 Complete reduplication to derive adverbs

Adjective	Gloss	Suffix	Adverb	Gloss
b ^h al	good	-ɛ	b ^h al-ɛ b ^h al-ɛ	Safely/nicely/ properly
bɛg	quick	-ɛ	bɛg-ɛ	quickly
lahɛ	slow		lahɛ lahɛ	slowly



In Table 17 we have a reduplicated adverb lahε lahε 'slowly' which does not take the adverbial marker -ε. Complete reduplication is one of the strategies to derive manner adverbs. In (13) the derived adverb indicates the manner in which the subject has arrived.

13. (a) nɔŋen b^hal-ε b^hal-ε pa-l-ε-hi
 nagen good-DADV good-DADV get-PST-3-ASS
 'Nagen arrived safely.'

3.4.5 Denominal adverbs

In Table 18, we have instances of derivation of manner adverbs from nouns. Here too the adverbial marker -koi and the reduplicated marker -ε suffixes to the noun to derive adverbs.

Table 18 Denominal adverbs in Assamese

Noun	Gloss	Suffix	Adverb	Gloss
xa.iN	row	-koi	xa.i-koi	'in a row'
kanN	ear	-ε	kanε kanε _{ADV}	'whisper'

The adverbial marker **-koi** suffixes to the noun **xa.i** 'row' to derive the adverb **xa.i.koi** 'in a row'. The suffix **-ε** derives the adverb **kanε kanε** 'silently whisper in the ear' from the noun **kan** 'ear'. In (14a-b) the derived adverbs modify the main verbs.

14. (a) xi k^hɔŋɔ-tɔ kan-ε kan-ε ko-l-ε
 he news-CL ear-DADV ear-DADV tell-PST-3
 'Lit: He told the news ear to ear.'
 'He whispered the news.'
- (b) puli-bɔŋ xa.i xa.i-koi ɟɔ-m
 sapling-PL row row-DADV plant-1.FUT
 'I will plant the saplings in rows.'

6. Conclusions

The analysis of the derivational process in Assamese shows that the language uses both prefixes and suffixes to derive a new category or maintain the same category. Of the two affixation processes suffixation is more productive in the language than prefixation. The class maintaining derivational affixes in the language are: **ɔ-**, **au-**, **ɔkɔ-ɔnu-**, **du-**, **du-**, **n-**, **-a**, **-ikaŋ/kaŋ**, **-ikɔŋ/kaŋ**, **-b^hɔŋɔ-ɔŋa**, **-twɔ**. The class changing derivational affixes are: **-ɔni**, **-uoi**, **-ɔŋa-uta**, **-jɔk/ok**, **ɔta**, **ɔtwɔ**, **-twɔ**, **-ija-ik**, **ijɔ**, **ni-**, **ni-**, **ɔ-**, **-itɔ**, **-uŋa**, **-ai**, **-koi**, **-ε-koi**, **-ai**, **-mulɔk**, **-hin**. Derivational affixes with negative connotation are: **-hin**, **du-**, **ɔ-**, **ni-**, **ni-**, **ɔkɔ**, **du-**. The prefix **ɔ-** can be both class changing and class maintain. This prefix can also derive words with negative connotation. The group of bound morphemes **du-**, **-hin**, **du-**, **ɔ-**, **ni-**, **ni-** etc. when affixed to nouns the derived word carries the meaning 'devoid of or absence of the quality referred by the root'. In contrast the negative morpheme **n-** is class maintaining and the derived negative verb functions as a matrix verb in a clause. Some derivational morphemes like **-ɔni**, **-mulɔk** and **-ũta** are very productive in the language. On the other hand morphemes like **-b^hɔŋɔ** are not very productive.

Morphophonemic change of the stem is observed in cases like **nawɔŋia** 'boatman', when the bound morpheme **-ɔŋia** is suffixed to **naũ** 'boat' here we observe morphophonemic change where /**ũ**/→/**w**/. Also we have instances of vowel copying when the negative morpheme **n-** is prefixed to a verb root. Also some allomorphs observed in our analysis are **-ikaŋ/kaŋ**, **ikɔŋ/kaŋ**, **-jɔk/ok**, **-ɔtwɔ/twɔ**, **-ija/ja**. Lastly we have observed some bound morphemes have the ability to affix with different word categories to derive new words. For example, **-twɔ** can derive noun from adjective and noun form noun.



Abbreviation

1	-	first person
2	-	second person
3	-	third person
ass	-	assertive
caus	-	causative
clf	-	classifier
col	-	collective
cp	-	complimentizer
dadv	-	deadverbial
dadj	-	deadjectival
dat	-	dative
dnom	-	denominal
dvrb	-	deverbal
erg	-	ergative
F	-	feminine
fut	-	future
gen	-	genitive
inf	-	infinitive
loc	-	locative
M	-	masculine
neg	-	negative
nf	-	non finite
nmz	-	nominalizer
prf	-	perfect
prg	-	progressive
pst	-	past
qtf	-	quantifier

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