



## Article

**Whole Segment Processes in Dogri**Devina Krishna<sup>1</sup><sup>1</sup>Patna Women's College, Patna, India**SUBMISSION TRACK**

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**A B S T R A C T**

The present paper aims to discuss the phonological processes including whole segment processes occurring in Dogri. It serves an introduction to the types of phonological processes and present examples from Dogri words exhibiting these processes and phenomena. The objective of the present work is to present a complete classification of different phonological processes in Dogri, explore these processes in detail and to acquaint students and researchers with the changes in the sound structure because of the whole segment processes. The earlier linguistic literature on Dogri mentions that various whole segment processes such as gemination, nasalization, addition, deletion, metathesis, substitution, and assimilation were prevalent in Dogri. Moreover, gemination and nasalization is phonemic in Dogri. It has been found that in certain lexical items, transposition of sounds takes place that is one sound is moved next to the adjacent sound and that in turn is replaced by the former sound. In sum, Dogri has been found to make use of a wide variety of the phonological processes. The work employs exploratory research design with thrust on qualitative method involving interpretative approach towards the data. The finding of the research presents a good amount of whole segment and phonological type phonological processes in Dogri lexical items. The study makes students and researchers acquainted with different phonological processes in words and the data serves as a documented record for future researchers and linguists.

**1. INTRODUCTION**

Dogri belongs to the New Indo-Aryan (NIA) branch of Indo-European family. It is chiefly spoken in the Jammu region of Jammu and Kashmir, Northern Punjab, Himachal Pradesh, and other parts of Kashmir. The people speaking Dogri are called Dogras whereas the belt where it is spoken is called Duggar. Dogri is a feminine form of the word Dogra which is a tribal name signifying the people of Duggar. It is a member of the Western Pahari group of languages.

According to some scholars, it is one of the several varieties of the Punjabi group of languages. It was only recently that the language received official status in the country. Based on the unanimous recommendation of a panel of linguists from the General Council of the Sahitya Academy of Delhi, the language came to be recognized as

an 'independent modern literary language' of India. In its next grand achievement, Dogri was hailed as a national language of India in the Indian Constitution and recently the language has been included in the eighth schedule of the Constitution.

As far as the historical account is concerned, from the period 1750 AD to 1860 AD, Dogri was written in Takri script. Before the partition, the script that was used for writing was Gurmukhi script that was also used for writing Punjabi. The present-day script is Devanagari in India and the Nasta'liq form of Perso-Arabic in Pakistan. Later period witnessed translation works in Dogri, such as the translation of the *New Testament*.

During the 20<sup>th</sup> century, Dogri writing was established in various fields of poetry, prose, plays, short stories, and novels. There have been remarkable literary writers and poets in Dogri and

recently a lot of translation works are being carried out in the state of Jammu, such as translation of philosophical classics such as 'Bhagavad Geeta' and many more.

Next, the question, however arises as to why we should study phonological processes in a language. The answer to this comprises of so many reasons. Languages comprise of various phonological scheme that makes use of phonological processes. Knowing these processes and analyzing the words making use of these processes help in examining the sound structure of a language.

Vasanthakumari (1989) talks about the insertion process in her work. Bahri (2001) states the various whole segment processes in his work substantiating a from Dogri. Kulkarni's (1976: 45) work presents the metathesis process happening in Gondi. However, the study provides a limited account of the phonological processes with little description of these processes.

Bahri (2001) mentions the various whole segment processes such as gemination, addition, deletion, metathesis and many others. His work presents substantial examples from Dogri exhibiting the segmental processes. This is the only study that has been dealt at length as far as phonological processes are concerned. Still, a lot many research is yet to be done for the sake of preserving linguistic data in the area of phonology.

The present work explores these processes in detail and to acquaint students and researchers with the changes in the sound structure because of the whole segment processes. The previous studies show gaps and inconsistencies found in the linguistic data on phonological processes. The present work showcases phonological processes including whole segment processes. The previous writers in Dogri worked on phonological processes but the categorization of whole segment was not mentioned and the works were devoid of theoretical framework. Ghai (1991) presents a work on phonetics and phonology but little is presented on phonological account of the language. Later, Bahri (2001) has stated about the various whole segment processes in his work substantiating examples from Dogri. His work presents a brief account of phonological processes occurring in Dogri. However, the present work acquaints the readers to the types of phonological processes and makes use of theoretical analysis to analyze segmental structure. It examines the existence of epenthetic

vowels before segments for instance, and provides a basic Optimality Theory (OT) analysis to account for various phenomena.

The students of phonetics and phonology are expected to name the phonological processes in phonological grammars and studies. There are two categories of phonological processes- Whole segment and modification type processes. Whole segment includes deletion, insertion, or transposition of elements whereas modification type includes nasalization, assimilation, and such. The phonological world of languages revolves around these processes and include ways by which native speakers of languages produce words in their own way.

The present work presents various processes which are important issues or frequent phenomena occurring in Dogri and several languages. Such processes are implicit in the scripts of the languages. The study also shows how these processes are important for intelligibility and unaccented speech. The study also poses challenges to non-native speakers because the scripts, including Devanagari do not tell when for example, schwas should be deleted. Thus, the study presents the list of explicit data which becomes a source for documentation for future linguists and scientists.

## II. METHODS

In the proposed study the exploratory research design was used to get a better understanding of the planned study and achieve desired results. Data for the proposed study was obtained from two sources which include a primary and a secondary source. For the collection of data, a list of words was collected from the previous linguistic literature. Dogri speaking informants based in Jammu were interviewed. The data was recorded in media recorder via mobile technology. The sample size for the present work comprised of 20 participants to elicit linguistic responses. There were 10 females and 10 males of same age groups to maintain homogeneity in the results. The data was analyzed by transcribing the recorded speech of the informants by use of phonetic fonts. Further, all the lexical items were examined along with their Hindi and Sanskrit counterparts which were further classified into various phonological processes.

Before we begin with the phonological processes in Dogri, let us shed light upon some characteristics of Dogri. The following section

would talk about Dogri, its historical account and some of its linguistic characteristics in a nutshell.

### III. RESULT AND DISCUSSION

#### Phonetics and Phonology

##### Segments in Dogri

Dogri has 26 consonants, 10 vowels and a three-way tonal oppositional system (Bahri:14). The following are the 26 consonantal phonemes: /p/, /b/, /t/, /d/, /t̪/, /d̪/, /c/, /ʃ/, /k/, /g/, /pʰ/, /tʰ/, /t̪ʰ/, /cʰ/, /kʰ/, /m/, /n/, /ŋ/, /r/, /ɽ/, /l/, /w/, /s/, /ʃ/ and /j/

Thus, Dogri has 26 consonantal phonemes based on the oppositions. These consonantal phonemes have a certain distribution according to their incidence in syllables as well as words in general. Bahri (2001) states some of these general characteristics as follow:

1. Consonants occur in all positions, with the following restrictions:
  - a. /ŋ/, /ɽ/ does not occur in the initial position.
  - b. /w/, /j/ does not occur finally.
2. All consonants occur in the syllable initial position.
3. All consonants can occur medially within the word/morphemes.
4. Dogri lacks voiced aspirates.
5. All consonants can occur as geminates or as single consonants with these exceptions exceptions as /r/, /ɽ/ and /ŋ/.

#### Whole Segment processes in Dogri

With the uprising that we have experienced until now, our communication medium also keeps changing and developing. The sounds that our articulator organs produce to interact with others have also changed, whether it's changed partially or even entirely. This feature of sounds in the phonological system of a language that is affected due to the processes are also known as phonological processes.

But there is another example of phonological processes case that comes from the aspect of an individual human progress. That happens to us when we were young. As a child, our brains could recognize and begin to understand the language that is commonly used in our province, we also learn to speak and pronounce words, but the child's brain that is still developing isn't ready to divide such

a complex and various sound that we could spell. Because of that, the child's brain works and give an alternative way and simplify the speech sounds so that the words are easier to say.

The following are the whole-segment processes in Dogri:

#### Gemination

Gemination refers to the process of doubling sounds, chiefly consonants, in certain positions of a word or boundaries within word. The doubling of segments becomes a feature of certain languages. In India, Punjabi exhibits cases of gemination.

In Dogri, gemination is said to be phonemic. All consonants except /r/, /ʃ/, /ɽ/, and /ŋ/ can be geminated. Gemination fails to occur in a few of sibilants and rhotic sounds. These are preceded by short vowels when geminated. In case of aspirates, only the voiceless element that is onset is geminated. The gemination in Dogri is established on the basis of the following oppositions:

/pp/	/təppa/ 'stanza'	/tə'pa/ 'to cause to jump'
/ppʰ/	/təppʰi/ 'stronghold'	/təpi/ 'recited'
/bb/	/ləbba/ 'found'	/ləbà/ 'find (imp)'
/kk/	/mokka/ 'fist'	/mò'ka/ 'finish'
/gg/	/bægga:/ 'whitish'	/bə'ga/ 'flow'
/cc/	/kacca:/ 'ripe'	/kə'ca/ 'bad'
/tt/	/kəttə/ 'young one of buffalo'	/kə'tə/ 'to cause to cut'
/dd/	/səddi/ 'called'	/sə'di/ 'century'
/d̪d̪/	/bəd̪d̪ə/ 'big'	/bə'd̪ə/ 'to cause to cut'
/mm/	/kəm̪mi/ 'labourer'	'kəmi/ 'weaknesses'
/nn/	/mən̪ni/ 'agreed'	/'mən̪i/ 'a stone'
/ss/	/rəssa/ 'rope'	/'rəsə/ 'soup'

#### Epenthesis or Insertion

In certain contexts, a particular segment gets added in between certain segments. Consider the following examples:

Please	:/pəliz/	instead of	/pliz/
Film	:/filəm/	instead of	/film/
Hamster	:/hæmpster/	instead of	/hæmster/
Strength	:/strɛŋkθ/	instead of	/strɛŋθ/
Ankle	:/əŋkəl/	instead of	/əŋkl

In a certain context, a particular segment gets added in between certain segments. Consider the following example:

Hindi	Dogri	Gloss
[səmbəndʰ]	[sərbəndʰ]	'relation'
[pəsina]	[pərsina]	'perspiration'

(Excrescence, a part of the phonological process of Epenthesis of consonants).

However, in certain contexts, a particular segment gets deleted and another segment gets added, as in the following:

[bilap]            [bərlap]            ‘agony’

In the context of epenthesis, the present study provides an Optimality Theory (OT) analysis to account for this process. Native Indian English Dogri speakers prohibit initial consonant clusters, and many word-initial consonant clusters are made easy within the sound sequences of a language. The initial consonant clusters are further broken into segments with the epenthesis process. The data shows that there is restriction against word initial consonant clusters which can be translated into an OT constraint. Another point to note is that, outputs in the form of lexical items like ‘special’ or ‘front’ are not permissible. The OT approach states that an output with word-initial vowel epenthesis to break the consonant cluster is a possibility. For example, in the example /ɛʃpɛʃəl/ ‘special’, one can notice such an aspect. Another explanation is output with vowel epenthesis between consonants of the initial cluster. For example, in the case of /fərʌnt/ ‘front’ where such an explanation is visible.

### Deletion

The process of deletion takes place when a segment is elided in each context. Native speakers of a language pronounce certain words with the aspect of deleting a particular segment. The process of deletion is very natural for the speakers to undergo and produce. A phenomenon that is prevalent across many languages across the world.

Dogri undergoes deletion in certain contexts.

Deletion or Elision

Aphesis (segment is deleted word-initially)

Hindi	Dogri	Gloss
[ənaʃ]	[naʃ]	‘grains’
[əcar]	[car]	‘pickle’
[əmrud]	[mərud]	‘guava’
[əʈʰarah]	[ʈʰarah]	‘eighteen’
[inam]	[nam]	‘award’
[ilaci]	[laci]	‘cardamom’
[imarət]	[marət]	‘building’
[imərti]	[mərti]	‘sweet’
[anənda]	[nanda]	‘joy’
[ənərtʰa]	[nərtʰa]	‘calamity’
[ədʰina]	[dʰina]	‘dependent’
[əkala]	[kala]	‘famine’
[ədʰjaj]	[dʰjaj]	‘chapter’

The previous examples exhibit deletion of a particular segment in initial position. However, deletion takes place in medial position too, as in the following:

Hindi	Dogri	Gloss
[kəpət]	[kəpt]	‘fraud’
[kələ]	[kəl]	‘auspicious pot’
[səbək]	[səbk]	‘lesson’
[malik]	[malk]	‘master’

In certain cases, deletion takes place, along with insertion of a particular segment, as seen in the following:

[əkʰnʌr]	[kʰənʌr]	‘Akhnoor’
[əkʰbʌr]	[kʰəbʌr]	‘newspaper’

### Metathesis

In certain lexical items, there is transposition of sounds taking place that is one sound is moved next to the adjacent sound and that in turn is replaced by the former sound.

The phonological processes can metathesize the pronunciation of a word by its rule called metathesis. The metathesis rule is simply changing the sound of a syllable by swapping the position of a segment as we pronounce the word.

Example:

**Ask** is commonly pronounced as /æsk/. But in the metathesis case, the sounds become /æks/.

I **asked** Marry about her dog.

The same form as ask, the asked that is usually addressed by /æskt/ can be metathesize to /ækst/.

Consider the following examples in Dogri:

[uʃaɾ]	→	[ʃuaɾ]	‘destroy’
[udas]	→	[duas]	‘sad’
[udʰar]	→	[duhar]	‘loan’
[utar]	→	[tuar]	‘downs’
[ukʰaɾ]	→	[kʰuaɾ]	‘uproot’
[upaj]	→	[puaj]	‘solution’

In the following examples, the [ɪ] segment is moved after the first sound and the following segment, next to the first, will move next to [ɪ] and a schwa will be inserted along with it. Moreover, the approximants become plosives in certain cases.

[kɾɪtʰən]	→	[kɾətʰən]	‘unobliged’
[vɾɪdʰ]	→	[bɾədʰ]	‘old’
[pɾɪtʰvi]	→	[pɾɪtʰvi]	‘Earth’
[mɾɪg]	→	[mɾɪg]	‘deer’
[vɾɪtti]	→	[bɾɪti]	‘way’
[kɾɪpa]	→	[kɾɪpa]	‘grace’
[sɾɪʃən]	→	[sɾɪʃən]	‘production’

It is an important fact to be noted that the [r] sound which got lost in Hindi, it still retains in Dogri. This can be seen in the following examples:

Sanskrit	Dogri	Gloss
[mitrə]	[mittər]	‘friend’
[sutrə]	[suttər]	‘thread’
[tram]	[trama]	‘bronze’
[gram]	[grā]	‘village’

### Substitution

In certain cases, a particular sound gets substituted by another sound. Consider the following examples:

Hindi	Dogri	Gloss
[nəvā]	[nəmā]	‘new’
[satvī]	[sətmī]	‘seventh’
[jatra]	[Jatra]	‘journey’
[jəntṛə]	[Jəntṛə]	‘instrument’
[jogi]	[Jogi]	‘ascetic’
[jogyə]	[Jog]	‘deserving’
[vela]	[bela]	‘useless’
[vəcən]	[bəcən]	‘promise’
[vedna]	[bedna]	‘grief’
[vər]	[bər]	‘bridegroom’
[ləkʃən]	[ləkkʰən]	‘quality’

## Modification Types Phonological Processes

### Nasalization

Nasalization is the part of the assimilation phonological processes rule that occurs when the sound as we articulated a word is impacted by the upcoming nasal, and it usually comes just before we say the vowel of the syllable. Bahri (2001) notes that nasalization is phonemic in Dogri. All vowels can occur nasalized as well as non-nasalised. The phonemic status of nasalization is established on the basis of the following oppositions:

/adər/ ‘respect’	/ãdər/ ‘intestine’
/sə/ ‘hundred’	/sã/ ‘oath’
/Jəg/ ‘world’	/Jãg/ ‘war’

Nasalization in Dogri is not predictable when a vowel precedes or follows a nasal consonant /n/ or /m/. However, in case of /ŋ/ the preceding vowel invariably is nasalized and the following vowel for causative verbs may or may not be automatically nasalized, e.g., /nar/ ‘woman’, /mar/ ‘to strike a blow’ or /ram/ ‘a name’ etc. where the nasalization is not perceptible.

1. Word-final vowel after a nasal is automatically nasalized in the following positions:

a. If a word has a geminated consonant, word final vowel is nasalized, irrespective of any tone:

[kəmmi]	‘worker’	/kəmmi/
[kənnē]	‘along with’	/kənnē/
[mənni]	‘agreed’	/mənni/
[kɪnnā]	‘how much’	/kɪnnā/
[rəmmi]	‘Rummy’	/rəmmi/

b. If the first syllable has any of the short vowels and the word bears a high tone on any of the two syllables; the range of nasalization is predictable in both the syllables though the first vowel need not be nasalized.

[Jəmá]	‘a seed’	/Jəmá
[móná]	‘no’	/móná/
[rəmmi]	‘Rummy’	/rəmmi/

2. If the word-final vowel after a nasal bears a low tone or mid tone on the second syllable, the nasalization is not predictable, as can be observed in the following oppositions:

/nà/ ‘take bath (imp.)’	/nã/ ‘should I take bath?’
/kə'ma/ ‘earn (imp.)’	/kə'mã/ ‘I should earn’

In a monosyllabic word, if there is a high or a mid tone, the nasalization is predictable as there is no opposition available in Dogri.

3. a. In a monosyllabic word ending in any of the three nasal consonants, the preceding vowel is automatically nasalized; as such there is no need of writing / ~ / over the vowel.

[kõn]	‘ear’	kən
[kõm]	‘work’	kəm
[cõn]	‘moon’	cən
[cõm]	‘leather’	cəm
[rãm]	‘Ram’	ram
[Jãn]	‘grace’	Jan
[rãn]	‘thighs’	ran
[pĩm]	‘Bheem’	pim

b. In disyllabic words with both syllables open, with the second syllable having a nasal consonant, both vowels are nasalized.

[dũṇã]	‘double’	duṇa
[tãmã]	‘feasts’	tãmã
[tramã]	‘copper’	tramã
[lãmã]	‘complaint’	lama
[sĩnã]	‘chest’	sinã
[mẽna]	‘mynah’	menã
[kãmã]	‘worker’	kamã

4. A vowel next to /m/ or /n/ where a centralized vowel /ə/ precedes and follows the /a/ or /ə/ may not be nasalized:

[də'mag] 'brain' də'mag  
[kə'maia] 'earned' kə'maia  
[sə'nara] 'told' sə'nara

5. The vowel after /m/ or /n/ in the syllables ending in any other consonant may or may not be nasalized.

nəp 'catch' nət 'tast' mət 'intellect'  
nəbbe 'ninety' nərə 'darkness' mar 'beating'  
nar 'women' mal 'goods' mata 'mother'  
naṛa 'string'

6. A homorganic nasal occurs with the bilabial stop, otherwise with the rest of the consonants, there is always an allophone of /n/ after the vowels and before the consonants:

[ləmp] 'lamp' ləp  
[əmb] 'mango' əmb  
[kəmbəl] 'blanket' kəmbəl  
[səpənc] 'sarpanch' səpənc  
[məɳʃa] 'cot' məɳʃa  
[sənt] 'saint' sət  
[dənd] 'tooth' dət

### Assimilation

In the following words, medial j and u are generally changed to i, u and assimilated with other vowels. Consider the following examples:

Sanskrit/Hindi	Dogri	Gloss
[nəjəna]	[nain]	'eyes'
[vinajək]	[bənaiik]	'Ganesha'
[b <sup>h</sup> avəna]	[b <sup>h</sup> auna]	'emotion'
[ləvəṇa]	[luṇa]	'salt'

Two consonants are often made similar or assimilated as one notices in the following examples:

[təttua] [tətta] 'bitter'  
[sərpə] [səppə] 'snake'  
[səptə] [səttə] 'seventh'  
[p<sup>h</sup>alguna] [p<sup>h</sup>agguna] 'Phalgun'

In sum, the rich phonology of Dogri can be of particular interest for studies dealing with the structure of phonological representations. In the present work, one finds the major phonological processes such as assimilation, deletion, metathesis, addition and gemination with reference to the data of Dogri language collected from published as well as unpublished descriptions. Phonological processes are finite in number although they vary from language to language depending upon the phonotactics. Dogri operates with several phonological processes which lead to implicit expressions by the speakers of the language. The study provides a preliminary account of processes dealing in phonology of Dogri depending upon its phonotactics. It refers to Optimality theory by providing its account in certain examples within the language.

### IV. CONCLUSION

It can be concluded that various phonological processes are prevalent in Dogri. These processes operate at various phonological environments in lexical items. A brief Optimality theoretical account has been mentioned for one of the processes. The present study will be of use to the future researchers and language scientists for further reference. It also serves as a source or documentation of linguistic data on Dogri phonology. Further, it gives rise to the scope of future work on studying the morphological basis of these various processes in Dogri.

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