

# An Analysis of Syllable Patterns in Gojri Monosyllabic Words

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## Abstract

Gojri is an Indo Aryan language, commonly used in mountainous regions of Pakistan and Azad Jammu & Kashmir. The aim of this study is to examine the syllable patterns and phonotactic limitations of Gojri monosyllabic words to better understand their phonological structures. It is investigated that Gojri exhibits a variety of syllable structures, including V, CV, CVC, CCV, CCVC, and VC, with CVC being the most frequently used. The research examines the onset, coda, and nucleus patterns in these syllables, revealing the use of both single consonants and consonant clusters in the onset and coda positions. Notably, consonant clusters follow the Sonority Sequencing Principle (SSP), where the second consonant in a cluster is more sonorous than the first. The study also identifies phonotactic constraints, particularly in the permissible combinations of consonants at the onset and coda positions, such as the restriction of certain consonant sounds like /h/ and /v/ in these positions. Through a detailed analysis, this study highlights the systematic nature of Gojri's syllabic structure while providing insights into the phonological patterns that govern monosyllabic words in the language. Further research could explore the phonotactics of disyllabic words and the influence of regional languages on Gojri syllable patterns.

**Keywords:** *Syllable Patterns, Syllable Structure, Monosyllabic, Gojri language*

## 1. Introduction

Gojri is an Indo Aryan language, which is commonly used in mountainous region of Azad Jammu & Kashmir and northern areas of Pakistan. Masica (1991) claimed that Gojri is a dialect of Rajastani language (language spoken in Rajasthan, India). It is also reported that Gojri language is originated from the famous Indo Aryan language, Sanskrit (Losey, 2002). Moreover, the Gojri language is highly influenced by other Indo Aryan languages, like Urdu, Pahari and Hindko (Bukhari et.al., 2007).

Gojri speakers are commonly known as 'Gujjar'. Gojri is used by around more than one million people in Pakistan including Azad Jammu and Kashmir (Kalis & Zaidi, 2017). They are the resident of different district of Azad Jammu & Kashmir including Muzaffarabad, Bagh and Poonch along with northern areas of Pakistan (Shinwari, 2005). However, Gujjar and Gojri language do not have any significance status in the state, as language neither have any official

status as well. Moreover, Gojri language is not much explored by the researchers. There is very limited work is done in the field of syntax, morphology and history of the language.

Despite being unique, Gojri's phonology is similar to that of other Indo-Aryan languages. It has a rich system of vowels and consonants, along with nasals, voiced and voiceless stops, and a group of retroflex sounds that are unique to Indo-Aryan languages (Pandey, 2010). Aspirated consonants and breathy voice phonation are also noteworthy characteristics. Additionally, Gojri shares vowel harmony with related languages like Pahari. However, the number of phonemes in Gojri has been the subject of debates and is currently up for debate (Bukhari, 2009).

### **1.1. Research Objectives**

The study aims to find out the following research objectives:

1. To analyze the syllable patterns including onset, coda and nucleus of Gojri monosyllabic words
2. To find out the syllable structure of Gojri monosyllabic words
3. To investigate the phonotactic rules governing consonant clusters in onset and coda positions, identifying the constraints that limit certain sound combinations in Gojri monosyllabic words.

## **2. Literature Review**

The phonological system of every language is commonly discussed in terms of syllabification. According to Bartlett et al. (2009) Syllabification is the analytical process of distributing a word into its small constituents. Basic concept of syllable is discussed by many linguists but it is still debatable. However, according to Ladefoged and Maddieson (1990), syllables must be strictly considered a phonological unit. Syllables are "a prosodic category organizing segments in sequences according to their sonority values (Kager, 1999). Every syllable has a sonority peak (nucleus), which is typically a vowel. Lower sonority margin segments, which are typically consonants (onset, coda), may surround the nucleus on both sides. It is claimed that syllable is a phonological unit, which is necessary for the description of any language (Khan et. al, 2015). Therefore, many researchers discussed the syllabification of different languages.

Habib & Khan (2021) discussed syllable structure of Punjabi language. They claimed that Punjabi has open and close syllable typologies. It allows CV, CVC, VC structures of syllable,

which implies that vowel is mandatory and consonants are optional in Punjabi syllable structure.

Khan et.al, (2011) investigated Syllable phonotactics and onset cluster in Pahari language. They reported that Pahari has C1 and C2 at onset cluster where C1 is less sonorous than C2. It shows that onset cluster in Pahari follows sonority sequence principle.

Ahmed et.al, (2017) explored syllable structure of English borrowing in Urdu language. They argued that when treating English borrowed words, Urdu speakers adhere to the Sonority Sequence Principle (SSP) for syllabification since it suits their phonological preferences. The SSP adheres to Urdu's stringent ban on complex onsets and restricts syllables to a single consonant at the beginning, in contrast to the Maximal Onset Principle, which is not always applicable. This constraint reflects Urdu's careful and methodical approach to syllable construction by ensuring a smoother adaption of consonant clusters in the middle of syllables.

Bukhari (2009) studied the phonemes and syllable structures of Gojri language. He claimed that Gojri contains the same set of consonants and vowels as other Indo Aryan languages have, with some exception. It shows that Gojri Syllable structure prefers to have single element in an onset or coda, and the most of the Gojri syllables follow the same pattern. Double consonants are rarely used in the syllables. Onset is commonly existing, without onset, syllables are very rare in Gojri. It follows the same trends as other regional languages. It is also claimed that number of phonemes in Gojri language is still unfold, as no one reported the exact number of phonemes.

Gojri is the language, which is commonly used in mountainous regions (Grimes, 2000). Gojri is not much studied language. However, different aspects of Gojri language are studied by different researchers.

Bukhari et.al. (2007) studied the case system of Gojri language, spoken in Azad Jammu and Kashmir. They claimed that Gojri case system is similar to other South Asian languages. In Gojri, different case markers are used along with postpositions, which shows different cases. Ergativity and bare nominative are most dominant.

Bukhari (2009) investigated the light verbs of Gojri language. According to them Gojri is spoken commonly in Jammu & Kashmir, except Ladakh. Gujjars commonly used Gojri language in Rajouri and Poonch. Moreover, it helps to preserve the culture and identity of Gujjars.

Zaman (2018) investigated the reduplication process in Gojri language. He suggested, “Reduplication is the largest semantic class of Gojri compounds. This involves full and partial reduplication. The semantic functions of reduplication are to increase or decrease the intensity or the frequency of the meanings. Other semantic functions are augmentation, diminution, distribution, plurality, generalization and emphasis”.

Zaman & Qi (2019) studies the compounding in Gojri language. They employed descriptive approach to analyze the data. They claimed that compounding is commonly used word formation process in Gojri language. Left stem of the compound word is considered as head of the compound. Certain rhyming compounds are made up by reduplication.

Bhat and Khan (2022) explored the native language of Bakerwal and Gujjars in district Ganderbal, JK. The study explores that they are multilingual communities but dominant language is Gojri, as it is their native language. Variation in mother tongue with respect to mannerism, tone and symbolic meaning of things has been observed between two communities. In intra community settings, mother tongue primarily used and in inter community settings

It is observed that Gojri phonological patterns are not investigate completely. There are few studies who elaborated it syllable and phonemes but suggested to explore it completely. Therefore, present study is an attempt to explore the syllable phonotactics of monosyllabic words in Gojri language.

### **3. Methodology**

For the present study, data is collected from Gojri speakers of district Muzaffarabad, AJK. Data is collected in the form of audio recordings. Monosyllabic words are recorded from the participants and transcribed by using phonetic symbols. Further, data is analyzed to identify the syllable patterns and structure of monosyllabic words. Praat is used, where it is required.

### **4. Result and Discussion**

#### **4.1. Syllable and Syllable Patterns**

Syllable is said to be a prominence peak in a word, which have vowel as main element and consonant as optional elements (Jones, 1957). Syllable is the combination of high sonorous segment (vowel) and low sonorous segment (consonant) (Ladefoged and Maddieson, 1996). Therefore, syllable conations vowels as main element, which is known as nucleus and consonant are considered as optional. If consonant appears before the nucleus, it is known as

onset. However, if it appears after the nucleus, it is called as coda (Davenport & Hannahs, 2005). Moreover, number of vowels decide the number of syllable in a word. A syllable mainly consist on single vowel sound is said to be a monosyllabic word. In South Asian languages, monosyllabic words are commonly used by the speakers (Bukhari, 2009). It possesses different structure and patterns as well.

## 4.2. Monosyllabic words in Gojri

In Gojri language, monosyllabic words are commonly used by the speakers. Monosyllabic words contain only one syllable. However, structure of monosyllabic words varies due to occurrence of consonant sounds at onset and coda position.

### 4.2.1. Onset Patterns

Onset position in a syllable is occupied by consonant sound. A single consonant or a group of consonants usually make up the onset of Gojri monosyllabic words. Although the onset position is quite adaptable and may accommodate a wide range of consonants, it also has some limitations that are governed by Phonotactic principles. Let discuss the onset patterns of Gojri language according to number of consonant sounds.

#### 4.2.1.1. Single Consonant

In Gojri, most of the consonants are acceptable as a single onset. It may be arise either at open or closed syllable, with or without coda position. Some words are listed below as example of onset with single consonant:

Words	Structure	Meaning
bəɲ	CVC	Forest
mas	CVC	meat
təp	CVC	tub
ka	CV	grass

It reveals that single onset is commonly practiced in Gojri language. However, there are many sounds, which could not occur at onset position as single onset, for example /ɲ/, ŋ/ (nasals) and /ɽ/ (retroflex). Therefore, it is observed that all consonant sounds are not occurred at onset position when it is based on single sound.

#### 4.2.1.2. Consonant Cluster

In Gojri language, consonant cluster at onset position is not much common as compared to single consonant. These clusters often follow the Sonority Sequencing Principle (SSP), where the second consonant is more sonorous than first. In Gojri, commonly used onset cluster is Stop + Approximant. There are few examples are given below:

Words	structure	Meaning
gra	CCV	bite
ṭrɛɽ	CCVC	a small gap
pjal	CCVC	to make drink

Above examples shows the possible clusters at onset position. It reveals that Gojri language only allow, Stop + Approximant at onset position in monosyllabic words. It follows SSP but with very limited structures.

Therefore, it reveals that onset in monosyllabic words contains either single consonant sound or consonant cluster. Consonant cluster contains only two consonant sounds where C1 is less sonorous than C2. Moreover, it is very restricted one as it only allows “stop + approximant”. It implies that fricative, nasals and approximants are not acceptable at onset position as cluster in monosyllabic words.

#### 4.2.2. Nucleus Patterns

The vowel or vowel-like sound that makes up the core of a syllable is referred to as the nucleus in Gojri, as it is in many other Indo-Aryan languages. Examining the kinds of vowels and diphthongs that can occupy this core place in monosyllabic words is necessary to comprehend the nucleus patterns in those words.

##### 4.2.2.1. Monophthongs

In Gojri, monosyllabic words commonly have monophthongs as a nucleus. It makes syllable with and without surrounding consonants as well. Here are few examples:

Word	Structure	Meaning
ɑ	V	come
k <sup>h</sup> ɑ	CV	eat
ə <sup>h</sup> k <sup>h</sup>	VC	eye
sɪŋ	CVC	horn

Above examples indicate that monophthongs can make syllable without the consonants as /a/, and even with consonant sounds as /k<sup>h</sup>a/, /sɪŋ/, etc. It is observed that nucleus can make a syllable without onset and coda, which implies that vowel is obligatory element in Gojri monosyllabic words.

#### 4.2.2.2. Diphthongs

Diphthongs are commonly exist in many Indo Aryan languages. They are also use in Gojri language as well. Moreover, they are also acceptable as nucleus in monosyllabic words but they are used very rarely. There are certain words which, possess diphthong as nucleus, where diphthongs are presented by VV.

Word	Structure	Meaning
lau	CVV	Blood
kui	CVV	anything
dʒeo	CVV	like
sei	CVV	rest

It is observed that, diphthongs are also used as nucleus in monosyllabic words. It is interesting to note that diphthongs are used in open syllable. They are not observed in closed syllable. However, they are sometime used by Gojri speakers in closed syllable in words which are borrowed one. There are few examples which are borrowed one and likewise used in other Indo Aryan languages. It includes, ɾæb (disappear), peaz (onion), ɟear (name of a tree), etc.

#### 4.2.2.3. Nasal Vowels

Nasalization of vowels is very common in Indo Aryan languages. In Gojri language, nasal vowels are used by the speakers in different words even without nasal consonants as well. They are also appeared as nucleus in monosyllabic words. There are some examples of monosyllabic words, possessing nasal vowel as nucleus.

Word	Structure	Meaning
sĩ	CVN	lion
mũ	CVN	mouth
hũ	CVN	I
ɟĩ	CVN	sun

In above mentioned examples VN represents nasal vowels. It is observed that nasal vowels are allowed at nucleus position in Gojri language. Like diphthongs, they are also used in open vowels only.

It is noted that vowels are considered as obligatory elements in Gojri monosyllabic words. Vowel sound functions as nucleus of syllable in Gojri language. It can be either, monophthong, diphthong or nasal vowel. Monophthongs are commonly used as nucleus. It can be existed even without marginal elements (consonant sound at onset and coda position). Moreover, it is acceptable with onset without coda and with coda without onset as well. However, diphthongs and nasal vowels follow the same trends. They are acceptable only in open syllables with consonant at onset position.

### 4.2.3. Coda Patterns

Coda position is occupied by consonant sounds. In Gojri language, it allows single consonant and consonant cluster as well. However, consonant cluster at coda position have certain phonotactics constraints as well.

#### 4.2.3.1. Single Consonant Coda

Single consonant at coda position is commonly practiced in Indo Aryan languages. It is also practiced in Gojri language as well. There are some examples of words, mentioned below:

Word	Structure	Meaning
ʈɪɖ	CVC	Belly
lɪɲ	CVC	salt
preɖ	CCVC	to turn
əkh	VC	eye

Above mentioned examples reveal that single consonant can occur at coda position in Gojri language. It is observed that it can be allowed with consonant cluster at onset, single onset and without onset as well. Moreover, there are certain constraints as well as some consonant sounds like /h/ and /v/ do not occupy the coda position.

#### 4.2.3.2. Consonant Cluster

In Gojri language, consonant clusters also arise at coda position in monosyllabic words. It follows SSP, where last consonant is less sonorous than first consonant. There are few examples of consonant cluster at coda position



Word	Structure	Meaning
k <sup>h</sup> ɔrk	CVCC	itching
tʃənd	CVCC	pain
tɔnd	CVCC	fog

At coda position, there is cluster of two consonant sounds only in monosyllabic words. It is the combination of Approximants + Stops. Approximants are more sonorous than stops, so they follows the sonority sequence principle.

Coda patterns reveals that single consonant and consonant cluster both are acceptable at coda position. Single consonant at coda position can be used with or without onset (single consonant and consonant cluster). However, single consonant as coda is commonly used in Gojri language. In terms of consonant cluster, it only allows “approximant + stop”. It follows SSP as stops are more sonorous than approximants, but it does not follow multiple combination of sounds including other manner of articulation a well. This limited patterns of consonant cluster make it less frequently used syllable in monosyllabic words.

### 4.3. Syllable Structure

Syllable structure may refer to the arrangement of consonant and vowels in a syllable. In Gojri language, monosyllabic words have different syllable structures. It is commonly based on the position of consonants at onset and coda position. As we have seen in onset and coda patterns that onset and coda may possess either a single consonant or consonant cluster, which mainly based on two consonant sounds in Gojri language. The table below shows the different syllable structures of Gojri monosyllabic words.

Structure	Words	Meaning
CV	sɑ	Breath
CVC	bəɳ	Forest
CVCC	k <sup>h</sup> ɔrk	itching
CCVC	preɽ	To turn
CCV	gra	Bite
VC	ək <sup>h</sup>	eye
V	O	he

The syllable structure of Gojri monosyllabic words, as seen in the provided examples, highlights the variety and flexibility of its phonological system. The data includes simple forms

like CV ("sa" - **breath**) and VC ("əkʰ" - **eye**), demonstrating basic syllable structures with a single vowel nucleus surrounded by one or no consonants. More complex forms, such as CVC ("bəp" - **forest**) and CVCC ("kʰɔrk" - **itching**), illustrate how Gojri accommodates final consonant clusters while maintaining phonological balance. Additionally, the presence of CCVC ("preŋ" - **to turn**) and CCV ("gra" - **bite**) structures indicates Gojri's ability to begin syllables with consonant clusters, which adds complexity and richness to its word formation.

These monosyllabic structures underscore Gojri's phonotactic rules and reveal its systematic approach to combining sounds. The examples show a preference for straightforward syllable organization, with the vowel serving as the central component, surrounded by consonants in various configurations. Such diversity in syllable patterns supports the expressiveness and adaptability of the Gojri language, enabling it to efficiently represent a wide range of meanings with compact monosyllabic words. This structural versatility reflects the language's connection to its Indo-Aryan roots while allowing for unique phonological characteristics.

#### 4.4. Phonotactic Constraints

Phonotactics constraints provides allowable patterns and structure for a syllable, including possible combination of consonant clusters as well. There are certain phonotactics constraints in Gojri monosyllabic words, which are as follows:

- Gojri follows the **Sonority Sequencing Principle (SSP)** rigorously in both onset and coda clusters. For example, onset clusters allow less sonorous sounds (stops) to precede more sonorous sounds (approximants), and the reverse holds for coda clusters.
- Consonant clusters are limited to two consonants in both onset and coda positions. Longer clusters are not observed in Gojri monosyllabic words.
- Gojri favors simpler syllable structures (e.g., CV, CVC) over complex ones. Highly complex clusters or syllable shapes (e.g., CCCVC) are avoided.
- Diphthongs and nasal vowels are predominantly found in **open syllables** (syllables ending in a vowel). Closed syllables with these features are extremely rare and often occur in borrowed words.
- Vowel nuclei may exist without onset or coda (e.g., /a/ in "come"). However, coda clusters require the second consonant to be a stop, restricting combinations such as fricative + nasal.
- Certain consonants (e.g., /h/, /v/) are disallowed in specific syllable positions (e.g., coda), reflecting strict phonotactic rules.

- While native Gojri words follow strict phonological constraints, borrowed words may temporarily break these rules. However, over time, borrowed words tend to be phonologically adapted to fit Gojri constraints.
- Nasal vowels are common in Gojri but are restricted to specific syllable structures and cannot form clusters directly with consonants at onset or coda positions.
- Certain phonemes, especially retroflex and nasals, are less flexible in their positional usage, reflecting distribution constraints unique to Gojri.

## 5. Conclusion

The syllable structures and patterns in Gojri monosyllabic words reveal a well-organized and flexible phonological system. This system maintains key trends found in Indo-Aryan languages. Gojri features a variety of syllable structures, including V, CV, CCV, CVC, CCVC, and VC, with CVC being the most commonly used by speakers. Additionally, consonant clusters are formed according to the Sonority Sequencing Principle (SSP), although certain phonotactic exceptions and restrictions govern the formation of these clusters. Further research can focus on the phonotactics of disyllabic words in Gojri and explore how contact with other languages has influenced its syllable patterns. Such studies would deepen our understanding of the language's phonological evolution and its place within the broader Indo-Aryan linguistic framework.

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