



The Sound Science of the Devanagari Script

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The **Devanagari Script**, far from being a random jumble of symbols, is a marvel of linguistic engineering. Its grid-like structure reflects the mechanics of speech production, revealing a hidden elegance. This article will explore this fascinating system, tackling the pronunciation puzzles that have baffled many.

Let's face it, the **Devanagari Script** can seem daunting. Those unfamiliar with it often see only chaos, where others see artistry. But fear not, my friends. Once you understand the underlying **logic** and **patterns** behind it, the seemingly random jumble of letters will transform into a thing of **beauty** and **elegance**. Imagine **someone** shrouding a complex code in mystery for generations.

श and ष exist separately

One of the most common frustrations stems from seemingly redundant letters like श and ष. Are they really the same? Absolutely not! The difference lies in the tongue's position – a subtle detail often overlooked. Similarly, the nasal sounds ङ and ञ, often mistaken for न, possess distinct points of articulation, making them fundamentally different.

Furthermore, the mysterious ॠ is not simply "ri" or "ru", as many believe. Its pronunciation is more nuanced, reflecting a unique tongue position, a fact often lost in modern usage. This fascinating detail highlights the rich history and evolution of the language and script.

Rows and Columns of Devanagari Script

The beauty of this script lies in its structure. The Devanagari script, unlike the English alphabet, organizes its letters in a two-dimensional grid. Each row represents a consistent tongue position (guttural, palatal, retroflex, dental, labial), while each column represents a consistent airflow. This systematic approach makes mastering pronunciation significantly easier. So let's look at some of the rows and columns of Devanagari in Fig. 1.

	Voiceless		Voiced		Nasal
	Unaspirated	Aspirated	Unaspirated	Aspirated	
Guttural (kanthya)	क	ख	ग	घ	ङ
Palatal (talavya)	च	छ	ज	झ	ञ
Retroflex (murdhanya)	ट	ठ	ड	ढ	ण
Dental (dantya)	त	थ	द	ध	न
Labial (oshtya)	प	फ	ब	भ	म

Fig. 1 Devanagari Script Rows and Column

When you read any row horizontally, your lip and tongue positions stay the same; the only thing that changes is how you let air out from your lips, nose, and voice box. When the back of the tongue touches the end of the roof of the mouth (guttural/velar), the whole क row is said. The middle of the tongue touches the roof of the mouth (palatals) for the entire च row. The tongue is bent back in the ट row, and its back touches the roof of the mouth (retroflex). The tongue meets the teeth (dental) in the त row. Moreover, the lips are together (labials) in the प row.

Read any column now and see how they are similar. The answer is clear from the earlier table: only the place of the tongue and lips changes in any column, while the air leaving our mouth, nose, or voice box stays the same.

Saying ड and ञ in Devanagari Script

By now, you should be able to pronounce ड and ञ right. Know the source of the air by first saying न and छ many times. Because they are nasals, air leaves the nose instead of the mouth. Say क ख ग घ several times now to understand the place of the tongue. You can say ड by mixing these two. ड is a guttural/velar nasal sound in phonetics. The same is true for the palatal nasal ञ.

	Voiceless		Voiced		Nasal	Approximant	Fricative	Vowel	
	Unaspirated	Aspirated	Unaspirated	Aspirated				Short	Long
Guttural (kanthya)	क	ख	ग	घ	ङ		ह	अ	आ
Palatal (talavya)	च	छ	ज	झ	ञ	य	श	इ	ई
Retroflex (murdhanya)	ट	ठ	ड	ढ	ण	र	ष	ऋ	ॠ
Dental (dantya)	त	थ	द	ध	न	ल	स	ॠ	ॡ
Labial (oshtya)	प	फ	ब	भ	म	व		उ	ऊ

Fig. 3 Devanagari Vowels

The other letters य, र, ल, व, श, ष, स, ह

Moreover, letters often seen as exceptions, like य, र, ल, व, श, ष, स, ह, actually fit into this grid when looked at through the lens of approximants and fricatives. It's like finding a hidden map! These are usually written after the main grid. They seem like an afterthought and don't seem to fit into the grid.

An approximant is a type of sound. It happens when the tongue gets near the roof of the mouth, teeth, or lips. However, the tongue does not touch them. A fricative is another type of sound. It occurs when the tongue gets very close to the air. This

	Voiceless		Voiced		Nasal	Approximant	Fricative
	Unaspirated	Aspirated	Unaspirated	Aspirated			
Guttural (kanthya)	क	ख	ग	घ	ङ		ह
Palatal (talavya)	च	छ	ज	झ	ञ	य	श
Retroflex (murdhanya)	ट	ठ	ड	ढ	ण	र	ष
Dental (dantya)	त	थ	द	ध	न	ल	स
Labial (oshtya)	प	फ	ब	भ	म	व	

Fig. 2 Approximants and fricatives in Devanagari Script य, र, ल, व, श, ष, स, ह

closeness causes the air to move in a turbulent way. The friction between the tongue and air creates this sound. Now, read any row again and see how the tongue position stays rather steady. The tongue must move a bit to avoid contact in the last two columns, but it stays in the same general area.

You can now see the link between ड and श and च, and so on. Also, you now know the differences in saying between श and ष. The tongue is straight in the first, as in च, and bent back in the second, as in ट.

Notice the link between व and प and फ, and you'll see why the Germans call Volkswagen Volkswagen,

which means "the cheap people's car, or car for the common folk." I should say that ऌ should be next to ॡ. Try saying it like ॡ, but with your tongue bent back like in ट, if you're not sure how to say it.

The Vowels in Devanagari Script

Since the vowels feel excluded, how about we bring them in?

When the tongue does not touch anywhere during a vowel, the airflow is continuous and smooth. Once more, listen to the rows and convince yourself that अ आ are by using all the rules strictly.

The Elusive ऋ

This also enables us to extend and comprehend ऋ. It is not री or रु. Since र is a retroflex approximant, the curled tongue almost touches the palate. But ऋ is a vowel; thus the tongue is not near the palate. The tongue remains curled up like in र and ट, but it is in the air, allowing for free movement of air. The original Sanskrit pronunciation of ऋ is not used in modern languages anymore. Today, people pronounce it differently. In Hindi, it sounds like री. In Marathi, it sounds like रु. Basically, no one uses the original sound anymore, and Hindi and Marathi have officially replaced it with easier knockoffs.

If you ask is it Krishna, Krushna, or, as ISKCON likes, Kṛṣṇa (which is more closely related to the original Sanskrit), you will never receive a satisfactory response.

Why is it ghazal instead of gazal?

Let me clarify a few more things since you're already here and listening to obscure pronunciation details. In गज़ल, the ग़ is not the typical ग. You are already aware that the rear of the tongue should touch the back of the palate when pronouncing ग. But the Persians introduced ग़, which is a distinct sound. The tongue is not in contact with the palate in this instance. Rather, you attempt to produce the desired sound by tightening your neck. If you haven't done this since you were a child, it is challenging to accomplish without training. In any event, you will begin to notice the difference if you listen to a skilled vocalist pronounce the word गज़ल. Similarly, we do not use the letter "k" to form the words "qayaamat," "qaatil," or "qaazi." These words require a specific sound. They need the "क़" sound, not the "क" sound.

In addition, I've never understood why my American friends found it so funny when I mispronounced the words "wet" (water) and "vet" (doctor). In Devanagari, they are both वैट, although the "v" and "w" sounds in English are entirely different. The letter "w" is pronounced with your lips together, as in "उ" (see?). However, you say "v" with your bottom lip on top of your teeth. To most Indians, both of them sound the same, yet to Westerners, they sound completely different. At first, I didn't think that was possible, but then I understood that the opposite is also true. Arabic speakers frequently say "Bushba" rather than "Pushpa" because they are unable to distinguish between the "p" and "b" sounds ("ro mat Bushba...I hate tears.")

Conclusion

If you start looking through [Wikipedia's phonetic entries](#), you'll find a lot more sounds from around the globe. There are several sounds in Sindhi and Marwadi whose descriptions I also don't understand. There are clicks in African languages. And a lot more. You might learn how the letter "l" is pronounced in Tamil. In Tamil, this letter isn't really the same as "l" in English. This is why the language is spelled as "Tamizh." Kozhikode and other Tamizh terms share the same "zh" sound.

Similarly, if you want to know why "Rama" is not spelled "Ram" check out [my thread on Twitter which recently went viral](#).

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