

Why Sanskrit is Relevant – Today and Tomorrow

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Editor's note: This is a slightly reformatted version of a TedX talk given by the author. A reader-friendly voice is still maintained.

- “Sanskrit is a programming language.”
- “Sanskrit is a difficult/dead language.”
- “Sanskrit is the language of Hindus, it is the language of religion.”

One finds many vague ideas floating around with regard to the history, practicality and use of Sanskrit. Let us first clarify some of them.

- Sanskrit is not just a scientific language, it's **a language of science**.
- Computer programming languages have **not yet been written** in Sanskrit.
- Sanskrit is not the language of only religion and prayer books, but of **every subject known to man**.
- And Sanskrit is most definitely not just the language of Hindus – it is taught in schools **all over the world** today irrespective of caste, creed or religion.

Sanskrit has some remarkable features that are important to the way we learn. This is true not just for the present, but for the future as well.

The systematic nature of Sanskrit is exceptional. Its grammatical structure was well-defined and precisely laid out by sage Panini in the 5th century BCE, and little has changed in over two millennia. Sanskrit is also almost entirely self-contained, and any new vocabulary or structure can be generated within the language itself.

One usually thinks of Sanskrit as only the language of religion, scripture and prayer. But in truth, Sanskrit is the language in which almost every subject was written. **There is in fact, more non-religious, scientific literature in Sanskrit than texts on religious subjects.**

India, the land of the origin of Sanskrit, was once the leader in the field of scientific discoveries, and almost all of those were written in Sanskrit.

Agriculture and horticulture	■	Krishi-shastra
Alchemy	■	Rasa-shastra
Architecture	■	Shilpa-shastra
Astronomy and astrology	■	Jyotisha-shastra
Botany	■	Vrikshayurveda
Chemistry	■	Rasayana-shastra
Mathematics	■	Ganita-shastra
Mechanical science	■	Yantra-shastra
Medical science	■	Ayurveda
Metallurgy	■	Loha-shastra
Physics	■	Padartha-vijnana
Biology	■	Jivavijnana
Physiology	■	Shariravijnana

Fields of knowledge in Sanskrit language

Why Sanskrit is Relevant – Today and Tomorrow

Sanskrit remains relevant not only for today but also for the progressive evolution of humanity. Here are some of the reasons for such an assertion:

1. It is a language of **clarity**
2. It can create an **endless number of words**
3. It is a **living, breathing language**
4. It is extraordinarily **flexible**

SPECIFICITY/CLARITY

Sanskrit is a language that explains things with much clarity. One of the most important features with regard to this is that Sanskrit is not an **object-specific language**.

Let us understand this with an example.

It is well-known that Sanskrit uses many words for a single object. Most people think that this creates difficulty in learning Sanskrit, as there is seemingly no unanimity in the various words that might refer to a particular object. But in fact, it makes the meaning clearer and more specific.

For example, to refer to water, some use the word जलम् *jalam*, others use नीरम् *nīram*, yet others use पनीयम् *panīyam*, still others would prefer to use वारि *vāri*. In fact, there are more than two hundred words used for water alone.

The reason for so many words for a single object is that Sanskrit users never use words specific to the object, but use words describing the various **properties** of the object. So each of the many words used for water here describes a particular **property** of the water.

- The word जलम् *jalam* describes that from its liquid state, water can become solid. The root of the word *jalam* is *jal* which means ‘to harden’.
- The word नीरम् *nīram* comes from the root-sound *nee*, meaning ‘that which leads or always moves ahead’.
- The word वारि *vāri* means ‘that which evaporates, turns into a cloud and covers’.

In this manner, every word in Sanskrit describes a property of the object, and presents its users with a **holistic understanding of the objective word**.

ENDLESS WORDS

Another important feature of Sanskrit is that **because words are formed from root-sounds, it has the potential to create as many words as needed. And the words formed are simple and self-explanatory.**

For example, by combining the word रूप *rūpa*, meaning ‘form’ with the word ग्राहकम् *grāhakam*, meaning ‘that which captures’, one creates रूपग्राहकम् *rūpagrāhakam*, meaning ‘camera’. In the same way, one can have ध्वनिग्राहकम् *dhvanigrāhakam* to mean ‘microphone’ or ‘sound-receiver’, or ह्वानग्राहकम् *hvānagrāhakam* to mean ‘call-receiver’.

Based on this transparent system, one can create any amount of words needed for day-to-day use. For example, by combining the one monosyllabic root-sound कृ *kr̥* which has the root-experience ‘to do’ or ‘to make’ or ‘to put into action’, one can derive thousands of words with different meanings. Yet, all these meanings will be clearly defined by the root-experience.

Similarly, by adding the suffix तृ *ṭr̥*, we get the word कर्तृ *kartṛ*, meaning ‘a doer’. By adding अन *ana*, we get करण *karaṇa*, meaning ‘doing’ or ‘an instrument which does’. By adding य *ya*, we get कार्य *kārya*, meaning ‘a thing to be done’. And by adding तव्य *tavya*, we get कर्तव्य *kartavya*, meaning ‘that which must or should be done’... and so on and so forth.

LIVING AND BREATHING LANGUAGE

What does it mean to say that the Sanskrit language is a living, breathing entity? This quality comes from the way the Sanskrit alphabet is arranged.

In the Sanskrit alphabet, vowels and consonants are arranged in two separate groups, each in an extremely logical fashion.

अ	आ	इ	ई	ऋ	ॠ	ऌ	ॡ	ए	ऐ	ओ	औ	अं	अः											
a	ā	i	ī	ṛ	ṛī	ḷ	ḷī	e	ai	o	au	am	aḥ											
क	ख	ग	घ	ङ	च	छ	ज	झ	ञ	ट	ठ	ड	ढ	ण	त	थ	द	ध	न	प	फ	ब	भ	म
ka	kha	ga	gha	ṅa	ca	cha	ja	jha	ña	ṭa	ṭha	ḍa	ḍha	ṇa	ta	tha	da	dha	na	pa	pha	ba	bha	ma
य	र	ल	व	श	ष	स	ह	ya	ra	la	va	śa	ṣa	sa	ha									

Sanskrit Alphabet

Consonants are arranged in vertical and horizontal groups according to the voicing state, manner of articulation, place of articulation and the intra-oral pressure required to produce them. The logic in this arrangement is based on human vocal anatomy, which makes it easier for us to memorise the sound of each consonant.

In Sanskrit, all sounds are articulated from five distinct places, all located in the mouth: the throat, the palate, the cerebrum, the roots of the upper teeth, and the lips. On the basis of this, the sounds are either guttural, palatal, cerebral, dental or labial.

Though the letters of a horizontal group of consonants are pronounced from a single position, each sound in that group differs from the others because of its internal efforts.

For example: क *ka* ख *kha* ग *ga* घ *gha* and ङ *ṅa* belong to the guttural group. Here,

- क *ka* is a hard, unvoiced consonant with minimum breath release,
- ख *kha* is also hard and unvoiced, but pronounced with maximum breath release;
- ग *ga* is soft, and pronounced with minimum breath release;
- घ *gha* is also soft, but pronounced with maximum breath release.
- ङ *ṅa* is the last sound in the group – soft and voiced, but nasal. For this sound, the breath is released through both the nostrils and the mouth.

When we pronounce the first line of consonants: क *ka*, ख *kha*, ग *ga*, घ *gha*, ङ *ña*, we feel the rhythmic breath of this alphabet. The letters, like us, **breathe**.

This is no coincidence. **A deeper understanding of the principles of the formation of Sanskrit shows us that this language is based upon a clear understanding of the science of sound.**

Now that we know that the Sanskrit alphabet is a living, breathing thing, we go an incredible step further.

This unique alphabet, by its very arrangement, can also teach us the practice of *pranayama*.

Just as with the arrangement of consonants in the Sanskrit alphabet, the arrangement of sounds too, is methodical and comprehensive.

The stop consonants in Sanskrit are arranged in an alternating fashion. The first and third sounds of each group are articulated with minimal breath release, while the second and fourth are articulated with maximal breath release. So breath release runs minimal; maximal; minimal; maximal.

Each group ends with an oronasal sound, which requires the breath to be released through both the mouth and the nose.

But here's the amazing thing.

When we consciously articulate a sound with minimal breath, we experience the intensity of focused, one-point concentration. Similarly, when we articulate a sound by releasing maximal breath, we experience a sense of relaxation or expansiveness.

So if we consciously recite the Sanskrit alphabet, we can actually experience the play of minimal and maximal breath, contraction and expansion, concentration and meditation, and feel the alphabet breathing. **In effect, one experiences the benefit of *pranayama*.**

Each sound impacts our vocal cords and nervous system. Each sound strikes a different chord within us. Reciting the Sanskrit alphabet, therefore, is not just an exercise in phonetics, but an important method of balancing and calming the mind.

Sanskrit letters are potent enough to stimulate all the powers of the brain and the nervous system and help to improve concentration, memory and perception.

- Anusvaara
- Visarga
- Urasya

Sanskrit sounds

अनुस्वार *anusvāra* is the only pure nasal sound in Sanskrit and is produced by closing the mouth completely and releasing air through the nose. The sound is drawn down into the throat, and then nasalized with a lip sound of ‘mmm’.

Anusvaara sounds

अं आं इं ईं उं ऊं ऋं ॠं एं ऐं ओं औं
 अं इं उं ऋं
 आं ईं ऊं ॠं
 एं ऐं ओं औं

Combining it with all vowels and reciting it gives the benefits of *bhramari pranayama*, or the bee breathing technique.

Visarga sound: **विसर्ग** *visarga* is the word for two dots often placed just after a Sanskrit character. The word **विसर्ग** *visarga* in Sanskrit means ‘to send forth’ or ‘to discharge’. This refers to the release of sound through exhalation, represented by the two dots. Phonetically, sound is produced following a vowel by expelling air from within.

Visarga sounds

अः आः इः ईः उः ऊः ऋः ॠः एः ऐः ओः औः

अः इः उः ऋः

आः ईः ऊः ॠः

एः ऐः ओः औः

The *visarga* pushes energy out or opens it, and is connected to expression, expansion and realization. This is the same effect as **बाह्यकुम्भक** *bāhyakumbhaka* has in *pranayama*, and helps in focus and concentration.

उरस्य *urasya* **sound:** The last sound of the Sanskrit alphabet (हं *ha*) is a purely aspirate sound produced from the throat. However, when this sound is combined with the fifth letter of each of the last three groups of plosives (ण *ṇa* न *na* म *ma*) and the semi-vowels (य *ya* र *ra* ल *la* व *va*) then it is no longer glottal; it becomes a pectoral or *urasya* sound, requiring exertion of the thorax.

The following seven are the **उरस्य** *urasya* sounds in Sanskrit. For these sounds, we have to throw the sound *ha* from the thorax and then enunciate the remaining sounds in combination with it.

Urasya sounds

ह ह ह्य ह ह ह

hNa hna hma hya hra hla hva

If we articulate these sounds together repeatedly, we can feel the exertion in the thoracic and abdominal region. We can also feel the rhythmic play of the air release. This is similar to practising the कपालभाति क्रिया *kapālabhāti kriyā* in *pranayama*.

One would think that a logically arranged alphabet that also teaches us *pranayama* would be astonishing in itself. But in practice, it has led to an even more remarkable use.

The Sanskrit alphabet, with its orderly and scientific arrangement, provides a simple means of understanding the production of phonemes and memorizing them.

Because of this, it has now come to the attention of plastic surgeons, speech pathologists, dentists and voice culture experts, who feel that the Sanskrit alphabet can be a valuable tool in creating a simplified version of speech evaluation that can be used to evaluate and identify speech-related disorders and disabilities in patients.

FLEXIBILITY

Let us now briefly explore the amazing flexibility of Sanskrit.

Most of us are probably familiar with this famous sentence: ‘Able was I ere I saw Elba’.

Able was I, ere I saw Elba

English palindrome

The phrase was crafted in 1848 by a magazine writer who used Napoleon's exile to the island of Elba as an inspiration for his wordplay.

As we read this sentence again, we see what is special about it. Reading it once more, this time from right to left, we find that it reads the same. This is called a palindrome.

There are, in English, words like peep, noon, dad, madam etc. which, when read from either left to right or right to left, give the same sounds and often, the same meanings.

Now let us see this verse from a Sanskrit text in which we will not only see a palindrome, but will also be amazed at the genius of the poet and the extreme flexibility of the Sanskrit language.

तं भूसुतामुक्तिमुदारहासम् वन्दे यतो भव्यभवं दयाश्रीः |
श्रीयादवं भव्यभतोयदेवं संहारदामुक्तिमुतासुभूतम् ॥

Sanskrit palindrome

तं भूसुतामुक्तिमुदारहासं वन्दे यतो भव्यभव्यं दयाश्रीः ।

श्रीयादवं भव्यभतोयदेवं संहारदामुक्तिमुतासुभूतम् ॥

taṁ bhūsutāmuktimudārahāsaṁ vande yato bhavyabhavyaṁ dayāśrīḥ |

śrīyādavaṃ bhavyabhatoyadevaṃ saṃhāradāmuktimutāsubhūtam ||

Here, we can see that the second half of the verse is formed by reversing the first half. The entire verse, from left to right and right to left, is the same.

But there is more to this verse.

The most amazing and outstanding thing about this verse is that the first half is a description of Lord Rama, and the second half, which is the reverse of the first half, describes Lord Krishna. One wonders how the poet could have managed this!

Also, we can observe that by reversing the first line or by reading it from right to left, the arrangement of syllables by short and long remains intact, there is no loss in the rhythmic pattern. It perfectly follows the rules of metrics, rules of grammar and rules of poetry. Everything is perfectly maintained.

What can we call this? Is it Art? Science? Mathematics? Or is it poetry, a formula, a mantra?

Elegance and beauty

My last example is exceptionally beautiful. It is based on a well-known problem in mathematics.

The challenge is to place a knight in one corner of a chessboard and to cover all 64 squares using the knight, without landing on any square twice.

The Swiss mathematician Euler found the answer to this problem in the 18th century. This is why this is known as Euler's Chess and Knight problem.

However, in India, a manuscript called *Paduka Sahasram* has been found, written by a Tamil saint Shri Vedanta Desikan. In it, there are a thousand verses written in praise of the wooden sandals of Lord Rama.

Here are two of those verses:

Slide 6: *Paduka Sahasram* verses

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sthirāgasāṃ sadārādhyā vihatākatatāmatā |
satpāduke sārāsā mā raṅgarājapadannaya ||

□□□□□□ □□□□□□□□□□□□ □□□□□□□□□□ □□□ |

□□□□□□□□□□ □□□□□□□□ □□□□□□□□□□□□□□□□ ||

sthitā samayarājatpā gatarāmādake gavi |

duramhasāṃ sannatādā sādhyātāpakarāsarā ||

स्थि 1	रा 30	ग 9	सां 20	स 3	दा 24	रा 11	ध्या 26
वि 16	ह 19	ता 2	क 29	त 10	ता 27	म 4	ता 23
स 31	त्पा 8	दु 17	के 14	स 21	रा 6	सा 25	मा 12
रं 18	ग 15	रा 32	ज 7	प 28	द 13	न्न 22	य 5

स्थिता समयराजत्पागतरा मादके गवि ।
दुरंहसां सन्नतादा साध्यातापकरासरा ॥

As you can see, the syllables of the first verse are written out in the squares on a chessboard. Then, beginning with the first syllable, if the second verse is read among the letters of the first verse, one finds that the letters follow the movement of the knight on the chessboard, giving simultaneously a solution to the Chess and Knight problem. In fact, the writing of the verses in this fashion is far more difficult than the original Chess and Knight problem.

One is even more amazed when one realises that the Indian saint lived 500 years before Euler, and the manuscript was written in the 13th century.

There are endless examples which demonstrate the amazing flexibility of the Sanskrit language. These show not only its richness of vocabulary, but its amazing power of expression.

So we come back to the question – Is Sanskrit Relevant Today?

Sanskrit, as one of the oldest existing languages, has contributed immensely towards shaping the history of India's culture and civilisation. But even today, its beauty, logic and almost flawless structure bring a universal appeal.

The proper use of Sanskrit in everyday life can endow user with enhanced creativity and imagination, clearer thinking, deeper concentration and better memory.

Not only does Sanskrit help students to gain self-confidence and clarity in speech, language skills and logical thinking, it also enhances their skill and understanding in other, seemingly unrelated subjects like science, mathematics and computers. Moreover, Sanskrit generates a

deeper awareness in students of themselves and everything around them. These are timeless qualities.

Sanskrit's versatility of expression, its amazing power to create new words, its ability to meet the challenges and needs of the future, its incredible flexibility, and its utility in this age of science and technology.... Therein lies the relevance of Sanskrit.

Let us end with a Sanskrit verse translated by Sri Aurobindo:

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keyūrāṇi na bhūṣayanti puruṣaṃ hārā na candrojvalā
na snānaṃ na vilepanaṃ na kusumaṃ nālaṅkṛtā mūrdhajāḥ |
vāṅyekā samalaṅkaroti puruṣaṃ yā saṃskṛtā dhāryate
kṣīyante khalu bhūṣaṇāni satataṃ vāgbhūṣaṇaṃ bhūṣaṇam ||

It is not armlets that adorn a man,
Nor necklaces all crammed with moonbright pearls,
Nor baths, nor ointments, nor arranged curls.
'Tis art of excellent speech that only can adorn him...
Jewels perish, garlands fade;
This only abides, and glitters undecayed.



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