KRISHNADHEVA SCRIPT – Transliteration Scheme for Indian Languages to English

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1. INTRODUCTION

For the thousands of years that Devanagari has existed, millions have used it, mainly to chant Sanskrit (or other Devanagari-script based) prayers and scriptures. Devanagari is the script, and it is used for many languages such as Sanskrit, Hindi, and Marathi.

Many do not know the Devanagari script, but have access to its transliterations into a language they know. Of these, a number of South Indian languages, such as Kannada, Malayalam and Telugu, based on Devanagari, have very similar alphabet sets with almost identical sounds. To them the transliterated versions would have been faithful reproductions of the original.

However for those who did not know such Devanagari-based languages, or who did not have the transliterations available, the next recourse was to use the English language script.

The author of this paper learnt Sanskrit at home from a priest as a boy, and had Sanskrit as second language in his undergraduate days. He also studied some Hindu scriptures in the Devanagari script, and formally studied a small portion of the Veda-s through a Guru.

Problems with Devanagari-related languages:

Many adjustments and accommodations have been made to reflect the sounds of Devanagari, such as the following (see Comparison Table at end):

- The International Alphabet of Sanskrit Transliteration (IAST) includes the following conventions:
  - "***i***", "***u***", etc. with a bar above it, to represent the long "***i***", "***u***", etc.
  - "***t***", "***d***", and "***s***" with a dot underneath each, to represent the sound "***t***", "***d***", and "***sh***", while without the dot, they would represent, "***th***", "***dh***" and "***s***".
  - "***n***" by itself, with dot above, Tilde (~) mark above, and dot underneath, to represent four different sounds relating to "***n***".
  - "***s***" with an accent mark above (***ś***), to represent a special sound relating to "***s***".
- ITRANS uses the Tilde and Caret (or "hat" mark ^) to denote certain Devanagari letters.
- ITRANS and certain other schemes represent the long versions of vowels "***a***", "***e***", etc. by doubling the letters ("***aa***", "***ee***", etc.) or by capitalising them ("***A***", "***E***", etc.)
- Most schemes use "***c***" to imply "***ch***".

IAST was set up in 1894. This and certain other schemes have done yeoman service to the dissemination and popularisation of Sanskrit and other Devanagari texts within India and around the world. However, they have remained the domain of scholars, while with the spread of digital facilities, many would need easier ways to learn and use the valuable knowledge available in Devanagari without having to spend inordinate time and effort in understanding the schemes.

Table 1 shows two standard schemes, the IAST, and National Library at Kolkata Romanization.

As a result of these variations, unless a person knows the particular scheme by which an item was written or printed, he/she cannot read it correctly.

For instance, the common name "कृष्ण" ("Krishna") is shown in five different schemes as below:

Kṛṣṇa	kR^iShNa	kR^iShNa –or– kRRiShNa	kRSNa

Capitalisation has the following vexing problems:

- Most identify capitals with the first letter of any sentence and with proper nouns.
- Certain letters, such as "***c***" and "***o***", can be easily mistaken for capitals or lower case, especially in handwriting.
- In sans-serif fonts, capital "***I***" may be mistaken for lower case "***l***".
- Many write certain lower case letters in their capital form, and some like to write everything in capitals.
- Mixture of capitals and lower case letters within a single word can be visually distracting.

Double letters to denote long vowels also have problems. Apart from doubling the space used, ambiguities occur. For the short vowel "***i***" as in "ink", the double "***ii***" appears to be less suited for its long form than "***ee***". Again, for the short vowel "***o***" as in "once", the double "***oo***" appears to be less suited for its long form, visually suggesting more the long form of "***u***".

Typing the diacritical markings above and below the letters with a conventional typewriter has remained a tedious and untidy chore. Printing by the old-fashioned typesetting method too was a specialised and expensive task. Even with today's computers, one has to resort to special software or use extra computer skills to transliterate a Devanagari passage by any scheme.

Even more critical is the fact that to legibly and consistently write these modified English letters by hand also imposes a burden on the transmission and understanding of the language.

Special Situation with Tamil:

Author's "father-tongue", adopted by his Kannada-speaking mother before his birth, was Tamil. Tamil, while possessing as hoary a tradition as Sanskrit in many ways, has the limitation that the same letter can represent two to four Sanskrit sounds.

Examples are the "***k***" and "***g***" pair of sounds, the "***t***" and "***d***" pair, and the "***p***" and "***b***" pair of sounds, with each member of the pair having two further options in Devanagari, namely the normal and the aspirate, as for instance the "***k***" in "kill" versus the "***k***" in "khan" – aspirate requires the user to imagine an "***h***" after the consonant and deliver it with a puff of air.

The additional three Devanagari sounds were denoted in the Tamil script by placing subscripts 2, 3, and 4, next to the basic letter. This strategy was again too complicated to print or write, and too cumbersome to read.

Scholars and knowledgeable Tamilians distinguished the appropriate sounds between the "***k-g***", "***t-d***", and "***p-b***" pairs according to context. But many who did not learn the language rigorously slipped frequently from one to the other. For example, "*kaditththapuli*" written as "கடித்தபுலி" in Tamil could as well be read out as "*gatidhdhabuli*". Many ladies named "*Padhma*" written in Tamil as "பத்மா" have been transformed to English "*Bhatma*" in Singapore and Malaysia!

Thus, unlike the Kannadigas, Malayalis, and Andhras, the Tamilians have had a hard time learning chants and songs in Sanskrit (or related languages) by reading their Tamil transliterations, most not having the benefit of the 2, 3, 4 subscript notation, and even among those who had, many not having the background or determination to follow through with the scheme notations.

So, many Tamilians who do not know Sanskrit (or related languages) end up reducing the two or four variations of one common letter to a single Tamil sound, or changing it to a different form!

However well meant the prayer or other text might be, the corrupted pronunciation would be an affront to someone who knew Sanskrit (or related languages). One school of thought would even feel that such wrongly pronounced prayers would not bring any divine benefit to the devotee.

Hence those groups whose own language could not represent Devanagari sounds faithfully also had to resort to English transliteration to learn and use Devanagari texts.

The author has been wrestling with this transliteration problem for decades. After recent years of watching well-intentioned but not so well-advised propagators of Sanskrit hymns and chants through hundreds of sites on the web, almost all following no particular transliteration scheme but simply a free-form phonetic presentation of individual perceptions of the Devanagari (or oral tradition) original, he has determined that the existing transliteration schemes have not reached the people who wish to use the English language to disseminate or understand Sanskrit texts.

He has sadly concluded that many popular Sanskrit texts are destined to become corrupted in the minds and tongues of a sincere multitude – unless some order is brought out of this chaos.

To try to overcome all these impediments and provide a workable solution suited to the modern age, the author proposes a simple new scheme of transliteration named "KrishnaDheva". He hopes it may also have wider applications than representing Devanagari in English alphabet.

2. THE NEW SCHEME, "KRISHNADHEVA"

The KrishnaDheva scheme uses many letters of the English language to represent the basic (root) sounds of Devanagari, and uses two commonly available punctuation marks to augment these to cover all variations.

In particular, the mark used most commonly to augment a basic sound is the single apostrophe (′) or quote mark, which may be referred to as the single "tick" mark. In the few cases where the tick mark has already been used up and a second mark is needed, a "plus (+)" mark is used.

As the single tick will be used as the main transliteration modifier in KrishnaDheva scheme, author will not use the single tick to denote possessive case, or to enclose special characters or terms. If and when single ticks become necessary, or when direct quotes must be given for reproductions from the original, double tick (") marks will be used.

A few simple rules will illustrate the use of the tick and plus marks. In what follows, transliteration characters will be enclosed in square brackets to separate them from running text.

Rule 1: A tick mark following a short vowel will represent the long form of the vowel.

E.g. [***a***] as in [***a***]rise, but [***a′***] as in [***a***]rgue

Rule 2: A tick mark following a consonant will represent (a) the aspirate form, or (b) the thicker form, or (c) a special form, of the consonant.

E.g. (a) [***k***] as in [***k***]ill, but [***k′***] as in [***kh***]an

(b) [***n***] as in [***n***]umb, but [***n′***] as in thu[***n***]der

(c) [***s***] as in [***s***]ir, but [***s′***] as in [***sc***]ion

Rule 3: A plus mark following a vowel or consonant will represent a special form of the vowel or consonant. The plus mark after a vowel may be followed by a tick mark to represent its longer form.

E.g. Consonant [***r***] as in [***r***]un, but vowel [***r+***] as in w[***r+***]inkle, the [***r+***] sound lying between [***ri***] and [***ru***]. Actually, the "***r***" in the popular name "Krishna" should not be pronounced as [***ri***], as is most commonly done, but as [***r+***] defined above.

Fortunately, [***r+***] and [***l+***] and their long forms are the only extra vowel sounds special to Devanagari, and they are rarely used, although for very important words.

These are the only three rules required in KrishnaDheva!

Table 2 lists all the Devanagari letters along with equivalent Kannada and Tamil letters with their KrishnaDheva equivalents and English language examples. Telugu characters will be very close to Kannada characters, and Malayalam will be a mix of these and Tamil-like characters.

Obviously some sounds are not natural to the English language, and in such cases the nearest equivalents have been given, and/or pronunciation suggestions such as *"longer form of the above"* for vowels, and *"aspirate of the above"* for consonants, have also been added.

It is interesting to note that no familiar English word could be found for aspirates, or for sounds "***dh***" and "***ksh***". Instead, fairly common Hindu words have been given where available.

3. ADVANTAGES OF KRISHNADHEVA OVER OTHER SCHEMES

Unlike other schemes, KrishnaDheva may be written, typed, or printed in capitals or lower case, and in regular font or bold or italics, and all of these will mean the same thing. Print, print-like writing, or hand-script (cursive writing) will also not make any difference.

The only two symbols used to denote modifications are the tick [′] and the plus [+], both of which can be easily written and are available on all keyboards. No other diacritical mark is used above, below, or on either side of the basic letter. No underlining or over-scoring is used.

In KrishnaDheva, English letters and their combinations will retain their phonetic sounds in normal use. Thus anybody who can read school texts in English can also read the transliteration from Devanagari without error, once the significance of the two extra symbols [′] and [+] is understood. There is no need to remember rules such as "***c***" sounding like "***ch***" in most other schemes, or what different positions of dots around certain letters represent in certain schemes.

Most of the time, even if one ignores or does not recollect (or know) the true significance of the two modifiers, the sounds from the rest of the characters would give a fair indication of the content. Further, the single quote is less visually disruptive than marks in most other schemes.

In other words, as the Comparison Chart Fig. 3 will show, KrishnaDheva may be more visually meaningful than other schemes, making it WYSIWYM, "***W**hat **Y**ou **S**ee **I**s **W**hat **Y**ou **M**ean*"!

The test of a good transliteration scheme is whether a transliteration scheme can be reversed to get back the original. With large differences in the currently available schemes, it appears as if KrishnaDheva can be the best contender to win the test, as is shown in an example in Section 5.

4. PROPOSED EXTENSIONS OF KRISHNADHEVA SCHEME

Arguably, KrishnaDheva shares one limitation with all other transliteration schemes, namely that it cannot reflect intonation nuances or accent differences.

Apart from this, the broad principles of the KrishnaDheva scheme may have applications beyond transliteration of Devanagari texts into English.

Hindi texts can be as easily transliterated as Sanskrit texts. The practice of terminal vowels in written or printed Hindi words generally being omitted in vocalisation can be reflected by simply omitting the terminal vowel in the English transliteration.

As already pointed out, KrishnaDheva may serve as a good intermediate or supplementary step for Tamilians not only to learn from the Sanskrit original, but also to transmit Tamil usage correctly across regional and ethnic – and generation – barriers.

Transliteration of most Indian language texts which are based on the Devanagari roots – and in fact, with some tweaking, any language – should be an obvious application for KrishnaDheva.

The KrishnaDheva scheme may also be more suited for Optical Character Recognition (OCR) than other existing schemes, and to that extent, automatic cyber transliteration – and in due course, translation – of Sanskrit and other language texts into English and vice versa, and hence of English to other languages, should become feasible.

Author is also considering further simplifications and improvements to his scheme – as for instance, whether some alternative (such as ">" mark) could be better than the "+" sign.

5. EXAMPLE OF APPLICATION OF KRISHNADHEVA SCHEME

A random selection from the web, of probably the best known prayer to Lord Ganesha, is reproduced below, in the Sanskrit original and its English transliteration.

शुक्लाम्बरधरं विष्णुं शशिवर्णं चतुर्भुजम् ।
प्रसन्नवदनं ध्यायेत् सर्व विघ्नोपशान्तये ॥

"shuklambaradharam vishnum shashivarnam chaturbhujam
prasanna vadanam dhyayet sarva vighnopashantaye"

Obviously, assuming that the author of the above transliteration knew about the existing transliteration systems, he/she did not like, or did not want to use, or was not able to use, any of them, and only intended to convey the phonetics of the original Sanskrit in the English version.

If the English is written back into Sanskrit just as it sounds, it may appear as follows, with the differences from original shown bold within parentheses and separated by spaces for clarity:

(**षु**) क्लाम्बर (**द**) रं वि (**ष्नुं**) (**ष**) (**षि**) व (**र्नं**) च (**टु**) र्भुजम् ।
प्रसन्नव (**ड**) नं (**द्या**) ये (**ट्**) सर्व विघ्नोप (**षा**) (**न्ट**) ये॥

On comparison with the original, the error count is twelve out of 36 syllables, a full third of the original. On the other hand, the KrishnaDheva transliterated version will appear as follows:

s'ukla'mbaradh'aram vishn'um s'as'ivarn'am chathurb'ujam|
prasannavadhanam dh'ya'ye'th sarva vig'no'pas'a'nthaye'||

This can be read – and should transliterate back – exactly like the original, just remembering the few basic uses of the single quote.

The author hopes that users of KrishnaDheva will benefit by learning Sanskrit and other Indian language texts faster and more easily, and thus broaden their horizons better.

A final thought: Author has spelt the name for his scheme as "KrishnaDheva" only to retain the familiar phonetic style in current use. Now that his fresh scheme has been introduced, the name should be written as it should be pronounced, to conform to his own rules – "Kr+isna Dheva"!

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The author is an eighty-year old semi-retired Professor of Civil Engineering, specialized in Structural Engineering, with some training and considerable interest in the Sanskrit language and Hindu scriptures. He is currently active in the workplace safety and risk management area.

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Table 1 : Two Standard Transliteration Schemes

International Alphabet of Sanskrit Transliteration (IAST)

अ [ɐ] a A	आ [ɑː] ā Ā	इ [i] i I	ई [iː] ī Ī	उ [u] u U	ऊ [uː] ū Ū	ऋ [ɻ] ṛ Ṛ	ॠ [ɻː] ṝ Ṝ	ऌ [l̩] ḷ Ḷ	ॡ [l̩ː] ḹ Ḹ	vowels			
ए [eː] e E	ऐ [aːi] ai Ai	ओ [oː] o O	औ [aːu] au Au	diphthongs	अं [ⁿ] ṃ Ṃ	anusvara	अः [h] ḥ Ḥ	visarga					

(1894)

velars	palatals	retroflexes	dentals	labials	
क [k] k K	च [c] c C	ट [ʈ] ṭ Ṭ	त [t̪] t T	प [p] p P	unvoiced stops
ख [kʰ] kh Kh	छ [cʰ] ch Ch	ठ [ʈʰ] ṭh Ṭh	थ [t̪ʰ] th Th	फ [pʰ] ph Ph	aspirated unvoiced stops
ग [g] g G	ज [ɟ] j J	ड [ɖ] ḍ Ḍ	द [d̪] d D	ब [b] b B	voiced stops
घ [gʱ] gh Gh	झ [ɟʱ] jh Jh	ढ [ɖʱ] ḍh Ḍh	ध [d̪ʱ] dh Dh	भ [bʱ] bh Bh	aspirated voiced stops
ङ [ŋ] ṅ Ṅ	ञ [ɲ] ñ Ñ	ण [ɳ] ṇ Ṇ	न [n] n N	म [m] m M	nasal
	य [j] y Y	र [r] r R	ल [l] l L	व [ʋ] v V	semi-vowels
	श [ɕ] ś Ś	ष [ʂ] ṣ Ṣ	स [s] s S		sibilants
ह [ɦ] h H					voiced fricative

National Library at Kolkata romanization

अ	आ	इ	ई	उ	ऊ	ऋ	ऌ	ए	ऐ	ऽ	ओ	औ	अं	अः
a	ā	i	ī	u	ū	ṛ	e	ē	ai	o	ō	au	aṃ	aḥ

क	ख	ग	घ	ङ	च	छ	ज	झ	ञ
ka	kha	ga	gha	ṅa	ca	cha	ja	jha	ña

ट	ठ	ड	ढ	ण	त	थ	द	ध	न
ṭa	ṭha	ḍa	ḍha	ṇa	ta	tha	da	dha	na

प	फ	ब	भ	म	य	ळ	ऴ	ऺ	ऩ
pa	pha	ba	bha	ma	ẏa	ḷa	ḷa	ṟa	ṉa

य	र	ल	व	श	ष	स	ह
ya	ra	la	va	śa	ṣa	sa	ha

Table 2 : KrishnaDheva Transliteration Scheme and Pronunciation Key

Original	KD	Sounds as in […]
Vowels		
अ, ಅ, அ	***a***	[***a***]rise
आ, ಆ, ஆ	***a'***	[***a***]rgue *(Long form of above)*
इ, ಇ, இ	***i***	[***i***]nk
ई, ಈ, ஈ	***i'***	[***e***]ven *(Long form of above)*
उ, ಉ, உ	***u***	p[***u***]t
ऊ, ಊ, ஊ	***u'***	f[***oo***]l *(Long form of above)*
ऋ, ಋ, (-)	***r+***	w[***ri***]nkle
ॠ, (-),(-)	***r+'***	*(Long form of above)*
ऌ, (-),(-)	***l+***	si[***l***]ly
ॡ, (-),(-)	***l+'***	*(Long form of above)*
(-), ಎ, எ	***e***	[***e***]nd
ए, ಏ, ஏ	***e'***	[***a***]ngel *(Long form of above)*
ऐ, ಐ, ஐ	***ai***	[***i***]dle
(-), ಒ, ஒ	***o***	[***o***]nce
ओ, ಓ, ஓ	***o'***	wr[***o***]te *(Long form of above)*
औ, ಔ, ஔ	***au***	c[***ow***]
o, o, அம்	***am***	h[***um***]
:, :, அஹ	***aha***	S[***aha***]sra
Consonants		
क, ಕ, க$_1$	***ka***	[***co***]nsider
ख, ಖ, க$_2$	***k'a***	[***co***]nquer *(Aspirate of above)*
ग, ಗ, க$_3$	***ga***	[***gu***]n
घ, ಘ, க$_4$	***g'a***	*(Aspirate of above)*
ङ, ಙ, ங	***gna***	[***kno***]wledge; [***ng***] *if in middle without consonant*
च, ಚ, ச$_1$	***cha***	[***chu***]nk
छ, ಛ, ச$_2$	***ch'a***	*(Aspirate of above)*
ज, ಜ, ஜ$_1$	***ja***	[***ju***]ngle
झ, ಝ, ஜ$_2$	***j'a***	*(Aspirate of above)*
ञ, ಞ, ஞ	***gnya***	p[***un***]ch *if in middle without consonant*
ट, ಟ, ட$_1$	***ta***	[***tu***]mble
ठ, ಠ, ட$_2$	***t'a***	*(Aspirate of above)*
ड, ಡ, ட$_3$	***da***	[***du***]mb
ढ, ಢ, ட$_4$	***d'a***	**[*duh*]** *(Aspirate of above)*
ण, ಣ, ண	***n'a***	thu[***n***]der *(Thicker than normal, and with "a" or other vowel, or no vowel, to match)*
त, ತ, த$_1$	***tha***	[***thu***]mb
थ, ಥ, த$_2$	***th'a***	*(Aspirate of above)*
द, ದ, த$_3$	***dha***	Budh[***dha***]
ध, ಧ, த$_4$	***dh'a***	[***dha***]rma *(Aspirate of above)*
न, ನ, ன	***na***	[***nu***]mb *(Normal)*
प, ಪ, ப$_1$	***pa***	[***pu***]zzle
फ, ಫ, ப$_2$	***p'a***	*(Aspirate of above)*
ब, ಬ, ப$_3$	***ba***	[***bu***]ndle
भ, ಭ, ப$_4$	***b'a***	*(Aspirate of above)*
म, ಮ, ம	***ma***	[***mu***]nch
य, ಯ, ய	***ya***	[***yo*]**ung
र, ರ, ர	***ra***	[***ru***]n *(Normal)*
ल, ಲ, ல	***la***	[***lo***]ve
व, ವ, வ	***va***	[***vi*]**olent
ळ, ಳ, ள	***l'a***	b[***lu***]nt
श, ಶ, (-)	***s'a***	[**sci**]on *(Between* [***su***]nk *and* [***shu***]t*)*
ष, ಷ, ஷ	***sha***	[***shu***]t
स, ಸ, ஸ	***sa***	[***su***]nk
ह, ಹ, ஹ	***ha***	[***hu***]nt
क्ष, (-), **க்ஷ**	***ksha***	[***Ksha***]thriya
Special Tamil characters		
ந	***n+a***	[***nu***]mb *(Thinner than normal)*
ழ	***zha***	[***r***]ound, *(With highly slurred* [***r***]*)*
ற	***r'a***	[***ru***]n *(Thicker than normal)*

'Aspirate' implies adding 'h' and letting out a small puff of air after the sound.
For consonants, the 'a' vowel ending has been added for convenience of pronunciation; any other vowel ending or no vowel ending may apply.
Only lowercase KrishnaDheva forms shown in Table; capitals may also be used.

Table 3 : Comparison of Standard Transliteration Systems with KrishnaDheva

Extension of the table for other schemes given in the website: http://www.sanskrit-sanscrito.com.ar/en/sanskrit_sanskrit3/transliterating2.shtml

Devanāgarī	***IAST***	***ITRANS 5.1***	***ITRANS 5.3***	***Harvard-Kyoto***	***KrishnaDheva***
आसन	āsana	aasana/Asana	aasana/Asana	Asana	***a'sana***
ऋषि	ṛṣi	R^iShi	R^iShi RRiShi	RSi	***r+shi***
योग	Yoga	yoga	yoga	yoga	***yo'ga***
संस्कृत	Saṁskṛta / Saṃskṛta	saMskR^ita sa.mskR^ita	saMskR^ita saMskRRita sa.mskR^ita sa.mskRRita	saMskRta	***samskr+tha***
शिव	Śiva	shiva	shiva	ziva	***S'iva***
महाभारत	Mahābhārata	mahaabhaarata mahAbhArata	mahaabhaarata mahAbhArata	mahAbhArata	***Maha'b'a'ratha***
कृष्ण	Kṛṣṇa	kR^iShNa	kR^iShNa kRRiShNa	kRSNa	***Kr+shn'a***
राम	Rāma	raama	raama	rAma	***Ra'ma***
अन्तःकरण	antaḥkaraṇa	antaHkaraNa	antaHkaraNa	antaHkaraNa	***anthahkaran'a***
ज्ञान	jñāna	GYaana/GYAna j~naana/j~nAna dnyaana/dnyAna	GYaana/GYAna j~naana/j~nAna dnyaana/dnyAna	jJAna	***gnya'na***
क्षोभ	kṣobha	xobha kShobha	xobha kShobha	kSobha	***ksho'b'a***
चक्र	cakra	cakra	cakra	cakra	***chakra***
सूत्र	sūtra	suutra sUtra	suutra sUtra	sUtra	***su'thra***
इच्छा	icchā	icChaa icChA	icChaa icChA	icchA	***ichch'a***
प्रतिष्ठा	pratiṣṭhā	pratiShThaa pratiShThA	pratiShThaa pratiShThA	pratiSThA	***prathisht'a'***
मूलाधार	Mūlādhāra	muulaadhaara mUlAdhAra	muulaadhaara mUlAdhAra	mUlAdhAra	***mu'la'dh'a'ra***
विक्लृप्	vikḷp	vikL^ip	vikL^ip vikLLip	viklRp	***vikl+p***
शास्त्र	śāstra	shaastra shAstra	shaastra shAstra	zAstra	***s'a'sthra***
पतञ्जलि	Patañjali	pata~njali	pata~njali	pataJjali	***Pathangnyjali***
अङ्ग	aṅga	a~Nga	a~Nga	aGga	***anga***

[NOTE: In KrishnaDeva equivalents Capitals have been used only for first letters of proper names. Even for this or otherwise, the Capital letters have no script significance.]

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