



# Is Sanskrit really the best language for computer programming?

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I spend a lot of time on the internet searching for interesting things to learn. The search isn't specific and neither is the inflow of information. I take what I get. Sadly some of it is utter nonsense. I happened upon a few articles recently that suggest Sanskrit, the ancient nigh dead Indian language, is good for computer programming and that NASA uses it to program artificial intelligence. A peek at the headlines triggered my bullshit alarm – we should all have one – but, in those moments of curiosity, I perused their contents. They were so very devoid of rationality, I had to search for a fun little activity to take my mind off it. Betteridge's law of headlines did the trick.

**Betteridge's law:** If the headline to an article is a question, the answer is always no.

## What it's all about

There was a paper by Rick Briggs, a NASA researcher, published in the spring issue of Artificial Intelligence magazine in 1985 (Volume 6 Number 1), entitled '**Knowledge Representation in Sanskrit and Artificial Intelligence**'. It can be found here on AAAI's website (<http://www.aaai.org/ojs/index.php/aimagazine/article/view/466>).

**Noteworthy:** 'Rick Briggs' at best is a pseudonym. There are absolutely no other works in related fields attributed to this name. Another less likely plausible inference is that Rick Briggs just doesn't exist – there are no publicly available records of him ever having worked for RIACS, NASA. That, however, in no way impacts the merit of his arguments.

It begins with Briggs describing the then current state of events surrounding artificial intelligence. It had been quite an undertaking to design unambiguous representations of natural languages for the purpose of computer processing. Natural languages – the way humans communicate with each other – had not been easy to parse and transform into information that a machine could understand. Even if they could overcome that barrier, there was the issue of ambiguity – statements could mean different unrelated things, depending on the context. A human who spoke the language wouldn't find it hard to understand what was actually meant, but computers would. It led to the belief that there might not be a way to effectively exchange information with machines without the help of an artificial language.

Briggs, in his paper, challenged that belief by drawing attention to the fact that there has existed at least one natural language which could, in theory, be used as an artificial language. It had a logical structure that mapped on to certain knowledge representation schemes perfectly. That language, of course, was Sanskrit.

## The contents

The paper provides a whole lot of compelling arguments that show it is indeed possible for a natural language to work as an artificial one. That's it. It does not at all claim that Sanskrit has to be that language. Sure, it uses Sanskrit as a case study, but that's all there is to it. A quick read of the 8 page

piece should make that clear.

If you've haven't time for that, or are unable to comprehend the piece (likelier, but we'll pretend it's the former), here's a gist of the points he tried to make.

I've used my natural intelligence to summarise it. It's not chronological but exhaustive.

1. A perfect natural language must have these characteristics.
  - A statement should be easy to break down into a semantic net or an array of semantic data. (He referred to the array as series of triplets.)
  - It should be easy to compile a natural language statement from the data array. It should be human readable and comprehensible.
  - The statements coming out should be about the same as the ones going in. It shouldn't sound weird, nor should it lose or gain information.
  - Deviations if any should be minimum.
2. Sanskrit, as it turns out, does all of that. It has an extremely logical structure. It's grammar rules allow a kind of precision unmatched by other languages. It has a near unchanging syntax.
3. The computer readable data representation of a Sanskrit statement can be obtained by simply placing the individual words of the sentence in an array. This is aided by the fact that word order simply makes no difference in Sanskrit.
4. That very sentence can be reconstructed by putting together the contents of the array.
5. The language is extremely concise. It has perhaps the highest information to word count ratio. There are no redundancies.

Brilliant stuff, isn't it? The following is an excerpt from the last paragraph of Briggs' work.

It is interesting to speculate as to why the Indians found it worthwhile to pursue studies into unambiguous coding of natural language into semantic elements. It is tempting to think of them as computer scientists without the hardware, but a possible explanation is that a search for clear, unambiguous understanding is inherent in the human being.

**Make a note.** The conclusion of the paper was that humans are capable of using an extremely precise unambiguous language. That should save you some back and forth when we debunk baseless claims.

## A few truths

Sanskrit is a brilliant language. I'm not kidding and neither am I being sarcastic. It really is the most precise language in existence, with Latin being a close second. However, it isn't a perfect language and it isn't natural either.

## Sanskrit's efficiency

Sanskrit makes use of declensions in nearly every part of speech. This means the ends of words, every single one of them, change depending on the part of speech they're supposed to be. Even proper nouns aren't exempt. The ends of people's names change in a sentence depending on whether they're the subject or the object. This is a bit of a problem for people whose names don't end in a vowel as there is no provision for that in Sanskrit.

The rules of inflections are precise. Just by knowing the ends of a word, one could know its role in a sentence. This makes word order a non-issue. A three word sentence could be written six different ways and a four word sentence in twenty four. None of the permutations would alter their meaning.

Because of the use of declensions, a lot of information is packed in fewer words. This makes

transmission of information extremely efficient in speech. Sanskrit is not the only language that can do this though. Latin, an equally dead language, also allowed word order independent sentences in a similar way. Latin too had quite a complicated set of grammar rules. It, like Sanskrit, isn't spoken very much because humans naturally tend to deviate toward simplicity.

## Storage issues

Despite the arguably best verbal efficiency, there are a few issues with the language in actual knowledge representation. Sanskrit has a glyph based script rather than the alphabet based script as with Latin and its derivatives.

Latin alphabets take one byte of space each. Sanskrit written in the current character set for the Devanagari script is however not an efficient way of storing information. Here's a list of why that is.

- Vowels or consonant glyphs with the inherent vowel takes up 2 bytes of space each.
- The combination of a consonant glyph and a different vowel takes 4 bytes.
- A consonant with a suppressed vowel is 4 bytes.
- A double consonant glyph is 6 bytes.
- A double consonant glyph combined with a vowel is 8 bytes.

Latin script, on the other hand, is consistent. You spend exactly the same number of bytes in conveying a message as the number of letters it contains. My name, 'Denver', takes up 6 characters, 6 keystrokes and 6 bytes in the Latin script. The crude and borderline terrible Devanagari transliteration, 'डेन्वर', takes 3 glyphs (in some renditions, it might look like four – in that case, the two in the middle are a single glyph), 7 careful keystrokes and 14 bytes.

If the character set were redone to start with Devanagari characters rather than the Latin ones, they could reduce space consumption to about a half. Unfortunately, that would mean I'll be spending a byte more to write my name in the wrong script and still have it screw up the pronunciation. Sanskrit is phonemically precise in that the pronunciation of words don't deviate. It does not have a universal phonology. A native speaker of a Sanskrit derived language will find it hard to sound in other languages.

## Sanskrit's naturalness

The fact is that Sanskrit, unlike other languages, hasn't had a natural evolution. Nearly everything about Sanskrit, as is known today, was codified sometime around the year 500 BCE by one person, *Panini*, who was bent on making it as precise and concise as was humanly possible. Sanskrit didn't simply happen to have the required characteristics of an artificial language by coincidence. It's there by design. It is indeed the work of a primitive computer scientist without the hardware. This is not to say *Panini* intended for his language to be used with machines. At best, his work caught the eye of a pattern seeking human in need of an answer to a difficult, perhaps unsolvable problem – it was bound to happen sooner or later.

The Sanskrit of today, the one reportedly spoken by a few tens of thousands, is about the same as that codified two and a half millennia ago. The language doesn't evolve, it can't evolve. Unlike natural languages, speakers of Sanskrit cannot be classified as proficient or eloquent as its precision does not allow gradations. You either speak the language or you don't; there is no grey. Even artificial languages do not suffer that restriction.

Sanskrit was never widely spoken. During the past two and a half millennia, Sanskrit scholarship was an exclusive club. None other than the Brahmins were allowed to use it. That all literary works in Sanskrit was made accessible only to the Brahmins, spelt its doom. The thing about languages is that,

like living organisms, languages too evolve by natural selection.

Natural languages thrive by fitting the need of the era. The flexible of the lot flourish organically forcing the less prominent ones to wither away. Sanskrit's resistance to change was the reason of its demise. This is essentially why every attempt to revive the language will fail, no exceptions.

## The actual point

The paper does not at all contain any claim, mention or indication that Sanskrit can be used as a programming language. In fact, the one and only instance of the word 'program' was in an example sentence meant to illustrate semantic nets. (The subject was a programmer.) Every single use of the word 'code' or variations thereof have been used to describe sentence construction rules or grammatical syntax.

**Notice** that in my systematic summarisation of Briggs' piece, the word 'program' doesn't appear once.

The question Briggs tried to answer was whether it was possible for one to create a perfect language for knowledge representation. If a computer scientist were to codify a new language humans could use just as well as a machine, what would the end result look like? He then shows how Sanskrit manages to fulfil all of those requirements. To him, it was astonishing to find that someone who lived a long while ago could accomplish such a feat of brilliance; the entire piece is a recurring acknowledgement of that fact.

Even after all of that, he never once suggested that Sanskrit should be used for knowledge representation. He insisted however that if anyone attempted to create such a language, they would do well to follow a similar pattern of processes as *Panini* did with Sanskrit.

## Not entirely right

Briggs did get a few things wrong in his piece. I wouldn't say he meant to mislead; his work shows his genuine appreciation for Sanskrit. There are, however, a few fallacies he seemed to have overlooked.

A precise language, by definition, wouldn't allow the many stylistic devices that make natural languages worth using. A language like that wouldn't allow metaphors, innuendos, synecdoches, litotes, hyperboles, puns and personification – they're all inherently ambiguous. Sanskrit however is capable of all of those, its literature being a glaring proof of it. Without exactly those seven, the totality of Sanskrit works would see their volume reduced to about a quarter. On the other hand, owing to word order independence, devices like hypallages, anastrophe, hyperbatons and general inversions are baked into every statement made in the language; they thus don't really stand out.

The degree of precision that Sanskrit affords its speakers prevents verbosity i.e. purposefully lengthening prose for effect. Attempts at verbosity leads to a redundant prose. Translating to Sanskrit from any other language would thus lead to loss of data. This data isn't particularly useful in the context of the prose, but having it allows one to deduce information about the author – things like their personality and state of mind while writing. A language that attains precision does so at the expense of creativity. This clearly doesn't happen with Sanskrit considering the abundance of Sanskrit works.

Here's the thing though. People who praise Sanskrit for its precision are the same people who suggest that works in the language need interpretation by scholars. They're the same people who bend their scriptures to make them appear to reference newly discovered scientific facts. They say Sanskrit doesn't need disambiguation while failing at translating all of the "ancient knowledge" trapped in their literature.

## So what happened?

All of what we've discussed until now comes from a single paper in a magazine issue published a little under 30 years ago. Every single hoax about Sanskrit as programming language can be traced back to it. From the hundreds of internet articles parroting the supposed "findings" of the NASA researcher, through the thousands of derivative works attempting to explain the efficacy of Sanskrit as a computer language in their own ways, to Indian politicians claiming that knowing Sanskrit is an obligatory prerequisite for computer literacy, all of that, everything goes back to that one paper. If I wasn't already clear (or you skipped the above sections), the paper suggests nothing of the sort.

Of course, that doesn't in and of itself mean anything. It is possible that the paper just gets quoted a lot for having kickstarted all of that research into Sanskrit. The logical next question is, **is there any research at all?** So, I dedicated about two hours of my info-binging time to look up research related to Sanskrit. Almost all of the publicly accessible real academic research on the language is about its literature, its cultural impact and decoding its complex grammatical rules – yes, that's still a work in progress apparently. Every research that relates to both, the language and computation, are conducted under dedicated Sanskrit research academies based in India. I'm not saying research done in India is any less worthy than elsewhere. However, there is none to back the claims about Sanskrit gaining a foothold in modern computing.

**So, how's artificial intelligence been doing all those years since 1985?** Well, good... pretty good actually. For instance, the most popular search engine, Google, does extremely well in guessing what it is you mean when you enter your search terms – that is indeed an example of AI if you're wondering. Facebook's graph search is a semantic search engine meant to answer natural language queries pertaining to interactions on the social network. Bing's contextual search is capable of answering your follow up queries almost as if it were a conversation. Shazam and SoundHound can tell you what song is playing around you. **Genius – a feature of Apple's iTunes can create a playlist of songs similar to the selected one and is known to get better at predicting what a user might like. Oh Siri! How could I forget about that? Siri, Google's voice search and Microsoft's Cortana – they're AI too you know.**

Besides, give it some hard thought for a moment. Let's assume Briggs did suggest that Sanskrit must be used as an artificial language. It raises a few questions. Foremost, **what exactly will that accomplish?** Sure, a native Sanskrit speaker will not be disappointed when a computer understands everything they say. Would anyone on this planet be willing to learn Sanskrit just to clearly communicate their ideas to a machine? Of course not. If a fifth of the world or even a fiftieth spoke the language, it would make some sense. A fiftieth is still ten thousand times larger than the self-reported Sanskrit speaking population. See, when nearly all programs are written in English, there is little incentive for programmers to pursue exotic languages. Again, this does not mean a Sanskrit parser can never be created. It can, but the efforts will have to come from those who actually care about it. (In a Venn diagram that would be the intersection of the sets 'people who have learnt or will learn Sanskrit' and 'people who have learnt or will learn programming and not just for an IT job'.)

Let's look at that a bit differently. Sanskrit is the second official language in the Indian state of Uttarakhand. It had a population of a little over 10 million as in the 2011 census. The number of people who declared Sanskrit as their native language in the 2001 census was a bit over 14 thousand. Assuming by some miracle that number doubled in ten years and every native speaker of the language moved to Uttarakhand, it's still a huge undertaking to make special provisions for what seems to be fewer than 0.3% of the state's people. Yes, that can be explained by misplaced pride, extreme nationalism and a hint of idiocy. That's some inconsistent minority appeasement, especially considering *Garhwali* and *Kumaoni*, two of the state's most spoken languages after Hindi, do not get the same treatment despite each of them having over a hundred times more speakers than those of Sanskrit.



Another important question: **Why not focus our efforts on writing AI that understands normal humans speech rather than structured speech?** Yes, that will make coding a natural language parser much more difficult, but that's a problem to solve, not to ignore. Suggesting the use of Sanskrit as an AI language is like spelling the letters in 'nirvana', in a spelling bee, instead of 'liberation' because the latter is harder. Teaching the world that language to simplify the work of developers of natural language parsers – that would be reinventing the wheel.

Great! I've spent a lot of energy arguing against Sanskrit for natural language processing. **How are AI researchers planning to solve that problem? Have they moved in a different direction or was all of this "Sanskrit bashing" a pointless exercise?** I'm so glad you asked and yes, they have. Instead of dissecting every statement into its constituent words, natural language parsers use a statistics intensive approach to guess their actual meaning. Inputs are compared with massive databases of previously parsed information. Based on the context, the interpretation engine would determine the one that was most probably meant. This means words don't necessarily need to each be separately analysed. The system will also have a parallel rating component that would evaluate whether it output the right thing. Over a large enough duration, by collecting and consolidating the information gained from a lot of users, the system would get better at understanding natural languages.

I would argue that **English is in fact the best language to test the scope of natural language parsing** simply because the evolution of English isn't regulated by an academy like many others. It's free to change and vary depending on the culture that speaks it. English linguists are almost exclusively descriptivists – they don't police one's speech as long as everyone understands what they've meant. It constantly borrows words from other languages for their own use. When new non-existent words become mainstream, they embrace rather than despise. It thrives by adaptation. An AI system that adapts itself to the evolving language rather than requiring people to speak with precision – that's intelligence.

**Here's the best part.** The approach taken by current implementations of AI ensures that natural language parsing isn't limited to human-machine interactions the English language. With some minor tweaks<sup>#</sup> the same algorithms can be adapted to every other language. This will eventually make it completely unnecessary to learn English to use an AI implementation. Ooh! Sanskrit just got out of the question altogether. You're still free to learn it, but if you're doing it to save your future robot a few computation cycles, you probably need to steer clear of them as natural intelligence seems to elude you.

<sup>#</sup> You might have to urge software engineers, fluent in your favourite language, to contribute to the tweaking.

## The hoaxes

Now that we've got our facts straight, let's begin the much awaited hoax debunking. It's going to be a bit tougher than usual; most of the Sanskrit bullshit found online are rearrangements of the same content. It's the content that will be decimated here.

## The eerily familiar intro

The extraordinary thing about Sanskrit is that it offers direct accessibility to anyone to that elevated plane where the two — mathematics and music, brain and heart, analytical and intuitive, scientific and spiritual — become one.

## The falsification

- **Adaptation:** It might seem a bit off topic, but take a moment to appreciate what just happened

here. Those of you with even the most rudimentary capacity for critical thinking have adapted themselves to be able to intuitively call bullshit on an article from its very first sentence. The analytical and the intuitive have unified and Sanskrit didn't play any role in it.

- **This is clearly woo.** Music, while being a subjective experience, is already entirely mathematical. One surely cannot be expected to believe Sanskrit would improve upon that.
- **The brain and the heart always work together.** You can't have one working without the other. Of course, if you're someone who believes thoughts and feelings originate in the heart, you probably need to be united with a biology textbook.
- **Spirituality is subjective.** The spirituality of one is different from the the spirituality of everyone else, regardless of the degree of similarity of their thoughts. It cannot be defined, hence science doesn't deal with it. Again, Sanskrit cannot do anything to change that fact.

## Extreme bullshitting

In 1985, NASA scientist Rick Briggs had invited 1,000 Sanskrit scholars from India for working at NASA. But scholars refused to allow the language to be put to foreign use.

### The falsification

- **There is absolutely no evidence** to back the claim that Rick Briggs had consulted Sanskrit experts. It's a fabrication. Widening the search parameters, none seem interested in the idea of Sanskrit for AI at all.
- **Crazy arrogant Indians:** It's all fiction, but let's reiterate the narrative. A thousand Indians would've got to work at NASA. All they had to do was explain Sanskrit grammar to those at NASA and thus contribute to the advancement of AI. They didn't need to satisfy any other prerequisite as is necessary for anyone who aspires to work at NASA. Their only job was to explain their fantastic language. Every single one of them declines the offer because they did not want the language to be put to foreign use.
- **You idiot!** You got to work at NASA for an otherwise utterly useless skill and you declined. One bullet point isn't enough to ridicule you.

## Americans know Sanskrit

After the refusal of the Indian Sanskrit scholars to help them acquire command over the language, US has urged its young generation to learn Sanskrit.

After the refusal of Indian experts to offer any help in understanding the scientific concept of the language, American kids were imparted Sanskrit lessons since their childhood.

### The falsification

- **The funny thing** is while the two sentences mean the exact same thing, you'll find them both in some renditions of the hoax. That's super redundant. Maybe they need Sanskrit after all.
- **Sanskrit isn't scientific.** It's a convention. Calling it a scientific language, whatever that means, is akin to calling the SI system of measurement scientific.
- **Idiotic narrative:** Sanskrit experts refuse to help the US. The US decides to teach Sanskrit to its children. Won't they need Sanskrit experts for that too? The US ain't India; they don't just create experts out of thin air like they do in India. They need credibility.

- **American kids aren't imparted the lessons.** However, they are allowed to learn Sanskrit for credit by whatever means they can.

## More lies

Very soon the traditional Indian language Sanskrit will be a part of the space, with the United States of America (USA) mulling to use it as computer language at NASA.

According to Rick Briggs, Sanskrit is such a language in which a message can be sent by the computer in the least number of words.

## The falsification

- **Not a computer language:** There is no such thing happening at NASA.
- **No such claim is made.** It's true, might I add in a very narrow range of circumstances, but nowhere in Briggs' piece does he mention this property of the language.
- **Least word count?** Yes, but Sanskrit words are often cascades of shorter words. It isn't unique to Sanskrit. The German language can do that too. Extremely long words can be created in Sanskrit just by lining them up one after another and omitting the spaces in between. That doesn't in and of itself provide any real benefit.
- **Computers don't care about word count.** A long word is going to take up more storage space or transmission time than a shorter word. Character count is the only thing that matters.
- **Not really concise:** Sanskrit nuts relish in its ability to create new words using Sanskrit's own prescribed framework instead of borrowing words from other languages. However, since those new words are always going to be cascades of smaller words, I fail to see how any computer would benefit from using Sanskrit.
- **Actually,** computers do not even need to communicate with each other in natural languages. They only need do so when interacting with people. They talk among themselves pretty well, transmitting predefined codes to one another. In fact, I can literally instruct a computer to note that a variable equals an entire Sanskrit sentence and make them transmit that back and forth instead of the Sanskrit directly. No AI scientist is stupid enough to suggest Sanskrit would reduce an already minimal transmission load.

## Clear hogwash

The NASA website also confirms its Mission Sanskrit and describes it as the best language for computers. The website clearly mentions that NASA has spent a large sum of time and money on the project during the last two decades.

## The falsification

- **Search engines exist.** Did they honestly think one wouldn't do a simple search for 'Mission Sanskrit' in a new tab before sharing a nonsense piece of news like that? Oh, right, Indians! Spoke to soon!
- **But seriously,** here's a list of all the things I did looking for this mysterious mission.
  - A general search. Yields thousands upon thousands of blog posts and Hindu propagandist website articles claiming that Mission Sanskrit is a real thing. Nothing at all from NASA.
  - A site specific search on Google. (`site:nasa.gov mission sanskrit`) Returns results truly



from NASA's website. The results are either about their undertaken missions in general or missions with Sanskrit names. The first page is filled with results like 'ABC means XYZ in [ancient] Sanskrit'.

- NASA's own search, provided by Bing. There was no Mission Sanskrit. I learnt a lot though. Did you know there is a crater on the moon named after Kalidasa, a Sanskrit writer? There were 25 results to that search. I checked every single one of them and none point to a Mission Sanskrit.
- I visited every single NASA mission page in search for Mission Sanskrit, just to be thorough. They have a handy index of all their missions (<http://www.nasa.gov/missions/index.html>).
- I made an enquiry via email to NASA about the whole thing. They sent me back a generic reply, but it said that the best source of information on anything that NASA was up to could be found on, well, NASA's website (<http://www.nasa.gov>). A more specific research could be done using their library site (<http://www.hq.nasa.gov/office/hqlibrary/>). So, I searched on their headquarters library and still nothing.
- I concluded that Mission Sanskrit is a hoax.
- **NASA isn't working on Sanskrit.** Never has, never will.

## Barking mad

The scientists believe that Sanskrit is also helpful in speech therapy besides helping in mathematics and science. It also improves concentration. The alphabets used in the language are scientific and their correct pronunciation improves the tone of speech. It encourages imagination and improves memory retention also.

## The falsification

- **Complementary bullshit:** There's not much bullshit that can be created out of thin air in this topic of discussion. Hence, they've brought forth a different but related bullshit to satisfy your bullshit needs of the day.
- **The speech therapy** part has some merit to it. There are papers in medical journals, of course by Indians, that suggest Sanskrit is useful for speech therapy. But that's only limited to native speakers of languages that strictly follow the phonological structure of Sanskrit. It's utterly useless to people speaking Latin derived languages or any other language for that matter. Sanskrit is limited to 8 vowels, 2 diphthongs and 33 consonant sounds. If you can do those well, you can do Sanskrit. You cannot master sounds outside its purview with Sanskrit speech therapy as they do not map on to every sound made in other languages.
- **Mathematics and science?!** Nope. Absolutely false, yet presented as if it were an accepted fact. The only "evidence" provided for it, is a claim made by a Hindu propagandist Facebook page who add that Sanskrit was a compulsory language in a London based school – untrue, they have a choice. They also claim that the school teaches Sanskrit to simplify mathematics and science while the school itself only ever acknowledges the speech therapy thing. A look at the videos from the school show they aren't really even pronouncing the Sanskrit correctly as would be clear to any Indian the moment they watch it.
- **Fabrications:** The improvements in concentration, the tone of speech, imagination and memory retention are not supported by scientific studies. People will still believe it. That's more to do with the stupidity of the average human than the efficacy of Sanskrit.

## Tall claim

A report in Forbes magazine in 1987 said that Sanskrit is the most precise language and hence suitable language for computer software.

### The falsification

- **There exists no such report.** Forbes does not seem like a publication that sustain archives of its decades old releases. There is no way to verify it using the official source. No one has ever published a scan of the page that says anything like that. We have nothing but assertions. The simplest explanation: Forbes never claimed anything about Sanskrit as a language for computer software.
- **Forbes is a business magazine.** Even if they did publish a report like that, what makes it valid? Was it a science writer who wrote the piece? Regardless, it's a Forbes article. Why does it even make it to the discussion?
- **A search for the article** only reveals how powerful the internet is. Despite not having an original source and being likely false, searching for Forbes articles on Sanskrit returns over two hundred thousand results not one of which comes from Forbes' website.

### Generations of bullshit

A report by NASA scientists says the creation of 6th and 7th generation super computers is based on Sanskrit language. This will probably lead to revolutionize language all over the world for learning Sanskrit.

America is going to creating a 6th and 7th generation super computers based on the Sanskrit language for the use of super computers to their maximum extent. Project deadline is 2025 (6th generation) 2034 (7th generation) after this there will be a language revolution all over the world to learn Sanskrit.

### The falsification

- **You're probably getting tired of reading that all of it is false over and over**, but it's true. I mean, the fact that it's false is true. Just to be clear, Sanskrit will play no role in 6<sup>th</sup> and 7<sup>th</sup> generation supercomputers.
- **6<sup>th</sup> and 7<sup>th</sup> generation computing haven't been defined.** The 5<sup>th</sup> generation computers are those with artificial intelligence. We are currently using a combination of the 4<sup>th</sup> and 5<sup>th</sup> generation systems – 4<sup>th</sup> for all your precise computations and 5<sup>th</sup> for the occasional AI application. Generations after that are not even in question as the problem of artificial intelligence hasn't been adequately solved yet. In fact, there is no telling until perhaps the 2040s, which is when the technological singularity is predicted to occur.
- **Computing generations know no deadlines.** There are no strict descriptions of the generations either. It's just made up on the fly. There is no consortium that decides the specifications of a computing generation before there is a need of one. That's how computing has always been – we see restructuring of clutter far more often than properly planned and executed conventions.

Ahh, the pain!

The idea of using a natural language for computer programming is to make it easier for people to talk to computers in their native tongue and spare them the pain of learning a computer friendly language like assembly/C/Java.

## The falsification

- **The level of competence of the hoax creators is baffling.** If they could only understand how stupid they were, they'd be surprised how they managed to get patriots to share their piece far and wide.
- **No, that's not the idea of natural languages for computer programming.** In fact, natural languages are out of the question altogether because a system like that will have to have prior encoded knowledge of the whole language rather than that assigned in compile time. A system without moving members would be dumbfounded trying to enact the statement, 'Move 5 metres north'. There would be a lot of subroutines that the language would theoretically allow but be wasted for want of functionality.
- **Learn Sanskrit to talk better with computers** is essentially what they're trying to say. Isn't that a stupid proposition, especially since the whole premise of this discussion is flawed? I mean are they honestly expecting people to learn a new language just so they could communicate with their computers better? Maybe they are. I can't even tell the difference between the real and the ridiculous anymore.
- **For the last time**, there has been no research that suggests Sanskrit would do well as a programming language.

## Conclusion

Let me make one thing absolutely clear. I do not hate Sanskrit. I am a descriptivist and I can vouch for those who say there exist features of Sanskrit that cannot be matched or have no parallels in other languages, including those derived from it. But, it's not a perfect language. It's not a complete language. It's certainly not the mother of all languages. It's not divine.

Sanskrit's grammar comes close to certain knowledge representation schemes used in computers but it's a language to learn from, not a language to use. It also has nothing to do with computer programming. NASA hasn't had nor will have anything to do with the Sanskrit, except perhaps naming a few of their missions with words from the language.

In my somewhat arrogant but educated opinion, Sanskrit as a spoken language is worse than useless today. It's extremely difficult to learn as is, and it's not spoken widely. As I've said before, every attempt at enforcing Sanskrit education will fail for the same reason it has always failed – it's not a natural language.

And that's it. Let me know if there's anything I've missed in this article. Be sure to share it with your friends and your enemies (especially your enemies). If there are any factual errors in this piece, let me know that too. Are there articles popping up in your social feeds lately that are in need of some quality debunking? Throw them my way.

Think!

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This article "**Is Sanskrit really the best language for computer programming?**" can be found at the URL:

## Denver Think

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