Thinking and Language

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Abstract:

Language is a limited set of symbols, signals, sounds and gestures. A construct in a language typically captures the emotion, culture, situational context, personal beliefs and faith. Language can help improve trust, build rapport and foster positive approach to transacting business. Language may not determine the thoughts of a given individual. However, it can influence the habit of thought and its impact on the related action of an individual. Understanding the language and the way human choice operates in this domain is an essential study in the progress of mankind. This paper is an exploration of thinking and expressing the thought in a chosen language.

Key Words: *Language, Expression, Thought, Trust.*

1. Introduction:

The earliest evidence of existence of Homo sapiens is derived from the graphic representation of daily life found in the caves in France and elsewhere. The significance of these figures is debatable. The earliest cave paintings date back 40,000 years ago *(Maya-Wei-Haas-2018)*[1]. They signal a perceived need to use a combination of medium and material for communication. Thinking is interlinked to the language. Primitive thinking is largely due to sensuous knowledge acquired through sensory organs. The early sound languages of *homosapiens* were perhaps little more than a set of animal cries. The possibility of abstracting one or other quality from the object of cognition became a reality only with the advent of speech. Man began fixing this idea or notion of such a quality in a word. Human thinking is thus impossible without language.

Pictorial representations convey shapes and colours far more effectively than words. They give greater clarity than a verbal description of an action or a scene. They are less effective in embodying abstractions or ideas. A picture can represent the appearance of a person but cannot show what he is thinking. To preserve the total image of anything other than the purely visual world, we need a system which allows us to express language in some representational form.

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[1]Maya Wei Haas (7th November, 2018), "40,000-year-old cave art may be world's oldest animal drawing", National Geographic.

The essence of all writing systems is that they allow language which describes the abstract to take concrete form. In some cases, they simulate language better by capturing the sounds and the ideas they convey. The earliest writing systems were non-alphabetic. They have been derived from the practice of drawing pictures about 5000 years ago in the Middle East. Unwritten languages tend to be highly fluctuating with many dialects. Writing assures greater stability of spoken language.

A writing system can never be independent of the medium being used. The medium used depends on the social and environmental circumstances. The environment in the Tigris-Euphrates basin was conducive for baking bricks. Inscriptions can be made on the surface of bricks and as they dried the marks become permanent. The earliest records were thus on clay tablets.

The system of writing used in the ancient middle-east is known as cuneiform. This is derived from the wedge-shaped instrument used to write on the surface of clay. Other systems evolved along similar lines elsewhere. All of them suffered from the inability to express abstractions and actions. The script which began to be developed in China around 1500 BC *(Joshua J Mark)*[2] was particularly adept at this mechanism to convey concepts. Characters for objects could even be combined to represent a concept associated with the combination.

The transition from purely pictorial systems (pictograms) to systems which combined pictograms and characters for more abstract concepts (hieroglyphs) took place independently in China and in *Egypt*[3]. Neither of them, however, addresses the problem of the representation of the language. Language evolved as sounds and different languages used these sounds differently. Some sounds or phonemes, which are common in one language, are not known in other languages. Words used to describe objects, actions or attributes are merely commonly understood combinations of sounds. Civilization is perfectly mirrored in speech.

By going behind what is signified by words to the sounds of which the words are constituted, the raw material of the language itself becomes obvious. This realization led to the use of symbols to represent sounds. The earliest writing systems known as syllabaries took the phoneme, the basic unit of pronunciation as the basic building block. Syllabaries broke the link between visual representation and the representation of human speech. The Chinese pictograms, adopted by Japanese, were eventually replaced by syllabary where each symbol represents a phoneme. Where phonemes vary between languages, each language needs its own character set to represent them. Only by breaking the phenomes into more basic units can the flexibility of

[2]Joshua J Mark, "Writing", Ancient History Encyclopedia, 28 April 2011 [https://www.ancient.eu/writing/]
[3] Ibid, p-2 *(Footnote-2)*

language scripts be achieved. This final development took place in the Middle East about 3000 years ago.

Phoenicians, a trading people on the eastern shores of Mediterranean developed a form of representing speech that was devoid of all pictorial images and almost all of the phonemes. Greek alphabet is derived from this and only a few phonemes such as 'theta' survive in the script. They are conspicuous by being unusual. 'Roman' or 'Latin' alphabet is derived from the *Greek-Alphabet*[4] and eliminates the phoneme content of the Greek alphabet. Greek was modified to represent some of the Slavic languages. The speakers of Semitic languages developed *Arabic-or-Hebrew*[5]. The single common aspect of this development is the adaptability of different languages which have different phonemes. More remarkable is the fact that languages can change from one script to another. Turkish changed from *Arabic-script-to-Latin-in-1924*[6]. Many African languages can be scripted only in the Latin alphabet. Roman alphabet, though not perfect, is probably the best historically developed device to record sounds. The spelling does not change as rapidly as the language sounds. As a consequence, several languages use accent marks, umlauts, cedillas, tildes, hooks and bars to indicate change in pronunciation of the symbol appearing below them. It is a strange fact that there is no language that has an absolute symbol-for-sound correspondence.

An alphabet is an infinitely flexible tool for the representation of the language and consequently for its storage and transmission. The Roman Empire spread the use of a common alphabet that preserved the cultural unity of the west for over 1500 years. The absence of a common language was less problematic due to the use of a common alphabet. The disadvantages are colour, sound and some actions are difficult to represent to make an impact. Both knowledge and ability limit our understanding of the concepts represented by words formed out of the alphabet. Onomatopoeic words were used in languages to represent specific sounds of animals. The representation of numbers and calculations was efficiently solved by Arabs. Papyrus as a medium became popular for recording the concepts and ideas of the society. Humans happen to need words in order to talk scientifically about a world that has nothing to do with language. Consequently, determining the meaning of what is said is a complex and contested area. Also, it is important to note that in any communication the impact of verbal is only 7%. About 38% impacts are from vocalics (volume, pitch, rhythm and so on) and 55% impact is from body movements *(Philip-Yaffe-2011)*[7]. There are many dominant myths about non-verbal communications. How can all this be couched in forms amenable for scientific exploration and technical realization?

[4] Ibid, p-2; *(Footnote-2)*
[5] Ibid, p-2; *(Footnote-2)*
[6] Ibid, p-2 ; *(Footnote-2)*
[7] Philip Yaffe (2011), "The 7% rule: fact, fiction, or misunderstanding", Ubiquity – An ACM Publication, Article 1, October 2011.

2. Abstractions that enable Scientific Expressions:

Visualization is any technique for creating imagery (words, images, diagrams, or animations) to communicate a message. Visualization through imagery has been an effective way to communicate both abstract and concrete ideas since the dawn of man. Essentially, imagery is any series of symbols that create a sensory experience.

> *"The problems of language here are really serious. We wish to speak in some way about the structure of the atoms… But we cannot speak about atoms in ordinary language."*
>
> *– Werner-Heisenberg[8], Physics and Philosophy, 1963*

"Mathematical Abstraction" is the best for scientific expressions. Complex problems require more expressive mathematical abstractions. Mathematical Abstractions are required to view the problem 'Objectively'. Engineering education appears to be focused on imparting the skill to arrive at an appropriate mathematical abstraction for a given verbal specification. It can be argued that every verbal expression can be made to converge into a unique interpretation. It is a common experience that there can always be one more surprise interpretation. This possibility looms large in complex problems. We invent formal specification languages and notations like computer languages, higher mathematics, drawings (Geometric Abstractions), etc. to solve the problem of multiple interpretations of a verbal specification. Algebraic Abstraction is perhaps the most generic form of 'mathematical abstraction'. It yields more degrees of freedom for thinking, albeit with the limits imposed by a predefined set of axioms, rules or laws.

3. Grounding Reality:

Mathematization of reality (and equivalent forms of expressing an experience) often leads to the unhappy point were the world begins to disappear behind a ghostly veil of abstraction [6]. Time has come to try and gain a very different kind of clarity. This is not by minimizing the qualitative, phenomenal content of our scientific descriptions, but by maximizing it. The focus need to on the fullness of the understanding of an experience rather than the ease with which others can understand it.

At this juncture it would be useful to note that most of the barriers for communicating a concept or an idea or an experience stem from Diversity, Quest for Inclusion and reasonably known challenges for governance. "Language" as a barrier is unique both as a barrier and an enabler of civic behavior.

3.1 Geopolitics of Language – India Focus:

Mohandas Karamchand Gandhi consistently advocated the linguistic division of states since as early as 1918 *(The-Quint-2007)[9].* The first evidence of the call for a linguistic division of states

[8]Werner Heisenberg, "Physics and Philosophy: The Revolution in Modern Science", Harper Perennial Modern Classics, 2007.

[9]The Quint (2017), Should Indian States be Divided on Linguistic Lines?, 31 October 2017, https://www.thequint.com/news/india/linguistic-division-of-states-in-india-history

taking effect was the carving of Orissa [Odisha] in 1936. Utkala*(or Okkala)*, Kalinga, and Odra Desha *(or Oddaka)* were the ancient names of this state. It is very useful to note that Utkala*(Kala=Art, Utkrishta=Excellent)* simply means "Excellence Art". The author of this paper opines that it is the necessity to foster the native excellence in art rather than the language Oriya that made the British form Orissa from the states of Bihar and Bengal *(TheQuint-2017)*[10].

At the stroke of Indian Independence, it was decided that 571 princely states would merge to form 27 states. The basis for this decision were more historical and political, rather than along the lines of language and culture.

The government formed a commission in 1948 under Justice S. K. *Dhar*[11], of an Allahabad High Court Judge, to address the need for linguistic division of states. "Administrative Convenience" was given preference over language as the basis for division by this commission. In December 1948, Jawaharlal Nehru, Vallabhbhai Patel and Pattabhi Sitaramayya formed the *JVP-Committee*[12] to address the issue, but dismissed the idea in April 1949, as they believed linguistic states would only weaken the unity of a new nation.

In 1952, Potti Sreeramulu died after a 56-day hunger-strike which he had staged to draw attention to separate statehood for Telugu-speaking regions of *Madras*[13]. Thus, in 1953, Andhra – the first state for Telugu-speaking people was born. At the same time, demands for other states to be formed on linguistic lines arose. A commission led by Justice Fazl Ali formed on 22 December 1953 took two years to conclude that India should be fractured into 16 states. The States Reorganization Act *(SRA)*[14] in November 1956 split India into 14 states and six union territories.

Dr. B. R. Ambedkar was also a proponent of linguistic states but wanted the move to take place within reasonable limits. He has mooted the idea of "Official Language" and made a case for the state of Maharashtra. However, it was the 1960 Samyukta Maharashtra *Movement*[15] that resulted in the creation of Maharashtra and Gujarat, with the former retaining Bombay city. Similar tussles between linguistic and ethnic communities led to the creation of several states between 1966 and 1987. The author opines that basis for creation of these states was the need to foster community participation to ensure stable governance and gain from the tacit knowledge systems within the community that was most probably ignored by the British.

[10] The Quint @017). Should Indian States be Divided on Linguistic Lines?, 31 October 2017, https://www.thequint.com/news/india/linguistic-division-of-states-in-india-history
[11] ibid; *(Footnote-10)*
[12] Ibid; *(Footnote-10)*
[13] ibid, *(Footnote-10)*
[14] ibid; *(Footnote-10)*
[15] ibid; *(Footnote-10)*

The formation of two Telugu speaking states in June 2014 remains a specimen case even though this demand was there as early as 1969. That a language is both a boon and bane simultaneously is very well understood by the intellectuals and eminent scholars. The author opines that with a focus on thinking and faithful expressions of the thoughts, language can be elevated to a higher plane of abstraction that unifies people faster and better.

4. Faith, Language and Thought:

Before Panini (approx. 7 B.C.) there were only speculations about a formal/systematic understanding of the Vedas *(Devapriya-Roy-2020),)*[16]. The scriptures were meant for recitation and japa. The belief was that the contents of the scriptures would automatically act if the *"person & path"* combination obtains the grace of the Supreme Brahman.

In the eventuality of the focus on path, the localization and local language is the best approximation for any method of reconstruction. The author of this paper opines that this could have been the most probable reason for Mohandas Karamchand Gandhi favoring the linguistic division of states in *India*[17] as early as 1918. Indic is all about "Direct Experience" and seldom about the expressions. The author of this paper opines that Hatha Yoga *(David-Coulter-H.-2010)*[18] is the Hidden Language for Direct Experiences and it is replete with special Symbols, Secrets that govern the experiences and the Metaphors for the associated mysticism.

Panini is believed to have started with 'Siva Sutras'. These were 9 + 5 sounds generated by the Damaru of Lord Shiva at the end of the Tandava. These were the 'primordial sounds' for Sanskrit. Panini gave them an 'akshara (alphabet)' *(Aishwarya-V.A.;-Dutta-H.-2019))*[19] status. Panini went on to define a generative grammar that has over 4000 rules. This is indeed a remarkable intellectual feat by any yardstick. This language is called Sanskrit. Sanskrit Alphabet was created by Panini. There is no real reference of efforts in this direction before Panini *(Sumitra-M.-Katre-2015)*[20] in his treatise titled "Asthadhyayi". Many times, the Vedic Scholars do not agree to be confined by the structure provided by Panini. However, they agree that Sanskrit by Panini is the maximum fit for understanding the meaning of the Vedas.

Sanskrit was the accepted language for philosophical discussions, devotional writings and all that is Spiritual. It was accepted through the north and the south as the language of the King's courts

[16] Devapriya Roy (2020), A reminder: Panini didn't destroy lingual diversities with his Sanskrit grammar, he unified them, 17 November 2020, Scroll.in https://scroll.in/article/811942/a-reminder-panini-didnt-destroy-lingual-diversities-with-his-sanskrit-grammar-he-unified-them

[17] Ibid; *(Footnote-10)*

[18] David Coulter H (2010), The Anatomy of Hatha Yoga: A Manual for Students Teachers and Practitioners, Body and Breath, USA, 2010.

[19] Aishwarya Vardhani Aarugonda and Hemanga Dutta (2019). "Distinctive Feature Theory and PanianianMaheshwara Sutras: AComparative Analysis", International Journal of Language Sciences, Volume 1, Issue 1, August 2019, Pp 37 – 50.

[20] Sumitra M. Katre (2015), Astadhyayi of Panini, Motilal Banarsidass, New Delhi, 2015.

and was thus a common link across the country. Languages other than Sanskrit were considered acceptable for use only by Women, Sudras i.e. lowly rated citizens for use in singing the glory of the God and the King.

4.1 The Practice of Kundalini Yoga :

Central to the practice of Kundalini is the way the Sanskrit alphabet is distributed across the various charkas. Each chakra is said to have a certain number of petals making the lotus at that chakra. The petals at each chakra represent the number of vibrations. A reasonable approximation of the vibrations is the alphabet tagged to each petal as depicted in the Figure 1. The generic alphabet for this model uses 50 letters *(Purnananda-Swami-2017)*[21]. The letter 'Lla' (Zha in Tamizh) is usually omitted and is said to become operational at Sahasraara at the behest of the Brahman. Kundalini has ideological equivalences across major faiths.

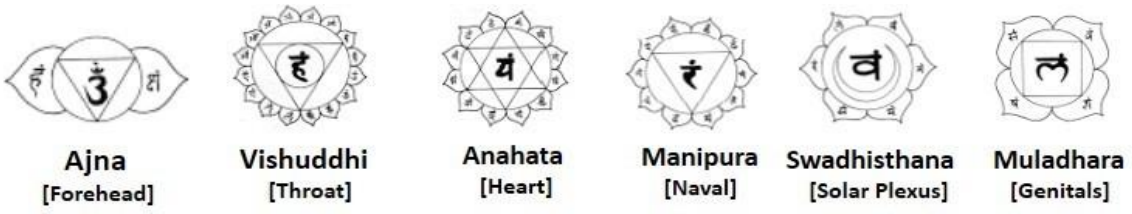

Figure 1: Kundalini Chakras and the Sanskrit Alphabet *(Arthur-Avalon-1974)*[22]

There are at least 6 variants of Sanskrit Alphabet with the number of letters ranging from 48 to 54. The crux of language viewed from this standpoint is that only the direct experience matters. The thought takes form. Expressions are not mandatory. By far, Sanskrit is believed to come very close to making such thinking effects manifest. Several languages are either derived or adapted from Sanskrit with due localization that can transcend the geopolitics.

It is here sonic tradition becomes very significant. The Riks (Hymns of the Vedas) or as a matter of fact any scriptural writing is 'at best' an approximation of the vibrations experienced by the practitioner. One can experiment with the number of letters in a given alphabet to reach as close as possible to the approximation documented by the seers and use it as a prop to experience (or internalize) the entire set of related vibrations. This is the way language began in the world and Sanskrit is believed to retain the pristineness of faith as well. Language is not a barrier at this stage. It is all about visualization and transmission of thought.

4.2 Siva Sutras :

The Aphorisms of Siva [Siva-Sutras] *(Vasugupta-1992)*[23] are relatively late reiteration of the Vedic view of Consciousness and the practice of Kundalini Yoga. In the early 800s, Shri Vasugupta was

[21]Purnananda Swami (2017), Sat-Chakra-Nirupana [Translated by Sir John Woodroffe], New Age Books, India,
[22]Arthur Avalon (1974), The Serpent Power: The Secrets of Tantric and Shaktic Yoga, Dover Publications, US,
[23]Vasugupta (1992), *The Aphorisms of Siva: The Siva Sutra with Bhaskara's Commentary, the Varttika.* SUNY Press, USA, .

living on Mahadeva Mountain near Srinagar. Tradition states that one-night Lord Siva appeared to him in a dream and told him of the whereabouts of a great scripture carved in rock. Upon awakening, Vasugupta rushed to the spot and found seventy-seven (eight?) terse sutras etched in stone, which he named the Siva Sutras. Vasugupta expounded the Sutras to his followers, and gradually the philosophy spread. These Sutras paved way for 'Kashmiri Saivism', which influenced the worship of Shiva all over the country.

According to Siva Sutras, the individual knowledge comes from associations. Owing to this our phenomenal knowledge can only be in terms of the associations of the outer world. But the associations in themselves need something to bind them together. The binding energy is called matrika (matrka). Lalitha is also known as Matrika Devi, the Goddess of the Letters of the Alphabet. In Sanskrit there are 36 consonants and 15 vowels. Each letter is a Matrika. Matrika Chakra is a group of letters *(Hans-Johann-Glock)*[24]. This is the key to word – meaning pair formation in language *(Štekauer,-P.;-Valera,S.-and-Kőrtvélyessy,L)*[25].

4.3 Tamizh – A Specific Case:

Tamizh was born to Sage Agastya. Lopamudra is the wife of Sage Agastya. As a matter of fact, Lopamudra was also Agastya PrasUtAt *(Vedanta-Desika)*[26]. Sage Agastya created Lopamudra by taking those parts that were regarded as highly beautiful, from creatures possessing them and joining them with his ascetic powers.

Sage Agastya perhaps did a grouping and gave one Tamizh Matrika each to represent a group. The [ka, cha, ta, tha, pa] rows of consonants are done at the four lower chakras. In Tamizh these Matrika Chakras (row of consonants) has only one symbol. Tamizh is a chosen to illustrate the adaptation or mapping to the letters of Sanskrit to produce equivalent yogic effects. The letter 'Zha' that is common to both Sanskrit and Tamizh eventually controls the meta-physical mixing in the Akasa or Space.

5 Conclusions:

English is the language of a vast geographical expanse in the world *(Brient-C-Oberg-2005)*[27]. There are 121 languages *(Census-of-India-2011/Language)*[28] which are spoken by 10,000 or more people in India, which has a population of 121 crores. More than 19,500 languages or

[24]Hans-Johann Glock (2012). What Is A Theory of Meaning? Just when you thought conceptual analysis was dead…, Cahiers Ferdinand de Saussure, Vol. 65, Pp 51 – 79.

[25]Štekauer, P., Valera, S.andKőrtvélyessy, L.. (2012). Word-Formation in the World's Languages: A Typological Survey. Cambridge: Cambridge University Press.

[26]Vedanta Desika, Dramidopanishad Tatparya Ratnavali and Sara, Madras Vedanta Desika Research Society, Chennai, 1974

[27]Brient C Oberg (2005). Interpersonal Communication, Jaico Publication House, Mumbai.

[28]Census of India (2011). Language – India, States and Union Territories, Office of the Registrar General of India.

dialects are spoken in India as mother tongues, according to the latest analysis of a census released in June 2018 *(Census-of-India-2011/Language)*[29].

The problem of meaning of the various linguistic elements needs to be understood in perspective *(Ronald-B.-Adler-&-Jeanne-Marquardt-Elmhorst-2002)*[30]. This is the foundation for understanding 'thinking' and 'thought'. Thinking is lot more than mere "sub-vocal" unwinding of well-organized language habits *(Steve-Talbott-2007)*[31] acquired with regular usage of a chosen language. At this level differences between languages do not exist. "Mother Tongue" with writing becomes the "First Language". Three is a number that fits a regression and hence three languages may make the thinking straight. This is the quintessence of the study reported in this paper.

References:

Aishwarya VardhaniAarugonda and Hemanga Dutta (2019), "Distinctive Feature Theory and PanianianMaheshwara Sutras: A Comparative Analysis", International Journal of Language Sciences, Volume 1, Issue 1, August 2019, Pp 37 – 50.

Arthur Avalon (2005). The Serpent Power: The Secrets of Tantric and Shaktic Yoga, Dover Publications, US, 1974 Brient C Oberg, Interpersonal Communication, Jaico Publication House, Mumbai.

Census of India (2011)/ Language – India, States and Union Territories, Office of the Registrar General of India.

David Coulter H. (2010). The Anatomy of Hatha Yoga: A Manual for Students Teachers and Practitioners, Body and Breath, USA.

David Peat F. (1990). Mathematics and the Language of Nature, Mathematics and Sciences, Word Scientific,

Devapriya Roy (17th November, 2020). A reminder: Panini didn't destroy lingual diversities with his Sanskrit grammar, he unified them, 17 November 2020. Scroll in https://scroll.in/article/811942/a-reminder-panini-didnt-destroy-lingual-diversities-with-his-sanskrit-grammar-he-unified-them

Hans-Johann Glock (2012). What Is A Theory of Meaning? Just when you thought conceptual analysis was dead…, Cahiers Ferdinand de Saussure, Vol. 65, Pp 51 – 79.

Joshua J. Mark (28th April 2011)."Writing", Ancient History Encyclopedia. https://www.ancient.eu/writing/

Maya Wei Haas (7th November, 2018). "40,000-year-old cave art may be world's oldest animal drawing", National Geographic, 7 November 2018

Philip Yaffe (2011). "The 7% rule: fact, fiction, or misunderstanding", Ubiquity – An ACM Publication, Article 1, October 2011.

Purnananda Swami (2017). Sat-Chakra-Nirupana [Translated by Sir John Woodroffe], New Age Books, India.

Ronald B. Adler and Jeanne Marquardt Elmhorst (2002). "Communicating at Work", McGraw Hill.

Štekauer, P., Valera, S.andKőrtvélyessy, L.. (2012). Word-Formation in the World's Languages: A Typological Survey. Cambridge: Cambridge University Press.

[29] Ibid; (Footnote-28).

[30] Ronald B. Adler and Jeanne Marquardt Elmhorst (2002), "Communicating at Work", McGraw Hill.

[31] Steve Talbott (2007). The Language of Nature, The New Atlantis, Winter 2007.

Steve Talbott (2007). The Language of Nature, The New Atlantis, Winter.

Sumitra M. Katre (2015). Astadhyayi of Panini, Motilal Banarsidass, New Delhi.

The Quint (31st October, 2017). Should Indian States be Divided on Linguistic Lines? https://www.thequint.com/news/india/linguistic-division-of-states-in-india-history

Vasugupta (1992). *The Aphorisms of Siva: The Siva Sutra with Bhaskara's Commentary,* the Varttika. SUNY Press, USA.

Vedanta Desika (1974). DramidopanishadTatparyaRatnavali and Sara, Madras Vedanta Desika Research Society, Chennai.

Werner Heisenberg (2007). "Physics and Philosophy: The Revolution in Modern Science", Harper Perennial Modern Classics.