

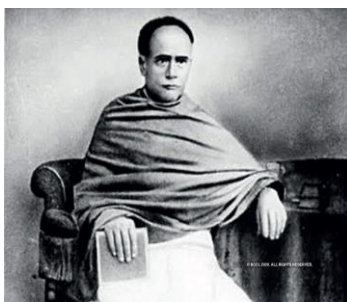
IISRR - International Journal of Research

A Peer-Reviewed Print-in and Online International Journal for
Research Activities & Case Studies & an Initiative of the IISRR

VOL- 6; ISSUE- III
December – 2020

ISSN
Online Version : 2394-885X
Print Version : 2394-6873

Dedicated this Issue to Commemorate the Birth Bi-Centenary of



Iswar Chandra Bondopadhyay



Akshay Kumar Dutta



Indian Institute of Social Reform & Research

Registered under Govt. of West Bengal ACT XXVI of 1961

Digital Registration No.: SO210729 of 2013-2014 * Legacy Registration No.: S/2L/ No 10729 of 2013-14

P-14, Regent Estate, F-3B, Kolkata 700092, India

Website: www.iisrr.in email: iisrr09@gmail.com

For Current & Previous Issues: <http://www.iisrr.in/journal/current-issue-of-journal>

IJSRR - International Journal of Research

ISSN numbered, Peer-Reviewed, Online and Print-in International Journal for Research Activities
& an Initiative of the-

Indian Institute of Social Reform & Research

**Volume: 6; Issue: III
December, 2020**

Dedicated this Issue to Commemorate the Birth Bi-Centenary of

Iswar Chandra Vidyasagar

&

Akshyay Kumar Dutta

**Online Version:
ISSN 2394- 885X**

*The contents of the articles, the views expressed therein and checking of Plagiarism
are the sole responsibility of the authors, and the Editorial Board will not be held
responsible for the same.*



Indian Institute of Social Reform & Research

[Registered under Govt. of West Bengal. ACT XXVI of 1961, Registration No- S/2L/ No 10729 of 2013-14]

Website: www.iisrr.in email: iisrr09@gmail.com

IISRR - International Journal of Research

ISSN numbered, Peer-Reviewed, Online and Print-in International Journal for Research Activities
& an Initiative of the-

Indian Institute of Social Reform & Research

**Volume: 6; Issue: III
December, 2020**

**Dedicated this Issue to Commemorate the Birth Bi-Centenary of
Iswar Chandra Vidyasagar
&
Akshay Kumar Dutta**

**Online Version:
ISSN 2394- 885X**

Annual Subscription: INR Rs.300.00; USD \$7

Design & Software Management by

Mrs. Paramita Chakraborty

Treasurer, Indian Institute of Social Reform & Research

Website Maintained by

Mr. Chandan Kumar Singh

MFT Internet Pvt. Ltd. Kolkata

www.mftinternet.com

Printed at

Shri Krishna Enterprise

B-27, K.I.T. Market, Jadavpur,

Kolkata – 700032

Published by

Prof. (Dr.) Abhi Kumar Das

Director (Honorary)

Indian Institute of Social Reform & Research

P-14, Regent Estate, F-3B, Kolkata 700092, India,

email: iisrr09@gmail.com; Website: www.iisrr.in

Click-on to get Previous & Current e-Issues of IISRR-IJR

<http://www.iisrr.in/journal/current-issue-of-journal>

IISSRR - International Journal of Research

Our Tribute to Iswar Chandra Vidyasagar in his Birth Bicentenay



Name	: Iswar Chandra Bondopadhyay
Father	: Thakurdas Bondopadhyay
Mother	: Bhagavati Devi
Wife	: Dinamoyee Devi
Children	: Narayan Chandra Bondopadhyay
Date of Birth	: 26 th September, 1820
Place of Birth	: Birsingha, Bengal Presidency in British India [Now in Paschim Medinipur, West Bengal, India]
Date of Demise	: 29 th July, 1891 (at the age of 70)
Nationality	: British Indian
Occupation	: Educator, Author and Social Reformer
Alma mater	: Sanskrit College (1828-1839)
Literary Movement	: Bengal Renaissance
Notable Works	: Widow remarriage , introduction of punctuation mark in Bengali language

Notable Publication

1. Betaal Panchabinsati (1847)
2. Jeebancharit (1850)
3. Bodhoday (1851)
4. Borna Porichay (1855)
5. Sitar Bonobash (1860)

IJRR - International Journal of Research

Our Tribute to Akshay Kumar Dutta in his Birth Bicentenay



Name : Akshay Kumar Dutta
Father : Pitambor Datta
Mother : Dayamoyee Devi
Date of Birth : 15th July, 1820
Place of Birth : Chupi, Burdwan, in British India
[Now in Purba Bardhaman, West Bengal, India]
Date of Demise : 18th May, 1886 (at the age of 65)
Nationality : British Indian
Occupation : Writer and Social Reformer

Year	Title of the Books Written/ Co-Authored by Akshay Kumar Dutta	Name of the Authors
1901	Prachin Hindudiger Samudrajatra O Baniya প্রাচীন হিন্দুদিগের সমুদয়াত্রা ও বাণিজ্য	Dutta, Akshay Kumar; Dutta, Rajani Nath, ed.
1882	Bharatbarshyia Upasak Sampraday - Vol.2 ভারতবর্ষীয় উপাসক সম্প্রদায় - খন্ড ২	Dutta, Akshay Kumar
1923	Padartha Bidya পদার্থবিদ্যা	Dutta, Akshay Kumar
1888	Bharatbarshyia Upasak Sampraday - Vol.1 - 2nd ed. ভারতবর্ষীয় উপাসক সম্প্রদায় - খন্ড ১ - ২য় সং	Dutta, Akshay Kumar
1872	Dharma Niti - Vol.1 ধর্মনীতি - খন্ড ১	Dutta, Akshay Kumar
1863	Dharmaniti - Pt.1 ধর্মনীতি - ভাগ ১	Dutta, Akshay Kumar
1851	Bahya Bastur Sahit Manab - Vol.1 - 8th. ed. বাহ্যবস্তুর সহিত মানব প্রকৃতির সম্বন্ধ বিচার - খন্ড ১ - ৮ম সং	Dutta, Akshay Kumar
1852	Bahya Bastur Sahit Manab - Vol.2 - 5th ed. বাহ্য বস্তুর সহিত মানব-প্রকৃতির সম্বন্ধ বিচার - খন্ড ২ - ৫ম সং	Dutta, Akshay Kumar
1825	Bahya Bastur Sahit Manab - Vol.2 - 4th ed. বাহ্যবস্তুর সহি ত মানব প্রকৃতির সম্বন্ধ বিচার - খন্ড ২ - ৪র্থ সং	Dutta, Akshay Kumar

Source-http://dspace.wbpublibnet.gov.in:8080/jspui/simple-search?query=Akshay+Kumar+Dutta&sort_by=score&order=desc&rpp=10&etal=0&filtername=author&filterquery=Dutta%2C+Akshay+Kumar&filtertype>equals



EDITORIAL BOARD

Advisors

Mr. Asoke Motayed

Eminent Environmental Engineer-Scientist;
International Industrial Advisor;
CEO of NexGen Systems Corporation, USA

Prof. (Dr.) Robin Groves

Former President, International Council of
Association for Science Education (ICASE),
Professor, in an University in Australia

Prof. (Dr.) S.N. Pathan

Former Vice-Chancellor, Nagpur University

Prof. (Dr.) Dilip Kumar Mohanta

Former Vice-Chancellor, Kalyani University, India;
Professor, Calcutta University

Prof. (Dr.) Pranab Kumar Chakraborty

Former Dean, University of Calcutta, Kolkata, India

Prof. (Dr.) Soroshi Mohan Dan

Former Pro Vice-Chancellor, Bardwan University,
Bardwan

Dr. Sampson David,

Ex- Jt. Secretary, Association of Indian Universities
AIU House, New Delhi

Dr. Amal Kumar Chatterjee

Former Professor, David Hare Teachers' Training
College, Kolkata

Prof. Sudin Chattopadhyay

Former President, WB Council of HS Education.
& Former Controller of Exam, Calcutta University

Prof. Ujjwal Basu

Ex-President, WB Board of Secondary Education.
& Former Registrar, Calcutta University

Editor-in-Chief

Prof. (Dr.) Asit Kumar Das

President & Director, Indian Institute of Social Reform & Research; Kolkata
www.iisrr.in iisrr09@gmail.com

Former Dean (SW), University of Kalyani, W.B., India
Professor, Seacom Skills University, West Bengal



IISRR - International Journal of Research

Online Version: ISSN 2394-885X; Print version : ISSN 2394- 6873

© IISRR Volume: 6; Issue: III; December, 2020

EDITORIAL BOARD

Editor-in-Chief

Prof. (Dr.) Asit Kumar Das

President –cum- Director (Honorary),

Indian Institute of Social Reform & Research; Kolkata, India

Former Dean (SW), University of Kalyani, India

EDITORS

Prof. (Dr.) Sudhakar C. Agarkar

Professor and Dean, VPM's Academy of International
Education and Research, Thane,
Former Professor, TIFR, Mumbai;

Prof. (Dr.) Jack Halbrook

Professor, Centre for Science Education,
University of Tartu, Vanemuise 46, 51014 Tartu, Estonia
Former President, International Council of Association
for Science Education

Prof. (Dr.) G. Saha

Professor of Science & Technology Education,
Lincoln University of Missouri, Jefferson City, USA

Prof. (Dr.) Nripen Bhaumik

Ex-Professor & Head, Department of Neurology, KPC
Medical College & Hospital; Former Professor.

Dr. Sibsankar Jana

Assistant Professor, University of Kalyani

Prof. (Dr.) Subir Kumar Das

Professor, JNM Medical College, WB University of Health
Sciences, Kolkata, India

Prof. (Dr.) Madan Mohan Chel

Former Principal, Sammilani Mahavidyalaya, Kolkata.
Professor, Dept. of Education; Seacom Skills University

Prof. (Dr.) M. A. Sikandar

Associate Professor, Dept. of Commerce and
Management. Maulana Azad National Urdu University,
Hyderabad; Ex-Director, National Book Trust, New Delhi

Dr. Sucheta Pryabadini

Dean, KIIT University, Bhubaneswar, Odessa

Prof. (Dr.) Abhijit Pal

Professor, West Bengal State University

Mr. Debasish Pal

VP, Indian Institute of Social Reform & Research,

Prof. (Dr.) Tapas Kumar Chatterjee

Former Registrar of the University of North Bengal

Prof. (Dr.) T. V. Gopal

Professor, Dept. of CSE, Anna University, Chennai
Coordinator, Centre for Applied Research in Indic
Technology [CARIT]

Mr. Amitava Das

Ex-Scientist, Zoological Survey of India; Govt. of India,
Secretary, Indian Institute of Social Reform & Research

Dr. Anira Phiphon Lepcha

Assistant Professor; Sikkim Central University

Peer Review Committee

(There are Peer Review Committees on each of the following broad areas/ sub theme, consisting of experts from different subject areas)

1. Sciences, Education & Health Sciences; 2. Engineering & Technology; 3. Social Sciences, Library & Information Sciences; 4. Finance, Law & Management Sciences; 5. Culture, Fine Arts & Visual Arts. Etc.



IISRR - International Journal of Research

A Peer-Reviewed Half-Yearly Online International Journal for Research Activities & an Initiative of the IISRR
Volume: 6; Issue : II; August, 2020 * Special Issue on Coronavirus Pandemic
CONTENTS

Authors	Article No	Articles	Page No
(A) IISRR- IJR, Vol-6; Issue -III; December, 2020, Title Page		Editorial Board, Contents, Peer-Review Process, etc.	1
		Tribute to Iswar Chandra Vidyasagar	3
		Subscription and Donation	4
		Tribute to Akshay Kumar Dutta	5
		Editorial Board	6
		About Authors	8
		Contents	9
		Process of Section of Articles for Publication	10
Prof. Dr.) Asit Kumar Das Editor-in-Chief		Editorial	11
Webinar and Inauguration of this Vol-6, Issues-III		Topic- "Art of Writing Research Articles" Part-1	12
Articles to Commemorate the Birth Bicentenary of Iswar Chandra Vidyasagar and Akshya Kumar Dutta			
Prof. (Dr.) Tapas Kumar Chatterjee	1	Akshya Kumar Dutta	13
Dr. Bikash Ranjan Deb	2	Iswar Chandra Vidyasagar	24
Prof. (Dr.). Soroshi Mohan Dan	3	Iswar Chandra Vidyasagar	38
Research Articles			
Dr. Teh Kim Hong, Dr. Lee Shok Mee, Dr. Fong Soon Fook	4	Dramatized Environmental Issues: Empathetic Learning Beyond the Classroom	41
Dr. Babita Bhardwaj-	5	Study of ICT Competency and Professional Interest of Student-Teachers	51
Prof. (Dr.) T. V. Gopal	6	Thinking and Language	59
Dr. Biswaranjan Mandal -	7	A Weibull Distributed Ameliorating Inventory Model with Ramp Type Demand and Shortage	69
Mr. Kaliram Murmu, Dr. Kamal Krishna De Prof. (Dr.) Nimai Chand Maiti	8	Problems of Dropout of Scheduled Tribe Students at the Upper Primary	76
Mrs. Dayamoyi Das, Prof. (Dr.) Bijan Sarkar	9	The impact of COVID-19 Pandemic	86
Dr. Md. Azizur Rahmanp – Bangladesh	10	Present Public Library System in Bangladesh - A Birds Eye View	97
Mr. Partha Pratim Halder Prof. (Dr.) Madan Mohan Chel	11	Comparative Study of Teaching Effectiveness of In-Service Teacher with Pre-Service Teacher at Secondary Level	106
Mr. Santwan Chattopadhyay	12	Kolkata Purashree	113
Ms. Subhashree Bera Prof. Madan Mohan Chel	13	Among Women in Educational Institutions Towards Cybercrime	122
Mr. Aojy Kumar Manna Prof. (Dr.) Nimai Chand Maiti	14	Concept of Teacher as conceived by Dr. A. P. J. Abdul Kalam	130
Mrs. Nivedita Sarkar (Talukder) Prof. (Dr.) Asit Kumar Das	15	Effectiveness of Applying Integrated Strategies of Microteaching Skills in Teaching Science	137
B) IISRR- IJR - Authors Guidelines for Articles, Copyright Agreement, IISRR-IJR Membership,		Guidelines for Authors	150
		Copyright Agreement	153
		Application Form for IISRR-IJR Membership	154



IISRR - International Journal of Research

A Peer-Reviewed Half-Yearly Online International Journal for Research Activities & an Initiative of the IISRR

Online Version : ISSN 2394-885X; Print Version : ISSN 2394-6873

Volume: 6; Issue : II; August, 2020

Special Issue on Impact of Coronavirus Pandemic

Editorial

The *Indian Institute of Social Reform & Research* (www.iisrr.in) is publishing Volume-6; Issue-III; December- 2020, of the *IISRR-International Journal of Research*.

This Issue is dedicated to Commemorate the **Birth Bicentenary** of two great Leaders of **Indian Renaissance** - **Iswar Chandra Vidyasagar** and **Akshay Kumar Datta**. The contribution of these two leading lights of Indian Renaissance and myriad aspects of their roles in shaping better life for the people through education, training and socio-cultural reforms need to be deliberated by the academic community, to commemorate the Birth Bicentenary of these two great Icons.

In this connection it may be mentioned that the Indian Renaissance spanned almost the entire 19th century beginning its dent in late 18th century with **Raja Rammohan Roy** as the pioneer. Calcutta, being the capital of colonial rule, was its nerve centre but the ideas spread among intelligentsia all across the country like a storm to blow up obscurantist, superstitious, casteist, communal and exploitive social norms that were perpetuated by the vested interests. Following the footsteps of reformist and humanist ideas propounded by Raja Rammohan Roy and others, **Pandit Iswar Chandra Vidyasagar** was the tallest of all leaders to carry forward these ideas. In this noble mission, Vidyasagar was joined by **Akshay Kumar Datta** among many others in the intelligentsia. They were not only bound by friendship and camaraderie but also by roles that were complementary. Both the men shared unfathomable talent, giant personality, keen intellect and profound scholarship besides courage and conviction. They were extremely sensitive to human misery that originated in illiteracy, gender atrocities, terrible forms of socio-cultural prejudice and lack of human rights,

We would like to extend our thanks and gratitude to Prof. Tapas Kumar Chatterjee, Prof. Shorosimohan Dan, Prof. Dilip Mohanta and Dr. Bikash Ranjan Dev for their full cooperation with their scholastic articles and guidance.

We also extend our thanks to all other Authors of other Research Articles, Reviewers, Advisers, Members of the Editorial Board, Website designers, Printers and all other persons who have extended their direct and /or indirect cooperation for publishing this Issue of the *IISRR- IJR*, and the future issues too.

We would like to request all Educational Institutions, Institutes of Higher Learning, and Research Organizations for organizing different collaborative activities; including conducting Webinars, Virtual Trainings, Workshops, publication of papers, abstracts, proceedings of seminars, symposium, workshops, etc. organized by their esteemed institutions.

Cooperation of all concerned is earnestly solicited.

Abit Kumar Das
Editor-in-Chief



Indian Institute of Social Reform & Research

www.iisrr.in <http://www.iisrr.in/journal>

The Indian Institute of Social Reforms and Research
invites your participation in the following Virtual Programs, through Registration in the following Link

Inauguration of the

IJSRR - International Journal of Research; Volume- 6; Issue- III, Dec 2020

A Peer-Reviewed ISSN numbered Journal; Online Version: ISSN 2394-885X; Print Version: ISSN 2394-6873

& Webinar on

“Art of Writing Research Article”

Followed by

Commemoration of Birth Bicentenary of Great Leaders of Indian Renaissance



Iswar Chandra Vidyasagar



Akshay Kumar Dutta

Date & Time of the Webinar

Sunday, the 17th January, 2021 at 16.00 Hours (GMT + 5hours 30 minutes)

Registration Link

https://docs.google.com/forms/d/e/1FAIpQLScFFKLTGpZoFPXn_5df6DRIVkGGo3p9SBkjheFshnt9QdkSQ/viewform?usp=pp_url

Link of the Webinar will be communicated to the Registered participants through email/ WhatsApp

Programme Schedule

4.00 pm: Introduction: **Prof. Asit Kumar Das;** Director, IISRR and Editor-in-Chief, IISRR- International Journal of Research.
Former, Dean Students' Welfare, University of Kalyani

4.10 pm:

Welcome Address

Prof. Sudhakar C. Agarkar

Editor, IISRR- International
Journal of Research
& Former Professor, Homi
Bhabha Centre for Science
Education, TIFR, Mumbai;
Chairperson, CASTME (Asia)



4.20pm:

Inauguration of the Journal

Keynote Speaker

On- “Art of Writing Research Article”

Prof. Jack Holbrook

Professor, Tartu University, Estonia, UK
Former UNESCO Expert,
President, International Council of Associations for
Science Education (ICASE)



5.00pm: Peer-Review & Selection Process of Articles for Publication: **Dr. Sibsankar Jana;** Managing Editor, IISRR- IJR;
and Associate Professor, University of Kalyani

5.05pm: Collaboration with DCC: **Prof. (Dr.) Nripen Bhoumik;** Editor, IISRR-IJR. Former Professor and Head, Dept. of Neurology,
KPC Medical College & Hospital. President, DCC

5.15pm: Tribute to

Akshay Kumar Dutta – by

Prof. Tapas Kumar Chatterjee

Editor, IISRR- IISRR
& Former Registrar, North Bengal
University, Darjeeling



5.25pm: Tribute to

Iswar Chandra Vidyasagar – by

Prof. Shorosi Mohan Dan

Advisor, IISRR-IJR
Vice-Chancellor, Dakshina Bharat Hindi Prachar Sabha,
Former Vice-Chancellor, Bardwan University



5.35pm: Vote of Thanks: **Mr. Debasish Pal;** Vice-President, IISRR and D.F.O; Jadavpur University

Webinar Part-2: “Art of Writing Research Article- Hands on Activities”:

It will be organized after 10/ 15 days for Presentation of Papers, published in this issue of the IISRR-IJR, by the Authors. Authors interested, please send your **PPT (5-7 minutes)** to iisrr09@gmail.com by 25th January, 2021.

Thinking and Language

Dr. T V Gopal*

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.

*Co-Ordinator, Centre for Applied Research in Indic Traditions [CARIT] & Professor; Department of Computer Science and Engineering College of Engineering, Guindy Campus; Anna University; Chennai - 600 025, INDIA
(Mob): +91 9840121302; e-mail: gopal@annauniv.edu ; gopal.tadepalli@gmail.com ;
Home Page: <https://vidwan.inflibnet.ac.in/profile/57545> ; Face Book: <https://www.facebook.com/gopal.tadepalli>

¹Maya 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

²Joshua 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-Alphabet⁴](#) 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-Hebrew⁵](#). 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-1924⁶](#). 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 where 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 needs to be 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

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

⁹The 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

¹⁶Devapriya 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)

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

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

²⁰Sumitra 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 chakras. 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.

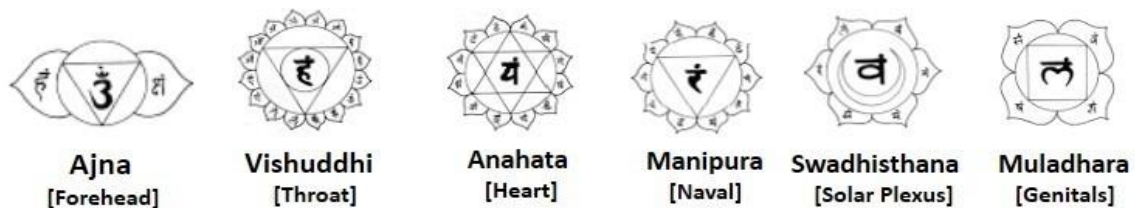


Figure 1: Kundalini Chakras and the Sanskrit Alphabet ([Arthur-Avalon-1974](#))²²

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

²¹Purnananda Swami (2017), Sat-Chakra-Nirupana [Translated by Sir John Woodroffe], New Age Books, India,

²²Arthur Avalon (1974), The Serpent Power: The Secrets of Tantric and Shaktic Yoga, Dover Publications, US,

²³Vasugupta (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-Körtvélyessy, 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 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

²⁴Hans-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.

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

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

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

²⁸Census 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 PaninianMaheshwara 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. and Körtvélyessy, 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.