



ISSN Print: 2664-8717
ISSN Online: 2664-8725
Impact Factor (RJIF): 8.36
IJRE 2025; 7(2): 655-658
www.englishjournal.net
Received: 02-08-2025
Accepted: 06-09-2025

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Role of language in the emergence of modern sciences, technologies and modern nations

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DOI: <https://www.doi.org/10.33545/26648717.2025.v7.i2j.530>

Abstract

This Paper deals with the role of Language in general and the role of English in particular in the emergence of Modern Sciences, Technologies and Modern Nations. It deals with such important concepts related to the role of language with respect to Philosophy of Language, Language and Communication, Language as a Reflection of Civilization, Language and Culture, Language and Development of Modern Sciences and Technology, Verbal Languages vis-à-vis Computer Languages, How Globalization and Neo-Consumerism Propelled English as World Language further Globalization as a Step Towards Emergence of Global Village and other such important issues.

Keywords: Role of language, role of english, modern sciences and technology

1. Introduction

It is said by eminent Chinese Philosopher, Confucius that “LANGUAGE IS THE VEHICLE OF THOUGHT” during (551-479BC). The role of language as a vehicle of thought enables human thinking to be as complex and varied as it is. With language one can describe the past or speculate about the future and so one can deliberate and plan in the light of one’s beliefs about how things stand.

Language serves as a Vehicle of Thought by enabling humanbeing to formulate, express, and communicate ideas, facilitating complex thinking and social interaction. It is more than just a tool for communication; it shapes how we perceive and understand the world, influencing our cognitive processes. (Source: Encyclopaedia and Wikipedia).

1.1. Philosophy of Language

Philosophy of Language is a branch of Philosophy that explores the nature of language, its relationship to thought and reality, and the ways in which language functions. It investigates concepts like meaning, reference, truth and the connection between language and the world. (Source: Encyclopaedia and Wikipedia).

A renowned Philosophy of Language Expert Ludwig Wittgenstein maintained that if one is able to conduct Linguistic Analysis of any word, idea, term, concept, principle or theory, men will be able to understand the meaning and essence of any concept, Theory and so on so forth. According to Wittgenstein “the meaning of a word is its use in the language”. This insight highlights that meaning is context-dependent and shaped by specific social principles, or form of life.

1.2. Language and Communication

In Communication, basically, there will be four major Components viz; Communicator, Recipient, Medium and Message. In Modern Era, medium may be of several kinds viz; Electronic Media, Print Media, Hoardings, Bill Boards, Flexies, Display Panels, etc. Similarly, message may be in the forms of Audio, Video and Textual forms. All these things are invariably linked up with Language, that is, Language itself is playing vital role in all kinds of communication in both Verbal(oral) and non-verbal (written) communication. Communication is an Art in which skill plays a major role using Language as a tool, that is presentation of message in several articulated forms. In modern era, even Communication has become a kind of Science in which both theory and skill components started playing a synchronizing role.

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If the communication of message, particularly with reference to language is not done in a proper way, message will undergo distortions at every stage of communication. More the number of Communication Stages or Levels, more the Chances of message distortion. Message distortion level varies from '0' percent level to '100' percent level, that is, a valid and rational message may emerge out as a kind of misnomer or a Rumour.

In addition to those two major kinds of communication, another mode of communication is taking place in 'SEMANTIC MODE', that is, communication in Signs and Symbols.

As already enunciated above, Language plays as a kind of vehicle of thought which will make humanbeings to study the external world enabling us to traverse both into the visible world and also to the extra-terrestrial bodies such as Moon, Mars and so on so forth. Men travel from the known world into the unknown world. Entire world and Universe are Knowable. All Unknown things are Things-in-Themselves. When those very unknown, uninvestigated things have become known and thoroughly investigated to the satisfaction of Scientists, those of very unknown things, ideas and concepts will become Things-for-us as enunciated by the renown Philosopher, Emmanuel Kant. All these will happen only with the help Language as the Vehicle of Thought.

1.3. Language as a Reflection of Civilization

Men, bounded by geological, topographical and several other factors such as natural, physical, social, economic and cultural factors, will live on different continents, sub-continents, islands, deserts and others. But, all of them will use language as the vehicle of thought, which in turn, will determine their way of living with respect to communication with one another, while entering into socio-economic-political and cultural relations and in the development of both material and aesthetic world.

Combination of both material and spiritual/aesthetic world will together lead to the emergence of Civilization of that particular region, state, country, continent and so on so forth. Thus, Civilization of a particular Region or Country or a Continent is a very broader term which will reflect not only that particular people's way of living in Physical, and material sense (production of artifacts) but also in terms of their production with respect to social relations and more significantly with respect to the production of several Arts, such as Prose, Poetry, Painting, Music, Dance, Drama, Sculpture and so on so forth. Thus, Historians realized different Civilizations, Ancient Harappan Civilization, Mohenjo daro civilization, Ancient Chinese Civilization, Ancient Greece Civilization and other prominent civilizations. All those civilizations are developed only by the men with thoughtful ideas, concepts and theories which in turn influenced and determined by their corresponding languages.

1.4. Language and Culture

Out of Civilization only, a Culture will come into being. Basically, culture comes as a way of living with respect to people's attitude towards Nature, Society and Life, more so, with respect to their ideas, concepts, perceptions, social relations, Morals, Ethics, performance of several rites, rituals, inter-personal relations, involvement in community development programs, production of cultural programs in

the form of Art and Theatre and others. All those will together reflect a particular region's culture.

Language and Culture will play a vital role in human relations, more so, with respect to communication with one another, in terms of Exchange of ideas, views, thoughts, development of several conceptions, perceptions and attitudes. It is a fact that ideas will become powerful, once they grip the minds of people. Even in Dream-world, ideas will be lingering to one's mind in the form of language only. Those very ideas when it comes to reality will take the form of several conceptions. Several conceptions will together constitute one Perception. Again, several perceptions will together constitute one Attitude - both positive and negative. To all these things, Language is the Basis. Language acts as the substratum, using which men develop several Physical, Natural and Social Sciences.

1.5. Language and Development of Modern Sciences and Technology

Modern Sciences emerged based on modern languages with enriched languages, varying in terms of lower levels of ideas, rudimentary concepts, incipient forms of Languages to rich ideas, views, thoughts which in turn, has led to the emergence of modern social sciences, physical sciences, natural sciences such as Operations Research, Mathematical Statistics, E-Business, Data Analytics, Astro-Physics, Cosmo-Physics, Polymer Chemistry, Oceanography, Nano-Physics, Plasma Physics to Futuristic Studies.

In modern era, Computer Science emerged as an all-comprehensive and all-guided branch of knowledge. Its applications are so varying and guiding that almost all branches of knowledge/domains are under their influence and control either directly or indirectly. In modern era, computer science emerged in a such a way that it is influencing and determining the development of each and every branch of knowledge and production of material and aesthetic values.

Today, almost all high quality of products, both artifacts and natural products are endowing with computerized built-in programs with respect to their product style. A product style is the resultant of both Form and Content. In Modern Era, product development is taking place only with the applications of Computer Science and Computer Technology which in turn, is an application of Computer Science. While designing a product, more so, its form, its usage, everything will be visualized in the form of language only.

Archimedes Laws of Floatation in Physics, Kekule's Aromatic Structure to Einstein's Theory of Relativity, everything has emerged as Concrete Theories only with the enactment of language based dreams, ideas, conceptions, perceptions into reality. All these have together led to the emergence modern views, principles, modern Laws and theories and in the long run contributed to the emergence of modern sciences and modern technologies.

1.6. Verbal Languages vis-à-vis Computer Languages

Till the end of the middle of Twentieth Century, Languages used to be either in the form of Verbal or in Non-Verbal forms. Unlike those languages, which could be either written or which could be audible to humanbeings, in modern era, Computer Languages came into being which are playing a vital role in the emergence modern sciences in general and modern computer and/or Cyber Technologies in particular.

Just as primitive Tribal Languages were negated more with the modern languages such as English, French, German, Russian, Italian and Spanish, so the Computer languages were negated by one after the other. For instance, BASIC has been considered as the Low-level Computer Language which, in turn, in due course of time has been negated by COBOL, PASCAL, FORTRAN, JAVA, Python and so on so forth. From COBOL to modern Python were considered as High-Level languages in Computer Science.

Computer Technologies particularly in respect of Audio-visual form are playing a vital role through modern mediums of Communication more so, through Television. In modern era, verbal languages in conjunction with computer languages have been blended with one another. First, audio-visual and textual messages are being transformed in electrical waves which in turn will be transmitted either through Air as the Medium of Communication or through Copper Cable or Optical Fibre or through Satellites using Space Research Technologies.

1.7. Language as the Primordial Factor for the Emergence of Nationalities

It is a fact that almost all the major countries emerged as Nations based on Language. For instance, in the erstwhile USSR, several Nationalities based on Language had come together and formed themselves into Soviet Union, which is nothing but a conglomeration of several Nationalities basically, depending upon their Languages. The same thing happened in India. India, emerged as Indian Union based on Languages only. Ultimately, Indian States have become a kind of Linguistic States only. Each and every State is unique in itself in respect of their spoken language. Unfortunately, some of the age-old Tribal people have got no written language, only verbal or oral mode of language and verbal mode of Communication and at times in Semantic mode of Communication only.

Every Idea, concept, percept, Theory will be developed based on first Theoretical conjecture. Afterwards, it will be transformed into a kind of Hypothesis and then assumes the form of Theory after putting abstract ideas and principles by subjecting them to observation, verification and Experimentation and/or application or practice depending upon the branch of Science, applicable methods and techniques.

Even, Theoretical conjecture will be done in the form of Language only. That is, man, even in his dream world also, his mind thinks in the form of some or the other language or a combination of one or two languages. For instance, Kekule, the Founder of Organic Chemistry, first he thought of the chemical and the chemical bond structure of Benzene in his dream world, as if his daughter were playing and exchanging with her fellow-girls in Round Robin mode in his native language only. Thus, Language is the soul and spirit of all kinds of human beings, right from an illiterate, semi-literate to the Intellectual communities. In fact, even a deaf and dumb person, will think in his own language and communicate in his known language, of course, through signs and symbols, which is known as Semantic mode of communication.

Not only with respect to the emergence of Nations and Nationalities but within the country also, in almost all the Countries, even Regions and sub-regions to Districts levels, Language is playing a vital role. Even those Tribes and Tribal People who were not having written scripts are

communicating in either oral or verbal or in Semantic Mode of communication, that is, communication in the form of Signs and Symbols.

Even in those days wherein there was no language in non-verbal written mode, yet, with respect to calculation of money, people used to communicate the imaginary value of money or currency in non-verbal symbolic mode in the form of signs and symbols by articulating their hands and fingers.

1.8. Globalization and Neo-Consumerism Propelled English as World Language

Modern Era is nothing but Globalization and Neo-Consumerism. People at large, and Indians in particular have emerged themselves into a kind of Global Community spreading and working across the Globe. One of the Boons, Indians got out of our people's interaction with British people for almost four centuries is their interaction, communication particularly, official or Government communication in English. Almost all Government Orders to Judicial Correspondence used to take place in English for centuries and decades together. Keeping in view the local requirements, now, several State Governments are communicating in Bi-Lingual mode, that is, in English and Local/Regional Language as well.

Thus, English emerged not only as a kind of Link Language in India but emerged as International Language, which is nothing but Global Language which is popular and widely spoken and known across the World or Globe. English is transforming the entire world into a kind of Global Village.

The entire official and Business Communication across the world is in English. Though some of the countries were having their own National languages such as Russian, French, German, Japanese, Spanish, yet, those very countries are also slowly and steadily sliding towards adapting themselves to English Language.

Even, highly accepted Computer Languages are also developed in English only which includes ASCII and BCD. Even the standard Assembly Language or Computer machine language was developed using standard codes for Standard Mathematical operations using Operands and others such as SUB for Subtracting, MUL for multiplication, ADD for Addition, DIV for Division operations and so on so far.

Once upon a time, it is said that 'KNOWLEDGE IS POWER', now, Information itself has become Power. In Modern Information Age, access to Information is possible through communication in English only. Processed Data is known as Information. Data processing based on the collection of raw data to application of computerized processes, methods and techniques, which includes Advanced Computer Programming are developing and running on the basis and strength of English at large.

1.9. Globalization as a Step Towards Emergence of Global Village

The ultimate aim of mankind more so with respect to the Globalization of Economy vis-à-vis Globalization of Language and Culture is to take the present day mankind towards the emergence of Global Village by breaking the barriers of Nationalities, Regions, Religions, Castes, Sub-castes to Local Linguistic feelings of the given regions.

In this connection, the present day trend indicates clearly that the entire world is moving towards the emergence of Global Village with one, single language, that is, English, as

a Connecting and Communicating Link Language. English itself is going to be the Heart and Spirit of the Future Generations in General and Future of Younger Generations in Particular.

Unified National markets ultimately lead to one Global Market with unbridled Competition wherein no restrictions for the free movement of all products and people from one Nation to another Nation and from one Region to another Region. National and/or Local Taxes and Customs will be gradually waned away with unified thinking, unified language, unified customs, traditions and unified attitudes towards essential necessities and also towards fulfilling other requirements which includes the construction of Superstructures across their places of work and regions.

No Connecting and All Embracing language means, no free exchange of ideas, views, conceptions, perceptions and no emergence of scientific principles, concepts and scientific theories. No Theory means, no practice, no application and no sound guidance for Action. Consequently there will not be any considerable development of Science and Technologies and hence no question of emergence of modern societies, modern infrastructure and Modern Civilization.

2. Conclusion

As Confucius noted, language is the fundamental "vehicle of thought," indispensable for complex cognition, social interaction, and traversing the known into the unknown. This foundational role extends to the development of all modern structures.

Language is the bedrock of Civilization and Culture, enabling the codification of ideas that drive socio-economic and political life. Specifically, the development of modern Sciences and Technologies-from Archimedes' laws to the latest in Astro-Physics-is directly dependent on the conceptual frameworks provided by language. This dependency has evolved to include Computer Languages, which, alongside verbal languages, form the basis of our digital world.

Ultimately, the forces of Globalization and Neo-Consumerism have propelled English to become the unrivaled Global Language. This linguistic unification is the primary engine driving the emergence of a Global Village, breaking down traditional barriers of nationality and region. English is the connecting link that facilitates the free exchange of ideas, information access, and global commerce, serving as the essential "heart and spirit" for future generations and ensuring the continued progress of science, technology, and a unified global market.

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