Empowering 'Linguistic Have-Nots': Empowering 'Linguistic Have-Nots' in the Interests of Faster Economic, Social and Cultural Progress and Development Across Cultures and Societies

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Abstract:- This paper seeks to further the aims and goals of our 'Globalization of science" movement at least indirectly, if not directly. This is sought to be achieved by empowering 'linguistic have-nots' so that their economic performance can be improved, and their social and cultural development can be aided. We begin this paper with an overview of the field of linguistics, milestones in its development, and its various branches and areas of specialization. We also recapitulate theories on the origin of language, (including our Epochal polygenesis approach) and summarize the essence of our papers on language dynamics. We also review the essentials and basic concepts of linguistic ethnography, first language and second language acquisition theories, and the various downstream uses and limitations of, linguistic ethnography, and the lexical development of languages. We also review linguistic acculturation and enculturation theories, and review how technology, particularly more recently developed technology, can be used to increase linguistic fluency and proficiency and bridge the gap between linguistics haves and linguistic have-nots. We also review various theories in the field of pedagogy, and discuss the approaches developed by different countries to enhance their students' linguistic skills. We also discuss the twin ideas of 'linguistic sweet spot and 'economic sweet spot'. The concepts in this paper, as such are expected to contribute greatly to greater economic performance, social and cultural development, and the emerging field of Anthropological economics.

I. INTRODUCTION

This paper seeks to further the aims and goals of our 'Globalization of science" movement at least indirectly, if not directly, by plotting a road map to achieve superior linguistic and academic performance in academically under-represented regions of the world, and places where absence of linguistic capabilities and poor linguistic performance are bottlenecks to economic progress, and social and cultural development. This is sought to be achieved by empowering what we call 'linguistic have-nots' so that their economic performance can be improved and augmented, and their social and cultural development can naturally be aided. We begin this paper with an overview of the field of linguistics, the various milestones in its development and progress, and its various branches and areas of specialization.

We also recapitulate theories on the origin of language including the early or outdated ones and the more contemporaneous ones, (including our Epochal polygenesis approach first proposed in the year 2016) and summarize the essence of our three papers on language dynamics which were published by us a couple of years ago. We also review the essentials and core concepts of linguistic ethnography, (including its flaws, shortcomings and weaknesses) first language and second language acquisition theories, (including their limitations) downstream uses, implications and the limitations of linguistic ethnography, and approaches towards the lexical development of different languages. One of the core and fundamental concepts and philosophies behind this paper, therefore is that the underlying theoretical framework behind understanding key issues pertaining to linguistic empowerment are very weak at present, and need to be further strengthened and improved. This needs to be formalized as a core subfield within the realm of applied linguistics, and we stress and underline this in bold capital letters.

We also review various current theories on linguistic acculturation and linguistic enculturation i.e., theories that are in popular currency, and review how technology, particularly more recently developed software-based technology, can be used to increase linguistic fluency and proficiency and bridge the gap between linguistics haves and linguistic have-nots. We also summarize the basic concepts in the field of pedagogy, review various theories in the field of pedagogy, and discuss the approaches developed by different countries to enhance their students' linguistic skills. We also briefly discuss the mistakes made by different countries, and the underlying flaws beneath different approaches. We had proposed the term 'linguistic have-nots' in an earlier paper on linguistics, and now take this concept to a much higher level. We also formulate and discuss the twin ideas of 'linguistic sweet spot and 'economic sweet spot'.

The concepts proposed and propounded in this paper, as such are expected to contribute greatly to greater economic performance, social and cultural development, and the emerging field of Anthropological economics in diverse contexts and cultures. They are also expected to further the practical interests and applications of linguistics, and move the field away from nerdist, dyed in the wool approaches to more fieldwork driven approaches, and approaches birthed in social, cultural and economic realities. Thus, this paper also stems from our realization of the fact that many sub-fields of linguistics are barely practical or adequate at present, and driven by real-world concerns and considerations, least of all in developing parts of the world. We also believe that all meaningful approaches must be syncretic, eclectic and inter-disciplinary, and we take our first baby steps in this direction here. We also expect that this would become a major field of study in the years and decades to come, with rich and variegated benefits to science and to society, all driven by real-world experiences and fieldwork, and also invite other linguists, sociologists, and anthropologists to contribute to this new and virgin (but possibly extremely important) field of study in a big way. Thus, this paper, it is expected will set the tone and pace for further research in the years and decades to come. As such, it also seeks to generate more awareness of the need to carry out more research in this direction, and represents an important awareness-generator. There are therefore, many contentious issues such as the choice of the medium of instruction which need to be tackled through empirical evidence. There would of course be a certain degree of non-objectivity (i.e., subjectivity) in all such exercises and endeavours, and one will need to learn to live with the fact that differences of opinion are indeed inevitable. The core and underlying principle behind our paper is therefore, that better linguistic competence is an essential pre-requisite for enhanced social, cultural and economic development and performance. However, this by itself is by no means a simple co-relation; some types of economic activity may demand superior linguistic skills, while some others may not.

In order to achieve and accomplish a better readership of this paper, readership of our own following papers is highly recommended. These papers are listed below in no particular order, and as such, it is not possible to represent the contents of these papers multiple times: in downstream papers, though synpopses are provided wherever necessary 1. Introducing Anthropological Economics: The quest for an Anthropological basis for Economic theory, growth models and policy development for wealth and human welfare maximization 2. Towards a comprehensive compendium of factors impacting language dynamics in post-globalized scenarios: Presenting principles, paradigms and frameworks for use in the emerging science of language dynamics. 3. Conceptualizing 'Cultural Frames of Reference' and 'Cross-cultural Frames of Reference' for various cultures and societies: Employing these concepts to bring about social and cultural change in different societies. 4. Attempting Diachronic extensions of symbiotic approaches to socio-cultural change: Developing techniques to assess socio-cultural changes over a period in time. 5. Postulating 'Ethnography of Enculturation': A high-level overview of various social science research techniques that can be used to study human enculturation processes. 6. Formulating 'Extended identity theory' for twenty-first century social sciences research: Modeling extended identity in relation to real-world observations and data. 7. Generic Identity Theory for the Twenty-first Century: Towards grand unified approaches in identity formation, identity transformation and identity dilution or neutralization. 8. Introducing Anthropological Pedagogy as a Core Component of Twenty-first Century Anthropology: The Role of Anthropological Pedagogy in the fulfillment of Anthropological and Sociological objectives. 9. On the origin and spread of languages: Propositioning Twenty-first century axioms on the evolution and spread of languages with concomitant views on language dynamics. 10. Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective. 11. Observations on language spread in multi-lingual societies: Lessons learnt from a study of Ancient and Modern India. 12. The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: An assessment of their compatibility with Symbiotic models of Socio-cultural change. Readers may also want to read our paper on the 'Sociology of science' which was published by us in the year 2021.. 1 2 3 4 5 6 7 8 9 10 11 12

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[1] Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective Published in ELK Asia Pacific Journal of Social Sciences Volume 3, Number 4 (July 2017 – September 2017)

[2] On the origin and spread of languages: Propositioning Twenty-first century axioms on the evolution and spread of languages with concomitant views on language dynamics Sujay Rao Mandavilli ELK Asia Pacific Journal of Social Science Volume 3, Number 1 (2016)

[3] Introducing Anthropological Pedagogy as a Core Component of Twenty-first Century Anthropology: The Role of Anthropological Pedagogy in the fulfilment of Anthropological and Sociological objectives Sujay Rao Mandavilli International Journal of Innovative Science and Research Technology (IJISRT) Volume 3, Issue 7, 2018 (Summary published in Indian Education and Research Journal Volume 4 No 7, 2008)

[4] Towards a comprehensive compendium of factors impacting language dynamics in post-globalized scenarios: Presenting principles, paradigms and frameworks for use in the emerging science of language dynamics Sujay Rao Mandavilli, ELK Asia Pacific journal of social sciences, 2012

[5] Generic Identity Theory for the Twenty-first Century: Towards grand unified approaches in identity formation, identity transformation and identity dilution or neutralization

II. WHAT IS LANGUAGE?

Before we attempt a definition of linguistics, we must attempt a definition of the term language. Although we had indeed attempted such definitions in our earlier papers, a recapitulation of these papers may be in order. A language is usually loosely and crudely defined as a mode of communication which is fairly intrinsic to all human societies and cultures all over the world irrespective and regardless of their social or intellectual development or advancement. It is also deeply entrenched into the human psyche, and a crucial and critical part of identity formation; it also serves as an important cultural marker as noted by Henry Bretton and others; this aspect is formally studied in the field of sociolinguistics. Language is the fundamental pillar upon which civilizational complexity rests, and most human achievement would not have been possible without language. A language is usually specific to a particular community and may be defined as a mode of communication with a set of rules which are formalized and crystallized over a period in time.

Sujay Rao Mandavilli Elk Asia Pacific Journal of Social Sciences Volume 5, Issue 3, 2019

[6] Postulating 'Ethnography of Enculturation': A high-level overview of various social science research techniques that can be used to study human enculturation processes Sujay Rao Mandavilli IJISRT July 2023

[7] Attempting Diachronic extensions of symbiotic approaches to socio-cultural change: Developing techniques to assess socio-cultural changes over a period in time Sujay Rao Mandavilli IJISRT, September 2023

[8] Conceptualizing 'Cultural Frames of Reference' and 'Crosscultural Frames of Reference' for various cultures and societies: Employing these concepts to bring about social and cultural change in different societies Sujay Rao Mandavilli IJISRT, September 2023

[9] Introducing Anthropological Pedagogy as a Core Component of Twenty-first Century Anthropology: The Role of Anthropological Pedagogy in the Fulfilment of Anthropological and Sociological Objectives, Sujay Rao Mandavilli, IJISRT, 2018

[10] The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: As assessment of their compatibility with Symbiotic models of Socio-cultural change ELK Asia Pacific Journal of Social Science Volume 4, Issue 2, 2018 Sujay Rao Mandavilli

[11] Observations on language spread in multi-lingual societies: Lessons learnt from a study of Ancient and Modern India Sujay Rao Mandavilli, ELK Asia Pacific journal of social sciences, 2015

[12] Formulating 'Extended identity theory' for twenty-first century social sciences research: Modeling extended identity in relation to real-world observations and data Sujay Rao Mandavilli IJISRT, July 2023

These rules are referred to as syntax and grammar, and grammar and grammatical rules may either be simple or complex depending on the language in question; this aspect may also set apart sophisticated languages from less sophisticated ones. Languages may also be spoken or written or both, and the study of a language's script may be carried out distinctly and independently from the study of the language itself. Some more advanced languages have a richer and more complex and nuanced vocabulary than less evolved ones; as such, no two languages are at the same state of evolution at a given point in time. Language may also comprise of less formal variants, and these are known as dialects; examples of dialects include African American vernacular English or AAVE. (Nichrer 2000) There are also pidgins and creoles, and these constitute specialized forms of language. The science of linguistics also sometimes deals with registers and speech communities. Languages are also uniquely human, and are unique to the species Homo Sapiens (though Neanderthal man may also have possessed some linguistic ability) and are different from the call systems used by primates, and other non-linguistic systems of sign language or logographic writing. [13]

Many different definitions have been attempted for the term language. In the words of the eminent linguist and intellectual Noam Chomsky, "A language is a either a finite or infinite set of sentences, each finite in length and constructed out of a finite set of elements." In the words of another eminent linguist Edward Sapir, who also played a part in the development of the Sapir-Whorf hypothesis, a language, may be defined as "A purely human and non-instinctive method of communicating ideas, emotions and desires by the means and use of voluntarily produced symbols." (Sapir 1921) (Finegan 1989) According to the American linguists Bernard Bloch and George Leonard Trager who principally provided a definition of spoken language, "A language may be defined as a system of arbitrary vocal symbols by means of which a social group collaborates, co-operates, and achieves a degree of social and cultural cohesion." Likewise, the American linguist Leonard Bloomfield and the linguist Robert Henry Robins also primarily provided a definition for spoken language. (Bloomfield 1933) (Bloch 1942) (Robins 1985)

According to Henry Sweet, who was an English phonetician and language scholar, "Language refers to the expression of ideas by means of speech-sounds that are then combined into words. Words are combined into sentences, this combination answering to that of ideas into thoughts." According to the linguist Robert Henry Robbins "Language, a system of conventional spoken, manual (signed), or written symbols by means of which human beings, as members of a social group and participants in its culture, express themselves." According to the American linguist Ronald Wayne Langacker, "A language is a device to establish sound-

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[13] The language instinct: The new science of language and mind, Steven Pinker, Penguin books, 1999

meaning co-relations, pairing meanings with signals in order to enable people to exchange ideas with one another through patterned and observable sequences of sound" (Langacker 1967) According to the linguist Robert A. Hall, "Language may be defined as an institution through which humans communicate and interact with each other by means of habitually and oral auditory arbitrary symbols." (Hall 1968). This definition is essentially a sociological one, and other linguists such as the British linguist John Lyons and the linguist Desmond C. Derbyshire also provided sociological definitions. (Lyons 1970) (Derbyshire 1967)[14]

Languages have been known to exist since the dawn of human history, (History began with the birth of writing) even though they are in all probability likely to be much, much older. The researchers Leslie C. Alello and R I M Dunbar believe that spoken languages may be upto seventy five thousand years old, and such studies are often correlated with genetic studies and anthropometry including a study of brain size. There are probably between five to seven thousand languages in the world today depending on the source of data, including non-independent or less developed languages, and oral or non-literary languages. Many of these languages may eventually disappear, especially due to the advent of modern communication systems and technology. Language is usually and commonly acquired by humans early in childhood by imitation, and through what is known as linguistic enculturation (or in some cases, linguistic acculturation), followed by formal initiation through different models of education involving the acquisition of linguistic and non-linguistic skills. This by itself is a highly complex process indeed, and can span several years in most cases. Individuals who are not subjected to such complex processes of linguistic enculturation (or acculturation) may possess inferior linguistic skills. (Hill and Mannheim 1992) Theories to account for the origin and invention of language have included theories such as the bow-wow theory and the pooh-pooh theory. Some geneticists also link language to the evolution of the FOXP2 gene.

We have already discussed these older theories at a great level of detail, and as such consider them to be infantile and puerile. We had also proposed a replacement theory known as the 'Epochal polygenesis approach', and this was published by us in a paper in 2016. We would also like to categorize languages into three fundamental types: This would be an interesting and potentially useful categorization, and one fraught with many downstream implications and applications. The first category of languages includes languages that spread (and even develop and evolve in a historical timespace) primarily orally. This includes modern less-developed languages and most languages of yore and the ancient past. The second category of languages include languages which spread and evolve mostly formally, and through the medium

of writing, while the third group of languages include languages which spread bimodally. This would, in our view, be an interesting and a novel mechanism of classifying languages, but one with many potential uses. These three types of evolution would naturally affect the fundamental structure of language, too. (Paulson 2005) [15] [16] [17] [18] [19]

III. OVERVIEW OF LINGUISTICS

The term 'Linguistics' originates from the Latin term 'lingua' meaning language, and 'istics', meaning science. It is thus the science of language. Linguistics refers to the scientific study of different aspects and facets of human language and its structure, including the formal study of such as grammar, phonetics, phonology, morphology, etymology, semantics, morphophonetic systems, and syntax, either of any one particular language or group of languages currently being studied, or of language in general. This is represented by the field of structural linguistics as developed by Leonard Bloomfield and others. It may also involve a study of how properties of language evolve over a period in time, and may sometimes include the use of language in relation to society or culture. Pragmatics, discourse analysis, and the ethnography of communication are also often studied. There are many different branches of linguistics, and some of these include sociolinguistics, linguistic pedagogy, dialectology, computational linguistics, psycholinguistics, anthropological linguistics, ethnolinguistics, structural linguistics, and comparative linguistics.

Linguistics also overlaps greatly with anthropology (particularly linguistic anthropology) and sociology. Language acquisition is also often related to human development phases and the human lifecycle particularly in the formative years of psychological development. The science of language also includes fields such as descriptive linguistics, comparative linguistics, psycholinguistics and historical linguistics. Linguistics also includes applied linguistics which refers to the practical uses and applications of the field of linguistics, particularly its use in solving real-world problems; it is into this branch and field of linguistics that all our endeavours fall. However, most interpretations of linguistics have been fundamentally Eurocentric in nature, and to a much smaller

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[14] Crystal, David *(1997). The Cambridge Encyclopedia of Language. Cambridge: Cambridge University Press.*

[15] *Isac, Daniela; Charles Reiss (2013). I-language: An Introduction to Linguistics as Cognitive Science (2nd ed.). Oxford University Press. ISBN 978-0-19-953420-3.*

[16] Bloomfield, Leonard (1983) [1914]. *An Introduction to the Study of Language* (New ed.). Amsterdam: John Benjamins Publishing.

[17] Cultural Anthropology, Barbara Miller, Prentice hall India, 2011

[18] Human development, Ninth edition, Diane E Papalia, Sally Wendikos, Duskin Feldman, McGraw Hill Education India private limited

[19] Cultural Anthropology, Appreciating cultural diversity, McGraw Hill International edition, Conrad Phillip Kottak

extent, English language -centric. We seek to rectify and remediate this fundamental flaw, but the journey may be long and arduous, and many other scholars from all over the world must contribute meaningfully, and fundamentally in order to make this happen. [20] [21] [22] [23] [24]

IV.   HISTORY OF LINGUISTICS

Even though the study of language has been recorded in many ancient societies, modern linguistics began only around the late eighteenth century based on the foundations laid by linguists in the Middle ages, when the German scholars and linguists Johann Gottfried Herder and Johann Christoph Adelung published the earliest works in the field. Earlier, Antonio de Nebrija, wrote the first grammar of a modern European language, and also speculated on the interrelationships between languages. Some of his ideas were seconded and extended by Francisco Sanchez de las Brozas, who also first proposed the idea of language universals. The Swiss linguist Ferdinand de Saussure is also considered to be one of the founding fathers of the field of linguistics. Some of the earliest endeavours ever carried out in the field of linguistics were a study the inter-relationships between European, Persian and Indian languages.

Thus, historical linguistics and comparative linguistic gained ground, and Sir William Jones wrote on the interrelationship between Sanskrit and Greek in detail. Andreas Jager and others speculated on the origin of the Indo-European homeland, either correctly or fallaciously, and Portuguese travelers such as Filippo Sassetti had earlier commented on the similarities between Portuguese and Indian languages. It was only much later that Marija Gimbutas formulated her famous kurgan hypothesis. The Scottish judge Lord Monboddo also proposed a cladistic tree for the evolution of all human languages, and studied similarities between languages and their evolution patterns. In the early nineteenth century, the Dutch linguist Rasmus Rask developed principles to identify inter-relationships between languages. There were soon many schools of thought in linguistics, and this included the Prague school, British structuralism, American structuralism etc. The idea of linguistic fieldwork came into existence when the French diacletologist Edmond Edmont carried out extensive fieldwork on languages.

Linguistics also eventually came of age in the USA, and several prominent American linguists such as Franz Boas, Edward Sapir and Benjamin Lee Whorf even studied native American languages, and then contributed immensely to the science of linguistics in general. However, there was some form of ethnocentrism involved in early linguistic studies, and most early linguists and anthropologists considered European languages to be developed, and other languages to be less evolved and less developed. Some languages were even deemed savage and barbaric, and unworthy of scholarly consideration. Other prominent linguists included Prussian linguists Wilhelm von Humboldt who studied the philosophy of language and ethnolinguistics, the German philologists Friedrich Schiegel and the German linguist Karl Bruggmann who also contributed to Indo-European linguistics.

More recent researchers and scholars of language have included the Canadian psycholinguist Steven Pinker and the American intellectual, linguist and thinker Noam Chomsky (associated with the Chomskyan revolution related to the concept of generative grammar) who have contributed greatly to the field of linguists in contemporary times. More recent research has centered around language, language acquisition and the brain, including cognitive linguistics, and this is a fascinating field of study indeed with great potential. One is also reminded of the linguistic wars which took place in the 1960's and 1970's. These refer to controversies and differences of opinion between Noam Chomsky, George Lakoff and others. The history of the field of linguistics is however too vast to summarize here, and there is plenty of excellent material available on this subject which should make for good reading. [25] [26] [27]

Empowering linguistic have-nots

This paper explores and examines ways and means by which we believe 'linguistic have-nots' can be linguistically empowered, and can be made to contribute economically, socially and culturally in a much bigger way. This approach would also mark a radical departure from the past, as this study is proposed to be carried out from a multicultural and an inter-cultural perspective, with a particular emphasis on the linguistically disadvantaged and linguistically disempowered, and linguistic minorities as well, regardless of geography who speak a marginalized or a non-dominant language. This is why this paper is an essential and an integral part of our globalization of science movement; it bolsters economic productivity directly, and scientific and scholarly output indirectly. This paper is inexorably tied, and tightly bound

[20] Fromkin, V., & Rodman, R. (1978). An introduction to language (2nd ed.). New York: Holt, Rinehart and Winston.

[21] An introduction to language and linguistics, Ralph W.Fasold, and Jeff Connor Linton (editors), Cambridge University press, 2006

[22] Anthropology, twelfth edition, Carol R. Ember, Melvin Ember, Peter N. Peregrine, Pearson, 2008

[23] Linguistic imperialism, Robert Phillipson, Indian edition, Oxford University press

[24] A course in modern linguistics, Charles F. Hockett, Surjeet publications, copyright 1958, the Macmillan company

[25] Akmajian, Adrian; Demers, Richard; Farmer, Ann; Harnish, Robert (2010). *Linguistics: An Introduction to Language and Communication*. Cambridge, MA: The MIT Press

[26] Raimo Anttila, *Historical and Comparative Linguistics* (2nd ed.) (John Benjamins, 1989)

[27] James Milroy, *Linguistic Variation and Change* (Blackwell, 1992)

with the principles and concepts of our earlier paper on linguistics, all of which are as such inseparable.

> *Stalinist language models should be discarded*

In the former and erstwhile USSR over one hundred major and minor languages were spoken and used. The monolithic USSR approach to language and culture and the imposition of centralized language models may have angered peoples in republics such as Latvia, Lithuania, Estonia, Ukraine and Kazakhstan, and may have even played a part in the eventual breakup of the USSR in 1991. However, to be fair and honest, some rights were bestowed upon various ethnic and linguistic groups; Everyone had the right to use his or her own language, either privately or publicly, and correspond with public officials in their native languages as well. Russian was the main official and administrative language before the Bolshevik revolution, or October revolution of 1917, and continued to remain the main official and administrative language after the birth of the USSR. In spite of the fact that some linguistic freedom and autonomy was given, other minor languages were actively discouraged at times, and in a few minor cases, even forbidden. In the early years of the USSR, however, Vladimir Lenin was opposed to language imposition and linguistic imperialism, and sought the equality of all languages to be reinforced and established; discrimination on the basis of language was even made illegal under the Soviet constitution. Writing systems were also developed for languages that did not have writing systems. Thus, language policies may not always be necessarily coincident with political structure. However, multilingualism did not always work in praxis; Russian slowly gained the upper hand, and was used as the principal common language throughout the USSR. It was also seen as a symbol of communism and Soviet ideology.

We must observe and note here that the study of language dynamics will have limited utility in an oversized and centralized government structure. The idea of the invincibility of the Russian language was reemphasized under Josef Stalin and Brezhnev as well, even though the idea of voluntary acceptance was also noted. All such policies must be studied in the context of language ideologies which often play a crucial part in the formulation of language policy. (Silverstein 1979) China also imposed state monolingualism in spite of its largely multilingual population. Putonghua which literally means common speech, was the chosen official dialect in China just as Khadi Bholi was the chosen administrative Hindi dialect in India, and gained an elevated status in due course both in governmental and non-governmental domains. Putonghua itself was not fully standardized and had many regional varieties. Many other regional dialects were relegated to the background, and some were even confined exclusively to private domains. Many regional dialects were eventually vaporized, and the younger generation was largely seen to be more tolerant of a monolingual language policy. This did not mean that China

was, or had become monolingual in the real-world; as a matter of fact, it did not.[28] (Moosmuller 1995)

India's Rajbhasha policy is infinitely more interesting. In 1906, long before he had returned to India permanently from South Africa, Mohandas Karamchand Gandhi or Mahatma Gandhi wrote in his book Hind Swaraj or Home Rule, "A universal language for India should be Hindi, with the option of writing it in Persian or Nagari characters. In order that the Hindus and the Mohammedans may have closer relations, it is necessary to know both the characters. And, if we can do this, we can drive the English language out of the field in a short time." Mahatma Gandhi himself was a Gujarati speaker or a non native Hindi speaker, yet this statement betrays some ignorance of language dynamics (which may not have been formalized at that time), or the linguistic diversity of, and the linguistic preferences of the people of the sub-continent. Needless to say, Gandhi was not a linguist; he was a politician and a freedom fighter.

Globalization later changed the linguistic equation greatly but Mahatma Gandhi may not naturally have foreseen it, as would not have language planners in early independent India. Mahatma Gandhi later became very powerful in the Congress, and his ideas were sometimes never challenged. Mahatma Gandhi also equated English with mental slavery, and distorting education in favour of the privileged few. However, the seeds for linguistic provinces were sown in 1917 itself, the Indian National Congress decided to constitute a separate Andhra Congress Provincial committee. Nearly four decades later, Potti Sriramulu fasted to death for a separate state for Telugu speaking people. When his demands were met, many other linguistic groups began demanding their own states or provinces, and the idea of language-based or linguistic states was set into motion.

In later years, Mahatma Gandhi supported Hindustani which was an admixture between Hindi and Urdu, and the use of two different scripts for Hindus and Muslims. This however made some Hindu nationalists furious, as they saw it as blatant appeasement to Muslims. Partition later forced Hindusthani out of the equation, and a consensus was established in favour of Hindi. The alleged and supposed imposition of Hindi led to protests in many states, particularly Tamilnadu who saw it as Hindi imperialism. However, many people in the Hindi speaking states saw the continued use of English as English imperialism. They saw the continued use of English as a barrier to original thinking, and cited the case of Germany and Japan which promoted their own language; while this may be true, they failed to grasp the multilingual nature of the Indian state. The imposition of monolingual policies in multilingual states had led to problems in Pakistan and Sri Lanka; Canada and Switzerland contrarily and wisely promoted multilingualism.

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28 E. Glyn Lewis. Multilingualism in the Soviet Union: Aspects of Language Policy and Its Implementation. The Hague: Mouton Publishers, 1971.

India eventually adopted a three-language formula which sought to promote the best of both worlds. While Hindi or Hinglish did indeed spread widely in most parts of India primarily as a spoken language, English still reigns supreme in many fields. The New education policy of India proposed in 2020, seeks to actively promote education in the mother tongue. Read our three papers on language dynamics for further clarity. We observed that the use of language was largely role-based and context-based. For example, English is widely used in higher education, business, trade and commerce (even in countries such as Singapore), but hardly at all in social, cultural and religious contexts. Stalinist language policies also create discrimination between speakers of different language players, and do not create or promote a level playing field. Thus, abandoning Stalinist language models would be the first step to linguistic empowerment. However, promoting education in an alien language may sometimes trigger linguistic disempowerment as well. We had also noted in our previous papers that India was truly multilingual in a way that China was not; we had also proposed the characteristics and attributes of truly multilingual states, and methods to distinguish truly multilingual states from less multilingual states. [29]

➤ *No imposition; local expertise is always a must*

There must however, be no imposition of language at any cost. Language imposition has been carried out multiple times in the past. For example, the German government ordered that the German language should be taught in the French districts of Alsace and Lorraine after their annexation of these two districts following the Franco-Prussian war. This had significant political and cultural implications for both Germany and France, and alienated the local people from the German government. These policies also altered the student's linguistic ability for their detriment. In the early years of India's independence, there were allegations of Hindi imposition, though checks and balances were indeed available. In subsequent years, Hindi primarily spread as a spoken language (Urdu likewise, entrenched itself in Pakistan), though the supremacy of English in multiple domains apparently remains unchallenged. We had discussed pull factors and push factors as well in language dynamics, and as such our papers on language dynamics would be worth reading. As a part of this observation, we would also like to state that local expertise must be actively sought out in any linguistic analysis wherever this is not done, cardinal errors of judgment will invariably and inevitably result.

➤ *Study linguistic empowerment along with the science of language dynamics*

We began our work on language dynamics with the publication of our paper "Observations on language spread in multi-lingual societies: Lessons learnt from a study of Ancient and Modern India" in 2015. In this papers, which drew some inspiration from our earlier work on the Aryan problem, the Indo-European question, and our earlier study of the transformation of Harappan India to post-Harappan India, we studied the linguistic transformation, albeit very, very briefly from pre-Harappan cultures to the Mature Harappan phase, and then from Harappan India to post-Harappan India. We also reviewed plausible theories for the emergence of Sanskrit and the various Prakrits. We also reviewed the linguistic situation in India before and after the Buddhist periods, and the emergence of Persian and the Persianization of Indian languages. We wound up our study with our thoughts on the introduction and spread of English, and a study of the patterns of language dynamics in contemporary India.

This paper paved the way for our more detailed analysis of language dynamics which was tackled in two subsequent papers, and we subsequently developed the 'Theory of linguistic Osmosis'. Many different factors would determine the spread of language and we had discussed and analyzed them threadbare in our three papers on language dynamics. For example, the proficiency of people in English or any other dominant language would itself depend on many factors. These would also include Braj Kachru's model of the different uses of English around the world. This model is comprised of three concentric circles, which are the inner circle, the outer circle and the expanding circle, respectively. These would also determine communicative competence and linguistic naturalness. For a much more detailed and a meaningful discussion on language dynamics, refer to our paper "Towards a comprehensive compendium of factors impacting language dynamics in post-globalized scenarios: Presenting principles, paradigms and frameworks for use in the emerging science of language dynamics" which was published by us in the year 2020. [30] [31] [32] [33] [34] [35]

[29] Jolad, Dr. Shivkumar, and Aayush Agarwal. "Mapping India's Language and Mother Tongue Diversity and its Exclusion in the Indian Census." *ScoArXiv Papers*

[30] Syncretism and Acculturations in Ancient India: A New Nine Phase Acculturation Model explaining the process of transfer of power from the Harappans to the IndoAryans Part One Sujay Rao Mandavilli, ICFAI University press, 2009

[31] Syncretism and Acculturation in Ancient India: A new Nine Phase Acculturation Model explaining the process of transfer of power from the Harappans to the IndoAryans Part Two Sujay Rao Mandavill

[32] The Demise of the Dravidian, Vedic and Paramunda Indus Hypotheses: A brief explanation as to why these three Hypotheses are no longer tenable, Sujay Rao Mandavilli, 2013

[33] The reconfirmation and reinforcement of the Indus script thesis: A logical assessment and inquiry as to the elusive and enigmatic nature of this script Sujay Rao Mandavilli Published in the ICFAI Journal of History and Culture, January 2011

[34] Why the Indus Script WAS true writing and why a larger corpus of texts existed in the Indus Valley civilization: Simple proof addressed to mainstream researchers & archaeologists Published in the International Journal of Philosophy and Social Sciences (IJPSS), Vol II, No 2, 2012 Sujay Rao Mandavill

As a part of the theory of linguistic osmosis, we had proposed the concept of linguistic unit or entity which can be at various levels, the lowermost level being the linguistic community. The next highest level is that of a linguistic block which can also be referred to as a linguistic zone or a linguistic area. A linguistic block comprises various linguistic communities with common cultural and linguistic traits. Therefore, for the purpose of a meaningful analysis, a linguistic block and a linguistic unit must be chosen carefully. The dynamics of language spread outside the linguistic community or the linguistic block can also have a bearing on the language dynamics within the linguistic block or community due to the process of linguistic osmosis. Our approach follows an inside out analysis first, followed by an outside in analysis. This is repeated multiple times, and the resultant study is largely diachronic and temporal in nature. This approach also follows the premise that influences are bi-directional, multi-directional and inter-cultural. We had also presented other concepts such as porosity analysis and latency time. This approach also resembles the symbiotic approach to socio-cultural changes somewhat, though there are many differences between the two approaches. For further details, read the aforesaid paper.

While English is a relatively young language, it has spread to many parts of the world in recent times. It is spread to such a wide extent, that those who possess a proficiency or English are considered linguistic haves, and those who are ignorant or illiterate in the language are called linguistic have-nots. We do not wish that that be case, but unfortunately, that is the way it is. Demand for the English language continues to be high in countries such as India, Kenya, Tanzania (where it is widely used along with Swahili) and Ghana, and its popularity in these countries has overwhelmed anti-colonial sentiment. It has also become extremely popular in Scandinavian countries, Denmark and the Netherlands even though these nations may not have had direct ties with any English speaking countries. (Fishman 1977) One of two nations cannot hope to diminish the power of the English language at a global level by diminishing is use in the local context. Such is the power of English.

This may either be a fortunate and beneficial phenomenon, or an unfortunate phenomenon, but is based on the premise that the big fish eat the smaller fish, and what is already big, keeps getting even bigger and bigger, and what is tiny and weeny vanishes into oblivion. This all depends on the way one choose to look at it; however, we had predicted in an earlier paper, that the use of English will in all probability level off by 2050, and that the use of other languages such as Spanish, Chinese Mandarin, Arabic, Hindi and Bengali would rise in proportion. However, English may be the world's most widely used lingua franca for a long time to come. (We cannot however predict all factors impacting language dynamics) we must however bear in mind the fact that the power and legacy of English (and to a much, much lesser extent, French) remains strong worldwide, and the key functions played by it in different contexts and situations may be difficult to dislodge. Thus, the efforts of organizations like the Inter-African bureau of languages to promote indigenous African languages at the expense of English and French were not very successful, as they met with strong resistance and vested interests. (Kalema 1980) [36] [37]

For example, after Brexit, some French speakers naively assumed that English would be relegated to the background in the European Union, and French would triumph as the sole official working language of the European Union. Alas, this did not come to pass as most Europeans were more comfortable with English. However, other languages also continue to be used as the European Union does not discriminate on the basis of language. In the case of Quebec, the French language has been steadily losing ground to English though the number of allophones has also been increasing. Canada has introduced the Charter of the French language also known as Bill 101 to protect the French language, though their efforts have not been entirely successful. In India French today is as dead as a dodo, notwithstanding the fact that there were five French colonies in India, namely Pondicherry, Karaikal, Mahe, Yanam and Chandranagore. India does not participate in Francophonie meetings and conferences.

French has gone into steep and terminal decline in Vietnam as well, where it is only mow used by the older generations. Indonesia virtually no longer uses Dutch, and Portuguese is hardly ever used in Oman anymore. English is so widely entrenched in the Middle East, that even the dreaded ISIS terrorist group is said to have offered some English instruction to its cadres. Similarly, French is in steep decline in Lebanon where English is seen as being more cool. All this has got a great deal to do with language dynamics, as the French only colonized geographical islands and not large geographical masses like the British did. Hence, their influence is on the wane, as mapped to the principles of our papers on language dynamics. French is not commonly used in science and technology, and French is considered to be a more complex and impractical language than English. This may also be another factor or attribute leading to a wane in its popularity.

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[35] Alphabetic scripts and other forms of literacy in PostHarappan India: A logical assessment and inquiry as to the origin and extent of literacy in Post-Harappan India Sujay Rao Mandavilli, Intenrational journal of philosophy and social sciences, 10/2012

[36] Linguistics, An introduction, Andrew Radford, Martin Atkinson, David Britain, Harold Clahsen, Andrew Spencer, Cambridge University Press, 1999

[37] English as an international language in Asia: Implications for language education, Andy Kirkpatrick, Springer

French is in decline in many parts of Francophonie Africa. This fact is compounded by the fact that there is a growing anti-French sentiment in the region due to France's interference in the affairs of the region. The decline of the French language in the region, and the influence of France in the region in general was admitted to by the French President Emmanuel Macron as well more recently. French has also remained an obstacle to development in Africa as most people do not speak or understand it. Hence, the French language barely aids in linguistic empowerment of most people in the region, and this must be studied in conjunction with language dynamics. French has instead been rammed down the throats of many Africans only because of France's pervading legacy, and also because there are multiple languages in each African nation, many of which are ill-suited to becoming languages of teaching and instruction. In the case of Senegal, the official language is French. The various national languages are Wolof, Mandinka, Pulaar, Serer etc, but Wolof which is a part of the western branch of the Niger Congo branch of languages, is the most widely used. In recent years, French has ceded ground to Wolof, but linguistic rivalry keeps French intact and alive. However, in Senegal and parts of West Africa, French is referred to by the Islamic clergy as being 'nasaran' or ungodly. The younger generation of Senegalese is interested in English too. In Ivory Coast, a pidgin named Nouichi has taken off in a big way, and is emerging as a symbol of Ivorian identity.

Congo is a more complex case; there are a large number of minor languages spoken there, and French remains deeply entrenched. Rwanda has abandoned French more or less completely due to that countries anger with France's role in the Rwandan genocide. The switch to English and the local language Kinyarwanda appears to have benefitted Rwanda greatly. Burkina Faso has been watching Rwanda's experiment with interest. Mali more recently abandoned French as its official language, and declared that its indigenous languages would be its official languages. English has also been rise in Angola and Mozambique where Portuguese is the official language. Algeria, Morocco and Tunisia may also slowly move away from French to English, though in these three nations, Arabic remains the language of choice due to their Islamic cultural heritage.

There is a strong anti-French sentiment in Niger too, and it remains to be seen how this will impact language dynamics in the region, and override attempts by organizations such as the "Organization internationale de la francophonie" to promote French in the region. The only people most people fail to acknowledge the linguistic shift taking place in Africa is because of the slow pace at which it is happening. There is also no well-orchestrated and well-coordinated plan or program to move the region away from French. All this also does not automatically imply that English education is the best and will elevate linguistic have-nots. There are a wide set of factors that need to be borne in mind, and the issue is not as simple as meets the eye. Languages can indeed be issued with

death certificates too. Some linguists like Ronald Wardhaugh feel that many minor languages like Welsh and Gaelic may not survive. As a first step in an inevitable protracted process, many minor languages have already ceased to be languages of instruction.[38]

V. USE LINGUISTIC ETHNOGRAPHY

In a previous paper, we had spoken about the need to tightly integrate social science research techniques with linguistic studies. We will now take this a step further, and examine the current state of the field of linguistic ethnography and its potential limitations as well. Much can be accomplished if the participant observation method (i.e., naturalistic observation) and other time-tested techniques in ethnography are used in the field of linguistics along with other social science research techniques such as interviews, questionnaires and focus group discussion. We do admit that the field of linguistic ethnography does exist and is growing by leaps and bounds, and by the day. For example Penelope Eckert carried out research on language change (Eckert 2000), and Stephen Levinson prepared a cultural model of cognition. (Levinson 1996) However, the potential of this virgin field (which is more of less in its infancy) remains greatly unrealized, as much more can be done to apply such techniques in the service of diverse societies. The field is currently used to study and analyze how linguistic, social, cultural, and communicative processes operate in diverse settings. It can also be used to analyze and assess the social and cultural complexities of language use and its relation to society. (Tusting and Maybin 2007) Researchers such as the Belgian linguist and anthropologist Jan Blommaert, the British linguist Marilyn Martin-Jones, linguistic ethnographer Angela Creese, British linguist Ben Rampton and Sociologist Celia Roberts, have already contributed to this field, building on the earlier foundational work carried out by scholars such as the Professor Emeritus of Anthropology Frederick Erickson, the American linguist John Gumperz and the linguist Dell Hymes,

However, the field has not fully matured into a cogent discipline, and come of age; there is still a lot of work that can be done. It must also be better put to use to serve society and education given the fact that linguistics and pedagogy are tightly interlinked and interrelated. There are also many other fields of linguistics, pedagogy and education where the emerging field of linguistic ethnography deserves to be applied. As such no rigid boundaries can and must be defined. (Rampton 2004) From our perspective, this approach can be put to productive use in order to analyze linguistic preferences of students belonging to various cultures, socio-economic backgrounds, age groups, and those who speak a non-dominant language. It can also be used to assess first and

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[38] Calvet, Maurice jean; Dumont, Pierre (1969). "Le français au Sénégal : interférences du wolof dans le français des élèves sénégalais" [The French of Senegal: Wolof interference in the French of Senegalese students]. *Collection IDERIC*

second language learning preferences, abilities and patterns, so that pedagogical techniques can be suitably devised and employed. This could include aspects as far apart as syllabus formulation and teacher training techniques. In case of the latter, some work has already been carried out by Widdowson and others.

A suitable cross-section of students must be meaningfully analyzed (and a sample of the requisite size chosen) so that patterns can be drawn, and lessons gleaned. This would be a necessary input into policy formulation. Ben Rampton, Janet Maybin and Celia Roberts however appear to have carried out some work in this regard, and appear to have studied this issue from a non-ethnocentric and multi-cultural perspective. In our view, inductive approaches must be applied, even if the practical implementations of such approaches take time. There is so much work to be done that the Author, or any one individual for that matter, cannot handle it single-handedly. Thus, cross-cultural approaches and inter-disciplinary approaches must be employed, along with the use of grounded theory, and the sociological ninety-ten rule for hypothesis formulation. There may be various types of linguistic 'empowerment' or linguistic have-nots even in the context of a single homogenous society. For example, it the USA, certain individuals may speak basilects or non-standard varieties of English, and may possess a smaller lexicon. Of course, problems and patterns have to be identified first before solutions can be drawn up. In any case, a thorough analysis of the local situation is mandatory before any solution can be conceptualized and applied. In a vast majority of cases, there would be no readymade solutions that can be offered on a platter, though a database of solutions can indeed be built up.[39] [40]

> *Interface with Identity theory*

We had published two papers pertaining to identity formation and identity development. The two papers were "Generic Identity Theory for the Twenty-first Century: Towards grand unified approaches in identity formation, identity transformation and identity dilution or neutralization" published by us in the year 2019 and its extension "Formulating 'Extended identity theory' for twenty-first century social sciences research: Modeling extended identity in relation to realworld observations and data", which was published by us in 2023. These two papers covered various aspects of identity formation including linguistic identity which is and will remain an important part of identity formation. We had also discussed aspects of identity formation such as linguistic enculturation, linguistic acculturation, language ideology, the entire process of identity formation

including basic temperaments and personality types, cultural macro-environment, cultural-orientation, individual mind-orientation, mindspace, thought worlds, worldviews, identity in mindspace, levels of identity formation, equilibrium and non-equilibrium in identity formation, human development and identity, and chain of thought analysis (and to a lesser extent, chain of event analysis (an event is essentially an external stimulus for our purpose and analysis) and event-thought interplay (and co-relation)) which are all relevant for our purpose and study. These were studied against the backdrop of different types of identity formation including resistance identity, project identity, and legitimizing identity, and the symbiotic approach to socio-cultural change, along with an analysis of vertical, horizontal and lateral factors. In another paper, we had presented the twin concepts of cultural frame of reference and cross-cultural frame of reference which are also important for our purpose, particularly the former. In yet another paper, we had delineated and laid out bare, the concepts and principles of the 'Ethnography of enculturation' with all its various approaches, by means of which the enculturation process could be scientifically understood. These concepts would naturally apply to linguistic identity formation as well. [41]

> *Interface with first language acquisition theories*

We will also need to interface learning abilities, and language learning patterns with language acquisition theories. There are different classes of language learning theories in vogue (these are all primary language learning theories). These are the behavioural theory, cognitive theory, nativist theory, and the interactionist theory of language acquisition. Some of these theories are inadequate for our purposes, and we would like to see more research manifest itself through better and more varied fieldwork, for the singular purpose and objective for enhancing linguistic skills, and boosting social, cultural and economic outcomes. There are also many different theories of learning in the market, ever since the field was founded by stalwarts like Ebbinghaus, Bryan and Harter, and Thorndike in the late nineteenth century, and these theorists have sought to address aspects such as native response tendencies versus learning, maturation versus learning, fatigue versus learning, learning and the nervous system, problem solving, analytical and reasoning skills, creative thinking skills etc. Some theories that have been proposed are Edward L. Thorndike's connectionism, Edwin R. Guthrie's contiguous conditioning, etc.

In addition to all these, language acquisition theories have also been proposed, and these include the Behavioural theory of language acquisition or imitation theory of language acquisition first proposed by BF Skinner in 1957. According to this theory, children possess an internal mechanism to acquire language from society, particularly from their parents and elders in early years. This idea is also linked to Operant

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[39] The Original Sin of Cognitive Science, Stephen C. Levinson, 2012

[40] Methodological foundations inlinguistic ethnographyBen Rampton (King's College London)Janet Maybin (Open University) &Celia Roberts (King's College London)2014

[41] Cooley C H, 1909 Social Organization: Human Nature and Social order, New York, Charles Scribner's sons

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conditioning which consists of positive reinforcement or reward, and negative reinforcement or punishment, both of which are administered by the parent or the caregiver. The second theory is the cognitive theory or Jean Piaget theory of language acquisition which lays emphasis on internal thoughts and mental processes, and the development of cognitive ability in formative years. Likewise, linguistic ability is also acquired through assimilation and accommodation. Piaget also proposed four stages of cognitive development such as the sensorimotor stage, pre-operational stage, the concrete operational stage, and the formal operational stage. Noam Chomsky also proposed the nativist theory of language acquisition in 1957.

According to Chomsky, children are born with an instinct for language learning known as the language acquisition device, and children who grow up in an natural and a socially-friendly environment will possess normal and natural linguistic skills, and are able to understand and process grammatical rules naturally. This theory is particularly applicable for native language acquisition rather than second language acquisition. The Interactionist theory (or the Jerome Bruner theory of language acquisition) was first proposed by him in 1961. According to him, children require help from their parents and caregivers in order to process language better. This idea is known as the Language Acquisition Support System, or LASS in short. Many of these concepts however do not seek to understand how linguistic ability can be bolstered in the real-world. We would expect that more research be carried out here with real–world and real-time data collected from multiple linguistic environments, in such a way that they enhance and further our objectives.

➤ *Universalize second language acquisition theories*
We also have various second language acquisition theories in currency, but much more work needs to be done to synthesize them with real-world data culled from different contexts and situations, particularly data pertaining to people from less developed societies., and people from lower socio-cultural and lower socio-economic strata and backgrounds. As would be evident to readers, this has currently not been done, and principles remain essentially Eurocentric in orientation. This is also a relatively new field of study, and meaningful work on second language acquisition study only began in the 1960's through the published works of Pit Corder and Larry Selinker. More research needs to be done on how say an Indian perceives English versus how a Mandarin-speaker perceives English, and how quickly or effective both groups are able to learn that language. The main current objective of most such theories is how an individual who has already mastered, or is proficient in a given language, is able to learn a new one. Current approaches seek to combine data from diverse and allied fields such as linguistics, sociolinguistics, cognitive science, psychology, neuroscience, and pedagogy.

There are also four primary research areas, namely linguistic dimensions of second language acquisition, the cognitive dimensions of second language acquisition, the socio-cultural dimensions of second language acquisition based on the work of the Soviet Psychologist Lev Vygotsky and others, and the educational dimensions of second language acquisition, and all these dimensions overlap to a significant degree. Some work was also done on acquisition of English as a second language, but relatively less work on how to improve linguistic performance. Stephen Krashen had also proposed his input hypothesis, and this had considerable influence on second language acquisition research. Other important approaches developed during the period were Robert White's model of learner competence, and Manfred Pienemann's use of speech processing models and lexical functional grammar models. During the 1990s, new theories such as Merrill Swain's output hypothesis, Michael Long's interaction hypothesis, and Richard Schmidt's noticing hypothesis were introduced, and research carried out during this period also tended to take social and cultural factors of the learner into account. Other models have included the competition model of second language acquisition (McWhinney et al), connectionism as a cognitive approach, processability theory etc.

Some research also tended to take the ideal time for the introduction of a second language into the curriculum into account, but research in this field has been somewhat limited. Much more work needs to be done in the fields of pedagogical content and syllabus formation, and we have barely scratched the surface yet. As yet, we do not satisfactorily know how changes in syllabus will impact language acquisition ability. Thus, students continued to be smothered with arcane pieces of poetry, and medieval literature, even though they are not familiar with the basics of the language as yet. As in the case of many other fields of social sciences and linguistics, concepts tend to be highly abstract and abstruse. Some concepts have limited real-world utility. Linguistic acculturation patterns (i.e., second language acquisition patterns in an alien context) also need to be studied at a greater level of detail, and from a multi-cultural perspective. It is this realization that has led us to found the globalization of science movement. It has got to be science in the service of society, and science for all. The idea of empowering linguistic have-nots, and boosting social, cultural and economic output also has to be at the heart of the approach, and linguists must take this seriously. Will encouraging researchers from different walks of life, and from different parts of the world to participate, help in minimizing cultural bias, and lend strength and credence to our work? [42]

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[42] Wertsch J. V. (1985). Vygotsky and the social formation of mind. Cambridge, MA: Harvard University Press

➢ *Develop non-dominant languages lexically*

English is a West Germanic language that originated from several minor languages brought to Britain between the fifth to the seventh centuries AD by Anglo-Saxon migrants from parts of continental Europe who settled in the British Isles and imposed their culture on the region. These languages interplayed with old Celtic languages to give rise to what is today known as Old English. It is believed that North Germanic languages also played a role in the development of Old English, which eventually developed into Middle English, and later into Early Modern English which became a literary language in its own right. It was only much after this that English became a global language supported by colonialism, imperialism and exploration. English first grew rapidly in the fourteenth and in the fifteenth centuries (The number of words in the English language most likely doubled between 1500 and 1650 AD), the earliest English dictionaries complied by Thomas Blount, Robert Cawdrey, Thomas Elyot Knight and Edward Phillips contain only a partial compilation of words. Edward Phillips' dictionary which appears to have been the most comprehensive of the list, contained as many as 11,000 words in 1656, 17,000 words by 1696, and 38,000 words by 1706 (This appears to be on par with many major modern languages).

In a lighter vein, the noted playwright Shakespeare is said to have used around 22,000 words, and the poet Milton just around 17,000. We do not know how many of these old words were used in day to day life. Modern English may consist of close to a million words (or higher as there is a difference between different counts of words) if technical words are taken into consideration, and standardization and dialect leveling has already taken place. Thus, a wide variation in word count between English and other languages including Indian ones, occurred only in the past couple of centuries or so. English, which once borrowed words heavily from other languages, has become the largest lender of words to many languages as far apart as Hindi and Japanese, and many cannot imagine a life without English words.

Thus, most other languages have fallen behind English. In the French language words such as 'le foot' (football), le weekend, le smartphone and le shopping are used widely and commonly much to the chagrin of language purists. French language purists (including members of the l'Academie francaise) also waged a heroic battle against the "imposition" of English words, but this movement seems to have ebbed and waned considerably. There was a notable and prominent policy to introduce artificially created words into Rajbhasha Hindi in the 1950's and 1960's (for words such as tennis and cricket, even), though such efforts went nowhere. There is a linguistic inequality between languages as we discussed in our earlier papers, and some languages are less developed than some others; some are only spoken languages; languages spoken in parts of the world including Africa have only a thousand words each, and Toki Pona takes the cake for the language with the lowest number of words at one hundred and twenty. Thus, there is an urgent need for the lexical development of different languages to boost economic productivity in different parts of the world.

Malaysia had adopted a pragmatic policy for lexical development, and one that may be worthy of consideration and emulation. Its language is known as Malay, or technically as Bahasa Malaysia, and it belongs technically to the Austronesian group of languages. It has many variants, and is also very similar to the language spoken in Indonesia, even though there are some differences. There are also other minor languages in use in the region. The language formerly had many Sanskrit and Arabic words reflecting the Hindu and Islamic heritage of the region. It currently uses many English words, albeit with modified spelling. Some of these were consciously adopted through governmental effort, and the spelling standardized. Malay was formerly written using the Pallava and Kawa script; it now uses the standard Roman Latin script for most practical purposes, and the old script is used only wherever necessary. This policy and approach appears to have worked very well indeed. However, the importance accorded to the English language was officially diminished, but was increased again with hindsight, English words are widely used in Indonesian too, and in case of the latter, the Dutch language was virtually disappeared from sight. Such practices must be implemented only with a great deal of care in other contexts; for example there could be a veritable uproar if languages that are used to write Indian language are replaced with the Roman alphabet overnight.

The approach followed by Malaysia and to a certain extent Indonesia appears to have worked remarkable and admirably, and one needs to resist the temptation of coining entirely new sets of words when popular alternatives are already in place. This kind of a pragmatic approach has not however been followed in India unfortunately, which continues to cling on to the old Rajbhasha policy in many ways. Likewise, the efforts of the l'Academie francaise to invent French equivalent for English technical words have met with a lukewarm reception. In order to achieve lexical development of languages, it is necessary to set up committees including various specialists, sub-specialists and representatives of different language speakers. There may be cultural issues that may be readily apparent to native speakers of a particular language along and not outsiders. For example, Tamils and other groups may be touchy and sensitive to the use of particular types of words. They may also espouse ideologies that may be correct or incorrect. Indians also many only learn English because they have to and not due to any love and attraction for the language. All these sensitivities naturally need to be taken into account and consideration, regardless of whether they are ideologically determined or not. These ideologies will resultantly impact language learning patterns, too. A major advantage of this approach is this will help people learn more dominant languages, too; it is like killing two birds with one stone. This entire approach must be adopted for languages as far apart on the cladistic tree as

Kinyarwanda, Swahili, Kannada and Wolof, and we cannot stress the importance of this enough, as a basic and a meaningful input for further process in linguistic empowerment. [43] [44]

VI. MORE LITERATURE TO BE MADE AVAILABLE IN NON-DOMINANT LANGUAGES

More literature and other material also need to be made available in non-dominant languages. This would include different types of material such as technical material and teacher training material. Wikipedia has done an admirable job in translation a wide variety of basis information into a wide variety of different languages spoken and used all over the world. It has been over three decades since liberalization began in the current sense of the term, and a lot more work needs to be done here. In countries like India, governmental participation is virtually non-existent in this regard, though there is some discussion currently under way about how to translate medical literature into Hindi and other Indian languages. There is however, a lack of conceptual clarity here, even regarding methods and techniques to be employed for lexical development. Must more linguists and anthropologists be employed?

➢ *Use technology to the greatest degree possible*

Technology has always impacted language and linguistics to a significant degree. The Harappan script shared similarities with scripts further west, and crucially played a role in the economic development. So did proto-writing, and then full-fledged writing systems in all old world civilizations. As a matter of fact, writing is considered to be a hallmark of civilization, and as essential feature that sets apart civilizations from less evolved historic and proto-historic cultures. The development of the screw-based printing press by Johannes Gutenberg led to a situation where thousands of pages of material could be printed per worker day, greatly amplifying knowledge, and literacy. The old industrial revolutions of which there are canonically two referred to the process of change from pre-industrial economy to one primarily characterized by industry and machine-based manufacturing of several goods such as textiles. The third industrial revolution referred to the digital revolution which took off in the 1960's and 1970's, brought about by computing, and new communication technologies. People are talking about the fourth industrial revolution now.

The steam engine and the telegraph, also known as the Victorian internet, brought about great changes in society. Thus, science, technology, education, and economics are tightly integrated as evidenced by the Neolithic revolution and

the industrial revolution. The automobile was invented in 1885 by Karl Benz and Gottlieb Daimler, though the introduction of the Ford Model T in 1908, and the introduction of the moving assembly line in 1914 effectively transformed society. Air travel took off in the 1930's, and the first radio programs were broadcast in the early 1920's. By the 1950's, television took off, and jet travel became a reality by the 1960's. We then saw the great computing boom, followed by the emergence of the internet and mobile phones in the 1990's, and then smartphones in the 2000's. These have helped knowledge increase manifold, and have also helped boost linguistic skills in certain ways. (of course all technologies may not have impacted linguistic skills, and all technologies may not have had an equal social impact) However, traditional reading now appears to have become a thing of the past. We had co-related all these with the theory of mindspace in an earlier paper. Newer technologies such as internet-based language translation software, LLM's and the rise and spread of Artificial Intelligence are also likely to be game-changers in this regard, and may boost linguistic skills greatly. Linguists may however, need to design and develop co-relation mechanisms and co-relation patterns between all these aspects.

➢ *Change to economic development models*

One may also need to analyze the linguistic landscape thoroughly, meticulously and carefully as these would provide crucial and meaningful inputs into the economic planning process. This is extremely important indeed, and would constitute a crucial or core component of the emerging science of anthropological economics. Indeed, we had discussed this component already in the aforesaid paper. Thus, India may have erred in focusing too much on the service sector and neglecting the manufacturing sector. The over-emphasis on this sector led to jobs being created only for the highly educated few i.e., graduates and above. Others were benefitted only indirectly, though trickle down economics. India launched the 'Make in India' initiative only in 2014, and the PLI or the Production linked incentive scheme, but all these came a trifle too late, and China leapfrogged India in manufacturing. Countries like Vietnam made impressive strides in manufacturing too. Some experts believe that India has neglected the agricultural sectors in recent decades, and that a second agricultural revolution is nowhere in sight. It makes great sense for a country like India to continue to focus on the agricultural sector, and focus on trickle up economics rather than trickle down economics alone. It makes much less sense for some other countries to do so.

➢ *Developing output-criteria based techniques*

Another was is to develop output-criteria based techniques. Currently, various measures such a percentage, percentile the use of qualitative and quantitative grading methods, and ranking methods are used. These are computed by means of tests, examinations, dictations, classroom assessments, homework, project work, field work, student observation, student self-assessment, peer-assessments, teacher evaluation, personality assessment, assessment of team

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[43] Mueller CG Jr, (1956) Theoretical relationships among some measure of conditioning

[44] Kendler HH and Kanner JH (1950), A further test of the ability of rats to learn the location of food when motivated by thirst. Journal exp Psychology, 40

skills, rubrics, scorecards, report cards, Intelligence quotient tests, emotional quotient tests, etc. Tests to identify a student's linguistic capability or linguistic performance can include, but may not be restricted to tests, dictations, examinations, tests for evaluation of spoken language fluency and competence (i.e., verbal ability) tests to measure first language acquisition proficiency, tests to measure second language efficiency, tests to measure competence in the use of written language etc. However, tests for assessing a student's linguistic ability rank somewhat low in the pecking order, and this aspect may need to be remediated.

➢ *Local problems, local solutions*

One will also need to bear in mind the fact that many problems may be unique to a particular cultural or linguistic context, and problems that pervade in a particular region may not manifest themselves elsewhere. Therefore, local problems are always likely to demand local solutions, and this needs to be borne in mind at all times. We may discuss the concept of Jugaad here which refers to a simple, low-cost, no frills solution here; this concept is already in wide use in parts of India, particularly in North India. It also makes use of deep and critical thought and analysis to come up with solutions that anyone can use. Recently, the South African born comedian Trevor Noah stated that problems in Indian and African contexts were different from problems prevalent in the Western world. He also lauded Indian engineers in Bangalore for coming up with practical low cost solutions for problems and challenges facing the global south. This is great indeed. May we also suggest that these concepts be applied to bring about a revolution in the social sciences? We also strongly emphasize that people from different countries must participate in all scientific activity; only locals can be sensitized to local problems; this is also necessary to override all forms of vested interests. Thus, cultural aspects need to be taken into consideration always, and the needs of diverse societies studied at a great level of depth. Similarly, the needs of different socio-cultural groups, socio-economic groups and occupational groups also need to be studied and borne in mind while developing apposite curricula and instructional methods.

➢ *Ideal choice of language*

According to this principle which we had first formulated in 2018, the ideal choice of one or more language will play a major role in enhancing the efficacy of learning, and natural linguistic fluency and proficiency of students must be considered as well. This issue is far from simple as there are many complexities and intricacies involved, and this issue must therefore be given the attention it merits and deserves. This issue constitutes a meaningful interface between Anthropological Pedagogy and Linguistics, or to be more specific, language dynamics. In polyglot and multi-lingual societies like India, which are characterized by complex language dynamics, and multiple layers of decision making, students have been emotionally torn between the choice of the language of instruction which may typically either be the mother tongue or the language of the state, (the two are

entirely different) a more widely used lingua franca and language of commerce such as English, and to a lesser extent, a declared national language such as Hindi. This is a complex tripartite battle, and one that leaves parents unnerved and confused. Many language planners fail to understand language dynamics, and states like Uttar Pradesh and West Bengal effectively abolished English teaching at the primary level with unfortunate consequences. Language planners have typically been hidebound in India owing to their own limited education and exposure, but in 2019, the state of Andhra Pradesh effectively sought to make English as the mandatory medium of education This approaches is equated with its own set of weaknesses, and the choice of the medium of education in the Indian context must ideally be left to the parents. This is what some other Indian states have done.

➢ *Give students choices*

The Bharatiya Janata party (BJP) has claimed that education must be offered in the mother tongue, and not English. However, it has not abandoned English completely, for it would lead to a major retaliation of sorts. Other thinkers like Kancha Ilaiah on the other hand believe that education must be offered in English with the mother tongue as a subject. However, English is a much easier and a much more practical language than French which is practically non-existent in India. There is also no one size fits all approach. What may work for one student may not work for another. Hence, one option is to allow students a basket of choices from which they can pick and choose. As a matter of fact, this may be the only practical and logical way out. Thus, the debate of education in the mother tongue or education in the dominant language is an old one, and dates back to the time of Thomas Babington Macaulay in the early nineteenth century when he is believed to have said, "In one point I fully agree with the gentlemen to whose general views I am opposed. I feel with them that it is impossible for us, with our limited means, to attempt to educate the body of the people. We must at present do our best to form a class who may be interpreters between us and the millions whom we govern, a class of persons Indian in blood and colour, but English in tastes, in opinions, in morals and in intellect. To that class we may leave it to refine the vernacular dialects of the country, to enrich those dialects with terms of science borrowed from the Western nomenclature, and to render them by degrees fit vehicles for conveying knowledge to the great mass of the population." This debate is therefore old, and is never likely to be resolved given the fact that there are pros and cons for each approach. Therefore, context-based solutions and situation-based solutions can be offered.

Another possible approach is the transferable skills approach; per this approach, education is mostly in the mother tongue or in the local language (though there is still a major difference between the two) with English as a mandatory second subject. As the student gets older and older, more and more English is taught. This approach which only of course applies in the Indian context, can work admirably well

nonetheless. It is often said that the proof of the pudding is in the eating, but many individuals who were educated in Indian vernacular languages, later went on to become fluent and proficient in the English language.

➢ *Develop theories of pedagogical content*

We also propose that a new class of theories called theories of pedagogical content be created. This approach would greatly help experts in the process of syllabus formation and syllabus fixation. Sadly, the full potential of this approach has not yet been realized. To begin with, only functional and practical English needs to be taught in Indian schools, particularly where English is being taught only as a second language, We strongly propose that poetry and literature be relegated to the background or taught only as and when necessary, as these are likely to have lower practical utility in the real-world. What would be the approach where English is being taught as a primary language, or where syllabi need to be formulated for a non-English language being taught as a first language? Ethnography can provide vital clues and answers here. The choice of words that need to be taught to students, and introduced through the medium of prose also needs to be carefully considered, and prose narratives also need to carry simple and practical lexicon and uncluttered text. A choice between two prose texts may be more scientifically made based their linguistic utility, and not based on just a random selection. Selections must not also ideally not be carried out on the basis of their literary merit alone. We also propose that bilingual texts be provided as far as possible, and teacher training material be provided. Teacher training material may also need to be bilingual as far as practically possible or necessary. We had discussed some more aspects in our paper on the sociology of science, but those proposals were essentially non-linguistic.

➢ *Aim to create intellectual revolutions*

Intellectual revolutions, if we may so use the term, may refer to periods in human history characterized by an exponential growth in knowledge. Intellectual revolutions have been brought about in different periods in human history due to epochal events such as the invention of writing, the emergence of better and better transportation techniques, the emergence of political systems, the invention of printing, the renaissance and enlightenment, scientific revolutions, industrial and more recent transportation revolutions, the age of scientific miracles, the internet age and globalization, the smartphone age, etc. We also propose that another such revolution be brought about due to advances in the social sciences, particularly, anthropology, sociology, pedagogy and economics. Is anyone willing to bite the bait? We would be particularly interested in observing how social sciences can drive such a change, and bring about a meaningful transformation in society. As a matter of fact, we strongly believe that the desire to bring about such a change should be the chief or the principal driving force behind the endeavours of all social scientists. We had also discussed several possible techniques both in our paper on anthropological pedagogy

which was published by us in 2018, and in the paper on the sociology of science which was published by us in the year 2021.

➢ *Linguistic mindspace*

The idea of linguistic mindspace is a natural subset of the idea of Mindspace which we had propounded in a previous paper. Linguistic mindspace can again be sub-divided into two more sub-components namely, linguistic mindspace and strictly linguistic mindspace. The former involves more flexibility and change in the time allocation in the learning of languages on one hand and the learning of other subjects on the other hand, while strictly linguistic mindspace refers to the flexibility and choice in time allocation only within the learning of different languages or different aspects of the language. This aspect must be borne in mind by language and education planners, and only languages or aspects of a language that have some utility must be short-listed for inclusion in the syllabus. This will also ensure that students invest time in learning topics and aspects that will benefit them.

➢ *Linguistic sweet spot and Economic sweet spot*

Linguistic sweet spot refers to a sweet spot where an individuals or a group of individuals' linguistic skills are maximized. This may also need to be understood, assessed and analyzed at the level of the linguistic unit. This approach may also need to analyze and take into consideration, the dominance and utility of different languages. There are a lot of different factors that come into play here, including development of mental and cognitive abilities and cultural preferences, and we look forward to more vital research being carried out on this subject. As such, this approach will also be tied to economic performance; however, the concept and the idea of economic sweet spot is much more economic in orientation, and would seek to analysis how economic performance and economic productivity can be maximized through the common mediums of pedagogy and language teaching. For example, the switch to English from French appears to have helped boost Rwanda's economy greatly, and Burkina Faso is watching and observing Rwanda's experiment with great interest and rapt attention, as also are, some other African nations. The two sweet spots need to be analyzed in conjunction with one another always in any formal analysis.

Thus, efforts may also be made in quantifying economic function of linguistic ability or linguistic proficiency, on the basis of the dominance of different languages at a global or a local level, and the role played by different languages at a global level. Similarly, the economic opportunity loss or the loss incurred by not knowing or being proficient in a given language may be considered. We look forward to more and more research being carried out on all these topics in the future.

➢ *To reconcile with theories of learning and concepts in pedagogy*

Pedagogy may be defined as the method and practice of teaching, especially as an academic subject. It also includes several subfields in its purview and ambit, include a formal study of how well or effectively students learn in different contexts. There was an increasing interest in educational methods and techniques throughout the eighteenth and the nineteenth centuries and several notable attempts were also made to compare, evaluate, and rank different types of teaching methods and create academic rationales for teaching methods. However, it is only from the second half of the twentieth century that pedagogy has developed by leaps and bounds. In the words of Giovanni Genovesi, "Pedagogy is an autonomous science by virtue of the fact that it has its own language and is aware of how to use it according to its own method and its own ends and, by this language, pedagogy generates a body of knowledge, and a series of experiments and techniques without which any construction of education models would not be possible." Needless to say, a lot more work needs to be done to classify it as a true, data-driven science, and we are only skimming the surface, yet.

There are many existing theories of language learning, based on earlier concepts dating back to Ancient Greece (Plato) and the English philosopher and physician John Locke. However, many of these from our perspective, are highly abstract, and are not based on ground realities and practical observations in different contexts and cultures; any one would conclude that these are essentially Eurocentric in orientation. There is little interest in developing practical real-world applications, and improving the lot of the educationally less fortunate and lucky. An early approach has been Edward L. Thorndike's theory of connectionism which was first proposed in 1898. According to this theory, there is an association between sense impressions and impulses to action. These came to be known as a bond or a connection. Edwin R. Guthrie proposed an approach known as contiguous learning. This approach is based on stimulus-response, and is a behaviorist approach based on the works of Watson (1913) and Singer (1911). We then have B F Skinner's Operant conditioning approach which was developed from 1930 onwards, and published in 1938. This approach extended conventional stimulus-response psychology in new directions.

We then also have Clark L. Hull's systematic behavior theory, which was based on Pavlov's conditioned reflexes which first appeared in 1927. This approach is also behaviourist in orientation. We also have Edward C. Tolman's theory of purposive behaviourism which is also known as a sign-gestalt theory, sign-certificate theory, or expectancy theory. We also then have Kurt Lewin's field theory, and Sigmund Freud's psychodynamics. Some work was carried out by Albert Bandura and Lev Vygotsky as well. Some attempts were also made to develop mathematical models of learning, though we consider them to be less useful from our perspective. Other leading figures in the history of education were Thomas Jefferson, who, sought to help deserving students from lower socioeconomic backgrounds. John Dewey was another influential educationalist who proposed the idea of functionalism and the philosophy of pragmatism as well.

Margaret Haley was another famous educator who primarily focused on a child-centric pedagogical approach and effective teacher training and development in the early Twentieth century. Other influential figures in education were Alexander Crummell, Jean Wesley Gilbert, WEB DuBois, Daniel Hale Williams, Benjamin W. Arnett, Mary McLeod Bethune, Inez Beverley Prosser, Daniel Payne, and Booker T Washington. We also then have Jean Piaget's theory of cognitive development, Howard Gardner's theory of multiple intelligences which discusses and defines multiple types of intelligences, Carol Dweck's mindset and implicit theories of intelligence, and David H. Rose's (who was the co-founder of the Centre for applied special technology or CAST), Universal design for learning which is also known as UDL. In short.

In our paper on Anthropological pedagogy, we had introduced the following principles, and all of these will still hold good. 1. Maximum Relevant learning principle 2. Maximum individual psychological impact principle 3. Alignment with learning capacity principle 4. Maximum individual benefit for life or career principle 5. Rational individual principle 6. Maximum societal benefit principle (Practical needs approach. Local needs approach or societal metrics approach) 7. Maximum long-term societal benefit principle 8. Maximum international long-term societal benefit principle (Neo-centrist approach) 9. Antidote to popular ideologies principle 10. Science and Pseudo science principle 11. Change in individual mind-orientation principle 12. Altered social behaviour principle 13. Change in cultural or societal orientation principle 14. Alteration in Mindspace principle 15. Neutralization of perspective principle 16. The Principle of Non-dogma 17. Sociology of science principle 18. Overarching knowledge principle 19. Internal consistency principle 20. Cultural needs principle 21. Individual needs principle 22. Justification for inclusion principle 23. Intelligent learner principle 24. Student friendly course content principle 25. Meaningful Identity formation principle 26. Thoughtworlds and worldviews principle 27. Ideal Choice of language principle 28. Elimination of Vested interests principle. Also refer our paper on the 'Sociology of science' published by us in 2021 which contains many useful concepts. Computer based education and computer assisted education in another interesting and an exciting possibility, but many challenges remain in the Indian context including power outages and unreliable power supply. Maybe technology including future anticipated solar revolutions may remediate this to a fair degree.

➢ *Culture and language acquisition*

Culture also is a major determinant of language acquisition; in addition, different cultures also place different levels of emphasis on learning and education, (and some directly on language; we also introduced the term

'linguiculture' in an earlier paper) which in turn impact and determine language acquisition and linguistic proficiency. Some cultures are more open to the learning of new languages in general than other ones. All these aspects are of course not static, and may change over time. We had also discussed and evaluated different types of cultural orientations such as past-orientation versus future-orientation, inward-looking cultures versus outward cultures, rigid versus flexible cultures, individualistic versus collective cultures, material and non-material orientation, contentment versus innovation, rational-orientation versus non rational-orientation, etc. We had also discussed different characteristics of culture in papers published in 2017 and 2018. All these factors affect linguistic acquisition patterns to varying degrees. Some cultures may carry more intellectual baggage or a sense of perceived superiority than other cultures, and such factors may impede their learning abilities and progress somewhat. Thus, cultural remediation may also be required in some cases, and we had discussed this concept earlier.

Some other cultures particularly in less economically developed regions in the world, may perceive their own languages and cultures as being inferior, and may latch on to more developed languages. This may impact their economic output positively. This is an interesting observation, but worth investigating at a greater level of detail. Not only language dynamics but also social and cultural dynamics would impact language acquisition patterns. Refer our symbiotic approach to socio-cultural change, papers regarding which were published by us in 2017, 2018, and 2023. Some cultures are also associated with linguistic ideologies examples of which are the Dravidian movement of Tamil Nadu, and the emotive Banish English movement of Uttar Pradesh in 1967, and these may complicate the matter further, and even confuse students greatly. Some work on culture and second language acquisition has already been done by Ming-Mu Kuo and Cheng-Chieh Lai, but more work may need to be done on culture and primary and secondary language acquisition in diverse cultural contexts and among students of diverse socio-economic backgrounds; this would not only include factors such as cultural receptivity and openness to new influences, but also other cultural factors, and factors such as language similarity and dissimilarity indices. Some choice optimization techniques are also available and are used in other fields, but we would like to see whether these can be beneficially applied to the field of linguistics.

➢ *Modulating linguistic enculturation and linguistic acculturation patterns*

One anther interesting and a concept with potentially highly productive ramifications is the modulation of enculturation patterns in such a way that less privileged groups are brought up in more or less the same way linguistically, and to a certain extent non-linguistically as more privileged and elitist groups. We had defined enculturation and acculturation multiple times in our earlier papers, and it may be noted that linguistic enculturation takes place in silos, particularly in

developing countries like India, and other unequal societies. Thus, there are islands of linguistic enculturation patterns. This requires a great deal of critical thought, and the eventual design of suitable educational systems both linguistic and non-linguistic. We recommend that other linguists and anthropologists take up this issue seriously, and approach it methodologically and systematically. One is reminded of PURA or 'Provision of urban amenities in rural areas' as proposed by the former Indian President Abdul Kalam. The two are entirely different, but somewhat similar in concept. As a part of this entire exercise the concepts proposed in our paper of the 'Ethnography of enculturation', and the principles of the 'critical learning periods' theory also need to be borne in mind.

➢ *To reconcile with theories of human development*

Human development is a science that is a distinct and a highly specialized field of physical anthropology. These are several distinct phases of human development which are classified into two broad categorized namely prenatal or embryonic phases and post natal phases. Only the latter is largely relevant from our perspective even though nutritional and other factors may impact embryonic development. The post natal stages are infancy, the toddler stage, childhood, adolescence and puberty (the teenage phase), adulthood, (early adulthood, mid-adulthood, and late adulthood), senescence and old age. We also have domains of development such as physical development, cognitive development and psychosocial development. There are also major influences on development such as heredity, micro, macro and meso environment (family, circle of friends, neighbourhood circle and acquaintances etc). Several approaches have also been proposed to study human development, and these include Paul B. Baltes life-span developmental approach etc. Perspectives of understanding include psychoanalytical perspectives including psychosocial perspectives, learning perspectives, cognitive perspectives, evolutionary and sociobiological perspectives, contextual perspectives etc. A wide variety of research designs are used to study human development, and these include naturalistic observation, laboratory observation, case studies, correlational studies, longitudinal studies, cross-sectional studies, and sequential studies.

Some researchers, notably the psychologist Jean Piaget, have attempted to develop learning theories in relation to human development stages. He developed his famous theory of cognitive development. This includes the sensorimotor stage which lasts from birth to age two, the preoperational stage lasting form age two to age seven (characterized by basic speech, observation, intuitive thought, and basic learning), the concrete operational stage from ages seven to eleven (characterized by wider horizons, perspectives logic, and problem solving ability), and the formal operational stage from ages eleven to sixteen (characterized by the ability to understand abstract ideas and metacognition). Such theories are foundational to pedagogy, curriculum design, and language instruction models. However, we perceive that there

could also be differences and variations across cultures, which must be an input into syllabus formulation and design. We also need to bear in mind the postulates of the critical learning period theory which states that language acquisition is extremely easy in early years upto the age of five years old or so, but thereafter becomes progressively more and more difficult.[45][46]

➢ *Better teacher training*

Teacher training is a particularly important aspect to be borne in mind, particularly given the fact that language skills cannot be acquired overnight. There is a great and a growing demand for the English language in India; however, teachers are poorly equipped to teach in that language and evaluate student's performance in that language. This issue is further compounded by the fact that many states have in recent times, have decided all subjects in English. Will students be able to understand different subjects and assimilate technical material at all? Will students learn poor quality English? Another major drawback is that the BJP government in India does not appear to have taken the English language seriously and wants to treat is just as any other foreign language. Nothing can be further to the truth than this. English plays an important administrative role in India; furthermore, it is the only viable and practical neutral link language in a polyglot, multilingual country like India. In recent times, the British Council has played a major role in training teachers in many developing countries and runs programs such as the Cambridge CELTA. The Indian government barely appears to have utilized their services at a national level, though many Indian states are training teachers in the English language. It is not English speakers but also the French government which was sought to disseminate knowledge of the French language through the establishment of the Alliance francaise. The central government has also established Hindi Prachar Sabhas to promote Hindi, and conduct examinations in that language.

➢ *To reconcile with theories of educational psychology, sociolinguistics and psycholinguistics*

In addition, learning needs to be studied along with other aspects in Educational psychology such as heredity and environment, personality traits, social and non-social development, mental or cognitive development, theories of intelligence, theories of perception, theories of attention, theories of cogitation, imagination, memory and creativity, and theories of human motives and motivations. We also have different theories of teaching including formal theories of teaching (communication theory of teaching, moulding theory of teaching, mutual inquiry theory of teaching etc), descriptive theories of teaching, normative theories of teaching, cognitive theories of teaching, and psychological theories of teaching. Educational psychology also encompasses methods such as the introspection method, observation method, experimental method, clinical method, psycho-physical methods, differential method, etc.

We also have concepts in sociolinguistics and psycholinguistics. Sociolinguistics refers to the formal study of the various sociological aspects of language. The crucial discipline examines how different social factors, such as ethnicity, age, gender, class, education, and occupation, influence language learning and language use. Psycholinguistics on the other hand, is a discipline that investigates and describes the psychological processes that make it possible for people in different cultures and societies to learn languages and use languages proficiently and effectively. Anthropological linguistics deals with the study of language in relation to human cultural beliefs and culturally-derived patterns of thinking. Ethnolinguistics deals with the study of language in a cultural setting and context, and studies the origin, evolution and development of language in relation to a culture.

➢ *To reconcile with theories of psychology and behavioural science*

Our approaches may also need to be reconciled with approaches in general psychology to some degree; these include a study of the biological basis of behaviour, sensory processes, perception, learning patterns (classical conditioning, operant conditioning, reinforcement, cognitive learning etc), concepts in memory and knowledge retention, thought and language, concepts in thought conceptualization, theories of intelligence. It also needs to be reconciled with the theories and concepts of social psychology such as social cognition, social perception attitudes, conformity and non-conformity, group processes, etc. It also needs to be reconciled with various concepts in the behavioural sciences such as personality formation, self-esteem, emotional intelligence, listening skills, cognition and thought absorption, etc. We strongly emphasize that all these concepts need to be studied at a social and a cultural level, rather than at a general level, and useful comparisons and differentials generated. Field work and naturalistic observation are also a must, and causes for aberrations, learning deficiencies, and poor real-world performance analyzed. There is of course a lot of work to be done, and we definitely still have a very long way to go.[47]

VII. CONCLUSION

This paper had sought to advance the goals and objectives of our 'Globalization of science" movement at least indirectly, if not directly by empowering 'linguistic have-nots' through the use of various techniques and measures so that their economic performance can be improved, and their social and cultural development can be aided. The concepts in this paper, as such are expected to contribute greatly to greater

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economic performance, social and cultural development, and the emerging field of Anthropological economics. Thus, this paper is tightly integrated with many of our earlier papers including our papers on language dynamics, anthropological pedagogy, the sociology of science etc, and it is expected that readers would read them before an effective readership of this paper is sought to be accomplished. Well-begun is scarcely half-done; our paper only seeks to set the tempo for further research in this direction, all of which needs to be based on fieldwork and empirical, grounded research. This is just a virgin field, and a lot more work needs to be done to help 'linguistic have-nots', and hone their skills to perfection in the interests of better social, cultural and economic performance. We however hope this endeavour is a small but effective baby step in this direction.