

**Indian institute of technology of technology madras
Presents**

NPTEL
National Programme on Technology Enhanced Learning

Introduction to modern linguistics

Lecture-4

Design features of language-3

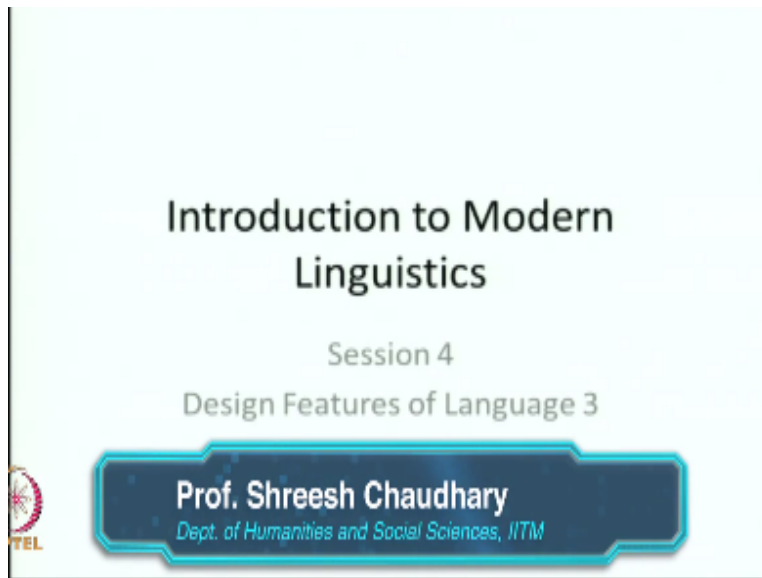
Prof.shreesh chaudhary
Dept.of humanities and social sciences
IIT madras

Good morning once again please I want a very enthusiastic good morning from you good morning I write lovely I let us come to our next class continuing talking about design features of natural languages what is there in natural languages that makes them unique that makes them such a versatile medium of communication for the entire mankind for the entire world and we have already seen some of their features you may recall.

We spoke about features like they are common to all mankind we says they are species uniform every human being has got language they are common only to mankind only human beings have this kind of language okay can you tell me what are the features we spoke about human languages these languages have to be learned acquired even though we are biologically gifted okay they have to be a part or culturally transmitted.

Anything else sorry you are right all only human all human beings and it anything else yeah it varies across time across region okay right let us look at one or two more today in tomorrow and then we will start talking about the structure of language and we may begin with we will begin with sounds then we will go on to organization of sounds organization of words an organization of sentences right.

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You may take notes if you like but all of these PPTs and other things are going to be on there I will mail them to the class representative I will mail them to Mahesh and they are also going to be on the net later you also have books which describe these things in great detail and I will also try and send you links to the websites which talk about some of these things please do look them up as well right the feature we will be talking today about is its locality.

You know that language if you know natural languages can be spoken man made languages in that sense it may or may not be spoken but natural languages are designed to be spoken you know nature or God has given us the ability has given a special organs whose main function is to help us speak we have can you put your finger here on your glottis on your throat inside there is a diaphragm we will talk about it next week in quite some detail inside.

There is a diaphragm you know which vibrates as you and I talk keep your finger here and say okay now do not say our now just say again please see do you feel something vibrates here when you say these are special gifts of nature for us if this diaphragm did not vibrate my voice will not reach you if it did not vibrate in your throat when you spoke your voice would not reach me God has the nature has given us special ability.

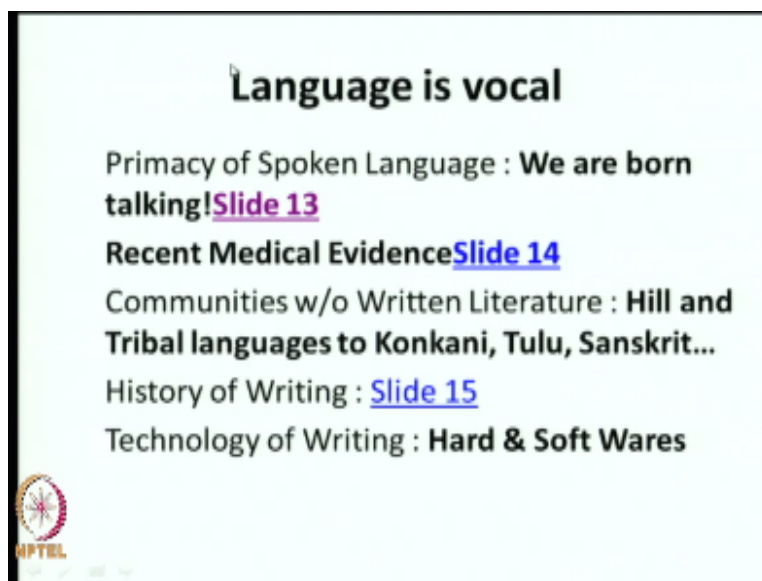
Of course you know at times once in a while you come across people who cannot speak but these are the aberrations of nature by enlarge 99.99 can account as many as you like except for a very rare exception all human beings are designed to speak they have been given tongue they

have been given pharynx they have been given other organs we will talk about organs of articulation you know beginning.

Next week and we will see that human beings have been specially gifted they have been designed to speak no matter who you are you may be a poet or you may be quote and unquote. A fool everyone is designed to speak okay everyone has that natural ability we actually you know the psychology today the current belief is that we are born talking you know parents get terribly worried when the child does not cry after birth okay doctors get into action patient you know all kinds of worries happen but when the child cries that is the first test that its throat its vocal chords work the child is able to communicate.


Of course the child cries under the pressure of atmospheric pressure outside the child's lungs take time to cope with the pressure of air plus other kinds of things which we only inadequately understand even today we do not know exactly an entirely why a newborn baby cries the way it cries but it does cry and that cry is audible because the child the baby has the apparatus which makes its cry audible the child you know we are designed to we are born actually.

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Language is vocal

- Primacy of Spoken Language : **We are born talking!**[Slide 13](#)
- Recent Medical Evidence**[Slide 14](#)
- Communities w/o Written Literature : **Hill and Tribal languages to Konkani, Tulu, Sanskrit...**
- History of Writing : [Slide 15](#)
- Technology of Writing : **Hard & Soft Wares**



You can look you can think of you know there are Greek philosophers even as in India we have always believed that human beings are born talking it is a later belief you know weak-willed on this course perhaps we may not talk about it but if you are interested you can look up books

which get into this debate whether language is learned our language is naturally acquired there that there has been a group of psychologists a group of philosophers.

Particularly in the last hundred two hundred and fifty two hundred years at the most who have believed that language is part of nurture only taught okay but for a for a long time you know we have believed including in the West even Greek philosophers have said that our Indian philosophers have also said that actually you might remember.

The story of abhimanu does anyone remember the story of a character in the Mahabharata somebody called a abimanu you know what is that a story who can stand up and tell us who would not mind being caught by the camera please you may not know the entire story it does not matter do try it will give you the ability to speak in public these things are skills they are acquired only through practice who will stand up and speak slowly and begin.

Again can you introduce yourself you alright please go does not matter right okay you know the Mahabharata has an anecdote which says that prince of abhimanu you learned how to organize a particular formation or how to break that formation even before he was born it so happened that one night while he was still unborn while he was still inside his mother's womb his father happened to be telling the story to his mother.

His mother a woman news mother do you know named Subhadra okay so Vadra asked her husband Arjuna how do you get inside a chakraviuga a formation which is like a circle which is a circle with blade you know a dancing circle how do you get inside that kind of formation and Arjuna seems to have described that in some detail and inside the mother's womb the child was hearing but before the story goes.

Arjuna could complete that story the mother fell asleep and then Arjuna is stop telling the story had Arjuna realized that his son was listening to the story inside he possibly could have continued but it is one of those tragedies of mankind which keep happening because they are designed to happen right so you know we have always believed that children learn till you know they begin talking or they begin learning language even before they were born.

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... because there is born in us the power to persuade each other and to show ourselves what we wish, we not only have escaped from living as brutes, but also by coming together we have founded cities and setup laws and invented arts, and speech has helped us attain practically all of the things we have devised... we shall find that nothing done with intelligence is done without speech.

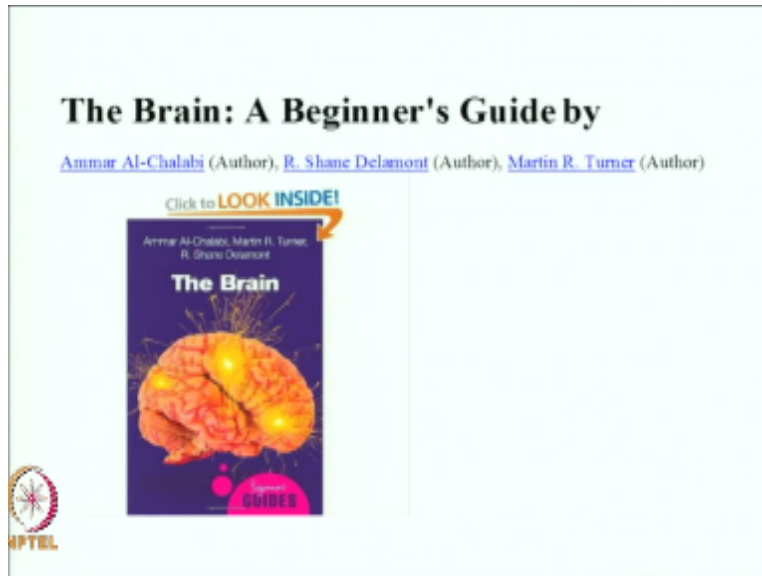
Isocrates (1436-338 B.C.), in Antidosis



Some Greek philosophers also said that let me see if the link works tell one of you our right to have money see this Greek philosopher can anyone please read it aloud somebody else this side please can you stand up and read it aloud okay last winter right please pick up because you seem to be hesitant in volunteering Socrates he was please sit down thank you very much what's her name karthick was a classmate of Plato and they all believed.

Greek philosophers believed just as Indian philosophers believed that God has created God has given mankind special ability to speak special ability for language there is there is a lot of recent medical evidence as well which suggests that human beings begin learning language even before they are born if you are interested there are and you can find some of these books.

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You can make a note and you know I will send you the link through Mahesh okay look at this book is available for free download one of the best books I have read in recent years on the subject called the brain you know people many people today say that we know only as much about brain today as we did about the solar system in the time of Galileo you know which means hardly much hardly enough we have very limited knowledge of brain.

We actually do not know what is the difference between brain and mind we do not know how brain works we do not know which part of the brain has language ability or does do all parts of the entire brain is involved in doing anything there are lots and lots of questions we know something about their structure of human brain we know that it has billion plus neurons we know that it has interconnections but we do not know how those interconnections act together you know we are we have done a lot of work in artificial intelligence neural network.

But we have not even touched the surface of the ocean I will strongly encourage you to read this book you see for you know we somehow we do not have a big culture of reading for pleasure reading in free hours but if you cultivate that you not only acquire good language you acquire some very precious knowledge some questions which otherwise do not come to you okay so when you read a book like this you will have questions.

Coming to your mind who taught me this how did I get this when somebody sings and if you have the wrong rhythm how do you know the rhythm is wrong did someone tell you about the raga did someone tell you about the melodies about the cadence how do you know that this is

not their proper raga this is not the proper rhythm how does your mind or brain remember even the tune let alone words let alone voice okay.

How do you remember that is there any connection between grammar of language and the tune of the song okay there are a whole lot of questions and the wonderful thing about this book is it has not been written by linguists okay it has been written by neurosurgeons three of them one Egyptian neurosurgeon doctor and two of his colleagues together extremely well-written book anyone who begins reading it cannot keep it aside until you finish.

If I will I will encourage you to buy it but if you do not have enough money or you do not want to buy at least read it on the net and you will see the point that I am coming back to his you know after selling this book trying to sell this book to you I hope some of you will read this book that you know there is a lot of evidence people have taken photographs of children born at or the fetus at various ages inside the mother's womb and they have found.

That neural network starts getting denser and denser as the child progresses 20th week 24th week 30th week a child born after thirtieth week maybe a premature baby but it is fully formed if you are interested in some of these areas please visit the pediatric ward of your hospital talk to doctors and you will see in nature the wonders of nature okay that it is possible that a child may be born in seven months it is possible that a child may be born event.

In six and a half months but the child is fully formed and if God willing the child survives the child grows up to be as normal a human being as anyone you and I know okay so one feature of language is it is a biological feature the feature is we have the ability to talk we have the ability to speak and this ability starts getting formed even before we are born there is much recent medical evidence that proves this there.

Is also anthropological evidence okay there are many communities which even today have language but do not have script their language is not a written language do you know any language of that kind anybody if you actually you see once again.

Just as I told you we do not have the culture of reading for pleasure we do not have the culture of our we had but you know only old people did that when they traveled went on pilgrimage but sometimes you should find to travel to on exotic places also within the country India is a

vast country there is nothing in the world which is not there in India you want permanent snow clad places go to Ladak leh higher reaches.

We want desert go to Rajasthan you want rains every day go to Northeast Shillong similarly you know there are there is a region in central India chuttanakpur you know Jharkhand Chhattisgarh parts of Bengal parts of hills in Maharashtra Andhra Tamil Nadu you know where what we call people tribal people you know it is a misleading name you and I are also tribal's you know we all live like tribes okay.

But we are quote and unquote what we call shield tribes live you know arouse mundari Santals Torre's Nagas angames you also have some students from those places here try and find them talk to them and you will see that they have as much a language as you and I have okay they also have literature they also have epics they also have jokes they also have vulgar jokes they also have wonderful jokes but their languages are not written actually many language is not just one I can you know I have mentioned only three you know I have mentioned even today company is written in three different scripts.

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How Scripts Differ

- **Konkani**: in Goa, Devanagri; in Karnataka, Kannada; in Kerala, Malayalam
- **Santhali** : in Bihar, Devanagri; in Jharkhand, Roman; in Bengal, Bengali
- **Sanskrit** : In many scripts, including Arabic and Roman

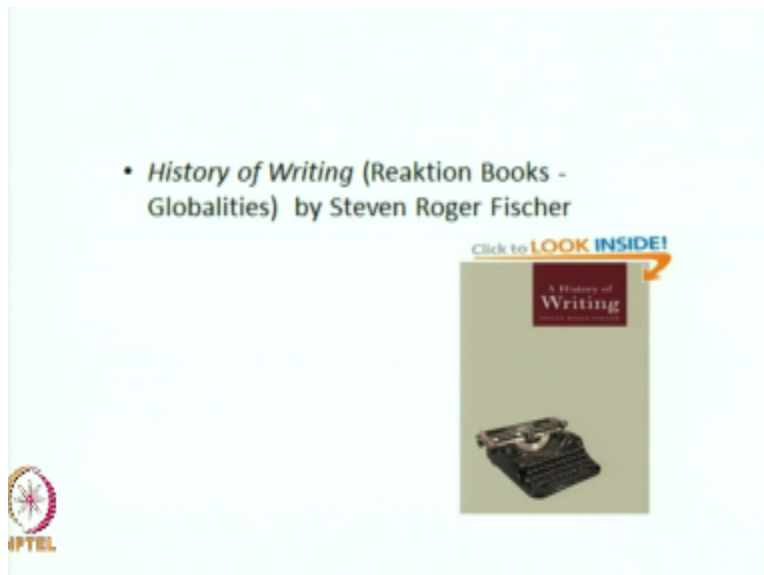


In Goa it is written in Devanagari or English in Karnataka Konkani is written in Kannada script in Kerala it is written in Malayalam script some thali is written in three or four different scripts senthil is written in Devanagari script Santhal is written in Bengali script santolli is written in Roman script and in something else that does not make santolli a lesser language.

Do you get my point you know there are over thousand languages in the world spoken even today and the eye itself claims sorry there are over death in India itself claims nearly 1700 languages sorry if the world has not just ten thousand assorted thousand it has many more I am not sure of the exact not more than a few hundred of them have their own script that does not make them any the lesser language.

They have all the literature if you look at Sanskrit okay Sanskrit was not a written language until about 2500 years ago until about the time of Buddha Ashoka because the technology of writing itself is in new technology okay if you are interested look at this book and maybe you can also find I have not checked but possibly you can find copies on the net as well .

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This is the history of writing okay we have a copy in the central library writing itself is relatively recent about 3,000 years ago Phoenician traders in the North Africa West Asia in that pocket what is called Egypt Libya Iraq Iran you know in that area some traders invented the art of writing and then technology was invented initially we wrote on hard surfaces stone slabs okay you had hammer and chisel.

And you know you struck the chisel with the hammer and then you wrote your name a long time it took you one hour to write my age one and a half hours to write series one and a half hours to write anything else there were specialists like there are carpenters like there are you

know electricians or plumbers today there were people who wrote you know eventually gradually then the paper was found by the Chinese ink was invented.

Then writing became more widespread more people began learning writing finally when printing was invented sometime in the 15th century more and more books came today with computers once again literacy seems to be disappearing okay not many people right they only print on computers but you know writing is a man-made thing it is a technology it is a combination of different kinds of Sciences and arts to make it a particular kind of technology.

Some people that just as today everyone every human being does not know how to type on computers do you know anyone who does not know how to type on computers yes or no do you know people who do not know how to type on computers yes or no I know many people I come from the village where few people know and they do not live in the village those that know how to type on computers live in either noida or guru Gong or Bangalore or Chennai or some other places.

They are migrated ok so just as computer literacy today writing was a specialized skill writing was or writing is a specialized skill okay it requires a technology it requires hardware and software you have to have pen you have to have ink you have to a paper or you have to have computer has to have a printer has to have a cartridge you need paper or you have virtual writing you need a screen a whole lot of artifact actually literacy is an artificially acquired you know I am not saying literacy is not important.

I am saying it is acquired it is artificially acquired it is a it is created by human beings and acquired by human beings in a deliberate manner it is not acquired by anyone just as spoken languages a spoken language you and I hear and we acquire is that so with the written language you flash a page before the child and the child after flash a page every day before the child and the child learns writing yes or no everybody please are you with me are you in the class yes sir okay do you think if we flash the page before the child every day.

The child will learn writing on the child would not because it is a man-made skill the child will have to first hold the pen you know do you know how many muscles work when you write it's a particular kind of skill you will have to hold the muscle on your forearm the muscle on your upper arm some muscles on the if you are a right-handed person then some muscles on the right

part of your back if you are a left-handed person then some muscles on the left hand left part of your back then some neural movements in your brain drive the pen before you write a or before you write aim or before you write any other letter.

Okay plus technology so writing is not natural in that sense quote unquote natural but speaking is everybody can speak in all our lives spoken language has come first written language has come next do you know anybody who not learnt writing before he or she learnt is speaking anyone even if he or she is in beat it from IIT or from anywhere it does not happen so we will agree do you agree that language is vocal please write the next feature.

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Languages primarily mainly vocal okay we are all designed to speak. We are speaking animals whatever else you see writing or typing or chiseling or painting whatever else we do or calligraphy you know all of this came later.

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Language is open-ended

- **Language is open-ended**
- Loss & Gain of Words, Sounds
- Loss & Gain of Diff Classes of Words
- Technology Induced: printing
- Culture Induced : democracy, slavery
- Contact Induced : colonial languages



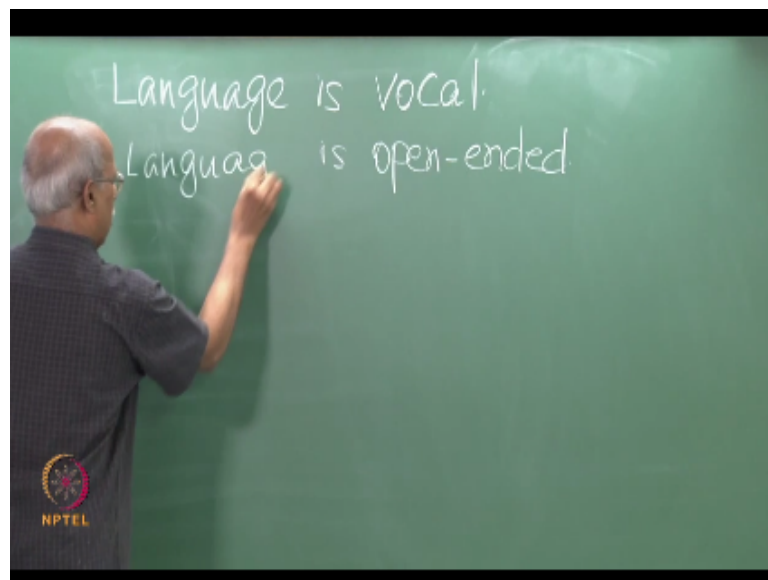
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Shresh Chauthary, DHSS, Indian Inst
of Technology Madras

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Language is also open-ended please write.

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What do I mean I mean that it keeps gaining and losing words sounds sentences features it is in a constant flux both its ends are open it constantly gains no matter what you think there have been movements for purity you know you must speak only in Hindi no English word there do not call it airport call it Vimana Pradhan.

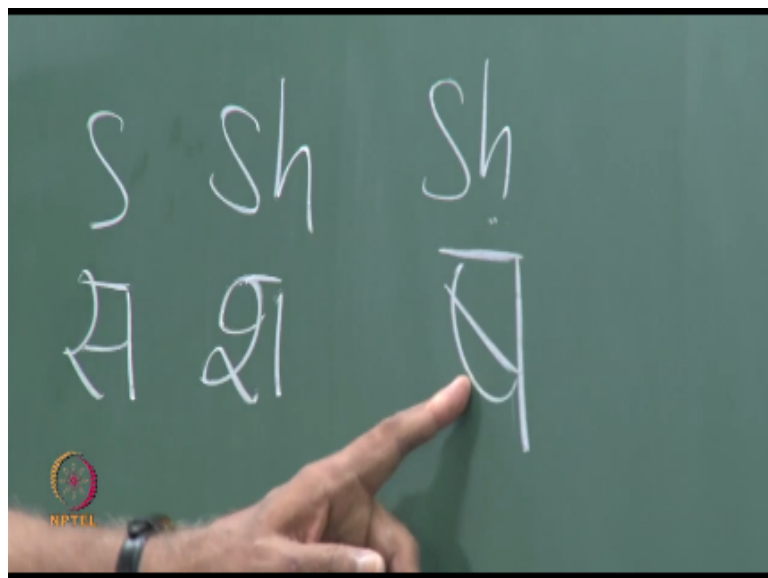
Okay do not call it book call it rustic or Kebab okay whatever man-- made efforts language always loses elements language always gains elements or sounds words kinds of sentences if

you compare your language with your ancestors language your grandfather your great-grandfather actually we say that in five generations it becomes a new language a great grandson in other words my grandson would not understand the language is spoken by my grandfather if there.

Were to be at any place together I will have to interpret one to the other you know it's open-ended why what do you mean by open-ended it keeps losing and gaining words and sounds different classes of words you know in English today you have no distinction of gender okay except in some pronouns you say he and she sometimes also in adjectives but there was a time when English had distinction of gender even in articles there was one kind of be the for boys another kind of the girls okay today in many languages in Marathi in Bengali.

I do not know about maybe other language increasingly in Punjabi and in Hindi you do not distinguish between plus honor and - honor okay you just say a better term battle you don't say up bat here tone bat here we do not ask up guessing up cassia who in Marathi desai cassava in Bengali in Punjabi in many other languages features keep changing new features come old features go away is a constant flux and different kinds of words it is not just that nouns and adjectives change I will give you examples in a minute okay also prepositions also articles also pronouns keep disappearing pronunciation keeps changing new kinds of pronunciation when person came to this country some new sounds came old sounds disappeared okay.

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In our in the writing system of in Indian languages we have three kinds of we have S we have SH and we have another kind of SH okay if they will agree we write sure right do you have similar letter in the script of your mother tongue in Telugu yes or no please yeah but we do not pronounce it has either we gong call or it has become sure it is no longer that it used to be okay it's hardly pronounced anywhere X profanity scions now.

So sounds words features entire lot of things keep changing they are open-ended somebody has said that language is like a patient on the table on a surgical table you know it keeps bleeding constantly blood going out and it is on transfusion constantly new blood coming in if you stopped the new blood or if you stopped bleeding the patient will die so similarly you know a lot of people try engineering do not let a new word come in to do not let foreign word come in to that language.

Look at what has happened to Sanskrit or classical Latin or classical Greek or classical portion they are no longer spoken they became library language only in books so all natural languages are open-ended they take and lose new words okay they lose old words they gain new words how does it happen why do we gain new words why do we lose old words we do not know exactly much that happens in nature is not very well known to us but we have one or two guesses one is when technology changes the way we do things or when culture changes the way we believe the way we interact with other human beings.

Whenever there are the changes so for example when there was monarchy we had one set of vocabulary we had Kings we had Palace we as princess we had Kings bodyguards we are generals we had everything was connected so we have Rajkumar a Raj put reservoir Raj would Raj mark in the highway excreta but today we have Jonathan peoples Road okay today we have result interpreting media somehow looks of our edges of our evidence of a goon doggies of a chalky Java you know we have the entire vocabulary changes and those other words start going similarly when technology changes the way we traveled the way we cooked the way we wrote okay look at some examples.

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Can you recognize have you seen a cooking facility of this kind how many people raise your hands please? Okay do you remember the word for it in your mother tongue please write on your notebook what is it called in your mother tongue that in Hindi we call it Chula okay write in Telugu what do you call it lovely and the word for the firewood that you burn here Malayalam speakers family speakers Hindi speakers you see in your language it is already dead.

You do not know there is no Indian language which does not have word for all of these things okay which does not have all of the word for all of these things what is the word for firewood when it becomes ash lovely there are a special word from there okay look at the next slide look at this.

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Okay you might see that the vessel the pot is resting on three or four protruding structures right what is their name for them they have a special name in Telugu as well as in Hindi in any language you know it is the same technology do you remember the me is dead in your language because the heart it is hardly in use in your families now you use gas stove or you use electric stove or you use solar stove or actually many families do not cook they go to Pizza Hut they go to Dominos what are the other things McDonalds or Sullivan oven more than Italy right.

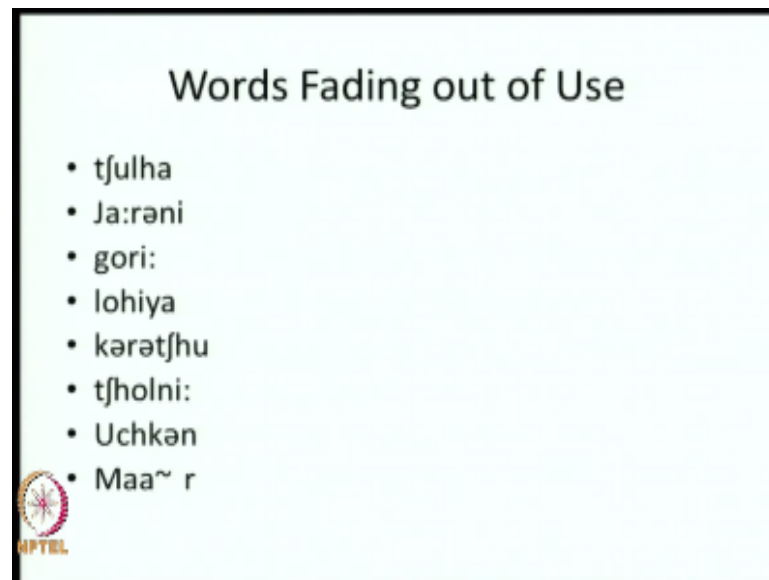
So you know but everything here has a name can you look at the little glass structure which has a flame in the picture what is it called in your mother tongue that is right okay so you see your child your grandchild actually you know tell him that I asked you this question God willing you have 10 grandchildren each you know I do not believe in the bag of population overpopulation world has enough a space for lot more people.

Okay we need people right maybe your grandchild will see it in a museum but until about or even today when I go to my village I live in this kind of thing you know because we do not have electricity there and electricity such as it is such a highly ecology destroying damaging kind of technologies such an eco unfriendly kind of technology that is another matter but as technology changes words change can you tell me the name of the pan on which this already is cooking in which this already is cooking in Telugu Tamil Tommy Malayalam anybody who speaks about RT here could say will live with myself thank you god bless you.

Okay there is no language which does not have work you know but now increasingly the word pots and pans and you know are coming non-stick pans nonstick pots are coming in there is another you know flat kind of pan behind that vessel what is it called what is it called in Telugu what is it called in Marathi okay check with your I am feeling that it may have a different you know for everything all the utensils etcetera.

Do you see there is a water pot with some water there what is it called Jammu right no okay all of these you know this was an entire technology it is changing you know another view of the same kitchen lot of things what is that earthen pot behind this young lady or okay and it came in it came in different kinds different varieties and the each of these different varieties different sizes had names there was Gera there was sera there was X there was Y a whole lot of different things. Okay many of these things.

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You can please make a note okay find words for these things in your mother tongue in my mother tongue what is called is trove in English it Chula what is firewood is Aaron okay what has door protruding structures in my mother tongue they call it Gaudi the pan the deep pan is called logia the flat pan is called tawa those gladly small ladle there are cultural saline which can a whole lot of thing what is the word for the water that came out of boiled rice without and more kanji yes you know all of these things can you translate it into English difficult because Englishmen do not have that thing that can you translate the word cake into Telugu difficult.

Because we do not have that culture we do not have that yeah we do not eat that dish the point I am making ladies and gentlemen the language changes as technology changes I have seen on this campus the days when there was you know computers were limited to three departments electrical computer science and applied mechanics okay then slowly each departments of his got one computer and we had to queue up then you know email internet mail came here in the 1990s all mails were received in one lab network lab in the computer science and engineering department in BSV.

And every departments Clerk went there as a designated hour brought the printout distributed like post entire department had only one email id the email ID of my department was I am gt1 because Industrial Management was there and those people had colonized us okay but gradually now you know everyone routinely says what is your email ID who could send it on the mail mailed the word mail has meaning has changed it does not mean a railway train it does not mean postal service okay so things change they also change when culture changes look at some modern kitchen.

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New words what is that flat hanging thing called what is this thing called what is this called the lid of the cooker here is the lid of the cooker what is this thing called tap what is this thing called where does it go to come on you go to the diesel you see our water dispenser okay water

dispenser lots of Indian entire kitchen had changed compared this kitchen please compare this kitchen with this kitchen.

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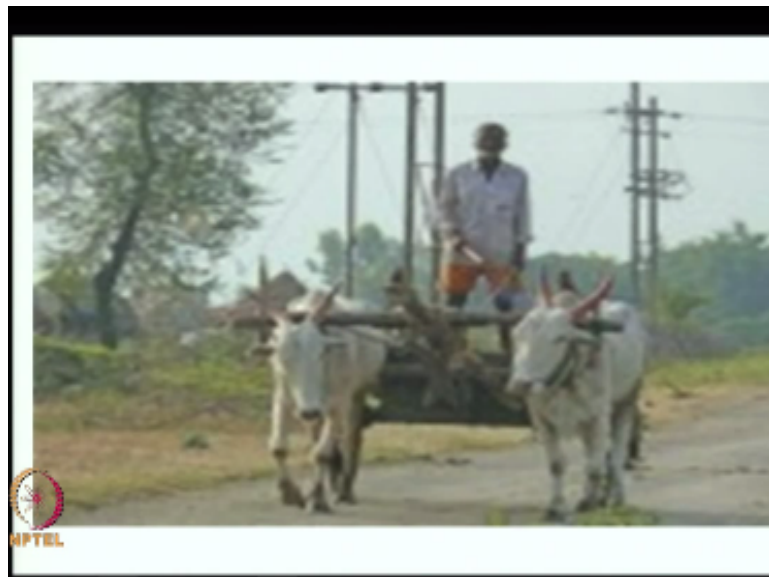
Except that human beings are the same everything else has changed that kitchen the new kitchen is energy intensive for everything. You need electricity or some other form of energy whereas for this other thing it is so far simpler of course you know you can say the cooking today is better I think the best cooking happened in some of these kitchens ok but the entire technology has changed the vessels have changed the utensils have changed the tools have changed. Look at these kitchens.

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Okay the way we travelled.

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What is the word for the Bullock our driver in your mother tongue what is the word ring what the word is for elephant driver in your mother tongue? What is the word for horse driver in your mother tongue? A horse minder those who speak Hindi? please raise your hands those who speak Hindi what is the word for the person who looks after the horses I am sure Telugu has them I am sure Tamil Malayalam all of us you know.

But because this is change every part of this contraption has a word what is the name for the rope which crosses through the nose of the Bullock what a cruel way their nose had to be

pierced for the Rope to be put through what is it called that rope next time you go home please find in Hindi got not okay what is this rope called the rope with which the that Bullock car driver controlled the boat everything.

What is this wooden structure called what is this wooden structure called it is in Hindi it is called juahh yoke you all of these things you know today we travel by train.

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And Indian Railway trains are as crowded as this is a train from out of my village everyone trying to go to Delhi or to Bombay to Calcutta Madras village is getting this village is getting deserted and you know we have an entire in all our languages we have no words like train Express reservation late railway station 500 words from the technology of Railway trains alone railway line crossing tracks XY a whole lot of things you can make an entire list of things.

Where we have got words from.

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Language is arbitrary

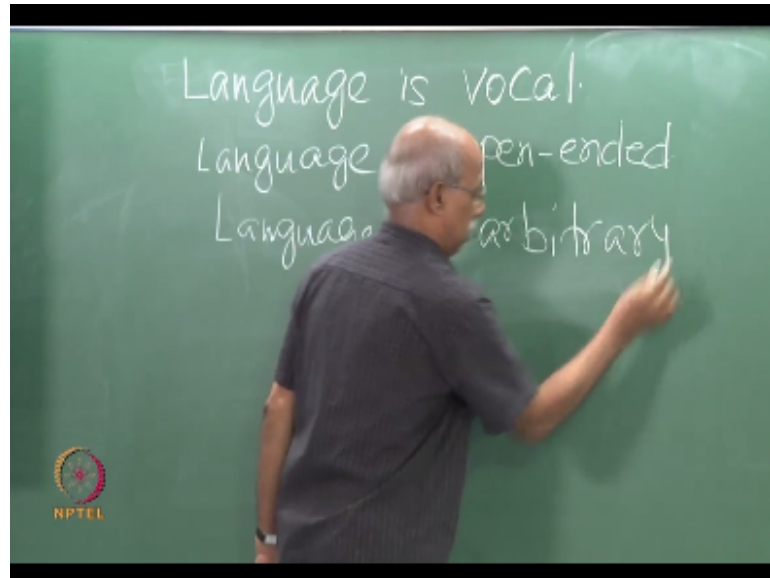
- No logical link bet sound and meaning
chuma, bibi, daai, aai, baai
glad, glamour, gleam, glisten, glow, gloom
madam, gay, silly, thrill, wifeman



Language is arbitrary can I have you for another three minutes okay language is arbitrary the meaning and meaning and word have no connection you can have any word meaning anything okay the word I have taken some examples here the first line you know chuma in Tamil it is an adverb in Hindi it is a verb in Hindi it means kiss okay mothers kiss their babies but in Tamil it is an adverb why are you doing it chuma for no particular reason okay. Or bibi in or do it can mean wife in Punjabi it can mean mother or daai it can mean in my mother tongue it can mean aunt but in Hindi it is a maidservant.

Okay aai in Marathi his mother but in Hindi it is past tense of come for a girl a lad icky aai okay or boy in the Hindi spoken in Bihar and Uttar Pradesh it can mean a dancing girl a dancing woman but in Madhya Pradesh in Chhattisgarh in Rajasthan it can mean a mother a grandmother or a respectable woman few words and meaning pronunciation in meaning do not seem to I do not know it is true do not seem to have a logical connection it is arbitrary.

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Language is anything can be made to mean anything can be made to mean anything yeah I am sure you are aware of them in the hostel language okay some people say words with GL mean good things so you have glad glamour gleam but glisten but and glow but you also have things like gloom which means sadness see it is not necessarily true words can have one meaning one day another meaning another day madam used to be a respectable lady in some slang madam today means the head of a brothel the woman who runs a prostitution den gay earlier was the description of a B Tech boy handsome rich intelligent assured of a job.

Today gay means someone who has a particular kind of sexual preference okay similarly with silly thrilled earlier woman was known as wife man in Old English today she's woman so benign and pronunciation and words do not have a logical connection we will meet tomorrow again and continue this discussion thank you have a good day.

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K.R.Mahendra Babu

Soju Francis
S. Pradeepa

S. Subash
Camera

Selvam
Robert Joseph

Karthikeyan
Ramkumar
Ramganes
Sathiaraj

Studio Assistants

Krishnakumar
Linuselman

Saranraj

Animations

Anushree Santhosh
Pradeep Valan .S.L

NPTEL Web & Faculty Assistance Team

Allen Jacob Dinesh
Bharathi Balaji
Deepa Venkatraman

Dianis Bertin
Gayathri
Gurumoorthi
Jason Prasad
Jayanthi

Kamal Ramakrishanan
Lakshmi Priya
Malarvizhi
Manikandasivam
Mohana Sundari

Muthu Kumaran
Naveen Kumar

Palani
Salomi
Senthil
Sridharan
Suriyakumari

Administrative Assistant

Janakiraman .K.S

Video Producers

K.R Ravindranath

Kannan Krishnamurthy

IIT Madras Production

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