

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

**NPTEL**  
**National Programme on Technology Enhanced Learning**

**Introduction to modern linguistics**

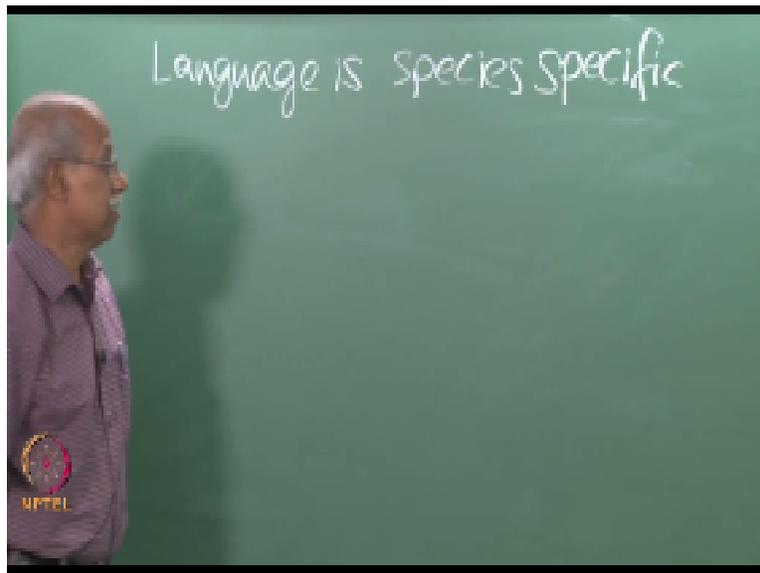
**Lecture-5**

**Design features of language-4**

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Good afternoon so we have been talking the design features of natural languages and so far we have listed some features like please check your notebook we have listed.

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Like languages especially the specific languages spaces uniform languages culturally languages culturally transmitted language varies and languages arbitrary languages vocal language is open-ended language varies according to region class cost subject a whole lot of things varies according to region place people etc okay today in tomorrow it is these reasons it is these features that make language natural languages a unique medium.

Of communication no man made medium has all these features we cannot say all human beings no painting we cannot say animals also know this or that we cannot say that painting changes according to region you know we cannot say that about music we cannot say that about spy language or computer language we will we do not we cannot say that computer languages are culturally transmitted or they are arbitrary they are based on logic natural language.

Also has a lot of logic but not entirely the meaning we saw is arbitrary there is no reason why offence should be called a pen and the shirts would be called a shirt and why the same thing should have different names in different languages or why should one word indicate one thing in one language and another thing in another language there is a bit of arbitrariness in natural languages we will talk about one or two other features.

And then we will begin talking about the structure of natural languages are you alright are you comfortable say yes or no please are you are we together great wonderful we are today going to talk about another feature which is generally described as please write creative language is creative by which I mean you know using the same words using the same rules using the same units same sound same words same or similar sentences.

You can say new things okay this is what poets do all the time they do all the time you know they use the same good old words and make new sentences out of them say for example the line I have quoted from a poet called Thomas Stearns Eliot a great poet and Nobel Prize winner 1922 Nobel Prize in Literature and American born in the son of a bank born in the family of bankers moved to England took poetry writing as his career took literature as his career I wrote some great poems including one called wasteland wonderful poem you should before you are 35 or 40 after you leave this Institute you might find to look at that.

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## Language is creative

- One can always say new things.
- "In my beginning is my end" - T S Eliot
- One can use old words with new meanings.
- "Computer", "mouse"...

For underlying poem it is a wonderful piece of work he wrote other poems as well and from one of these poems I have taken this line in what beginning my end is that possible how can you have your end in your beginning what poets can say words can say unusual things words can say new things and poets can say new things because it is possible for us to say new things in language using the same words we can say things.

Which nobody has said before is that do you agree they agree yes or no please I said do you agree yes using the same good old words the same five thousand fifty thousand seventy five thousand words we can always say new things or we can use old words in new meanings say for example when computers came we did not sit down together and said look now this machine has come let us create a vocabulary for this machine.

Actually computer used to be a man you know in survey teams you know if you have done some civil engineering you might have gone through some elementary lessons in surveying how many people have done that here no okay in civil engineering you know you serve a land topography so for example when Colonel Everest have you heard of Colonel Everest he was the director general of the survey of India.

In the 19th century so when he went to survey the topography of the Himalayas he had a team of scientists technicians Clark's administrators and he had one computer you know a man a gentleman his computer a man called rather not radha not sikthar there was a Bengali Gentry

man his official designation was computer and he computed the elevation of Mount Everest and he computed it almost as correctly.

As modern computers using GPS and other things do he is considered to be wrong by less than 50 feet you know he said 29,000 100 something it is not 100 something.

It is to 29,000 130 other device that is about all his official designation was computer but now if I call you computer would you be happy you will be happy if I call you computer software designer chief architect the official designation of many Chiefs of IT companies CEO chief operating officer a chief computer architect okay they do not like calling themselves chief executive officer but nobody likes being called a computer.

Today because it means so much more mechanical okay so much more you know driven by algorithms principles so much more oriented lots of words look at the picture of computer.

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You know for every part do you have a name but all those names were used for something else before see the monitor the screen the screen used to be made of textile of clothes do you have textile screen for computer today do you think it is likely yes or no how many people think we will have textile screen for computer in the next 10 years let me see no one we do not know you know in engineering always throws surprises.

At you until personal computers came computer used to be one source of endless pain ask your professors who grew up on those computers ok entire day you keep punching cards then at the end it gave you one or two lines but you know then came personal computers then came laptops or mobiles I remember at this Institute when laptops came only three professors had it the director had it the deputy director had it and somebody in computer science had it.

And they would they took their computers to the dining hall to the bathroom you know just to show off today nobody bothers even my wife has a laptop computer I do not know what she uses it for okay so you know it has everything.

What you call a speaker what we call monitor what we call CPU what you call keyboard in everything all of these names were in use already okay typewriters had keyboard before that keyboards were those boards we are sorry we are keys were hung in houses okay houses had locks and there was a central place where you would hand keys that you know that is in the nature of Technology when a new machine comes.

New words do not come suddenly when car came suddenly you did not have a whole lot of new vocabulary but then how did you get those words the car the seat the wheel the axle this spring the steering okay where do the steering comes from naval architecture from boats okay so you know this is a part of the creative nature of language it is a part of the creativity in language that you can always use old words for new things or you can extend.

The meaning you can you know new meaning can be assigned look at the word Mouse okay what a pity you know what why did I sometimes wonder why did they call it Mouse why they did not call it something else at least a cat or a lion or you know something else maybe because it looks like a mouse they think it looks like a mouse I do not know in my part of the country I see a lot of people keeping you know bitter leaves in a box like that.

So maybe I would have called it something else but everything that you see here has a name and all of these names had a different meaning until computers came in speaker his speaker was a human being a speaker was not a machine okay a speaker was an official the person who presided in Parliament was called a speaker okay who has spoke for the entire Parliament right but you know we changed the meaning and new things came in use.

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## Language is creative - 2

- One can make "new" sentences.
- "This is the cat that ate the mouse..."
- One can say things that are not "true".

So language is creative you know if there is no law saying that you can use cow only for cow you can use cow for lion you can use cow for snake you can use anything you like you know language is your property Nature has given you to you use it any way you like there is no restriction there you can always make new sentences no matter how long the sentence is no matter how long a sentence is you can always add something.

I am going to give you a play a party game with you suppose I have a sentence I say this is the cat add something then you know somebody said that ate the mouse can you add something to it now sorry loud enough please can you stand up and speak so that you know the microphone catches it come on please you have a wonderful completion everybody is going to talk but maybe you will begin now in that room yes now add something to in that room.

Somebody else please which has white color come again please add something and drank milk and drank milk lovely come on please give me some another extension these and drank milk which is on the stove wonderful great very delicious imagination come on please somebody else one more and go Nellie sorry and ran away and ran away oh you are going to complete the sentence okay this is a game you know children play in children's in kindergarten schools you know this is a long sentence.

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## Language is Recursive

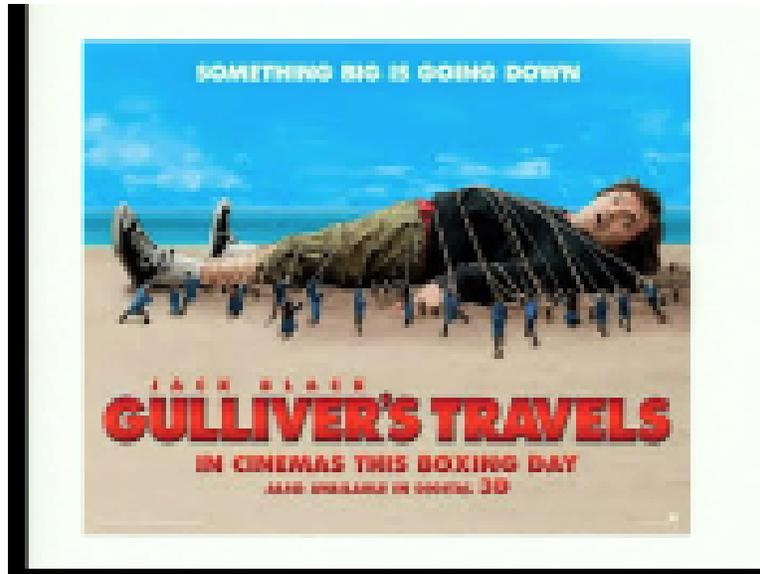
- "This is the priest all shaven and shorn  
that married the nun all tattered and torn  
that milked the cow  
that horned the dog  
that worried the cat  
that chased the rat  
that ate the corn  
that lay in the house  
that Jack built."

This is the cat that ate the mouse that ate the corn that lay in the house that Jack built you know or you can start in the first cell further this is the priest this is the priest that married the man all tattered and torn etcetera that kept takeout that horn the dog that worried the cat that chased the rat that ate the corn that lay in the house that Jack built you know you can endlessly go on because language has that capacity.

That is why you know all human beings regardless of Education regardless of position regardless of the fact that there are professors or Clark's everybody can use it and everybody can use it for their particular peculiar unique purposes when you look at the hostile language you see words come from different sources in the Telugu and you know they are made to mean exactly the same thing that be techs at this institute decide.

It should mean you know you can also say things that are not true human beings I was telling you the other day are the only creatures who can tell lies the dog cannot tell lies lion cannot tell lies snake cannot tell lies okay they can only tell you what has happened if at all but human beings can do one thing tell you another I had routinely asked you are we together and you say yes I know where you are okay and it is alright you know it happens this is part of the truth you know we a lot of wonderful things look at this book.

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The cover of this book Gulliver's Travels have you heard of this book okay a book a great book of satire written by Jonathan Swift if you have not read this book so far please read this book during the coming winter vacation okay one of the great books ever written the simple message it gives is do not be too proud okay you may be a b.tech from x Institute or Y Institute you may be an MBA from here or there you may be tall or fair or rich or clever.

But there always are people richer than you cleverer than you taller than you more intelligent and luckier than you this book Gulliver's Travels has anyone read it have you heard about this book okay can anyone please tell me what is this book about I want the camera to catch you know so that the viewers do not think that there were no students in this class the teacher talked only to the camera come on please somebody yes my you have read.

It like a lemur oh yes thank you notice is that this book has four tails Gulliver's tails or Gulliver's Travels Gulliver is a sea captain he goes out on ships on voyages and once his ship is wrecked in a storm and he is thrown off he floats survives floats onto an island and when he wakes up he finds himself surrounded by creatures that look like human beings but these human beings are very small only six inches.

How much would be six inches one span perhaps okay just six inches look at the picture they are all around him and Gulliver think oh wow I am a giant I am so big okay but next time some three four five years later Gulliver a shipwrecked again and this time he finds himself on an

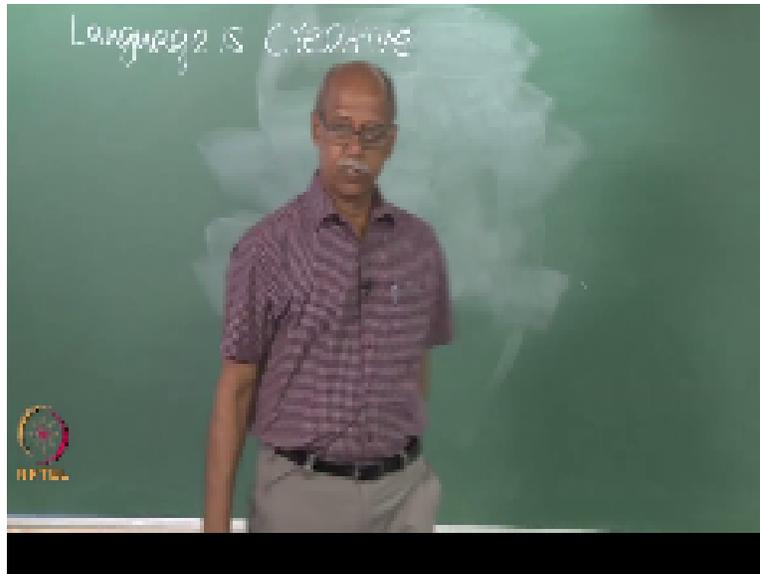
island where inhabitants are truly giant the daughter of the king of that island picks up Gulliver likes ship except like she used to pick up her dolls.

She would pick up Gulliver keep him on her table play with him then gently keep him back and Gulliver was so frightened because when she picked him up and threw him up you know he thought he was being thrown up 25 feet above the ground growl do you think such things exist we do not know we do not we do not know the entire universe we do not know the entire cosmos may be there but from what we know there is no such universe.

So human beings but human beings have the capacity to tell things to speak about things actually even to cry and laugh when we go to watch cinema I find some people in royalty bring three or four handkerchiefs okay particularly when there is Telugu movie or Hindi movie you know in the last scene or he has seen before last everything is settled the girl is about to put the garland around the hero and then suddenly.

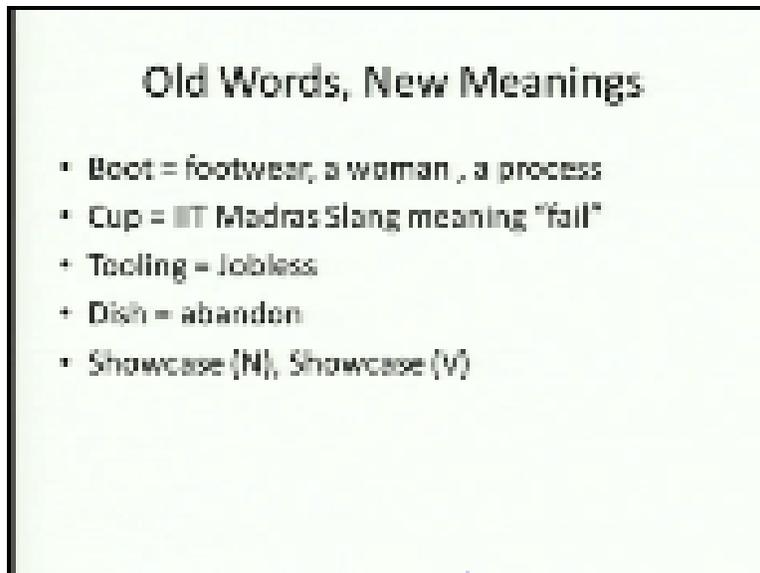
The villain comes or the mother comes and says no do not do this he is not the son of the rich man or she is not the daughter of the rich woman something happens and lots of crying all of us know everybody there knows it is untrue right when you go to a tea or when you go to watch a play we know it is not true right and yet we cry we get angry when the villain is punched we feel Wow right thing is happening give him one from my side as well please we feel angry we start sweating or we laugh we cry none of these things is true but human language has the capacity to make it possible to do it okay human language can talk of things which have not been experienced not happened please write creative that is because languages.

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Language is creative we can always say new things we can always make old words mean new ways okay we can always come up with new sentences we can always say things that are not true or we can use.

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One thing for more than one meaning say booth in computer today has one meaning but the original meaning of boot is a Footwear in slang in the 18th 19th century it also meant a woman who was very difficult you know many young men called their mothers-in-law a boot she is an

old boot okay in 18th century slang in 18th 19th century slang in England a difficult woman was also called an old boot and ugly boot or bootie is a process in computer.

You know your computer has booted or would you abort or retry okay, computer asks you boot abort or retry there is a wonderful poem written by a computer scientist finally when computer asks me at midnight I am about to go to a cinema a movie with a friend and computer asks me boot abort or retry ok it is a wonderful point must find it on the net and read it ok similarly look at your own words you know the kind of words kind of jargon .

I hear in IIT hostel sector until I came here I had thought cup meant a cup in which you drank tea ok but after coming here. I learned no cop is a grade which is given to people who do not attend classes regularly ok or you know when I came here one day somebody asked me sir why has that person got a good grade. I said what's the problem he said he just such a tooling around I thought tooling meant hard work they caught tool and tooling.

In those days Electrical Engineering etcetera they had you know tools today I think you do everything virtual engineering only on computer or are do you are you still trained in using tools okay they still have workshop lovely so I thought tooling was a good thing but later I discovered the tooling in IIT Madras jargon meant going about doing nothing and going from this canteen to that canteen to oil tea tooth or taramani to velacherry except everywhere.

Accepted classes in labs and laboratories and libraries so that person is tooling around meant that person is wandering like a cloud okay or dish I heard I thought this was a lovely thing you know we pay for it and we eat but somebody here told me that dish also means abandon or bitch it means they stop doing it or digit okay our showcase used to be known but now people in Management Studies also use showcase as well showcase it right.

So how can you showcase it you can sew something in the showcase you can show something in the showcase but then you say why have two shows we can just use showcase it that means it can be used as a verb India has an entire tradition of stories where animals behave like human beings do you know the name of that book collection of stories where animals birds panchatantra okay where birds other kinds of creatures.

From the animal world fight have quarrels who have friendships have alliances or treaties have conversations etc it is called Panchatantra does anyone know why is it called Panchatantra five

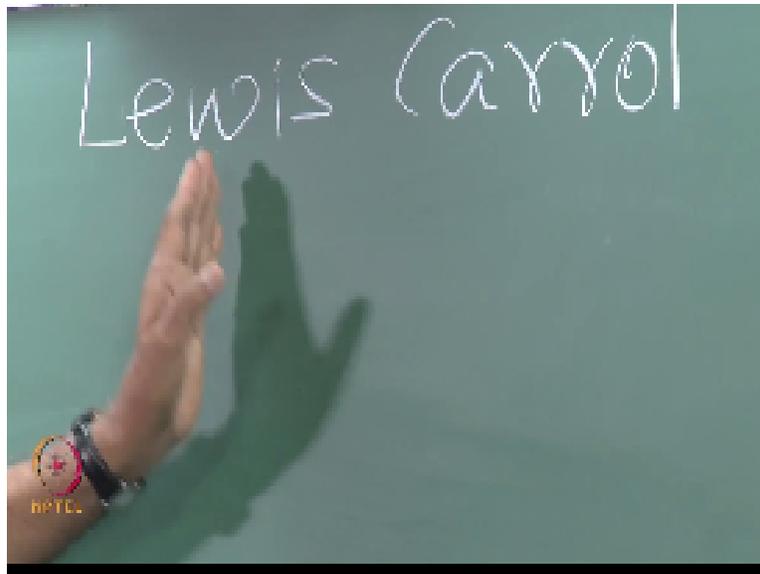
it has five morals great it has five models how to make friends how to conquer enemies how to plant differences in the camp of enemies etcetera there are five lessons in people management that is why it is called Matala or mithraved of emitter evade etcetera.

There are five different kinds you must read some of these books okay in any language it does not matter if you do not know Sanskrit you can I am sure there are copy translations in Telugu there I am aware of translation in Hindi translation in English and these books do not cost much no animals do not talk like that animals who look crows do not go and tell rabbits.

That rabbit do not go that side there is a lion waiting to eat you and rabbit remembers the crow okay crow you saved my life so when the crow what trapped a pigeon was trapped then somebody was required to free rescue that crow and this rabbit came and rabbit with her sharp teeth was able to cut the net and crows flew away okay.

They hurt it is true that crow can fly away it is true that rabbits can cut what rabbit and crow can never have conversation because neither rabbit has that kind of language nor crow has that kind of language neither do they know about each other and it is not that these stories have been written only in India you know else of Sybil's or you know have you heard of this book Alice in the Wonderland Alice in the Wonderland another very interesting English book please write you must you must read it when you find time this is the book you know this book has was written by a professor of mathematics you know the he wrote in a pen name his pen name is Lewis Carroll.

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This is not his real name please Google it and you will find his real name and other biographical information about him he was a professor of mathematics at Cambridge and for a you know he do not have his own family he did not marry he did not have children but he had you know one day he was visiting a friend and his friend had two or three daughters and they were celebrating the birthday of one of these girls and then the girl said okay.

Uncle where is my gift and the uncle said okay I will give you a gift and then he wrote this book Alice in the Wonderland it is a very simple story one day it so happens that Alice falls asleep it is a story how doors and in her sleep she finds that she has fallen down. A pit goes miles and miles into the earth in the pit finally she learns at a place where animals are talking like human beings where there is animal kingdom okay and this is a very interesting book how you know fish and birds and lobsters and lizards and frogs and rabbits and snakes and butterflies and a whole lot of things talk to one another you can watch it for yourself.

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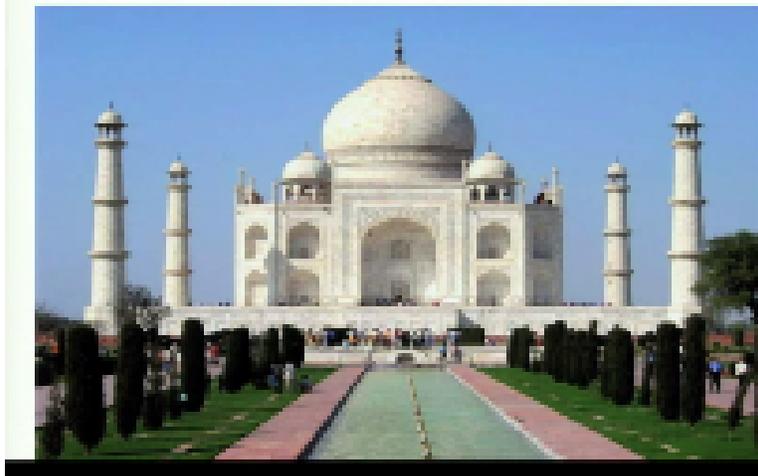
## Language is creative

- *Will you walk a little faster said a whiting to a snail* [The Lobster Quadrille - Alice in Wonderland.mp4](#)
- *Artfully careless...*  
*April is the cruellest month : T S Elliot*

The entire thing is there for free download on the net or in the net it there but the point here is human beings can speak about things which have never happened which cannot happen and this is what literature is made of the entire stuff the realm of imagination the realm of fancy or fiction is different from fact and human beings have this capacity primarily because of language enables them to go beyond experience he and I may not have been to Wonderland what we can describe wonderland you and I may not have seen or may have forgotten but yet we can recall imagine you know we can do a whole lot of things but we can recreate a world we can always say you know a clever smart strange kind of things about anything I have surely recognize.

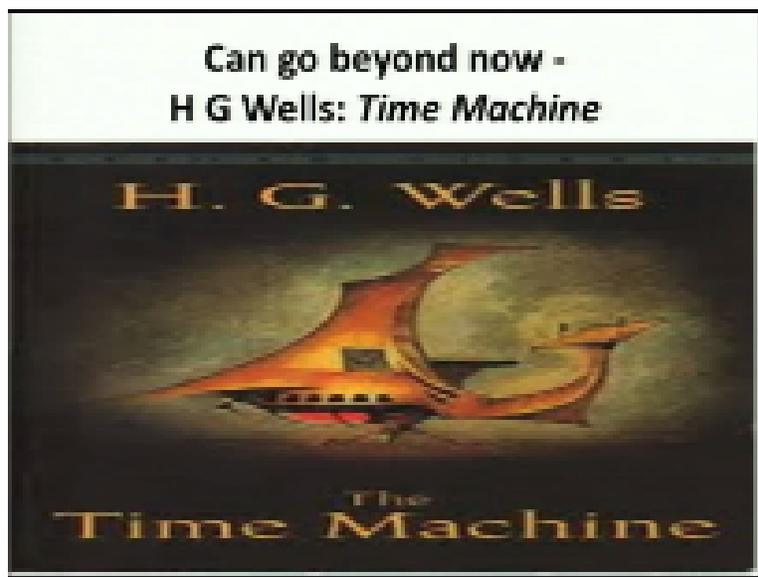
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***Ka:ler kopole ek photo jal :Tagore***



This building what is it the mausoleum or the tomb created on the grave of Mumtaz taj Mahal by her husband Shah Jahan later Sasha himself was buried here okay the middle of the 17th century right a great monument considered to be one of the wonders of architecture in the world considered one of the seven wonders in architecture or manmade kind of wonders in the world but a poet can always describe it differently Tagore called it a drop of tear you know Kale Copley on the forehead or cheek of time a cottage all a drop of water you know the kind of thing which has stayed ports can always you know words can always say fancy strange things.

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Human beings human languages have the capacity to go beyond here and now another you know just has you I gave you a view of the book called Alice in the Wonderland similarly there is this book called time machine by H G Wells okay it says that transported into a you know it is a piece of fiction which says that a man once got into a machine and the Machine transported him 2,500 years back it was time machine.

You could just as in a car you can decide to go rear or you can decide to go forward okay so this passenger decided to go backward in time and he went 2,500 years ago and had wonderful experience this experience is narrated in this book called time machine what the world was for though we know all of us know that physically is not possible we cannot go back let alone 2500 years ago we cannot get back into yesterday we cannot rewind and bring this morning back every moment of time gone is gone forever it cannot be recaptured it cannot be relived it is

finished but human beings have that capacity of going beyond time going beyond place so you know we can go beyond now we can go beyond here.

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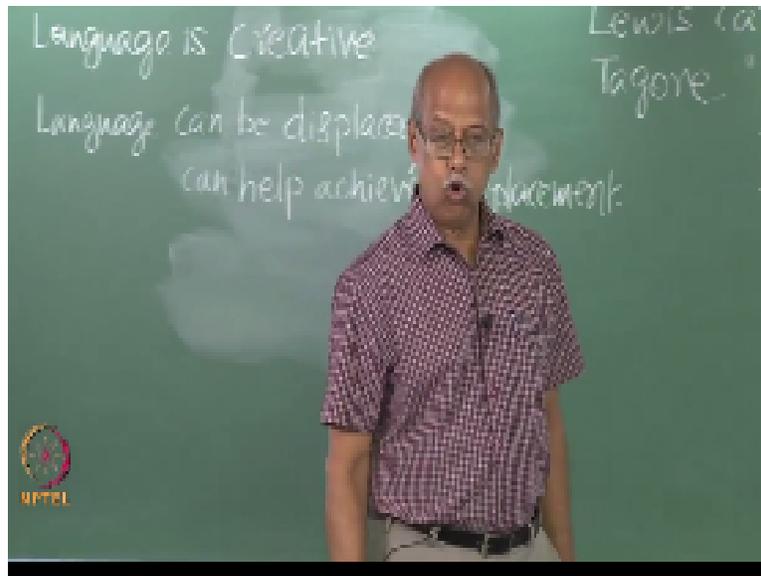
**Language is systematic**

System = Replicable  
Structure (units + Rules)  
Possible Combinations  
#pl-, kl-, gl-, not -pl, -kl, -gl#  
Restrictions on Occurrence  
\*#nk, kn, rk, lk

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As you saw in the clipping I showed you from Lewis Carroll Alice in the Wonderland okay language have the capacity please write of language.

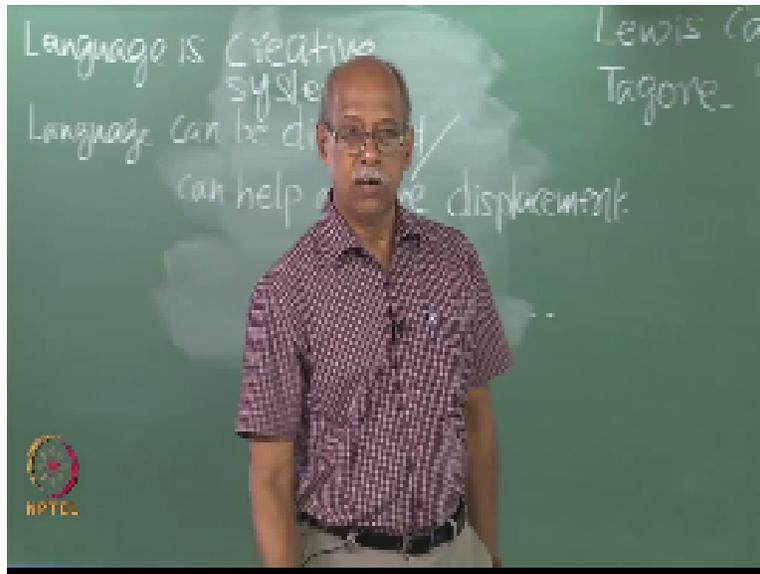
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Can be or language can help or can help achieve displacement it can help us it can help us go beyond here and now in animal languages that is not possible you cannot as far as we know today a dog cannot tell another dog about what happened five hundred years ago or five years ago or five days ago or what is going to happen they have some kind of a sense which tells them about the oncoming storm or weather but they cannot speak about that they do not have the language they have the sense of fear.

They have intuition they have instinct they can you know they can anticipate now storm is about to come now there is threat to my life or this place is wonderful I can stay and relax here but they cannot talk about all of these things because they do not have the property of displacement they do not have tenses present a past they do not have will shall can go went verb in two different forms past present talk about future time talk about past time human beings can other animals cannot that is because human being natural languages have the capacity to achieve displacement we can go beyond here and now all languages are systemic there is some amount of arbitrariness please write.

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Languages systematic what do we mean when we say language is systematic we mean two things number one it has units it is not one block it is made up of sub blocks so languages as we saw earlier are made up of the largest unit is discourse a paragraph a lecture a book but then there are sentences what is smaller than a sentence clauses what is smaller than a clause phrase is what is smaller than a phrase words.

What is smaller than a word syllables what is smaller than a syllable sounds what are smaller than sounds individual features components of sounds so each of these two you know you can take away it is like you know in any physical object it has you know atoms you further explore it and you find other particles finally you come to nanoparticles or maybe you can go even beyond but there are rules following which they are put together.

One syllable comes with another syllable following a particular rule words do not go with one another without rules okay can you say snake run or run snake can you say see snake or snake. See okay can you say eat water or drink water what can you say drink water but in Bengali you can say eat water in English you can say eat rice drink water smell air but in Hindi you can say eat rice drink water drink air okay in Bengali you can say eat rice eat water eat air eat cigarette Bengali do not smoke this is cigarette catchy Joel catchy hawa catchy but catchy okay you know this is learn in idiosyncratic.

So you know there are rules using which you decide which word will go with which word if you speak Hindi then you will have to bring gender into verbum adjectives a boy goes and the

girl goes in English it is the same goes but in Hindi you have different rules ladka jata hai ladki jati hai ladka bada hai ladki badi hai lurking a jati okay rock opera rocky brie or Barea okay so you know there are rules using which you combine words there are restrictions on combinations as well it is not that anything can happen anywhere okay boys hostel is not the same thing as hostel boys do you understand do you understand okay yeah there are there are differences even sounds you know there are English words which begin with PL KL GL .

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**Language is systematic**

- System = Replicable
- Structure (units + Rules)
- Possible Combinations
- #pl-, kl-, gl-, not -pl, -kl, -gl#
- Restrictions on Occurrence
- \*#nk, kn, rk, lk

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But they do not end with PL, k l , GL okay, you do not have words you know I mean in a certain sense okay, I am talking at the moment of writing and speaking everything put together but there are restrictions on occurrence no word in English can begin with NK but they can end in NK you can have thank but can you have in English a word that begins with NK you cannot so languages are systematic they are arbitrary.

Only in association between meaning and word meaning and sound meaning in a structure but the way they are put together there are lots of rules okay, a rules are different levels multi-tier rules.

Will learn those rules automatically without instruction and that is why human beings are cleverer than computers okay. Because languages systematic.

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## Meaning depends on combination

- /kil/ ~ /lik/ , /tel/ ~ /let/ , /pin/ ~ /nip/
- black boot ~ boot black
- hope in the soul ~ soap in the hole
- well boiled icicle ~ well oiled bicycle
- dear old queen ~ queer old dean
- *A woman without her man is nothing.*
- *(A woman, without her, man is nothing.)*
- *A woman, without her man, is nothing.)*

Will learn those systems meaning in language depends on combination because it is systematic you see you have the same sound in kill and lick like a but if you change the order then meaning changes look at this sentence one two three four five what do you think is the meaning a woman without her man is nothing it can have two meanings how you combine you can say a woman without her man is nothing okay.

Or you can say a woman without her man many husbands believe that okay a woman without her man is nothing okay so you know meaning depends it will be totally different depending upon how you combine words and all this is possible you know you have the same words black boot and boot black boot means a boot which is black in color but boot black is a boy who polishes your boot right hope in the soul they have the same words but it is different from soap in the whole well it will mean bathroom okay so there are you know the meaning because of the systemic nature of language meaning is a property of combination or permutation.

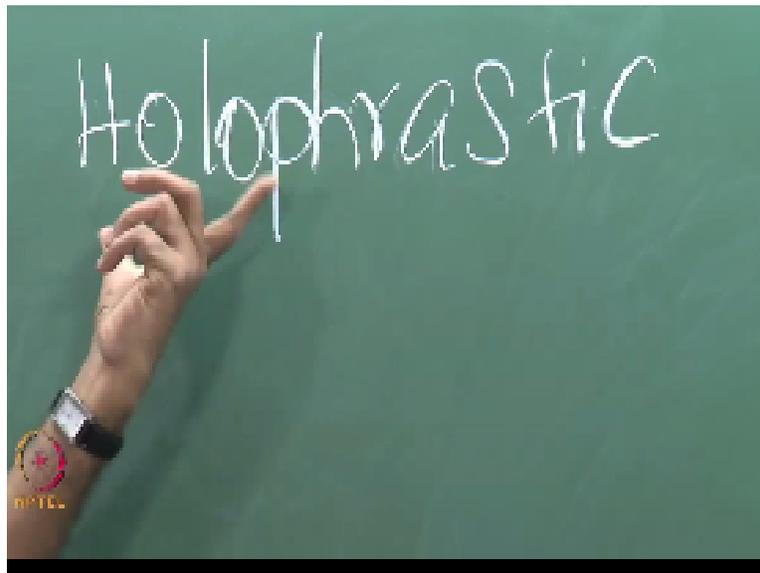
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## Language can be subjected to permutation

- tone ~ note
- ten ~ net
- boys' hostel ~ hostel boys
- dishonest but efficient ~ efficient but dishonest
- Inefficient but honest ~ honest but inefficient

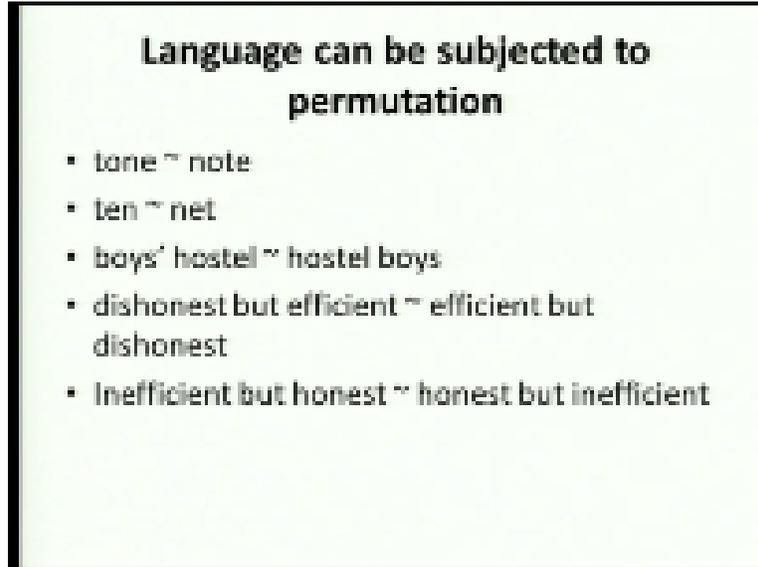
And combination you can bring one word here another word there in other words unlike animal languages human languages are not holophrastic.

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That entire phrase meaning one thing no there are units they are made up of units and dogs language together means one thing run away another dog is coming okay but in that is not the case with us each sentence is made up of sounds are put together in different combinations in different permutations and meaning depends upon actually it also influences your social judgment if you hear about somebody who is dishonest but efficient.

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**Language can be subjected to permutation**

- tone ~ note
- ten ~ net
- boys' hostel ~ hostel boys
- dishonest but efficient ~ efficient but dishonest
- Inefficient but honest ~ honest but inefficient

It is one thing but if somebody says efficient but dishonest it is another thing what comes first what comes next what kind of impression is left all of these things make a total impact so language is not an arbitrary structure it may be arbitrary in meaning but structure is pretty systematic there are rules there are constraints on combinations and it is these rules and constraints that make language mean what it means in other words.

Human beings are using a very complex mechanism called natural languages which are you know even if you like everything else the most important feature the feature of being systematic is there it is highly complex sophisticated rule based stuff no one knows how we learn those rules we only know that language cannot be used without those rules and we learn those rules almost without instruction almost automatically to have any questions thank you have a good day.

### **Online Video Editing /Post Production**

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