### Principles and Parameters in Natural Language Prof. Rajesh Kumar Department of Humanities and Social Sciences Indian Institute of Technology, Madras

### Lecture – 27 Morphological and Abstract Case

(Refer Slide Time: 00:30)

# Questions

- What is Case?
- How do we understand them configurationally?



We were talking about structural relations we started talking about case as well. And we are going to look at it that is what is what is case and how do we understand them configurationally that is in the whole scheme of x bar, how do we understand case and how does x bar scheme help us assignment of cases to different NPs. See the point is any noun phrase in a sentence that you see whether it is a subject noun phrase or an object noun phrase or anything else, a noun phrase within a PP which may be an adjunct. Each noun phrase must have a case; if a noun phrase does not have a case then the sentence is not grammatical. Also if the noun phrase has a long case still the sentence is grammatical. I am going to show you some such examples.

(Refer Slide Time: 01:34)

### Relations

- Dominance
  - Node A dominates node B, iff
    - A is higher up in the tree than B and
    - If there is a line tracing A to B going downward
- Precedence
  - Node A precedes node B iff:
    - A is to the left of B, and



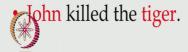
• A does not dominate B and B does not dominate A

Remember this part dominance and precedence so far keeping these two things in mind we are going to move ahead with cases and we will introduce two more concept of governance that is government and then finally, c-command which I told you last time the term stands for constituent command, how one constituent commands controls the other one.

(Refer Slide Time: 02:08)

# Morphological Case and Abstract Case

- John is from Germany.
- His coat is big.
- Mary is his friend.
- He likes her.



We come to agreement patterns little later. Let us look at first case. First we want to see

the distinction between morphological case and abstract case. If you understand what we mean by abstract case, then you understand what is the meaning of logical case and vice versa. These two terms simply mean in an NP in a noun phrase, which has abstract case on it we do not see the case see the point we do not see the case. In a morphological case, we realize that something has happened to that NP and therefore, it looks different.

For example, look at the first sentence, John is from Germany. What are the noun phrases that you see here? John is one and Germany is the other one. The first thing that I told you is both the NP must have case we do not know which case so far, but both the NPs must have case. And as a matter of I have marked just first one for our purpose, but both of them have abstract cases. Do you see any change in Germany, by change I mean change in the word? No? It comes as it is anywhere else. In whatever position it comes weather in a subject position or an object position the word comes exactly this way therefore, you see no change. Do you see any change in the name of the any change in John? No, and again I will make it clearer to you what I mean by change.

Now, look at the second one. We say his coat is big. Can we say he coat is big? No, why not? Why do we need to say his, and what is possessive, you are right that that is the possessive and possessive is a case. So, the NP in a possessive case must be in a different form than nominative cases. John is a nominative case; his is a possessive case.

Now, look at the next sentence Mary is his friend Mary is nominative case, what is about the other NP that is a possessive case. So, we cannot say Mary is he friend. And finally, the sentence - the last sentence I am trying to use both pronounce in this sentence, he likes her. Now, the pronoun he and look at the pronoun her. Can we say he likes she, no? Can we say his likes her? None of these things are allowed in English, the reason being he is a nominative case, he is the form in the nominative case; and her is the form in possessive case I am sorry yeah that is right.

So, in a set of four five sentences, what I want you to see is there are some NPs which are in nominative cases, some NPs in other cases. At the same time these are the examples of morphologically case marked NPs as well as abstract as well as NPs with abstract cases. Such as NPs like John, Mary and he, these three NPs have abstract cases on them that is we do not see any change on them. However, when you see his and her these are

morphological case marked NPs. Is this distinction clear to you? The distinction that I want you to be clear with is morphological case and abstract case. See keep in mind that each NP must have a case so that is out of a question, there will be an NP in a sentence which may not have a case is out of question. What is important is whether in NP has a morphological case on it or it has an abstract case on it that is the only distinction we have to make.

Student: But we have not defined case what is (Refer Time: 07:52)

Yeah, I am going to do I am going to talk more about that but.

Student: You are telling that (Refer Time: 07:56)

Yeah, first I am telling you that every NP must have case. And second thing I am telling you that some NPs will have cases will have morphologically marked cases and some NPs will have abstract cases. What I mean by case is, case is an abstract property of noun phrases. These things are and it is also property of a sentence. Cases are not properties of nouns in isolation; they receive a case only when they are in a sentence. Therefore, a noun phrase to begin with does not have any case; it receives either a nominative case or an accusative case only when they appear in different positions in a sentence. So, case is an abstract property of sentence - number one. These cases are realized only on noun phrases and these cases are how these cases are given to different NPs is what we are going to see further is this making sense to you.

Now, once again let us let us clarify this thing we are going to repeat this again we are going to see these things time and time and again, but I am glad you asked which gives me an opportunity to clarify this thing. Case is property of a sentence though they are realized or noun phrases. Noun phrases do not come loaded with cases they receive cases within the sentence. Now, at this point I do not want to take you to advanced debates, there are some debates available in principles and parameters and they are highly abstract and theoretically nature where people argue or people have argued that noun phrases come with cases and then they unpack themselves in the sentence.

Now, these are two abstract you think for us to see at this stage. What their argument is just like a noun, a noun is either masculine or feminine. The gender is not real gender of a noun is not realized in a sentence. A gender of a noun is available with noun even without a sentence. For example, when I say chair what is the word for chair in Hindi.

Student: [FL]

[FL]. And I am giving you Hindi example it is going to be true in many other languages except English. [FL] you put it outside a sentence or you try to use in a sentence; in both the cases it has a gender which is feminine gender. So, the argument is just like a noun phrase, a noun has a gender outside the sentence also; and lot of times it gets realized only in a sentence. Similarly, cases also come noun phrases come loaded with case and they are realized in the sentence.

See the argument now that argument is not relevant at this point. So, therefore, I want you to take only one part of that argument which is case is an abstract property of a sentence not of a noun phrase. Case is an abstract property of a sentence. In a sentence when cases get manifested, they get manifested on noun phrases. How they get manifested in noun phrases what I am going to show you little later. But some examples of cases are nominative, objective, possessive and I am going to show you few more examples. These are some examples of cases.

The third point I want you to know some of them are going to show up in abstract form and some of them show up morphologically marked and this is what I am trying to show you here is this much clear so far? Any hesitation, any problem let me know or when we move and still you see some something contradicting one each one another please remind me and if they if they are not going through, if they if they are not convincing let me know.

Now look at the last sentence John killed the tiger. See this thing. What are the two NPs in this sentence, John and the tiger? If I ask you what kinds of cases given the two here do you see on these two noun phrase I am not asking the names of the cases, I am asking given the two things what type of cases do you see here on these two nouns phrases abstract cases. Once again to wind up this discussion on abstract case and morphological

case, what we mean is knowing that case is the property of a sentence the two NPs in this sentence have two cases namely one what is the position of John grammatical position subject position, and the position of the tiger object position, very nice.

So, John gets a nominative case in the subject position and again how I am going to show you in a minute just let us take it for a moment. John gets a nominative case in the subject position and the tiger gets objective case or because it is an object it the case is called objective case or there is another name for the same thing which is accusative case, objective or accusative case because it is in the object position. However, you see no change in the no physical change in these two words this is the meaning of abstract case that even though it has accusative case on it that is NP - the tiger, and even if the NP John has nominative case on it you see no change as such in their physical form. Yeah go ahead

Student: Given example where there is a physical change in the objective case.

Yeah the sentence before.

Student: Yeah sir, what exactly the change that has happened.

(Refer Slide Time: 15:37)

	Case	es	
	Nominative Accusative		Genitive
• Lexical NPs:	John	John	John's
• Pronominal NPs:	I You He She It We You	me You Him her it us you	my Your His her its our your
*	They	them	their

I am going to hold on, let us look at this chart. We see lot of changes in pronounce, most of the time you are not going to see changes in nouns. However, you are going to see changes in pronounce and look at the changes. If you have a lexical NP that that is what I mean when I said the distinction between noun and pronoun nouns are lexical NPs. If you have a NP like John it is going to be the same in nominative case or accusative case. However, if you have pronounce that is pronominal NP in a nominative case, you have I in the accusative case it is going to become me. If you have he in a nominative case, it is going to be he in accusative case, it is going to become him or if it is she in accusative case it is going to become her.

Now see the in the previous slide. When we say he likes her right, the fact that we cannot say he likes she. The reason behind that is she has nominative case of it; and when it appears in object position, where it receives accusative case or objective case, it cannot retain its nominative form; it must appear in the accusative form. Now, this change in the form is visible on pronounce that is what we mean by morphological marking.

Student: So, the changes from the nominative case.

There are two forms. What we can say in an abstract way we have just one form she; in a nominative case the form is she; in accusative case the form is her. We have one form he, in nominative case the form is he, in accusative case the form is him, this is the distinction between abstract case and morphological case. And the further point that I am trying to make is he has abstract case because we do not see any change on him because even though it has nominative case on it we do not see any change, but the moment it takes accusative case we see a change in it. It does not retain its form what be what happens is the form becomes him that is the meaning of morphological case. However, that is not true for lexical NPs like John or Mary.

Now, take the same sentence if I want to say John likes Mary. John has which case in the in the subject position nominative case, and Mary has which case being in the object position objective case or accusative case. But do you see any change in the physical form of the word Mary, no, that does not mean, it is nominative case, it is in accusative case because of its position in a sentence. Now, lexical NPs, here is the point, lexical NPs do not change their form even when they have different cases on them that is called abstract

case.

Student: Genitive case?

Well, in the genitive, the situation will be different absolutely right, but I am trying to hold onto just to nominative and accusative to see the distinction. However, in nominative positions, most of them are abstract cases. In accusative case also some pronounce also you can see the examples I am not articulating them, for example, when you have you, no change even in accusative case. What else it no change in the accusative case yeah you and it at least. In genitive case you see all of them changing. So, all the forms of genitive case are called NPs morphologically mart that is some by morphological case we simply mean some change. Nominative cases you are not going to see any change. Accusative case sometimes the form change forms change sometimes forms do not change that is all is the distinction between morphological and abstract cases. Are we ok so far? All right.

Now, we want to see if we have a sentence fine, he likes her, we can at least see something, if I tell you he is a nominative case and her is accusative case, you have some evidence to believe it. Some evidence to believe that he has nominative case and her has accusative case even on the basis of this chart you have some evidence to believe it. But when we have sentences like John likes Mary, what is the evidence that other than what is the evidence that John has nominative case and Mary has accusative case other than the fact that someone is telling you so. Other than the fact that we know that one is in the subject position and other is in the object position. How do we know?

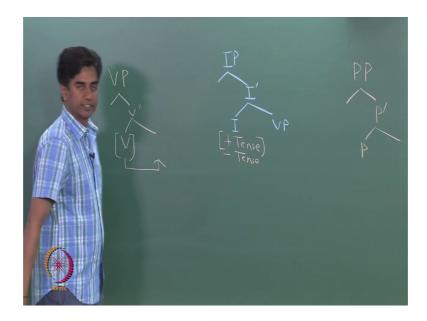
And then the second question is how do they get is there is the structure the x bar a scheme that we have seen does that have anything to do with case or we can put the same question in a better way as follows. Does x bar theory, x bar scheme help us understand nominative and accusative case or we just have to we just have to believe that one has nominative case and the other has accusative case. See the question. The answer is x bar a scheme definitely helps us understand cases in a better way.

(Refer Slide Time: 22:55)

# Nominative and Accusative Finite clause = I [+Tense] John likes Mary. John likes her. \* John likes she. Infiniteness I [-Tense] [For him to go to Delhi] is not possible. Nominative case is for Subjects Accusative case is for objects of a transitive verb and objects of postpositions.

So, we are going to see that. Look at the examples here on this screen. First I want you to understand what we mean by a finite clause. For example, things like John likes Mary or John likes her, these are finite clause.

(Refer Slide Time: 23:34)



Finite clauses simply means that in a x bar scheme let say we are talking about an IP, this

is where we are going to have objects, and this is where we are going to have subjects in

x bar a scheme. If this IP has something in it like if it is plus tense, you understand the

meaning of plus tense, no, if the sentence has tense this is the place where it is going to

show up. So, as long as you have any tense coming up here present, past, future anything

then we say the sentence is plus tense that is sentence has tense, then the whole clause is

finite clause. If this has no tense that is minus tense, then the sentence is non-finite then

the sentence is non-finite very simple finite means directly corresponds to tense the

moment we say a finite clause or a finite sentence. We mean a sentence with tense. The

moment we say non-finite clause we mean a sentence with sentence without tense that is

all clear.

So, if I say John likes Mary is this a finite clause or a non-finite clause, John likes Mary

finite clause, John likes her finite clause. So, I know what is coming to your mind is what

is an example of a non-finite clause, I am going to show you as you can see on the screen,

but hold on before we go there. Now, look at the sentence in red which is not a

grammatical with a star marks we mean ungrammatical sentence. What is the meaning of

that? So, I am sorry why is that why is that ungrammatical when we say John likes she,

what is.

Student: (Refer Time: 26:02)

She.

Student: is an (Refer Time: 26:05)

Is an object position and the pronominal NP is not displaying its objective form. It is

displaying its nominative form is the reason why this sentence is ungrammatical. Now, we

are going to use this finiteness the distinction between finite and infinite very soon to see

why we need this discussion. Let us look at non-finite things you see the whole sentence

for him to go to Delhi is not possible. Are you with me? For him to go to Delhi is not

possible, is this a good sentence, the whole sentence, good or not? Good sentence, it is

perfectly good sentence.

Now, whole sentence is a finite sentence. The whole sentence whole big sentence is a finite sentence, because it has tense in it. And what is the tense in the whole sentence? Present tense, I hope I am not asking you too complicated a question, for him to go to Delhi is not possible. And what shows us present tense in the sentence is, clear. Now, next question and I am asking you these questions to make sure that you understand these terms. Next question, what is the subject of this sentence? Please do not think about x bar and other things right now, very simply in simple terms the question is what is the subject

Student: Him

of this sentence?

Him, why?

Student: (Refer Time: 28:07)

sorry.

Student: (Refer Time: 28:12)

Him is the sentence because.

Student: because a verb go.

Goes, go, no, we are talking about a complete different thing. We are saying what is the verb in the full sentence. You see this is a pretty simple sentence pretty simple looking sentence. And I am not sure if I have told you this thing for sure I have not discussed these things with you. I am only starting to discuss I mean there is one more type of sentence where I can show you non-finiteness, but I have already discussed that sentence enough. For example, imperative sentences are non-finite sentences, when we say please go home, please sit down, these sentences are infinite sentences. But I wanted to take one more sentence slightly bigger to show you infiniteness. And the reason here and the answer to this finite and infinite sentences the following, and listen to me carefully looking at the sentence.

The whole sentence for him to go to Delhi is not possible is a finite sentence, the tense in

this sentence is present. Therefore this sentence is finite agree everybody. The chunk that

you see in red the whole thing for him to go to Delhi is the subject of this sentence. For

him to go to Delhi is the subject of this sentence - whole sentence that is in the IP in this

spec IP position in this spec IP position what comes is the whole thing in the red bracket,

you see that. Because the sentence is just like John is my friend; in the sentence, John is

my friend, the subject is the subject is John whatever comes before is the subject in this

sentence whatever comes before is the whole clause and the whole clause is the subject.

Now, in the whole clause what is the verb we are calling it a clause right the whole clause

is the subject. What is the verb in this class? You were right somebody said to go right is

the verb. Now, what is the NP in that clause him. I am trying to complicate the questions

for you to see these, see the concepts in a better way. And here is the complication, this

clause seems to have a subject and seems to have a verb right then this clause should be a

sentence, but what is missing from this clause to be a sentence.

Student: Agreement

Sorry.

Student: Is that agreement?

Agreement is missing, all the possible ingredients that make a subject that make a

sentence is missing from this. What is the tense in that clause? No tense because the

moment you have a tense we cannot say to go is out of question we cannot said to go.

So, there is no agreement, and no tense, therefore that clause is a non-finite clause, you

see that that therefore, that clause is a non-finite clause. Do we see the distinction

between a finite clause and nonfinite clause now? A finite clause is a clause or a sentence

with tense; and nonfinite clause is a clause or a sentence without tense. And when you

have no tense then there is no agreement. Are you with me? No tense, no agreement.

Can I take you for less than 30 seconds to another question for you to see it right now

because I am making a point which will help you understand something which we have

already discussed. Remember when we had broken the IP - the I, there are there were three things in I, which were tense, agreement and aspect. We had a question in mind that time right that how do we order them how do we start, do we start with tense, do we start with agreement we decided that aspect is dependent on tense. So, let us put aspect and tense together. Do we start with tense or agreement, we started with agreement and then we did not settle the question there that which one is logically first. By first we mean logically more prominent more significant. Now, you can have an agreement, you can have tense or you cannot have tense.

But the moment you do not have tense you do not have agreement also so which one is more important tense or agreement, you see the point? Therefore, starting the structure with TP is more logically convincing than a starting the structure with agreement you see this thing that is all I wanted to show you at this point. So, in a sentence like this in a clause like this, you have no agreement and no tense. The moment we have no tense, we do not even need to look at agreement; we can simply say this is a non-finite clause end of the story. So, right now I am only trying to show you finite clauses and nonfinite clauses. I promise you I will come back to this again and we will discuss little bit more, I am not going to leave this thing just like that.

For example when I am saying for him to go to Delhi the whole thing is a clause right and whole thing is the subject. I am going to show you more examples to make a point that subject position does not only need an NP, we can have a clause or a bigger sentence or a much bigger sentence in subject positions. Remember from the very beginning I have been trying to tell you that the whole notion of subject is a very complicated notion, it is not easy for anyone to define and say in one sentence this is what your subject. We have tried to define a subject from the perspective of agreement from the perspective of a semantics and still we see that is not just an NP it could be a bigger chunk also, it could be a non-finite clause, ot could be a finite clause it could be a CP. Have we have discussed CP little bit right we will come back to that again. So, it could be cp it could be much bigger s bigger a clause or an NP. Same is the story for object position also.

So, we are we are going to see some examples of those things I am I just want to give you a flavor right now. And all I want you to take from here is finiteness and non-finiteness. Now, two more things before we go to a structure I want you to know.

Nominative case is reserved for subject positions. Whatever comes in the subject position

gets nominated case. How is something that we can see structurally, and I am going to

show you that, but the moment something comes in a subject position that gets

nominative case. And accusative case or objective cases are for objects object positions

and by definition we know what are the types of verbs which can have objects.

Student: Transitive verbs.

Transitive verbs or di-transitive verbs; in transitive verbs, do not have objects. So, so keep

these things in mind. What are the things other than verbs which can take an object a like

a postposition can take an object. When we say on the table, the postposition on has the

table as its object, sorry.

Student: (Refer Time: 37:46)

I am sorry a preposition has a you see the there is another term I want to give you at this

stage, I do not like throwing terms only so that you have to memorize them or you have

to understand a lot of them. You understand the distinction between preposition and

postpositions do not you? You know to combine the two there is another term, which is

called add position. So, we use the term add position and depending on the language we

take them as preposition or postposition, but that is all right, you do not have to

remember the term you are right. In this case on the table we are talking about a pre

position and preposition. Takes the object the NP we are going to see some of these

things today.

(Refer Slide Time: 38:46)

## Case Assignment

- John [plays football in the playground.]
- Verbs and Prepositions assign accusative case to the NPs that they govern and ccommand.
- Verbs and Prepositions are governors/heads.

What assigns case to the Subject.

Now here is how it works and I will show you structurally also. So, we have a sentence John plays football in the playground. The assumptions that we have made so far is John nominative case. What is in the objective case or accusative case football, abstract case marker or morphological case marker?

Student: Abstract case marker.

Abstract case marker. So, I am bringing this thing again the abstract or morphological just is for us to understand, whether abstract or morphological it has a case. So, and then we have what is the other NP that we have, the playground and the PP is in the playground. So, the question is there are three NPs in this sentence, one is John, the other is football and the third is the playground. Each NP that is all three of them must have cases. We need to explain how do they get cases who gives them case. When the moment we say they must get case we also a must explain what gives them cases. And the moment we say we determine what gives them cases, x bar scheme helps us understand how.

So, quickly let us look at this. So, verbs and post positions assigned accusative cases verbs and post positions assign accusative cases. In other words what we what we really want to say is when we say verbs and postpositions we really mean heads. So, in a VP

what is the head of this VP, verb. And what is the head of a PP, prepositions. So, when we say verbs and postpositions assign cases accusative cases what we mean is heads. Assign accusative cases to their compliments. Heads assign accusative cases to their compliments that is what we mean, when we say verbs and post positions assign accusative cases to the NPs they govern NC command.

Now, we are bringing in the two terms govern and c-command and I am going to explain that to you. We answer the last question what assigns case to the subject little later. Let us first look at verbs and postposition and prepositions. And before that we need to look at the notion of government and c-command. We are trying to say look at all their structures that that are in front of you and try and understand the notion of government. Notion of government first and then the notion of c-command, not very complicated these are the new terms probably.

(Refer Slide Time: 42:18)

### C-Command and Government

- Government
  - A governs B iff
    - A is a governor (a head); and
    - · A c-command B
- C-Command:
  - A C-Commands B iff:
    - A does not dominate B; and
    - The first branching node dominating A also dominates B.



You are listening to these terms for the first time am I right? Can I in the advantage in this class is I can make these assumptions very simple. I cannot make any assumptions about physics, chemistry and all kinds of engineering in terms of how much of those things you know or you may have heard before, but about these things I can make simple assumptions, am I right. And this is not to show you that you do not know these things I all I am trying to assure you in fact what I am trying to assure you the even if you are

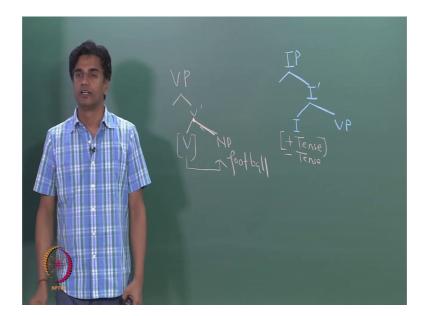
listening to these terms for the first time are not very complicated terms, they are simpler notions, look at this. Did you take look at this? It mean it says a governance B if and only if A is a governor. By governor we simply mean heads, only heads are governors. And A c-commands B, these two conditions must be fulfilled for a head to govern another node. The node A governs node B if and only if A is a governor which is A must be a head and A c-commands B, then A is a governor.

So, when we said old on before we come to c-command again. So, when we said verbs and post positions are governors. We are also saying verbs and post positions must be heads which they are. And they can assign cases only when they are in the head position. Again, I want to underline the notion that I have told you that it is a property of a sentence, case is a synthetic property, verbs outside a sentence cannot do anything. A verb becomes a head only when it is part of VP. So, keep these things in mind. And the verbs assign accusative case only to the NP that they govern. So, they must be a governor that is they must be a head and they must c-commando. How to they c-command A c-commands B if and only if A does not dominate B and the first branching node dominating A also dominates B, is that true. The first branching node dominating A also dominates B and here if the term is not clear.

If the term first branching node is not clear, what we mean is this. What is the first benching node here, this is the node which is branching. However, so let us first understand these things. First branching node dominating A does it dominate B, yes. Someone can extend this thing and say look this node also dominates both of them that true, but this node dominates both of them, but this node is not first branching node dominating the two.

This is at second or third or whatever branching node. The first branching node dominating the two is this one, this is why we are introducing the term first branching node; dominating A, also dominates B. This definition runs little bit into difficulty and then there are control mechanism applied to these things which I do not want to show you right now. I only want you to understand with clarity the two terms government and c-command, where case assignment simply means that when the verb assigns a case to the NP football.

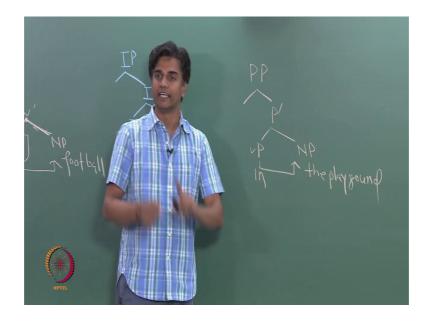
(Refer Slide Time: 46:52)



It assigns accusative case. With the notion of government and c-command which means verb governors its complement, verb c-command its complement. You may be wondering why do we need to say govern and c-command, why cannot we simply say web assigns accusative case. The answer to this question I will show you little later by little later I do not think we are going to do it today we are running out of time, I will show you that that thing, but hold on. Let me conclude this thing does this apply here too in the post position is in and what was the other NP.

Student: The playground.

(Refer Slide Time: 47:49)



The playground, the complement of this p is the NP the playground and I am assuming here that you understand that we are not talking about playground we are talking about the entire NP. So, this P is a governor, it governs this NP and it c-commands this NP, therefore, we say prepositions and prepositions and verbs are governors their heads and they assign accusative cases with the notion of government and c-command. This is what I mean when I said x bar scheme helps us understand certain of these things, I am not escaping I am leaving it behind I had it on schedule, we thought will be able to look at nominative case also, but we will look at nominative case tomorrow, it is important for us to understand.

But before we go let me just to show you one more thing where we started, do you see again this finite clause for him to go to Delhi, do you see this thing sorry non-finite clause. What is for doing here, can we not say him to go to Delhi, he to go to the we are not saying he to go to Delhi do you see this thing? We use these kinds of sentences, but I am asking you to draw your attention to these sentences and probably it will make more sense to you. Now, what is him doing here, how did it get him, and where did it get accusative case from. Him is a accusative case mark accusative case NP, him, and who gave it accusative case. Even though it is non-finite sentence, him is the subject of that non-finite sentence.

I will show you these clauses thread bare to see these notions, and I do not want leave you guessing, for the time being I can tell you the preposition for is giving accusative case to him. In the subject position, it is getting an accusative case; we cannot have just he there. And therefore, for a sentence like this we must say for him to go to Delhi, we need to begin the sentences with prepositions, because if we do not have the pre preposition there this NP remains un case marked, and therefore, not a good sentence. We cannot say he to go to Delhi is impossible or not possible, we have to say for him to go to Delhi is not possible more later. I do want you to understand the sentence and sentences like this when we have looked at more.

Thank you.