

Principles and Parameters in Natural Language
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Lecture – 30

Movement

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Questions

- What is movement/displacement?
- What is the evidence that movement takes place in natural languages?
- What are motivations for movement?



What does it mean when we say movement and particularly in the context of language, movement means?

Student: Movement of words from one way to another.

Movement of elements from one place to the other, that is displacement of a elements from one place to the other. Then the question is what do we mean by one place to the other, we mean from one looking at the \bar{x} a scheme from its original position that is the place where it originates to some other position then when the question comes up how can we be so sure about that, how can we say so that things really get displaced from one position to the other position is there an evidence for that. And if there is any evidence then there are motivations for that, there are compelling reasons why we want to say that things move from one place to the other. These are the questions that we are going to look at of course, with evidence.

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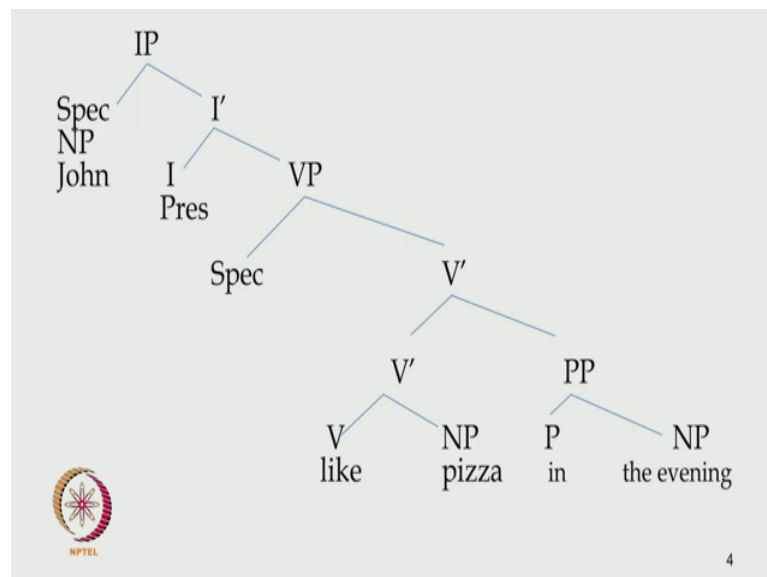
Movement/Displacement

- An element in one place moves to another
- A logical evidence for such a situation is required.



Now, like I told you movement means an element in one place goes to the other and we can only say so with compelling evidence, with conceptually motivated requirements, what could be such a requirement and how can we say.

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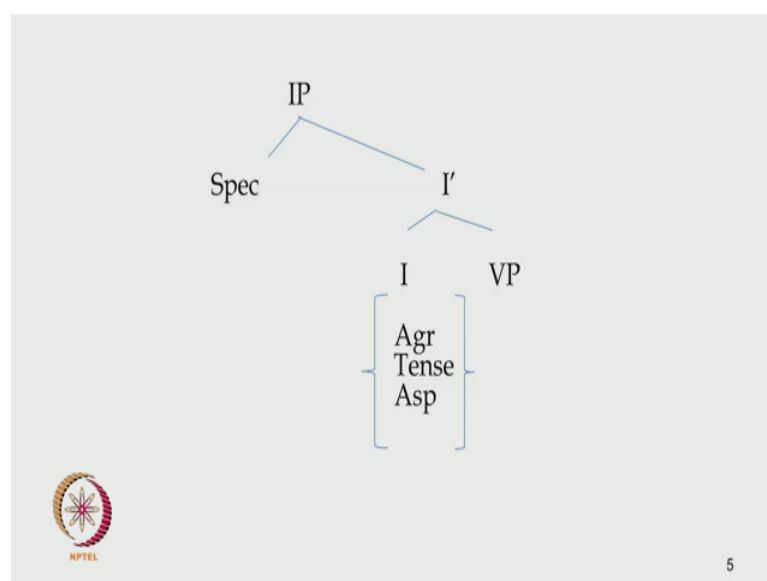
So, we have been looking at so far several kinds of structures there is I can I can talk about each one of them, but very briefly I want to tell you that the phrases that we have seen so far right each phrase has same structure like that is a phrase has specifier and a complement besides its own head. And the head has three layers, there are three layers in a

phrase one is the lexical layer, the other is intermediate layer and then there is maximal projection, excuse me. We have been looking at such a thing so far and from everything that we know a simple sentence like this John likes pizza in the evening, this is the structure and this is a grammatical sentence and we know how this sentence works by now do we, that ok so far.

Lately what we have seen is, lately what we have seen is there are some heads which assign cases to its complement and then we have also seen that such an account is also essential for a sentence to be grammatical. Namely, the verb like the verb as a head assigns accusative case to its complement pizza and P as a head assigns accusative case to its complement and NP the evening, I have not expanded the evening and I have not put a specifier position in the PP, but there is no change everything else is intact. And then we saw the NP in the specifier position of IP gets nominative case through I which is through tense or the features under I under the notion of m command and then it gets nominative case we have seen this. So, this looks like a nice looking sentence.

We know most of the things by now to say this sentence is grammatical that is it fulfills all the requirement of being a sentence. From now onwards I want to show you some motivations for movement.

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We know this thing right, that I is the head of a sentence and I retains bundle of features in it clear. Some of such features are agreement tense and aspect. Let me draw your

attention to the first reason for this, no I mean one more step before we see the first reason for this, first reason for movement. The question was raised that why are why do not we have each feature separated, what is the reason for putting three very significant entities in a sentence under one bundle, see let us see the point.

Since there is no such compelling reason to put them together please see the line of the argument, since there is no compelling reason to put everything together the argument for separating them was put in place. Once they were separated then there was no existence of what we call IP there could be reasons for why tense must precede agreement or agreement must precede tense, there may be reasons for that but then there is no reason for IP. So, I want you to see with clarity that the existence of IP is significant in x bar scheme only when we are talking about I as a head and I retaining bundle of features.

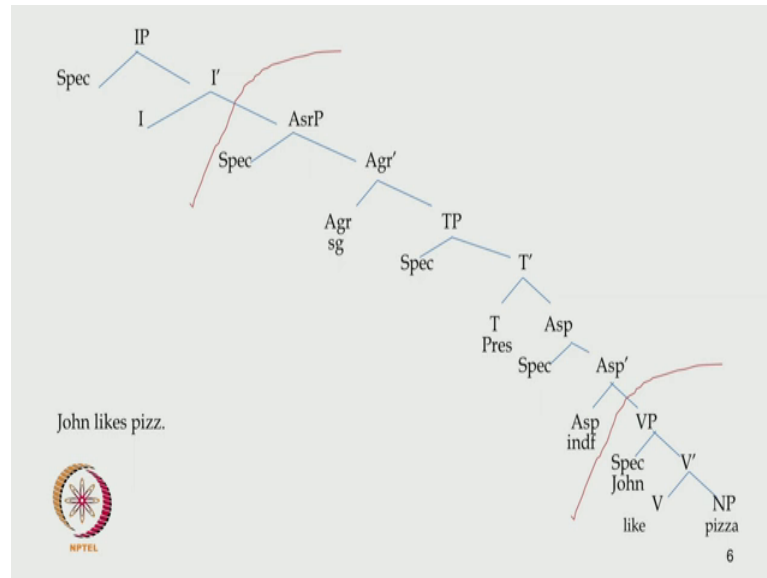
See this thing both the sides now, before we look at again both the sides see one more thing with clarity, I the specifier of IP retains subject right and the complement of I retains predicate, looks good, all right. Then the problem is when we separate them together we see the expansion of functional elements in language, expansion of functional elements in language, after separating the two we also see that the functional elements have their own layer and then the lexical layer begins. The question is where does the subject NP go to after IP is dispensed with where do we put the NP which we call subject. See the question that is the first problem after expansion of after expansion of I.

Now just because we do not have a space for subject NP is not the reason for not expanding I, you do not have a space for I Spec IP that is a different problem, but that cannot be the reason for not expanding I because the argument is whether you expand them or not this is how they look like are you with me in this argument yes no, yes.

Now, next point, if there is no space for subject NP after the expansion that is we do not know where to put subject NP in this in this structure so far, one of the reasons for that is sub canonically speaking and looking at a sentence in a traditional way we have seen subject being outside the predicate subject being outside the predicate. So, we do want to retain that notion that subject must be outside the predicate because I will tell you why, but we want to retain that outside therefore, we are wondering where to put it. However,

after the expansion of I the proposal was made by Richard Larson that probably subject also originates within VP that is in the specifier position of the VP do we have a space available for subject. Do you see that thing in this structure?

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If we go ahead with the argument of Richard Larson that this argument has a name and that that is called VP internal subject hypothesis, VP internal subject hypothesis. The moment you say this thing VP internal subject hypothesis researchers of linguistic theory will immediately tell you the name Richard Larson because that guy is famous for this one contribution. It was major intervention in the theory that Richard Larson came up with said alright.

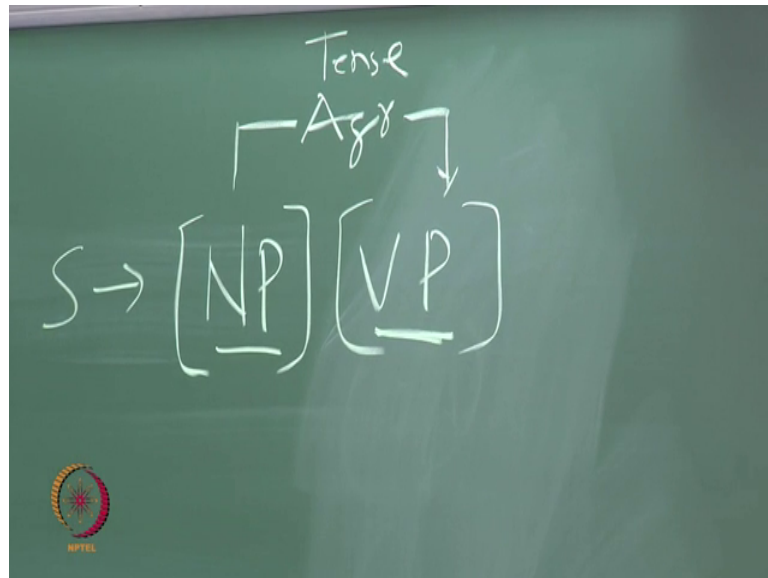
If we try to put it anywhere else other than VP then we are saying a lexical element a lexical NP in a sentence it stays somewhere in the functional domain that is the danger, that was the motivation behind Richard Larson saying that subject originates inside VP, are we ok. However, Richard Larson nicely solved the problem of two different layers functional layer and lexical layer, but that hypothesis landed us into a difficulty which is the difficulty is, anybody can see the difficulty?

Student: Subject (Refer Time: 13:31).

The now the difficulty is we kind of say that the subject is inside predicate right, subject is inside the predicate. Then if it has stayed inside the predicate then how does it agree,

how does it work. Canonically we have been looking at stuff like this subject sorry sentence NP VP right. This is predicate this is subject right and what connects these two is agreement and the role of tense is significant right.

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So, if we if we say that this NP is inside VP then how do we account for the role of these things all right that was the problem Larson's hypothesis landed it. However, we must give its proper credit that it is separated functional layer from lexical layer and that was a nice looking thing. This is one of the reasons; one of the first motivations for movement and this is where you see that it is, this is where you can see that an element literally moves outside.

So, Larson further propose is that the subject NP originates within VP, but does not remain within VP all the time what it really does is it originates inside the VP at the deep structure and then it moves outside and goes to the a specifier position of AgrP to the specifier position of AgrP. The reason why it goes to their specifier position of AgrP is because it needs to do this thing, it needs to take care of agreement and it is subject which agrees which takes care of agreement which you have been seeing so far that the agreement takes place with subject NP.

So, the subject NP must be within the local domain of AgrP right. And then the way it agrees it takes care of agreement is the head and a Spec within the two within their same domain takes care of agreement in under the notion of a Spec head relationship; do you

see here I have tried to put singular there in the Spec AgrP and this NP John is singular they match together and then the sentence becomes grammatical.

So, the point is at a logical level the argument is it originates within VP and then moves upward to the x Spec AgrP. One can question why do we need to select why cannot we simply say that it stays outside it is in the Spec of AgrP, understand this thing. One can one can ask this question why do we need to bring movement in it, we can simply say where the subject is in the Spec position of AgrP and it agrees there and everything is fine, what is the problem with that. I have just discussed that problem with you.

Student: (Refer Time: 17:56).

It then it then we end up saying up right then we end up saying that subject is in the functional domain that is also not conceptually acceptable that a lexical NP stays in the functional domain. So, they have to restate separately at a deep structure lexical NPs in the lexical domain functional elements in the functional domain ok.

Student: Always has been in the functional like when we say when you are writing IP.

I am coming, I am coming do that hold on, I am coming to that. You see that you see the problem it cannot originate in the functional domain it must originate in the lexical domain, but it cannot stay all the time there because it will not be able to maintain agreement that is the first motivation for movement and first evidence that this NP cannot really stay here it has to move outside and goes in this Spec AgrP all right. I am coming to your question in a moment.

I do not mean to bring in too many too many technical details right now because we are talking about movement and I only want to show you a couple of compelling reasons for movement, but it will be worth mentioning right here that this movement is moment gets complicated little later the proposal is some people have proposed you have seen the m command and barrier and all those things right. There are problems with the movement also. So, some people will argue than how can you allow an NP to jump that far are not these maximal projections have anything to do with that. Then the proposal was made that it moves stepwise which was called successive cyclic movement, but those are not important things for us right now to handle. I am only bringing this thing in this discussion. So, that it makes a little bit more sense, but all I expect from you right now is

to understand that this is a motivation, this is a reason, there is a reason for subject NP to originate within VP and then equally compelling reason is available for the subject NP to move outside data and bringing in the whole idea of movement takes care of separation from functional domain to the lexical domain and also takes care of the agreement between subject and this, and this canonical structure is also retained.

Under no fancy idea we can dismiss this point because this is the sentence. Of course, the problem is this does not tell us much this does not help us understand how a subject NP gets a nominative case, how an object gets an objective case. It does not help us much. But this is the sentence and we in order to explain more we do not want to lose originality all do you see that, it does so far everything.

Now, the question that you were raising what was your question, please repeat it again.

Student: I always been writing the.

Loudly, loudly.

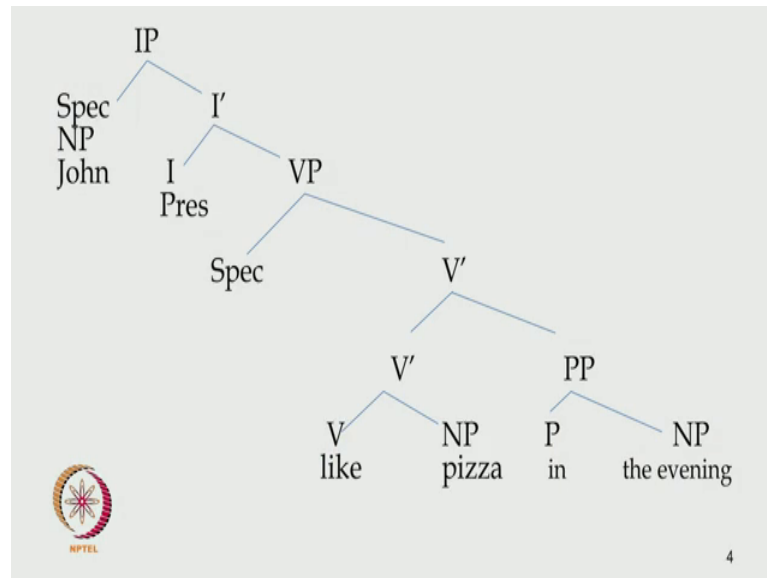
Student: We always wrote the NP in the specify position of IP which was in the function layer.

Ok.

Student: So, why are we bothered now that the NP is not an lexical layer.

Understand his question what he saying is when we were talking about IP where do we have our subject NP in Spec position of IP and it is a wonderful question that whether you expand I or put them in a contracted way that is the inflection right. So, even with the IP the subject NP is the in the functional domain or at least it is beyond the functional domain right. That is your question why did why do we want that kind of a situation there.

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Perfectly could reason for that is the reason for move for expansion of I and that is the reason behind Ritchie Larson's proposal that it cannot stay there. What we have been doing with IP is not really conceptually motivated, there are problems with IP. Someone can question this point as well we have just question that why do we need to go to separation of all that, when IP is working nicely all right we had to put some patches in it of m command we had to put a barrier we see, but still it was fine why do we need to separate them. The reason is this that we have Spec we have subject NP in the functional domain which it cannot stay where it cannot stay, there is no conceptually motivating reason for allowing subject to originate in a functional domain therefore, it has to originate with in VP understand this thing. So, that is the reason.

Student: Even if the when there writing IP and VP why cannot we just say that it is the subject is originating in the Spec position of VP and it is moving to the Spec position of IP.

We can say that and that will mean exactly what we are saying. Understand what he saying we can say even with IP we can say subject originates with Spec VP and then after originating within the subject VP it goes to a Spec position of IP. If it goes to a Spec position of IP again, what it is there, what is the reason for its movement because it needs to be under their Spec head domain of agreement that is I. It must be under a Spec head domain of I and a Spec of IP. So, that will be the reason for it to move.

Again the motivation of movement is intact see the point, you are absolutely right it will still be fine, but why do you want to retain IP. What the question comes out of your proposal is why do we want to retain IP when we can, we have no compelling reason to put agreement tense and aspect together and even if we separate them and as long as we see subject originating downstairs and then moving upward then there are more reasons to dispense with IP.

So, this is, these are the reasons for separating every features allowing them to head their own phrases, motivations for expansion being intact subject originating inside the VP for both and then moving outside there are I mean these arguments are connected, see this thing. Any other question, anybody has any other.

Student: Why cannot we say that that it originated in I Spec position of (Refer Time: 26:08) then move to be because they were considering into dominance of the.

Exactly.

Student: Then can we say the other way?

No, it has been established that an and there are more things that I need to show you it has been established that movement takes place only upward, downward movement is not conceptually motivating; is not allowed in our understanding of how language works in human mind. That has been established and I am sure I should have mentioned this thing before because I did not mention it so far because I have just to started talking about movement and you are not going to see any single evidence any single instance of movement which is downward, all the movement is going to be upward.

That is another, that is also a reason why once I was asked this question why not lexical layer is higher than the functional layer these questions may sound silly stupid, but they are not they are very nice questions you see. The question is why do we want to begin with AgrP why not VP and then do everything else and then put functional layer downward that is not possible that is also not possible because the functional elements are the significant part of a sentence which become head.

See the strength of the proposal of IP there was an a strength in that proposal also it ran into difficulty where Ritchie Larson questions why subject in the lexical why subject in

the functional domain that is a valid question, but that does not rule out its a strength, their strength was is the strength of IP is it clearly shows that the abstract categories, abstract elements are the head of a sentence. Subject in their Spec position and predicate in the complement position, that was the strength of the proposal of IP.

There were two problems with this that was proposed first was why everything together as bundle, the moment the question these questions are raised you must have conceptual answers for that. If someone could answer this question then the next proposal is dismissed, as long as we have no answer why everything together this exists because each one of the features like agreement tense and aspect are entitled to have their own phrases. So, that stays the second problem that this ran into is why whether we separate agreement tense an aspect or not the subject appears to be in the functional domain either in this proposal or in the second this proposal it appears to be in the functional domain.

So, there are reasons for subjects to be in the lexical reason, lexical domain. That was fine, but we cannot allow it to retain remain there because if we allow it to remain there then this is out we run into this problem. So, in order to retain the agreement of subject we need to allow movement allow for movement and this is what I have been trying to tell you that I am trying to show you an evidence for movement. This is just one I am going to show you more, but this is just one motivation one reason why we can say elements from one position to the other positions at a deep structure when we are discussing I language is possible that is the argument and that is all we are trying to see alright. Anything else?

Student: (Refer Time: 30:18).

Sorry.

Student: I complement.

Ha.

Student: Sir you bracket into I and AgrP.

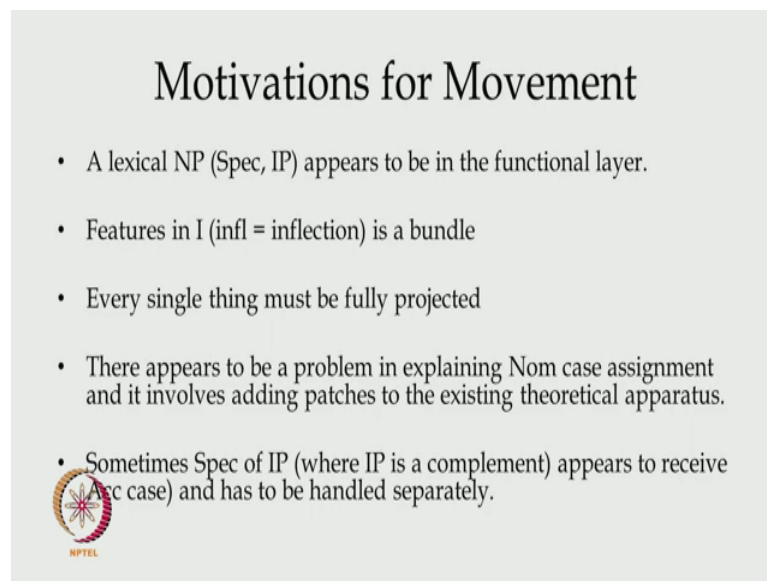
I have put it this way and then I have put the red line.

Student: Yeah. So, what is that I there, is it.

Nothing, I am trying to show you that whatever you see upward is not existing that that is what has to go. If we start with AgrP then we have to leave the whole idea of IP, this is why I have put it there. That is what has to go then we have sentence from here and to begin with we cannot say the subject is in a Spec position of AgrP because again the same problem how can it be in the functional domain then we are not solving anything we are just and we cannot expand things just for fancy stuff again we have subject in the functional domain. So, we have to say subject originates here and then it must move because it needs to take care of agreement. So, for the purpose of agreement movement is a required operation.


Anybody. It sounds little bit complicated little little bit tricky, but then it has a rational behind it and these are some of the motivations for movement.

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Motivations for Movement

- A lexical NP (Spec, IP) appears to be in the functional layer.
- Features in I (infl = inflection) is a bundle
- Every single thing must be fully projected
- There appears to be a problem in explaining Nom case assignment and it involves adding patches to the existing theoretical apparatus.
- Sometimes Spec of IP (where IP is a complement) appears to receive Nominative case and has to be handled separately.



First is a lexical NP we have already discussed them, but it helps if you look at them in one place. A lexical NP appears to be in the functional layer. Features in I is a bundle. So, we need to take care of these two things. Every single thing must be fully projected that is a g r t p and a s b must be fully projected. And there appears to once we do that then there appears to be a problem explaining nominative case assignment and its and it involves adding patches to the existing theoretical apparatus.

See this thing the fact that we are unable to provide one argument one I do not know how to put it, see with the IP right and case assignment we have to say two different things for

nominative and accusative cases I am I right we have to say two different things, the fact that we have to say two different things is making it weak. So, the point here is why to retain something that is weak why not strive for something which will be similar for both that is accusative case assignment and nominative case assignment. I am not showing you more in this structure after separation of AgrP and t p and all that the argument is case assignment does not work the way we have seen with IP case assignment works in a different way and right now we do not need to go there.

So, case the problem of case assignment of two different arguments one for nominative and one for accusative is gone. So, that is also a reason for separating all the features totally from one another and then allowing subject to originate in the VP. And then finally, sometimes a Spec of IP where IP is a complement appears to receive accusative cases and has to be handled separately that is about ecm remember exceptional case marking yesterday.

So, we are not only saying we have two different ways for marking nominative and accusative case we are also saying that that two different ways are also not enough, we may have to allow some more concessions sometime. The argument is how many concessions can be allow that the theory looks very weak with IP. So, so far what the one compelling reason to keep IP intact that we see is just this one, it shows agreement stance and aspect as the head of the sentence that is it, everything else seems to be everything else appears to be making this whole theory weak.

Now, I want to leave it here, but as a word of caution before I move ahead with more examples of movement I must tell you that the next proposal which is after IP is also not full proof is not really solving all the issues that is just for us to keep in mind it is not that there were problems with the earlier proposal and now there are no problems, that is not that not the case, it is just better. Now have we talked about CP so far something called CP the dimension this, this thing to you which is called a complementizer phrase. So, I am now I am going to show you at least one example of movement.

Let me see if I get that far. If you look at CP it seems like and for the time being I am also going back to IP, keeping in mind that we know the differences we know the motivations, but we are putting the bundle together and moving ahead with that; however, you are free to change IP to a AgrP will not make any difference, just for the

sake of simplicity I am retaining the argument the proposal of IP. With this is a structure I only want you to see that CP is also a functional category functional, CP is also a functional domain and C as the head of CP has IP as its complement clear. Do you agree and do you understand when I see say C is a functional category, yes no; if yes then please give me one example.

Student: That.

Yeah, that is a complementizer. So, some something like this let me see if I have an example yeah all right.

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- CP may occur in Subject positions of a sentence.

[_{IP}[_{CP} For her to laugh] is difficult]

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graph TD
    IP --> CP
    IP --> I_prime[I']
    CP --> CP_phrase[For her to laugh]
    I_prime --> I
    I_prime --> VP
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So, let me go ahead and then I will I will answer this question. What was the question that I was trying to answer, why C is a functional category I will show you that. So, let me move ahead and see CP may be in the subject position sometimes that is you have seen, what have you seen in the subject positions of a sentence so far? Mostly we have seen what?

Student: (Refer Time: 37:51).

An NP right, like John or Mary or something. Sometimes we can we see elements bigger than chunk bigger than NP in the subject position or we can see something. So, so that will be an IP also a CP may be allowed in a subject position. So, look at the example here we saw this sentence last time this type of sentence last time also.

Student: For him to go to Delhi.

For him to go to Delhi is difficult for her to love is difficult, for her to love is actually a CP I will go to the expansion of this thing little later. So, in that CP when we say for, the whole thing is an IP for her to love his difficulties an IP within that IP for her to laugh is a CP and within that CP her to laugh is an IP; what type of IP?

Student: In finite IP.

Infinite IP, non finite IP that we saw yesterday. I want him to go right him to go type of IP her to laugh is an IP which becomes the complement of C in the CP and then that CP is part of the, is in the subject position of the bigger IP. See the structure, any difficulty.

Now before I, again before I discuss why CP is a functional category let me tell you, what I want you to understand this - a CP can be in the subject position, a CP can also be in the object position and a CP by itself can take an IP as a complement, keeping all these things in mind we are only trying to say trying to give something in support of recursiveness in the language. The fact that the longest possible sentence has not been spoken and will never be spoken we can say so only on the basis of recursiveness in the language.

Since see that point many disciplines talk about this longest possible sentence is not possible, but however, long a sentence may be the x bar scheme explains it, therefore x bar scheme is argued to be a conceptual device in human mind and the argument is stated further that it helps us simplify a complicated position therefore, one can argue that human mind actually likes simplicity.


Now, lot of discipline will tell you that human mind likes simplicity in other words human mind does not like redundancies, but all such disciplines can only make this slogan, none of them have any evidence in support of that. The support for saying no redundancy in human mind comes only through language. See my point. Now give me give me two more minutes.

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- CP may occur in Object positions of a sentence.

[_{IP} John knew [_{CP} that Mary did not drink]]

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graph TD
    IP --> NP
    IP --> I_prime[I']
    I_prime --> I
    I_prime --> VP
    VP --> V
    VP --> CP
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So, do you see here that a CP is a complement of the VP do you see that with clarity, in a sentence John knew that Mary did not drink right, that is the sentence which is an IP. What is the verb of this sentence?

Know right; and that verb is a transitive verb or intransitive verb?

Student: Transitive verb.

Transitive verb. So, what does John what did John know?

Student: (Refer Time: 42:27).

That Mary did not drink and Mary did not drink is an IP right, if Mary did not drink is an IP then that Mary did not drink is definitely more than IP right and this is what we say as more than IP is a CP therefore, IP is always going to be more than sorry a CP is always going to be more than IP and it could be part of an IP or a CP could take an IP and it is part this is what allows us recursiveness in the language. It is not chicken and egg story it is not chicken and egg type of thing, it is not circular it is just recursive.

Now, one more point here and this is where I would stop for today. When we say that Mary did not drink right I do not remember, but I think I have talked about this that, that is a complementizer that here is not a demonstrative pronoun right.

Now it is a device in human language that same lexical item, same lexical item may have two different purposes two different functions and I am particularly saying two different functions and I am not saying two different meanings because take the example of that, it may have two different functions one is demonstrative pronoun when we say that boy, that house, that computer all right that has in those phrases that is a demonstrative pronoun which has a function which has a demonstrative function.

In this kind of an example it has a complementizer function and the moment it becomes anything other than demonstrative it does not have any meaning does this that have any meaning here it does not have any lexical meaning the fact that a word.

Student: (Refer Time: 44:50) lexical meaning.

Loses its lexical meaning becomes a functional element complementizer. Any functional element will never have a lexical meaning this is why tense we interpret tense as present time past time future time, but by itself it does not have any meaning all functional elements have no lexical meaning and since C that in the C position does not have any lexical meaning. You tell me check it with anyone, but that Mary did not know that Mary did not drink in that sentence what is the meaning of that.

One needs to know things that we are discussing to answer that question I am not by any means I am not trying to say that no I did not no one knows these things and we are we are discussing some wonder of the world. People have these people have found these things I am not the one who found this thing people have found these things quite some time ago, but these are very nice looking explanations that how two elements how the same element may have two different functions.

And look at my argument once again the reason why same element is allowed to have two different functions is because it is a product of human mind and we know very well or at least that becomes an evidence for us to believe that human mind makes no mistakes, creates no ambiguity, does not create redundancy the fact that it does not like redundancies it can still do away with the same element for two functions. That is also an evidence for saying human mind does not like redundancies and it still has no problems.

We need to figure these things out that there is one that which has demonstrative function and there is other that which does not have any meaning and is a functional element, we

need to figure these things out. But human mind has figured these things out already it is not that you are learning English here for the first time you know English you have been writing these things you have been speaking these things very well, your brain never gave you any headache. It never asked you a question do you know this did it ask you ever do you know these things it does not ask you anything, it functions very nicely and it functions with what we know now.

So, please keep relating I have told you earlier also that we may not have time during other discussions to talk about knowledge of language, principle of economy, how human mind does not like redundancies these are the examples of those things and therefore, a deeper investigation into language gives us a better understanding of human mind and it is not an arrogance of theoretical linguistics speaking it is a factual description, factual statement that many other disciplines have slogans, but not evidence. The study of language linguist also have absolutely no evidence of physical properties of human mind it can only talk about something about human mind through the structure of language alone and through the structure of language there are compelling examples available, evidence available for us to believe such things, that is all.

Now, I know we will stop here. So, I just want to give you a question before we discuss something next time. We are meeting next time on Tuesday, before we discuss this on Tuesday how do we understand these sentences.

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Questions in English

- What did you buy ----- ?
- I bought a phone.

- Did you buy a phone?



Again these are very simple sentences question sentences. I bought a phone and the question. So, if there is a question what did you buy a possible answer could be I bought a phone right, I thought I will be able to handle this question these things today this shows us another evidence for the movement. So, we will have to stop here in the interest of time.