

**Indian Institute of Technology Madras
Presents
NPTEL
|
National Programme on Enhanced Learning
Introduction of Modern Linguistics**

**Lecture – 34
Syntax: Structure of an IP and**

**Thematic Relations Cont...
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So today I want to talk about a particular thing which is called thematic relations in sentence chromatic relations among arguments in a sentence and what you have seen so far is as the structure of a sentence or a structure of any phrase is $X \bar{X}$ a scheme is actually a representation of sentence and what we are going to discuss in terms of chromatic relations is actually constraint on constraint on components and their relationships okay.

So that we do not we do not get anything that we want in sentence and elements in a sentence gets restricted in a particular way however that does not stop the that does not disrupt the things that we have talked about a phrase or a sentence can be infinitely long still be infinitely long as long as the thematic relations is taken care of before getting into specific thematic relations what sentences like to follow.

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Selectional Restrictions

- Selectional Restrictions limit the semantic properties of arguments
 - # My dogs loves to read newspapers.
 - # This chair is sweet.
 - # Buildings walk slowly.



Besides categorical rules lexical rules and semantic selection rules is selectional restrictions we do not we do not find sentences which have which violates selectional restriction that is a predicate in a sentence is very sensitive. To what it selects and sometimes violation of such selectional restriction may lead to unacceptability and ungrammaticality as you can see here it's there grammatically these sentences are very clear very good there is there is no grammatical error in sentences.

Like these like my dog my dogs love to read there is an error here in the sentence my dogs love to read newspapers perfectly good sentence read is a transitive verb it has an argument it has a complement sorry love is a transitive verb it has a complement and it works perfectly fine but this is not a warranted sentence in natural language this chair is sweet the problem this the sentence runs into difficulty when it selects the noun selects are not warranted adjectives in it buildings walk slowly say it say this sentence again violates the lexical restriction.

Where the predicate walk does not select does not agree with specifier of a noun a specifier of a sentence where the agreement does not work between them I briefly want to underline one issue and then move to thematic relations and to this issue I will come later when I am talking about the structural relations see the relationship between love and newspaper is perfectly okay love to read newspaper is perfectly ok the problem is with mean the predicate love and the subject do you notice that similarly in the third one the problem is between the predicate and the subject ok there is there is no problem within the predicate.


Where walk and the adverb slowly is perfectly done I will return to this thing later I just wanted to underline this thing to you semantic relations in a sentence is about roles that if they are an argument place in sentence for example when we say Brad hit and Rio this is a good sentence how many nouns phrases do you see here how many nouns do you see here in this sentence two one is the according to the structure of a sentence one is the subject and the other is the other noun is object one is subject the other is an object traumatically is speaking subject and objects.

Both have a role to play in a sentence dramatically speaking in this sentence Brad plays the role of an agent and Andrew plays some other role okay and the definition of an agent you can read this think the definition of an agent is someone who initiates the X okay normally in a sentence in a declarative sentence you are going to see subjects responsible for initiating actions therefore most of the time subject gets the role of an agent however that may not be a necessary condition for the sentence everywhere. So we cannot say by definition subjects are agents that may not be true but most of the time subject nouns subject NPS get thematic role of an agent.

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Thematic Relations

- Every argument must have one and only one thematic roles assigned in a sentence.
- X' generates sentences and theta theory is a checking conding
- Agent: initiator of the action, capable of volition

 - Brad hit Andrew

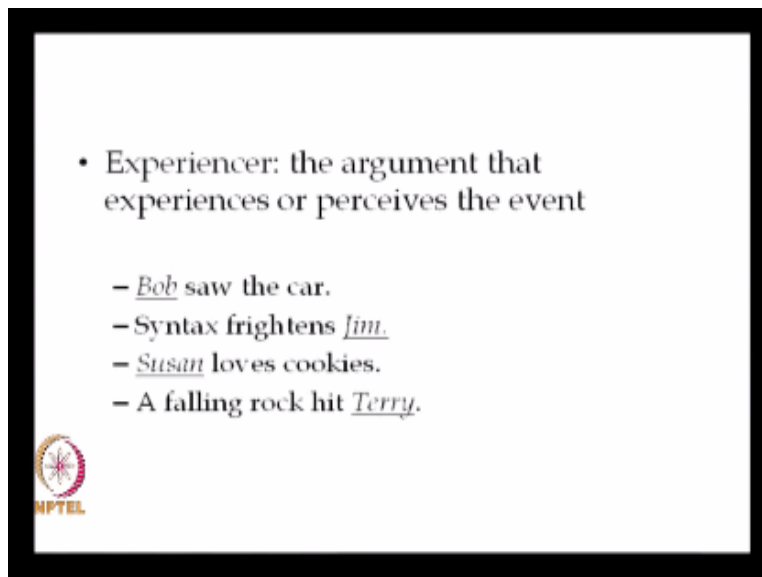
I come to and yes there is a there is another important point here that every noun phrase that you see in a sentence every noun phrase must have a thematic role if a noun in a sentence does not have a thematic role then that leads to ungrammaticality to that that which means that sentence that noun is not needed in the sentence therefore the sentence is grammatical I am

going to show you some examples of how not getting a thematic role leads the sentence into an grammaticality not necessarily not necessarily.

We can say like the example that I gave you this the building walks slowly it is a grammatical sentence it is an act it is a declarative sentence not a passive one building could get a semantic thematic role of an agent but this is not a grammatical sentence for two reasons there is a mismatch between building and walking because the when walk assigns agent theta hermetical when to and now it must be a movable object okay and in that case also if suppose.


They and there are some predicates which just does not assign thematic role agent role to a tweet subject I am going to show you some example subset of such type however statistically this is true that most of the time is sentences tend to get agent theta role but we cannot form that as a rule again to repeat this thing please keep in mind that every noun phrase every noun must have a theta role as a mathematic role in a sentence. Next one next is experience,

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• Experiencer: the argument that experiences or perceives the event

- Bob saw the car.
- Syntax frightens Jim.
- Susan loves cookies.
- A falling rock hit Terry.

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And look at look at these examples sometimes certain predicates when they sign thematic role to their to their noun phrases in the in the sentence they need not be agents in the sense that Bob saw that saw the car the predicate seemed does not require agency when you were seeing something you are not necessarily an Egypt so subject noun phrase getting traumatic role of an agent depends on the nature of the predicate whether a predicate wants an agent chromatic role or not syntax frightens Jim.

Now the one frightened is not something which assigns agent theta role is in thematic role to an NP and the reason why this example is significant here is because experience the thematic role is not necessarily assigned to the subject alone it can be assigned to objects as well so in this sentence you see Jim being the experience of the whole act of being getting frightened Susanne loves cookies does the world love assigns them agency agent theta role is Susan and is not in this sentence does not look like an active agent it becomes an experience it the point in this is predicates like C frightened love hit these do not assign necessarily agency.

To the subject and sometimes these predicates assign experience of thematic role to arguments and sometimes they assign experience and thematic role to their objects as well in the like frightens a sense is an agency role to the subject right syntax frightens Jim will be similar to that right Jim and Andrew will be experiencing yes like the object can be an agent also right now in Oh object will not be an agent passive sentences are different type of sign different type of sentences remember yesterday.

I was telling you about transformation rules in earlier theoretical models of explaining sentences we were working with transformation rules so according to transformation rules interrogative sentences were transformed from declarative sentences passive sentences were transformed from active sentences that is we had active to passive transformation declarative to question transformation affirmative to negative transformation these research has shown that these sentences are independent sentences.

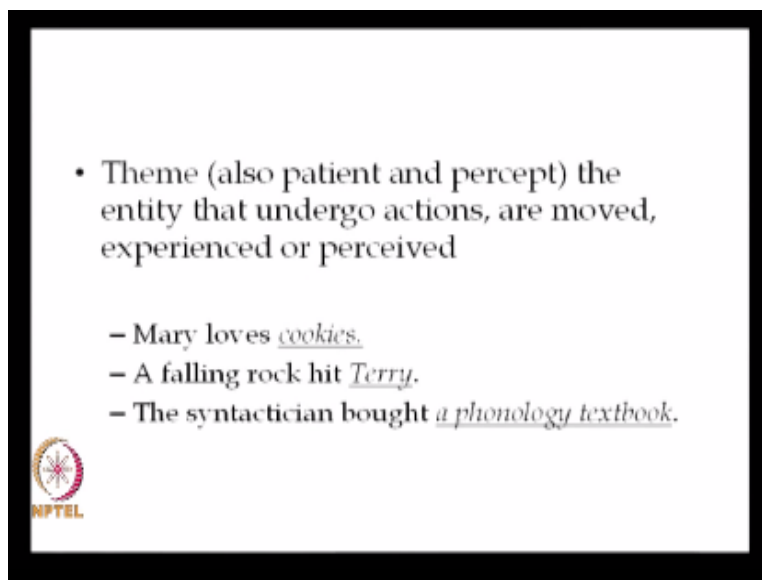
They are not actually when you have a passive sentence they are not actually related to active one when we have a interrogative sentence they are not necessarily related to the declarative sentences and likewise negative sentences are not really a product of their affirmative counterparts so every time we talk about a passive sentence what comes to our mind is its active counterpart that's that is not true what is also true about hermetical license is once a thematic relation is assigned to a noun in a sentence.

It does not change it stays the same way so in talking about a passive sentence if the subject helps up let us say let us talk about an older model in which passive sentences where outcomes of active counterparts in an active sentence the subject was assigned agent Kotaro in the passive also it remains agent so when we say John killed the tiger right the passive counterpart

will be a tiger was killed by John who is the agent the subject of the passive sentence becomes the tiger but the tiger does not receive agent theta role agent thematic relation.


What is still remains agent is by John so tomatoes and lessons do not change once assigned is once assigned to a particular NP still there are component which shows the X bar and cases a case agreement and other structural relations will show that passive sentences are not the direct outcome of their active counterparts if time permits I will show you that part but this much clearer let us look at another one.

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• Theme (also patient and percept) the entity that undergo actions, are moved, experienced or perceived

- Mary loves cookies.
- A falling rock hit Terry.
- The syntactician bought a phonology textbook.



Sometimes so when you when you look at sentences like Mary loves cookies okay. Mary we have just seen Mary will get the thematic role of an experience but what is the role of cookies in this sentence it is it is it a agent is it a experience and does it experience anything this NP experience anything when a when some NPS remain basically dormant then they are called teens so they are the so these types of MPs in these kinds of with these predicates get thematic role of theme the sin tactician bought a phonology textbook or we can get any sentence.


With a predicate by I bought a car when I am buying a car the complement car is neither an agent not an experienced it does nothing happens to that it remains dormant in the in the argument of structure and therefore we call it a team please do please know that these words like agent patient experience theme these are these are these are the words coined depending on their roles so there is there is nothing technical about these names.

What is technical? Is which one gets assigned to which NP what does it take they are semantically dependent clause true but it the thematic role theme is more appropriate for that because it did not want yeah it did not want to be hit the expiry in the thematic role of experience there sometimes volition laity may be involved but there is no volition allot tee involved there was no fault of Terry when it got hit by it is a very terrible sentence I do not know why this kind of sentence comes to existence.

But anyway it the you right it could be its variances as well it will be very difficult to argue this is not an experience that at all because Terry does not experience anything but what I can say is thing will be more appropriate and better than theme what will be more even more appropriate is patient in the sense that it did not have any role in getting it at times in calling this one either an experience or a theme could be little bit little bit complicated what could be more complicated is the distinction between theme and patient some people make the distinction between theme and patient - I have tried to put at least two of them together - two of them together.

So you were right that this could be it is easy to argue that this could be something else also and there is not much to defend there what is an important part of this is what do you think is that NP can be debated and but that NP must have a thematic room is not debated okay just look at another one gold now look at look at this one and you will you will see more difficulty.

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- Goal: The entity towards which motion takes place. Goals may involve abstract motion.
 - A falling rock hit *Terry*.
 - *The syntactician* bought a phonology textbook.
 - Bill went *to Chicago*
 - *Travis* was given a semantics article.

A falling rock hit tale what did we have the same sentence there now three ones right so now look at this it could be a goal to it. So we are we are not saying that an object NP will have just one name for it depending upon the meaning of the sentence it could be an experience it could be a theme it could be a goal sometimes this ambiguity may not lie no this is there is there is an error here that you see a lot of phonology book.


No this is an error yes this one is not in that sentence is not good but look at the third one bill went to Chicago to Chicago as a as a phrase is a goal Travis was given a semantics article this is a passive sentence and in this NP becomes it will not be a goal this is an error here for sure that that rule we cannot formulate we are only with this roles we are only saying that there are different types of roles agent theme patient goal experience these are different names of different relations.

How the team involved it would be different I will tell you the goal as well is it as well as the patient or the our team it could be it could be a team that if it did not have anything to do the theme is more or less a dormant kind of an entity like I read a book a book is a theme in this sentence in this case it is not each one of these arguments each one of these NPS in a sentence must have one or the other there could be more roles assigned to one but one must be is right okay and these are the differences of names.

Sometimes these names are these names may sound overlapping and also. Please look at the definitions that I have given they are not a standard or textbook definitions they are just a generic description of these terms I do not think there is there are textbook definitions of these things anyway.

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- Recipient: A special kind of goal that involves a change of possession
 - Julie gave *Jessica* the book
 - *Roy* received a scolding from Sherilyn.
- Source: The opposite of goal, entity from which movement occurs.
 - *Bob* gave Steve the Syntax assignment
 - Stacy came directly *from sociolinguistics class*.



Did we talk about a recipient not yet let us see what becomes a recipient Jessica gave sorry Julie gave Jessica the book it is a clear example of a recipient someone which receives a special kind of goal that involves a change of position does the same piece sound like a recipient it is a clear example of a recipient right now it sounds.

The same like it sound as the good like how is it different from the goal I did not understand that part difference from the goal in gold we took the example of Travis was given a semantic article the recipient also sir Travis that is possible experience and recipient I the way I understand it is an experience has to be plus human entity okay and the recipient may or may not be okay and again the I am trying to tell you this thing again and again that these names may overlap okay.

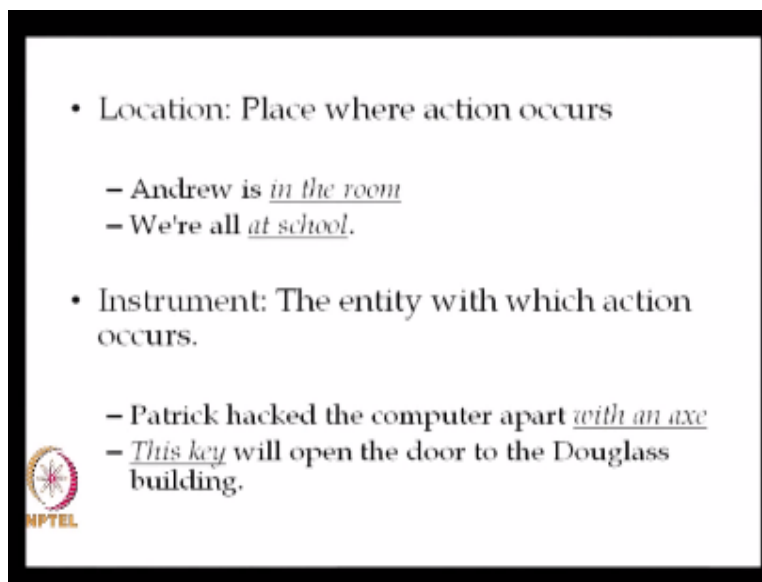
So the more significant question is how do I decide whether this is an experience or an or a recipient right or a goal or a team x-bar theory does not help us do that okay rather what semantic relations of arguments does is puts a check on x-bar theory that if we have warranted in a phrase in the sentence with a thematic relation then please take care of this you find a place for this in the in this structure if we do not have a role assigned to a to an NP or a PP then that is not part of the sentence just drop that then that is out of the main component of the sentence.

How we give them a name is more of more often most of them most of them decided by us in this case this sounds more like a goal not like a recipient this sounds more like a patient not like a theme or more like a theme not like patient it's decided by us we can impose more and more

restrictions on the differences between recipient n and that experience it or theme and patient or goal some of them are very close some of them are way too different from one another but there is no yardstick to categorically.

Say that no this is this is a goal this is an experience in this isn't this is a patient there is no such thing like I tried to show you the distinction between a compliment and adjunct there are categorical rules for that a compliment can only be a compliment therefore in the structural hierarchy and agents need sorry an agent can be defined structurally these things do not have a structural distinction these things cannot be classified in structural terms therefore you find this overlap and what we call ambiguity here there are there are more and we can we can find more names like location instrument depending upon what suits.

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• Location: Place where action occurs

- Andrew is in the room
- We're all at school.

• Instrument: The entity with which action occurs.


- Patrick hacked the computer apart with an axe
- This key will open the door to the Douglass building.



That P P or NP Andrew is in the room in the room is a location L P P we are all at school at the school gets vocational romantic vocational thematic role when we say things like Patrick hack the computer apart with an X computer with an X that is okay this guy will the this key will open the door to the Douglas Building right or to the IC NS are building the NP key and the P P with an axe yet instrument instrumental role in these in these predicates and then we have more like been effective the entity for whom the action occurs sentences like Bill bought these flowers for Mary.

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- Benefactive: The entity for whom the action occurs.
 - Bill bought these flowers for Mary.
 - Mary cooked Bill dinner.
- There are many other thematic relations, but these will do for our purposes.




Will be a been effective will this will get benefit of these things now again look at this could also be recipient right this could also be recipient so these are these are just the names that that we can assign and if you assign the CP and thematic role the recipient role to this it is not really too bad there are more I have just mentioned some of them to you let us look at a thematic criterion which plays as which works as condition as friction on sentence structure every argument must have one and only one theta roll.

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Theta Criterion

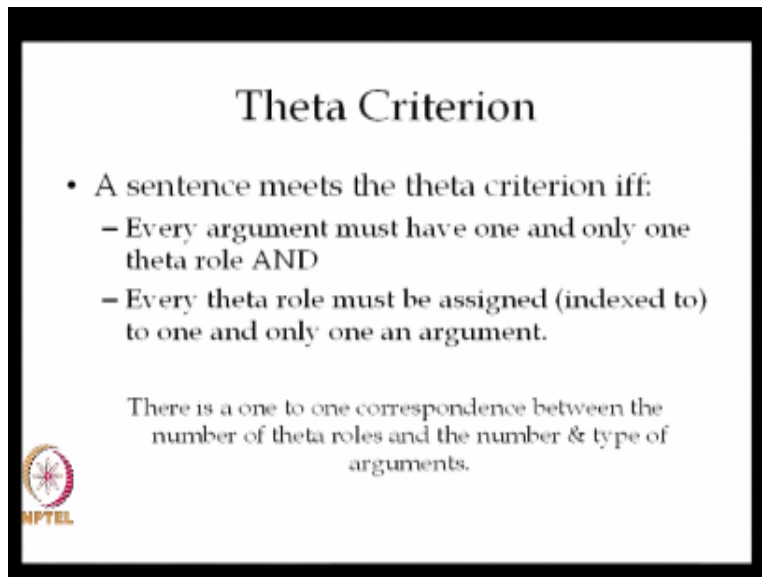
- A sentence meets the theta criterion iff:
 - Every argument must have one and only one theta role AND
 - Every theta role must be assigned (indexed to) to one and only one an argument.

There is a one to one correspondence between the number of theta roles and the number & type of arguments.



Okay but again look at this okay let me move and then I will show you what it means by one and only one and every T roll must be assigned to one and only one argument which means if we have already decided about an agent we cannot assign another agent we cannot decide about another agent in the sentence that is there cannot be two agents in one sentence yet this thing so this puts a very heavy restriction on assignment of thematic roles.


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Theta Criterion

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There is a one to one correspondence between the number of theta roles and the number & type of arguments.



In compound sentences also every NP will get a thematic road for example gives me an example of a compound sentence. I have just discussed one with you so far John knows that Bailey bill likes Mary write the whole sentence that bill likes Mary gets one thither oh okay which is assigned by the predicate no and then again in that sentence when you look at the predicate life it assigns two different literals to two different internal NPS bill and me okay so that is that is how a complex sentence will work adjuncts are optional.

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- Adjuncts are NOT included in theta grids.
- (With verbs) *Adjuncts are optional, complements & subjects are obligatory:*
 - John put the book on the table on Friday
 - John put the book on the table
 - *John put the book on Friday



Whereas complement same subjects are obligatory to a predicate do we and do we understand this part can be can I take it for given subjects and complements are obligatory to a predicate whereas adjuncts are not look at the examples when we say John put the book on the table on Friday instead if we have a sentence John put the book on the table this is a good sentence.

But if we say John put the book on Friday is not a good sentence we get it we understand this thing that this simply explains us that how a complement is an essential and obligatory part of a predicate. Whereas adjuncts are not now this has the reason for us to discuss this is agents are not included in the teacher grid that I am going to show you now we can define theta roles.

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Theta Roles

- Theta role (θ -role) is a *bundle* of thematic relations associated with a particular argument.
- Thematic relation \neq theta role.
- An argument can have many thematic relations, but only one theta role.

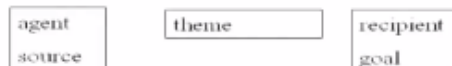


Theta roles are a bundle of thematic relations associated with a particular argument where thematic relation is not what we mean by theta role. There is a difference between thematic relation and theta role: an argument can have many thematic relations but can have only one. Okay, this becomes clearer.

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Theta Roles

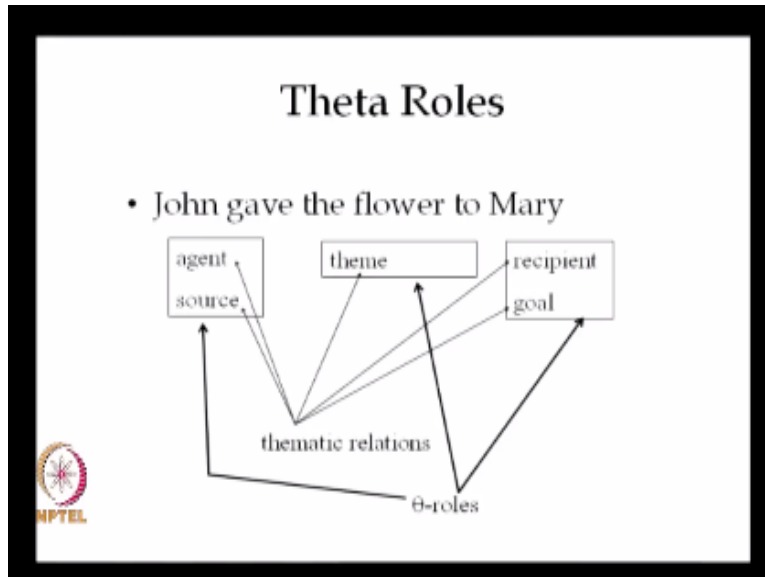
- John gave the flower to Mary



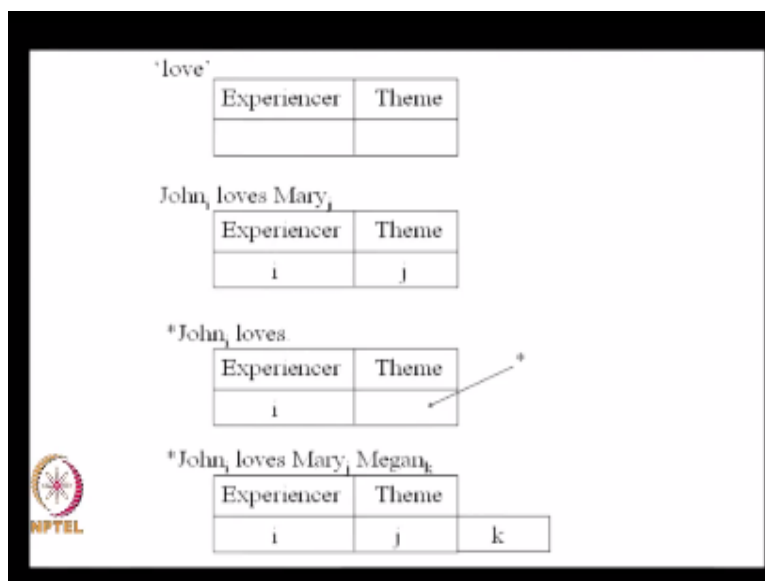
When we look at how it works, look at this: we have a sentence "John gave flowers to Mary". In this, we have three components which need to receive theta roles, and we need to look at their thematic relations. So one is John, the other is the flower, and the last one is Mary. See these are the thematic relations among them among the different arguments. For example, John can be in the relations to flower as a source or an agent; John can be Mary can be a recipient of according to this predicate; Mary can also be goal.

According to this predicate however when we when we look at him at across it has just one in relation to the other come other argument we may we may find different names but at once John gets one thematic role of an agent or a source flower gets one thematic role of team. And Mary gets automatic role of recipient or goal within a lesson to the predicate.

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Looking at domestic roles theta grid if we look at the predicate light love it has it must have two of them experience and the theme when both the both the arguments are met mode both the both the arguments are present around the predicate. Then we get the sentence as a good sentence as you can see the index explains this thing when an argument is missing from the thematic grid then the sentence is ungrammatical which is this the reason why this sentence john loves is not a good sentence is because it has theme missing from it if we have more arguments available in a sentence.

Which is not part of the thematic grid that also results in two ungrammaticality for example this predicate love requires only two thematic two arguments. Have only two thematic roles but if there is third one for which this predicate does not have a thematic role to assign then this is a bad sentence we say john loves Mary Megan is a bad sentence because third one Megan does not get an emetic role assigned in this the relationship between syntactic structures.

That is subject in complement and relationship between semantic roles is the following sorry when we talk about arguments of a predicate how many arguments does this predicate have love what is the total number of is this a transitive or intransitive or transitive one how many arguments does it need to be clear so by now how many arguments does this need do not look at them at across think about argument structure of a predicate.

That we have been discussing until yesterday how many compliments do we have in intransitive works for intransitive can you please go back and look at your notes the intransitive verbs have no argument like no in peace intransitive verbs have no complement no which means they have no arguments transitive verbs have one and the I transitive verbs have two the implications of this is when we count the argument of a sentence or argument of a predicate we do not count subjects in it now the reason why I am talking about argument to structure of a transitive verb.

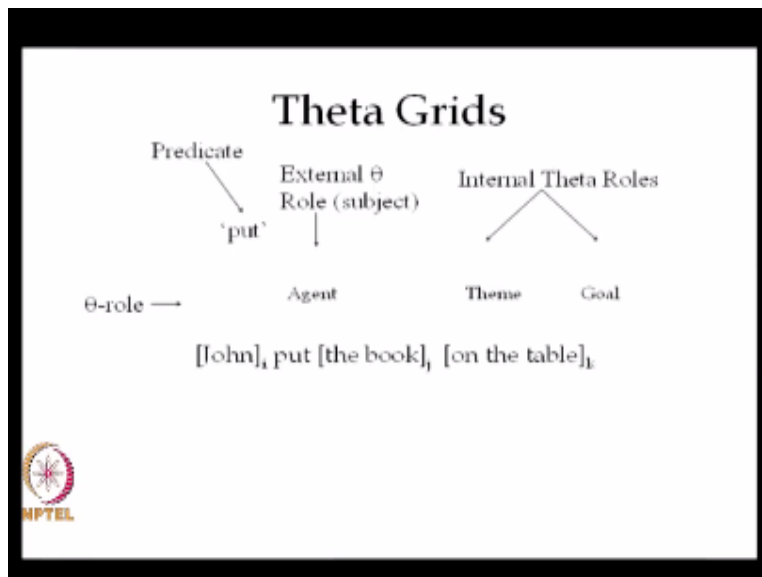
That is it requires one with that I also want you to know that when we count these arguments within the predicate we do not count subjects because subject is a given thing with every sentence we do not count subjects when we are looking at heretical then subjects are counted in thematic relations as well so assignment of thematic roles to subject is different from different from the predicate structure we when we look at heretical in inside heretical we have subjects

included inside or outside the argument structure subjects are not included in this despite making sense subjects are not part of the argument or structure.

When we count the total number of arguments of a predicate whereas when we are counting thematic roles assigned by a predicate subjects are included in that this is making sense so how do we count it what we mean by this question is when we are counting we are only counting complements we are not counting subjects because subject is outside the predicate therefore in the predicate structure subjects are not counted is this clean at least now why subject is not part of the complement part of the predicate structure is because it is outside the subject.

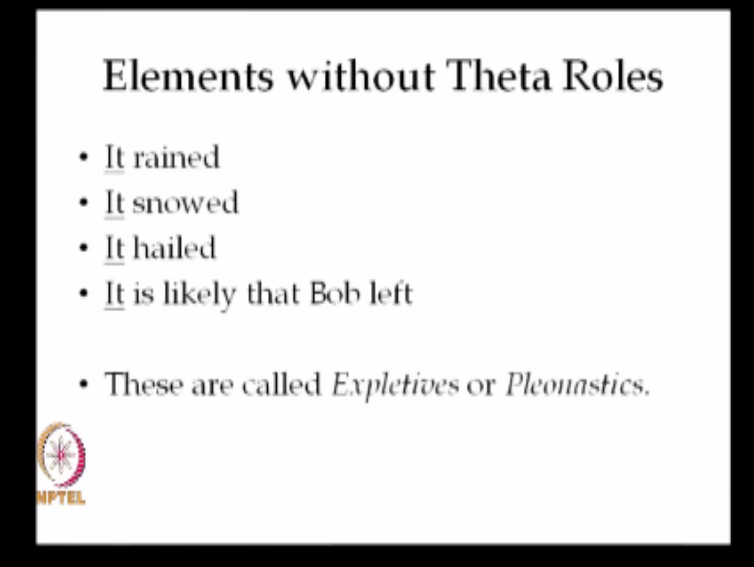
Outside the predicate whereas when we are counting thematic relations chromatic roles assigned to different components of a sentence we include subjects as well so when we say that that a world like love has two phonetic roles to assign one will be assigned to the subject and the other will be assigned to complement still we maintain that a world like love has just one compliment one argument but it has two Kematic roles to assign an intransitive verb will have how many complements this making sense now hope so moving away.

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This is how Thematic grid looks like for a sentence like John put the book on the table it has 3 theta rules the predicate is the world put it has one external theta role to assign that it assigns to it to the subject and to thematic roles been in the predicate to the two different complements in a sentence sometimes.


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Elements without Theta Roles

- It rained
- It snowed
- It hailed
- It is likely that Bob left

• These are called *Expletives* or *Pleonastics*.



We have which sometimes we find sentences in which we do not help and we have NPS without a theta role predicates like rain it is a transitive or intransitive rain intransitive snow what's the subject of trained in this kind of as in the in this sentence it rained clouds rain that a good sentence finish do clouds rain when it falls we find only water anyway it is the subject but in such sentences it does not have a thematic role okay it only fulfills the requirement that a sentence must have a subject.

When something is brought in to fulfill the requirement that does not become part of heretical and it be in these types of sentences subject NPS do not receive any theta rules because they are brought in only to fulfill the requirement and the requirement is we cannot have a sentence without a subject we cannot say rained we cannot say snowed therefore we have to bring in something to say it rained or it snowed.

That is all for today I sincerely request you to look at two things before I discuss s relations tomorrow one and both are available I don't remember page numbers from top of my head in the length of Lillian hangman's book that vision has sent to you as the last email both these things are explained in great detail that at least in 20 pages with lots of examples please look at that and then we will be talking about seek amount government and case relations next time that we meet that is all thank you.

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