

Language and Mind
Prof. Rajesh Kumar
Department of Humanities and Social Sciences
Indian Institute of Technology, Madras

Module – 08
Lecture - 36
Sentence
Dependencies;
Computer Verbs and Negation

Today, we will look at two specific constructions in sentences. These play a significant role in making of a sentence. These two constructions are compound words constructions and role of negation in the phrasal structure. Together, at least in the case of negation, we can say, this falls under the category of dependences in natural languages. We will look at why we say dependencies when it comes to the interpretations of negation and elements depending upon presence or absence of negation.

So far we have looked at displacement and a particular level of representation of elements in phrasal structure at what we say deeper structure. We have looked at how elements like anaphors, R-expressions and pronominals get interpretations in a sentence and the role of phrasal structure for such interpretations. We have seen how structural relations which come out of the understanding of phrasal structure helps us dealing with cases and how they help us understand hierarchical relationship between elements in a given sentence.

Continuing with that, we are looking at two specific constructions: compound word constructions are specific to South Asian languages and then, we will look at negation as well. Compound words will help us understand phrasal structure in a specific way that there are elements in natural languages, which have several components, but they form one category and we will look at these things in little bit details today.

(Refer Slide Time: 02:42)

Types of Compound Verbs

- Two types of compound verbs

– V + V = V

- aa jaao 'come'
- baith jaao 'sit'
- khaa lo 'eat'
- paRh do 'read' [for me]
- baiTh lo 'sit' [for your benefit]

Let us start with compound words. There are two types of compound words in natural languages; in the languages where compound words are found. First type is a V plus V construction, where we have two verbs coming together and giving us one construction with one specific interpretation and meaning. In such a construction, both the parts are verbs.

Look at the screen and then, you can see examples like aa jaao, baith jaao, khaa lo, paRh do, and baiTh lo - these are the examples from Hindi, one of the major Indo-Aryan languages and their English meaning is given next to them. The verb aa jaao has two verbs in it; one aana and the other jaana. Similarly baith jaao has two of them: baithna and jaana; khaa lo has got two of them khaana and laena; paRh do has got two of them: padhna and daena; and baiTh lo is baithna and laena.

Please pay attention to this construction. A meaning of this compound verb comes out of the combination of the two and we get the meaning, what is given next to these words. Now having said that both elements are verbs, it is important to pay attention to them. But let us move and look at the second type and then we come back to this type once again.

(Refer Slide Time: 04:30)

- N / A + V = V
 - kaam karo [work + do] 'work'
 - baat karo [talk + do] 'talk'
 - saaf karo [clean + do] 'clean'

The second types of compound verbs are a type where the first element is either a noun or an adjective and then, the second part is verb and together they make one single verb. Examples like kaam karo, baat karo, saaf karo... So in the example kaam karo, you see kaam as a nominal element and karna as a verbal element and together it gives us the meaning of - work. Baat karo has baat as a nominal element and karna as the verbal element and means - to talk. Saaf karo has got saaf as an adjective and karna as a verb and then we get - clean.

Now in the literature, there are different terms for these types of constructions. One of the popular terms for this type of construction is conjunct word. But for the simplicity of our understanding, we are putting these two types that you have seen so far together under the same term compound verb because we simply mean that the verb that we get out of combination of two elements, were in the first type, we have verb and verb and in the second type, we could have either have a noun and a verb or an adjective and a verb.

So, these are the examples from Hindi and you see their description and how they mean what they mean. Now, when we look at the structure of these words, we find several interesting things and that is significant for us to pay attention to, and particularly when these things are underlying deep down and we figure out these patterns, again effortlessly.

(Refer Slide Time: 06:24)

- Structure of Compound Verbs
 - Not all verbs can be both V1 and V2 in a sequence of compound verbs.
 - More verbs can come as V1 and only a few can be V2.
 - The meaning comes from V1 and V2 only adds a shade to the total meaning.
 - V2 carries all inflections.
 - In the phrase structure V1 and V2 both appear as V.

The first thing that you find is not all the verbs can be both V 1 and V 2 in a sequence of compound verb. What we mean by this is, there is a serious restriction on the combination of the two. There is no such rule that we can derive by looking at the set of data. However, it is pretty simple to generalize and to say that not all the verbs, that is, not any verb possible in Hindi or in languages where compound verbs are possible, can be in the place of V 1 and any of these verbs can take place of V 2; that is not allowed. What it means is only certain number of verbs are allowed to come together and form the combination, what we call compound verbs.

Why? We do not know much about it and to know more about this, you need to look at literature available in the field. What we also find that more verbs can come as V 1 and only a few can come as V 2. So we see, not all verbs can be V 1 and V 2 both in a sequence of a compound verb. The other restriction that we find on the construction of compound verbs is more verbs can come as V 1 and only a few verbs can come as V 2.

That is, the total number of verbs available in inventory of verbs in a language like Hindi, only a handful of them can be in the place of V 2 in a construction of compound verbs, whereas, more verbs can come as V 1. The total number of verbs that have been found in literature that can come in V 2 is not more than 22 to 30.

The next interesting thing that we find in such a construction is the meaning comes from V 1 and the V 2 only adds a shade to the total meaning. This requires your specific attention which we want to see carefully.

(Refer Slide Time: 09:05)

Types of Compound Verbs

- Two types of compound verbs

– V + V = V

- aa jaao 'come'
- baith jaao 'sit'
- khaa lo 'eat'
- paRh do 'read' [for me]
- baiTh lo 'sit' [for your benefit]

What we are trying to say is that in a construction like aa jaao, what we find is the meaning of the total compound comes from V 1; that is aana. So, the total meaning of the verb is 'come' and the V 2 which is jaao adds only some shade to this meaning and I will describe what I mean by that shade in a moment. But, please look at this example. It is an interesting example, where there are two verbs from a language like Hindi; two of them have got completely opposite meaning: aana means - to come, and jana means - to go.

Whereas, when they are put together and when they form a compound verb, then the meaning is coming from the first one, which is 'come'. Now, it applies to all verbs of this type, where you can see in the verb baith jaao, the meaning comes from the first one baithna; in khaa lo, the meaning comes from the first one khaana; in paRh do, the meaning comes from the first one padhna.

Then the question is, what kind of shade do the second verbs add to the total construction? Now, this shade is very subtle in its presence; the difference between two constructions like aana, like aao and aa jaao, baitho and baith jaao is minimal. However, the distinction exists. If you ask speakers of this language to give you the distinction between the two, the best they can give is, they will agree with you that there is a

distinction. But, it is hard to put the finger on the distinction between the two; that is, baitho and baith jaao.

However, when you look at the larger set of data, it becomes little easier later, when you have in the construction, both the verbs as transitive; like khaa lo. In this construction, both are transitive verbs; that is khana and laena. Now, if you look harder and then see, also because of the intended meaning of the first verb that is V 1, we see this means 'eat'; but the benefit of eating is intended towards the person who eats.

And therefore, a combination like khaa do is not possible. Whereas, we can have a combination like paRh do – meaning, 'read it for me', where the benefit of reading is directed towards the person who makes the request 'to read' as opposed to the construction like paRh lo, where the meaning of the compound paRh lo is directed towards the person who is going to read the thing that is supposed to be read.

So, looking at the two contrasted sequence of paRh lo and paRh do, we can say the verbs 'laena' and 'daena' are adding shades, which are easier to see. Probably, this happens because of the transitive nature of V 2. Similarly, in the construction baith lo, it is easy to see this shade that comes from the meaning of the verb 'laena'; that is, instead of saying baitho, when someone says baith lo, it is probably intended to mean that you need some kind of some rest and if you do it, you will feel better. And therefore, a combination of baith do is not possible.

So we can talk about these things, but it is hard to come up with a rule which puts these kinds of constraints and what is possible and what is not possible. But as general constraint on this construction, what we can say is the meaning of the compound comes from V 1, and V 2 only adds some shade to the total meaning of the compound.

And we also see another significant thing in the construction of compound words and particularly when they are used in a sentence that it is V 2 that carries all inflections. All the examples that you have seen so far are examples of imperative verbs, where you see imperative markers like 'jaao', 'lo', 'do' - these are the imperative forms of the verbs. So, we do not see any change in the V 1. The V 1 comes at this time, only with this time after removing the infinitive marker; whereas, V 2 carries all inflections in these cases are imperative markers.

And finally, we see that in the phrasal structure of V 1 and V 2, both appear as V. So, when you look at this thing in terms of the structure of the phrase, which is V P, you are going to see both coming as under one V P. And then, you will see that the theory requires some sort of manipulation to accommodate both the verbs.

But, both are part of the same V P, which predicts that this is one compound, one entity. This is interesting for us to see for the complexity of the structure and how it gets interpreted in terms of its meaning. And here, we see the role of human mind in looking at the constraints that you have seen on the screen so far, in a very clearer way. Even though, it is difficult to put the finger on the distinction of meaning between the two that we have just discussed like 'baitho' and 'baith lo' or for that matter, even more complex ones like 'aao' and 'aa jao'.

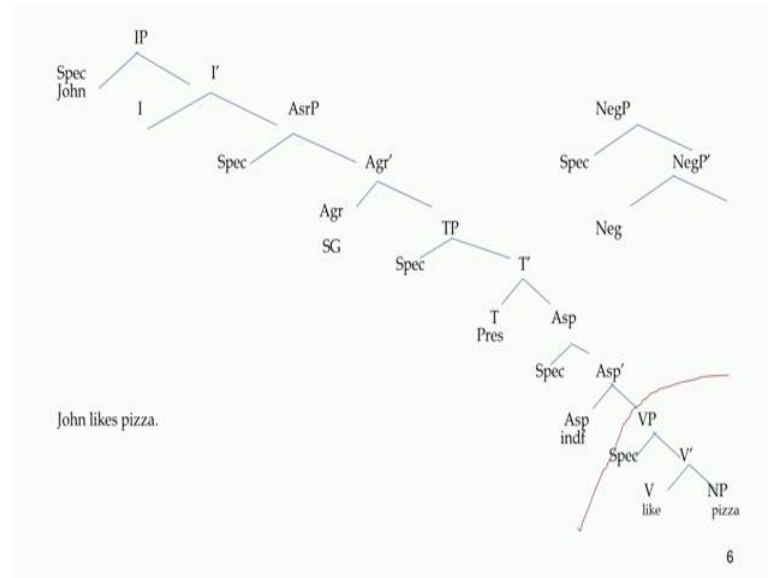
But, it is very easy to see that there exists the distinction between the two. This is the most complex example that one can talk about where human mind figures out these things effortlessly. However, in a real conscious effort in trying to study a structure of a sentence, it is very difficult to find which part and what rule of grammar helps us construct these constructions and get the intended meaning.

(Refer Slide Time: 17:22)

- Dependencies
 - Negation and interpretation of some elements in a sentence.
 - Evidence for (NEG)ation being a functional category item.
 - Elements that depend on negation are called Negative Polarity Items.

The next part of these types of constructions that we want to look at is in terms of dependencies and we are going to look at some elements of negation and elements that depend on negation in a sentence for various interpretations.

(Refer Slide Time: 17:42)



Very briefly, what is negation? There are three types of negation in a language like Hindi. We can say sentences like... if we have an affirmative sentence like ‘John pizza khathaa hai’, we can say a negative counterpart of this – ‘John pizza nahiin khathaa hai’, where we can see the element ‘nahiin’ comes right around the verb. And I am going to show you some examples of these things and then, we will evaluate, what we mean by elements that depend on negations for their interpretations. And such elements are called Negative Polarity Items in natural language. We will take examples from Hindi to look at these constructions.

(Refer Slide Time: 18:38)

Negative Polarity Items (NPIs)

–NPIs are the constituents in natural languages that are sensitive to the presence or absence of negative licensors.

To understand negative polarity items, negative polarity items are the constituents in natural languages that are sensitive to the presence and absence of negative licenses. In simple words, it simply means, for a negative polarity item to be present in a sentence, it essentially requires the presence of a negation element as well. So, let us look at some examples. So, here are two sentences from Hindi.

(Refer Slide Time: 19:13)

Type - I			
(1)	<i>raajiiv hargiz nahiiN</i>	<i>bol-egaa</i>	
	rajiv at all NEG	speak-FUT-MASC-IIISG	
	'Rajiv will not speak at all.'		
(2)*	<i>raajiiv hargiz</i>	<i>bol-egaa</i>	
	rajiv at all	speak-FUT-MASC-IIISG	
	'Rajiv will speak at all.'		

And the sentences 'Rajiv hargiz nahiin bolekaa', means 'Rajiv will not speak at all'. Look at the constituents of this sentence; in this sentence, 'Rajiv' is the subject of this sentence and rest of it is predicate, where the verb is 'bolekaa', which carries agreement markers and future tense on it. Specifically, I want to draw attention to the negative element; the negative element is 'nahiin' in Hindi.

As you see, it occurs right before the verb; that is on the left of the verb; it is a verb final language and it occurs right before the verb, to the left of the verb. Then, we see that it is because of this element negation, we can see... the presence of the word 'hargiz' in this sentence is dependent on the presence of negative element 'nahiin'. If we do not have the negative element in this sentence, then this sentence is going to be ungrammatical. So, you will not find Hindi speakers saying 'Rajiv hargiz bolekaa'.

So, with the examples of these two, you see two things: one you are being introduced to negative elements in sentences or particular types of sentence which are negative sentences. And then, at the same time, you see some elements in sentences, which are

crucially dependent on the presence of negation and these are the elements that are called negative polarity items.

So, 'hargiz' in language Hindi, is a negative polarity item, and because the negation element is not present in sentence 2, therefore it is ungrammatical. The star in front of sentence 2 indicates ungrammaticality of this sentence.

(Refer Slide Time: 21:26)

Type – II

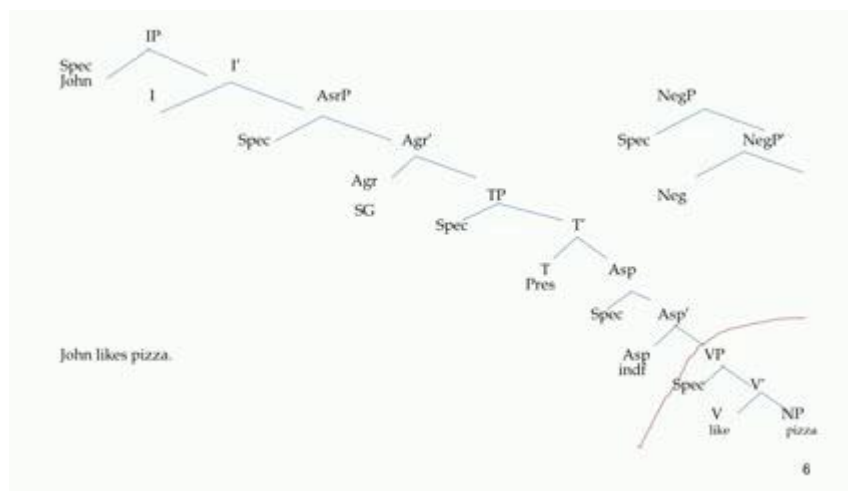
(3)	<i>maiN-ne</i>	<i>kuch-bhii</i>	<i>nahiiN</i>	<i>khaa-yaa</i>
	I-ERG	anything-EMPH	NEG	eat-PERF
	'I did not eat anything.'			
(4)	<i>maiN -ne</i>	<i>kuch-bhii</i>	<i>khaa-yaa</i>	
	I-ERG	anything-EMPH	eat-PERF	
	'Did I eat anything?'			

In second one, that is, in the second set of sentences in 3 and 4, again you see 'mainne kuch bhii nahiin khaayaa' - this is a Hindi sentence 'mainne kuch bhii nahiin khaayaa'; it means 'I did not eat anything'. Look at the meaning of the sentence in English and see, the meaning of this element 'kuch bhii' as anything dependent on the presence of negative element 'nahin'. In the absence of this element, this sentence does not have same interpretation.

Look at number 4. If we give it the interpretation of a question sentence, then it means 'Did I eat anything?' - 'Mainne kuch bhii khayaa?', then it means, 'Did I eat anything?' However, if we put it as a general declarative sentence 'mainne kuch bhii khaayaa', it means 'I ate something'. The point is, the interpretation of 'kuch bhii' as anything that is dependent on the presence of the element 'nahin'; that is a negation element in the sentence.

Now, you have seen these four examples so far to see that there are some elements in natural languages which crucially depend for their presence in some cases, for their interpretations as negative polarity items on negative elements themselves. How we look at these things is also significant. Look at a familiar structure that you have seen before. This structure helps you understand a very simple sentence like ‘John likes pizza’; we have seen this sentence several times before.

(Refer Slide Time: 23:25)



Now the argument here is, with lot of evidence from literature, it has been suggested that though ‘nahiin’ looks like a lexical item, but it is present in the functional domain. So, look at the corner, where you see ‘NegP’; when you look at the corner at NegP, you see it is maintaining the integrity of a phrase and it is called a negative phrase, which will have its spec; that is specifier and intermediate category NegP and then, it is going to head negation. In the head of the phrase is going to be negation and then, it will have its own complement.

The argument is this phrase occurs in the functional domain; that is above the red line, where you see agreement phrase, where you see tense phrase and aspect phrase, etcetera. A specific suggestion has been made that NegP phrase will occur above T P but below aspect phrase.

Now, those technical details are significant for the details of the study of this theoretical construction and the theoretical developments of this particular structure. For our reference, it is a simple thing that we need to understand that NegP is part of the

functional domain, which is above this red line that you see on the screen; and then, because... below the red line what we have is lexical domain.

Now, this needs to be in the functional domain, because it is from the functional domain that it can guarantee the interpretation of elements that are dependent on them. That is, from the functional domain, it can dominate all other positions in the lexical domain and therefore, the relationship between the negation element in the functional domain and the lexical elements that are dependent on it for their interpretations like negative polarity items can be licensed and guaranteed and their grammaticality can be explained.

Thank you.