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

Lecture – 12
Word Formation
Phonotactic Rules

How do we produce sounds what is the mechanism involved in that and then there what is the role of airflow extra air voicing that is vibration in the vocal cord and things like that right. That was the idea we can, that was the idea of that discussion on sound. So, now, we will begin with words go ahead.

Student: Sir, when link languages differ in the number of consonants of work consonant is that happened, but the different sounds will have what might be the reason that some languages have adopted more sounds as part of their languages by others have not, is there a historic can it be justified by some reason why do languages differ in the numbers (Refer Time: 01:06).

Its, say it again why do, his question why do languages differ in number of sounds, why do some languages have more sounds, some have less, sounds some have certain specific sound sense others do not have. You were saying something?

Student: I did not understand every language has a same number of sounds (Refer Time: 01:27).

No, not true approximately same for example, you will not find a language with 20 and a other with 50 see that. So, they will have approximately similar numbers like 42, 46 or 48 no language will have 20 or 25 and then others will have 50 or 70. They do not have same number at the same time the differences are not too wide.

Student: Sir, there is there are some languages in Africa which have more than 100 sounds, I cannot remember the name of the language, but they have unique some like they also have that part of their.

Right.

Student: Language.

Right, right.

Student: So.

They are call clicks.

Student: Clicks.

Right.

Student: Yeah, the exclamation point.

Right right.

Student: So, what might be reason that.

See first of all there are not 100, second some of those are called some of those things are supra segmental features. For example, in our languages we too have something called nasalization its part of many many languages, but to give you one example from our languages we have nasalization which is different from nasals. For example, we have a sound called [FL] right like [FL], but then we have something else which is called nasalization. Now what is nasalization, it is something like let us say when we say word [FL] is the word for.

Student: Eye.

Eye is a Hindi word for eye. Now, the first sound of this word is [FL] it is not [FL] what is it.

Student: [FL].

[FL] the first vowel is nasalized right that moon and the dot thing is the marker in writing system.

Student: (Refer Time: 03:53).

For nasalization. Now, you may have noticed I do not have it on my schedule to talk about return system, but you may have noticed in some words you just see a dot and in some you see moon and the dot there is a difference between the two. I hope we get

some time to talk about that; however, we need to get to principles in more details nonetheless they represent two different things moon and the dot is representing nasalization which is a feature on a particular sound, the dot is simply representing another sound which is nasal.

Now, how they do those things I will show you some other time and if I find some a space for that. Important thing with reference to your question is nasalization is something which is called supra segmental feature. Now it comes on a sound it is not a sound by itself therefore, several of such things may not be I am not denying because I do not know which language you are talking about I do not know the sound inventory of that language to deny anything outright, but some of them are super segmental features, that is number 1.

Number 2 and those are the things which are responsible for when someone says accents right. Accent most of the time is used as a derogatory word, word to mark the language low it said your language has an accent right; however, though the technical term accent also means difference caused by supra segmental features. So, that is also another aspect of that. There is one more point one more thing which we need to discuss before we move to words because now we are moving from sounds to words.

(Refer Slide Time: 06:14)

Words

- How do we make words?

- If words are not collection of random sounds, then what are the patterns?

When we look at words we know that they are not just random collection of sounds right that that is well established. We may not know each and every rule each and every

pattern which is responsible for which is responsible for the strings of sounds that we get in a particular word or what are the strings that are allowed and what are the strings that are not allowed we may not know all of them; however, we know that they are not random collection of sounds. They have a underlying pattern in it. We are going to see some patterns today which is going to answer the question how do we make words, but there is another element which is larger than sounds and smaller than word and this thing is called a syllable. Have you heard this word syllable, what does it mean to you when you hear the word syllable?

Student: It represents a certain sound (Refer Time: 07:26).

Ref with reference to sounds actually what it is the following its more than sound, its larger than sounds and smaller than a word. For example, a word may have two to three syllables or maybe 4 syllables; however, one sound may also constitute one syllable, but the question of syllable comes in only when we are talking about words there are if we cut the words in different parts then we get several syllables this is called a, there is a process called syllabification and we know that a word may have may be divided into two syllables then they are called bi syllabic or di syllabic word or a mono syllabic word if we cannot divide them into two or three then they are called mono syllabic words. So, please keep this thing in mind there is something called syllable which is larger than sounds, but smaller than words.

Syllables do not extend beyond the word boundaries they stay within words. So, now, let us very quickly look at these things my idea is to get to sentences by tomorrow.

Patterns

- CVCV
  - VCVC

- VVV

- CCVC
  - CVCCV
  - CVCVCC

- CCCVC

- *CCCCV
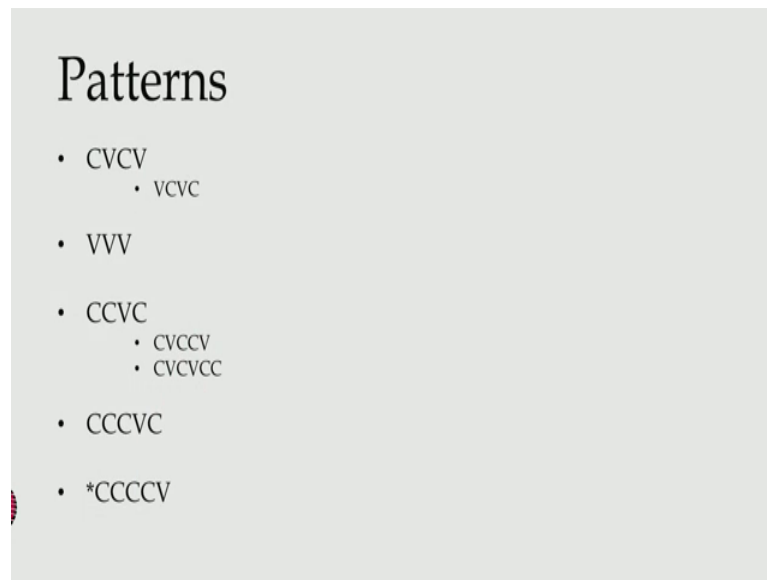
So, we have been looking at these things of and on, right where these things simply mean consonants and vowels. Now, the first pattern that you see CVCV right, which tells you several things, probably we have referred to these things while discussing other aspects, but for once again let me say the thing. This the first pattern simply tells you first and second that the most common pattern for the formation of word is CVCV. There is nobody knows how many words can we make with this pattern that simply means a lot a lot of words, there is no restriction on how many of them can be made. Also it means we must have a vowel in a word, when we say most common pattern we mean if we have a proper alternation or at a regular interval consonant vowel consonant vowel then we probably get more right which also means that we can have a vowel consonant vowel consonant alterations, which will mean the same thing.

We can also have simply words with to two three vowels and again the underlying thing is no word with only consonants in any language if these are the underline things. The third thing when you see what does this tell you when you see there are two consonants in the beginning right that is it, that is a clusters it means when two of them are together they not necessarily, but they will form a cluster. Does anybody understand what a cluster means?

Student: Yes.

Cluster is not just the jester position of two sounds, what does it mean somebody?

Student: Little part of sound on starting (Refer Time: 11:28).

Exactly.

Student: Might overlap.

No, overlap. The part of the previous consonant disappears, it is important to know which part of that previous consonant we are talking about a sound and again we are talking about a part of that sound has to disappear in order to make a cluster this see, how what a microscopic look it becomes when we look at words right. So, which part of that sound do we cut or gets disappeared.

Student: (Refer Time: 12:07).

The vowel part right; we know that every consonant comes with a vowel in which is called an inbuilt vowel which is just one particular vowel this vowel is.

Student: [FL].

[FL] a short [FL] it shorter than [FL] or definitely way shorter than [FL] is a completely different sound we do not find that anywhere in any consonant, when you see [FL] in a consonant that is an additional sound right. In a word like [FL] or, [FL] and [FL] are two different sounds right. So, the sound like [FL] comes with an inbuilt vowel [FL] which is small vowel it is called a [FL], but let us call it a vowel, in order to make it a cluster that goes away that vowel disappears and then we get the following consonant forming cluster with that one. And we have seen examples like school station scooter right and many more. This cluster is possible in the beginning of a word, in the middle of a word also at the word boundary.

However there are a couple of things that are that work as constraint and that are important for us to keep in mind only the first sound is responsible for forming the cluster that it is in a cluster the first sound that is first consonant will lose its inbuilt vowel. The second one will not, if the second one loses its vowel then it is going to form cluster with the following one see that and this can happen at any position in a word beginning, middle and end with the break of a vowel. If there is no break then they are going to form cluster with three consonants, if we say there are some words which are which have cluster of three consonants in the beginning of a word you get this question if

we say there are some words which have three consonants forming a cluster in the beginning of a word what do we mean, what are the two consonants that are losing their vowels.

Student: First and second.

First and second right, third one is not going to lose its vowel alright.

Now, before we see the exam see some more examples of the first second third 4th one let us look at the third one again. The difference between first and second put together and the third is striking which is remember what I told you about the first one, total number of words that we can make with this possible pattern is a lot that is that is infinite we do not know how many therefore, we do not even count.

However, the presence of a cluster in a word reduces the number of words way too low that is the number of total words in any language with clusters is very few this very few may not be handful that you can count, but when we say very few we mean compared to the first one way too low. What is the meaning of this thing? If you look at it in if you can elaborate this thing in a little bit more what does it mean which one is more common which one is easier. We get unlimited number of words with a pattern right definitely that pattern has to be an easier pattern only then we are getting so many of them.

Now, we are getting very few that is way too fewer with clusters which simply means that is a heavy word and for the vocal apparatus, for the word formation process and the generative mechanism that is a expensive word that is a tough, tough one therefore we have very few of them. This; I very well aware we did not completely answer your question at why differences in number of words, but this will tell you something. But one more thing I want to add to your a question not necessarily as an answer is this question is like why do we have so many languages right which we do not have a clear answer of, it is just that a we have so many of them.

Similarly, it is an empirical fact that languages differ in terms of number of words and get this thing.

Student: Sir, can we say that because say long time go because there was geographical isolation will be different groups or civilization I mean there was no civilizations if you

go long back, but different groups because there was geographical isolation, so one group they developed their own languages each group developed their own languages and since they did not communicate earlier. So, they were not exposed new sounds or different sounds which can be produced some group explored their vocal apparatus more compared to other groups.

Right.

Student: Can we say that.

Probably yes, but you can say the same thing in a different way also which is or similar things in a different way. See we have talked about language continuum even today right we have seen the continuum of Assamese, Bangla, Oriya and Telugu, definitely Telugu has some sounds which Bangla does not have and Bangla has some sounds which Assamese does not have or Oriya may not have right still they form a continue. It is possible for us to see that continuum today because we are aware of the geography.

Now, as you said long long time ago and that is possible it is just a speculation long long time ago when people started moving right that movement was probably permanent right. We are also familiar with what we know as big bang theory right that was way too big and I do not want to go that far we do not know we do not have evidence of that time if we had language or not or if it was there in what shape and all we do not know, but when people started moving they probably never met with one another again. So, they had one way of communicating again they separate and then moved to some other place then they had one some other way of communicating.

So, we see a common ground, but when people separated and they were communicating amongst themselves they came up with another few sounds which were a specific only to them and then as they moved probably they some of them were retained some of them were lost we do not know how many sounds may have been lost even in the languages that we have today because sound change is one of the big process of language change, sound change is one of the big indicators. Remember I was trying to show you the distinction between three kinds of [FL] dental [FL], that is dental fricative palatal [FL] and then there was retroflex [FL] and I told you that retroflex [FL] has some languages have lost that one and what we have we only have a little [FL]. And even between palatal [FL] and dentals [FL] some languages have one and some languages have other right

which means in if in language a we may not have both palatal [FL] and retroflex, in language b we may not have palatal dental [FL] and retroflex [FL] right.

So, and this loss is recent therefore, we can even put our fingers on them some of the losses may not have been recorded, so we do not know what has happened to sound; however, we do know sounds have played a great role in language change. And therefore, some languages in the present form when we see them have a particular set of sounds some languages have another set of sound nobody says that they are going to stay that way they are going to change too; however, what is predictable is the following and which will probably not change is all the languages will keep sharing sounds there will not be a language which does not share sound with other one that will probably not change.

I am very well aware this does not completely answer that question that is probably that question does not have an answer. If you can think you can read one can speculate one can write something else, but can never be a complete answer to a question like this get it.

Coming back to our discussion first and second patterns gives they give us lot of words the moment we start with clusters we start getting we start seeing reduced number of words which simply means the clusters are heavy. Now, the evidence of a cluster being really very heavy is coming from to forth pattern. Can you think of some words with 4th pattern where we have three sounds three consonants forming a cluster to make a word?

Student: String.

Loud.

Student: String.

String. So, what are the sounds here?

Student: (Refer Time: 24:11).

I suggest please keep writing these words string and underline the sounds that are part of cluster you will see a magic in this thing the sounds are [FL].

Student: [FL].

[FL] and.

Student: [FL].

[FL] true this is a cluster its string [FL] and [FL] all right, more.

Student: Stray, Stray.

Stray. So, what are the sounds here?

Student: (Refer Time: 24:46).

[FL] and [FL] all right, more.

Student: Spray.

Spray and sounds here are.

Student: [FL].

[FL] [FL] and [FL] more.

Student: Screw.

Screw, sounds here are.

Student: [FL].

[FL].

Student: [FL].

[FL] I can stop, but for your fun part can you tell me more.

Student: Sclerosis.

So, the sounds are.

Student: [FL].

[FL] and [FL] more.

Student: Prawn.

Sorry.

Student: Prawn.

Prawn sounds are.

Student: P and r (Refer Time: 25:42) only two.

We are talking about three. So, you are right in a word like prawn we have [FL] and [FL] probably you thought of this example because you were looking at the returns writing system where you see a w or something right.

Student: (Refer Time: 25:58).

But it has only two.

Student: Two.

Two sounds [FL] and [FL] right, we talking about three.

Student: Throw, throw.

Throw, what is the sound are.

Student: [FL].

[FL] and after that you get a vowel. So, that is not three that is only two we are talking about three can you be more imaginative.

Student: (Refer Time: 26:34).

Just give me a word.

Student: Stroke.

Give a word sorry.

Student: Stroke.

Stroke all right, so the sound are.

Student: (Refer Time: 26:44).

[FL] [FL] and [FL]. Now, while you are thinking and I am still waiting for few more examples let me say the following we are talking about some of these words from English clearly right, you are not coming up with words from our languages. What we are going to see as generalization applies to our languages also it is just that you are not giving those sounds those words. So, generalizations derived from English words are applicable to all languages. So, do you see anything common in what you have seen what you have given so far?

Student: (Refer Time: 27:33).

Anything common in the examples that you have given so far.

Student: (Refer Time: 27:39) start with [FL] start from the front and goes back.

That is that is very nice true, but look at the sounds.

Student: [FL].

What is the first sound in all of them?

Student: [FL].

[FL] do you see this cannot be a coincidence that the moment you want a word with three clusters you cannot have one beginning with any other sound any sound other than [FL]. And this is no big time discovery or anything it is just pretty obvious we speak these words every day, we learn these things the way I am telling you it is just that we are its this is the process that is call reinventing. We are not inventing anything new its call reinventing or making something little bit more obvious all right it is not that these words you did not know these are your examples it is just that we did not pay attention to this thing say.

Student: Sir the words right [FL], if the words come first then we found out the buncher rules fitted them or have the words been formed according to the rules.

This is like chicken and the egg story.

Student: Yes.

Yes. So, good question though is you are saying did we have first sounds and then we made words.

Student: Did we have words and then we figured out there the way we form was.

Definitely.

Student: Actually follow the buncher rules or did we make the words based on buncher rules that we create.

No, we have words; let me put it the following way. These things that I am trying to show you when somebody came up with these rules definitely they looked at huge dataset and then they came up with this pattern. That must have been very exciting at the time when someone figured out that you cannot have a word without a vowel, sounds very very generic and a matter of general knowledge today, but must have been very exciting for them.

Student: Why is that we cannot have words with different sounds like instead of starting with the [FL] is it that we cannot have it or since difficult pronounce (Refer Time: 30:04).

That answer that answer I can give you, but let me talk about the question that you raised before that is very interesting question. So, these patterns where made explicit definitely on the basis of large dataset where the claim is not this fun the claim is there is an underlying pattern of word formation. Now, these patterns are part of principles and parameters which are part of universal grammar and which are part of language acquisition device that we are born with, we trigger them with these examples and therefore, we speak the way we do. See this thing, so it is not that we have a set of sounds in one compartment and then rules in the other and rules apply to sounds and then we get words its altogether, and definitely the generative process is that we need to trigger those rules to get these things that is the answer I can give you for that.

Now, let us let us look at more and then you will see why they all begin only with [FL]. What is the second sound in these clusters?
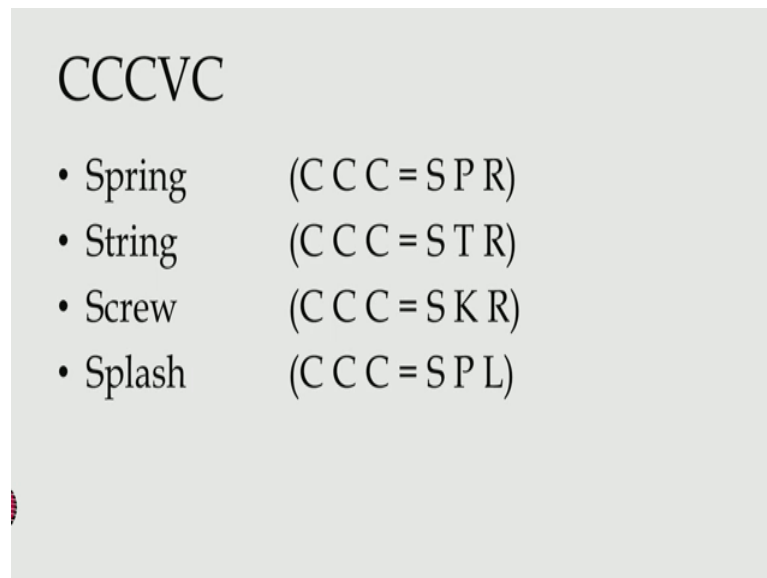
Student: (Refer Time: 31:35).

Second sound is.

Student: [FL].

They are either [FL].

Student: or [FL].

Or [FL] or [FL]. You can come up with 100 words, but they all are going to have sounds like second one can only be [FL] one of the three. Now what is common in one of the three we are going to look at that in a moment, and the third one?

(Refer Slide Time: 31:58)

CCCVC

- Spring   (C C C = S P R)
- String   (C C C = S T R)
- Screw   (C C C = S K R)
- Splash   (C C C = S P L)

Student: [FL].

Third one can only be either [FL] or.

Student: [FL].

[FL]. Now the again underlying idea is this constraint is very strict the stricter the constraint the heavier the word by heavy you understand what we mean by heavy the heavier the word for the apparatus therefore, fewer in number alright. Now these words with three consonants if you compare them with the words with cluster of two consonants are again way too few in number in any language they could be handful of them and these things being handful I am not concluding on the basis of you not giving

more examples. We do not come up with more examples have nothing to say that we have established well before they are very few in number you can count them I mean if you will not be too wrong if you say English may not have let us say more than 100 or 150 words like them, by 150 I am not trying to put a number on that it could be 200, but or even for that matter its 500 what is the big deal about that which is not true definitely 500 is not true.

But the point is if you can come up with 5000 with one pattern and then the third pattern which just makes another string little bit tighter and gets reduced to 10 percent and if you look at the previous one which were millions and you added one more constraint on that and got reduced to let us say 5 lakhs or for that matter 1 lakh that is too heavy a constraint. Just put one small constraint it gives you it becomes such a heavy that it has dramatic change in total number of words that is the constraint we are looking at right. I am coming to this in a moment to conclude this thing.

Student: (Refer Time: 34:56).

Yeah, I am coming to that in a moment I am coming to that slide in a moment again. See the last one, 4 consonants as a cluster do you see a star in the beginning of that for your information this star means not possible, 4 consonants as part of the cluster not possible and this answer could be simple for you, answer must be simple for you, why?

Student: (Refer Time: 35:33) extremely heavy.

Extremely heavy not possible, will become too heavy for processing therefore, not possible and this is not possible in any language no language gives you 4 clusters of consonants. Now for you and in the interest of time I should add in the beginning of the word there are few words in English where at the end of the word a cluster of 4 consonants is possible. I think the word sixth has probably 4 clusters or there are a couple of couple more again not a significant thing very significant to this thing to discuss; however, the point is even if it is possible at the end its possible only for few words not more than 5.

Student: Definitely.

Definitely and 5 I am being generous in the beginning of a word definitely not possible in any language. Now the point for us to take from here is see the weight of these constraints and see the patterns involved in the formation of some of the word these are called phonotactic rules, by no means I am giving you all the possible patterns and all the possible rules of word formation I am just giving you a flavor of these things. Yes sir.

Student: Sir, you told every word has to start with this if it has a cluster of 3.

If it has a cluster of 3 consonants the first consonant must be [FL], not s [FL].

Student: If there is a word supposed there is a word called fcron, f c r o n.

F c r o n, fcron.

Student: F c r o n fcron

Student: F is (Refer Time: 37:34) f is say on.

What is how is that pronounced.

Student: Fcron.

So, the first one is [FL].

Student: F.

No, but you I the way I hear you saying is fcron.

Student: (Refer Time: 37:47).

I am not familiar with that word what I am asking you is you tell me what is the first sound.

Student: [FL].

[FL].

Student: Yeah.

[FL]. So, the word is fcron.

Student: F c r o n.

So, how do we say this word tell me.

Student: Fcron.

Fcron.

Student: Fcron you can (Refer Time: 38:06).

You cannot say this.

Student: He is saying [FL] fully without eliminating the [FL] sound, but then (Refer Time: 38:12).

Fcron something like that.

Student: Yes, (Refer Time: 38:14).

Fcron you can do that, is there a word like that?

Student: No, I am just asking if there is a word like that.

No, you are artificially creating one where the where the where the problem is it right like someone said.

Student: (Refer Time: 38:28) not removed.

In the sound [FL] the [FL] is not deleted thus the sound [FL] is not deleted therefore, you are having difficulty saying this I am having difficulty saying that and imagine.

Student: (Refer Time: 38:42).

We drop that, we will not be able to say that I invite you say that word. So, your right on the paper we can do anything, but that is not going to be word and definitely that word is not going to be available in the inventory of words to be a signed meaning. See this, see the point, see the formation of words is one part and how such words if they are legitimate word based on these patterns get meaning is a completely different process and that that also I have I think I have told you that the relationship between a word and its meaning is arbitrarily matched is arbitrarily put together why this thing is called a

pointer has got no rationale behind it. We could have called it aeroplane, it would still mean the same thing I mean it would if in the beginning if everybody call it aeroplane we will call it an aeroplane would not make any difference.

It sounds ridiculous today because the moment we say aeroplane we have something else in our mind because we know the word aeroplane is assigned for something else get this thing. So, that is a different process. Coming to this you can do it on paper we will not be able to say that in order to be able to say a word this is what has been derived this is not a prescriptive rule that you must say [FL], this is if you happen to say three clusters in a word the first one must be [FL] or first one appears to be only [FL] let us put in it that that is the point, now yeah.

Student: What about words like accreditation were like k k r put together.

So, tell me now what is the word in acridicy?

Student: (Refer Time: 40:58) accerdiat.

Student: Sir, k is (Refer Time: 41:00).

So, that is a vowel, accreditation.

Student: About I am that can be when you say C C C B C that means.

No no.

Student: Let me only to 5 letters was any kind of.

It again, it takes long time to get out of this thing when we say 5 letter words we are not talking about letters we are talking about sounds.

Student: So, (Refer Time: 41:23) that is this arrangement generally be only for word with 5 sounds or word that start with these 5 sounds (Refer Time: 41:24).

First of all we are talking about this base word this cluster of three in the beginning of a word.

Student: Yes sir.

That is the thing that I am trying to show you, but I am saying something more than that also. What I am saying is when we look at a word we are talking about looking at sounds involved in the word not the letters involved in the word.

Student: I mean my questions coming (Refer Time: 41:58) apply only to 5 round words or do they to the.

No no, it could be any number of sounds in a word.

Student: So, but this type of pattern; that means, starting of a word you can generalize it to starting of a word that can be a single word also for example, if you say string it is stringing.

Ok.

Student: The same through (Refer Time: 42:15), stringing (Refer Time: 42:16).

Sure, sure definitely true.

Student: That was.

That I heard your, I heard your question as a different one and that is that is important to clarify when you say word like accreditation right what are the sounds involved in that.

Student: [FL].

The first sound is a vowel, so that is out. Second one is.

Student: [FL].

[FL].

Student: [FL].

Say that is a question of only two sounds right, the following sound becomes.

Student: A.

A vowel.

Student: Sir, what about words like kripa? Kripa.

Kripa. So, what is the tell me.

Student: (Refer Time: 42:55).

Before you say [FL] there is an intervention of a vowel right before you say the third one [FL] and [FL] before the [FL] there is a vowel see that true. So, you must get three of them, if you have a break then you can have any because we are not talking about words with two clusters words with cluster of two sounds. If we are talking about two sounds in a cluster then we can get any number any two sounds we are talking about a cluster of three sounds in that three you must have first one [FL]. Please think about more words I invite you this is not the only 50 minutes where you can talk about this think about more words, but just keep in mind that we are talking about sounds not letters. So, the first one must be [FL] second one can only be either [FL].

Student: [FL].

Or [FL] yes sir.

Student: Sir you said that the second sound can only be [FL] or [FL].

No, I said a second sound can only be [FL].

Student: [FL].

Or [FL].

Student: But it could also be [FL] right

[FL].

Student: It may not be possible in English, but it is possible (Refer Time: 44:25).

Yeah, see this is why we discussed both retroflex and dental and then we have also discussed something called Alveolarlet this, the English [FL]. So, there all from the same region therefore, I am saying [FL]. So, in our language it could be either [FL] which is complete dental or in other languages it could be an alveolar [FL] softer right in a word like let us say string. It is not a retroflex [FL] it is [FL] therefore, I am putting it that way. This is the reason why we discuss the differences between remember do people

remember here the difference between [FL] as a dental [FL] as a retroflex and then the intermediate alveolar one which are the sounds that we get in English very nice.

Now, what is the common between these three sounds [FL] and [FL]? It is not all of them are from the front of the vocal apparatus [FL] is.

Student: [FL].

Whilom, see that. What is common between all three of them is they are all stop sounds, stop sounds means total closer and then release of air [FL] the common in the manner of articulation in all three of them is they are all stop sounds and the common between [FL] and [FL] is these two sounds are called liquid sounds.

Now, liquid does not mean much like liquid is not something like physical liquid water or oil; however, it is something of that sort in nature did not did not have much to say about them at this moment, but I can simply give you one generic example. That you may find some people who interchange these two sounds when they would want to say [FL] they would end up saying [FL] or the other way round.

Some of such things are also attributed to some kind of a speech disorder and some of these things are very commonly known as metathesis or something like that, but the point is whether it is a speech disorder or not, it is not our job to hint that. Our thing is what this even in the speech disorder the alternation is between only these two sounds. So, some people can you think of some examples, I have found a instead of saying rail I have found some people saying [FL] and where they are supposed to say [FL] for example, [FL] the instead of [FL] they put [FL].

Now, this may not give you the answer, but this is just an application of what I am saying which is these two sounds are liquids therefore, this interchange. Now the third one of this cluster must only be either one of the two therefore, you get sounds like spring, strings, screw, splash and many other words that you gave.

Student: If the case only when as we started the beginning.

Most of them have been seen in the beginning of it yes, beginning of a word it is difficult to get a cluster of three sounds somewhere else; however, that is not denied.

Student: When somewhere else says by common.

Somewhere else it is quite common.

Student: As it, but the ended is common.

Come up with some of there words, probably there also it will be [FL].

Student: Pangst.

Sorry.

Student: pangst, p a n g s t pangst.

Again you are talking about written things, written letters if you say those sounds and pay attention to them there will be a break with a vowel.

Student: You are saying (Refer Time: 48:59) present.

Yes and if at all that is that counts that is one consonant which is [FL] velar nasal [FL] alright. That is all that is what I had to say for to tell you today.

There are couple of other things about words which I do want to bring to your attention because this is the what; so far we have seen some patterns now we are going to see some additional rules applicable for formation of words and then we go to sentence right away from there, to see more rules of why and how sentences are not simply cluster of words.

(Refer Slide Time: 49:17)

Cluster of three consonants

- The first consonant must be a s (dental fricative)
- The second one must be one of the following:
- P T K are stop sounds. Stop means a total closure before the release of air flow.
- The third one must be either R or L. These are liquid sounds.

They will make more sense when we look at those things through the intermediate rules that are applicable information of words and then a better understanding of sounds is definitely going to help us what we see little later alright. We stop here.