



IIT Madras

BSc Degree

Copyright and terms of use

IIT Madras is the sole owner of the content available in this portal - onlinedegree.iitm.ac.in and the content is copyrighted to IIT Madras.

- Learners may download copyrighted material for their use for the purpose of the online program only.
- Except as otherwise expressly permitted under copyright law, no use other than for the purpose of the online program is permitted.
- No copying, redistribution, retransmission, publication or exploitation, commercial or otherwise of material will be permitted without the express permission of IIT Madras.
- Learner acknowledges that he/she does not acquire any ownership rights by downloading copyrighted material.
- Learners may not modify, publish, transmit, participate in the transfer or sale, create derivative works, or in any way exploit, any of the content, in whole or in part.

English – I (Basic English)
Professor Rajesh Kumar
Humanities and Social Science
Indian Institute of Technology Madras
Three Consonant in Clusters in English Words

Welcome to the class. Today we will talk about clusters and in particular, we will talk about a special kinds of clusters in English words where we have cluster of three consonants together. We know little bit about clusters by now, what is a cluster, and then we will continue from there and go to the examples where we discuss cluster of three consonants in English words. Right at the outset as usual, I would like you to know that the discussions about specific features of words, specific intricate details in formation of a word in the way words function, this, these things are important for us to know for detailed and basic knowledge about language. We are talking about, for example, a cluster of three consonants is not specific to English alone. So, once you know about this part of three consonants in a cluster, you can check your language as well, languages that you speak, languages that you grew up with, and languages that you consider as your first language, native language, mother tongue et cetera et cetera.

Now, we, you know English already. We are trying to help you make it better. We are trying to help you feel that you know the language that you speak in a much better way. And once you get aware of these underlying patterns of the language, your level of confidence in the language that you speak becomes much better. It is at a completely different level and then that has implications for learning and if you work with these things, if you keep them in mind, when you use the language, it has exponential impact on every aspect of use of English. When you use, you sound more impressive and confident or the other way around. So, let us go ahead and look at it.

So, one more time: a cluster is, clusters are specific to consonants. Only consonants form clusters.

(Refer Slide Time: 03:19)



Consonants

- Sounds produced by modification of the flow of exhaling air in the vocal tract

• /k/ -- velar	[-asp, - voice]	king, class
• /g/ -- velar	[-asp, + voice]	great, glass
• /p/ -- bilabial	[-asp, - voice]	pink, pure
• /b/ -- bilabial	[-asp, + voice]	bliss, bless

- They have an inbuilt vowel sound 'a' with all of them.



So, we know about consonant sounds, we know that every language has limited number of sounds. In this case, English has 44 sounds out of which we have 24 consonant sounds and 20 vowel sounds. We know about the details of consonant sounds and vowel sounds. We have talked about how vowel sounds are produced and what is the role of understanding places of articulation in our oral tract for each one of these consonant sounds, and how when we bring in a discussion of understanding manners of articulations of these sounds, we understand each sound in a specific way. So, that is about consonants and vowels.

Then we come to words and we find several interesting patterns in words. We see that first of all words are not random sounds together. We can put sounds together and make words. So, there are specific underlying patterns in the formation of words and we are trying to uncover some of those underlying patterns to understand these things, to understand words in a better way.

So, like, we have will, the patterns that I am talking about are plural formations. So, how pluralization works in English and then we are looking at how clusters are formed and then other intricate details that we need to know about words. One of them is understanding syllabification, aspiration, and stress patterns underlying words.

So, these are the underlying things that we need to know. So, to come back, today we are going to look at little in little bit more details, cluster one more time. So, a cluster is formed out of consonants. Two consonants come together, that is as of now it is not a cluster; two consonants

next to one another it is not a cluster. It becomes a cluster, when in a word the first member of the cluster, that is, the first consonant loses its inbuilt vowel 'a' and then it becomes a cluster.

A cluster is possible at the initial position of a word, the cluster is also possible in the medial position of a word and also at a final position in a word. A cluster is also possible in multiples, we can have two or more clusters within ones word. So, we have looked at some of these examples, we are going to look at some of those examples, and then we will today specifically look at a cluster of three consonants.

So, you know about consonants and vowels that we have talked about. So, 'k', 'g' are consonant sounds, 'p' and 'b' are consonant sounds. It like, in words like 'king' and 'class', 'k' as a sound is that the initial position of both the words; 'g' as a sound is at the initial position of two words 'great' and 'glass'.

These are also the examples where you have seen 'k' and 'g' as, 'k' and 'l' as making clusters, 'n' and 'g' making clusters, 'g' and 'r' making clusters, and 'g' and 'l' again making clusters what this is indicative of certain features of these sounds. So, here we, you see, these are the places of articulations of the sounds, in the sense that 'k' is velar sound and 'g' is also a velar sound.

So, 'k' is a non-aspirated non voice sound, 'g' is known as non-aspirated but voice sound. Same way 'p' is, and 'b' are bilabial sounds according to their places of articulations. But when we look at specific features, we see 'p' and 'b' both are unaspirated but 'p' is unvoiced and 'b' is a voice sound. These are the distinctive features of some of these sounds that we are talking about and each one of them has one little short 'a' inbuilt in this. So, when we speak 'p' we also hear 'a', when we speak 'b' we also hear 'a'.

(Refer Slide Time: 08:44)



Consonant Clusters

- Two consonant sounds together
- Reduction of the inbuilt vowel sounds from the first one
- Not in random order

CV CV CV

• Cluster	-	/kləstər/	CCVCCVC
• Bliss	-	/blis/	CCVC
• School	-	/skuul/	CCVC
• Scooter	-	/skutar/	CCVCVC
• Blast	-	/blaast/	CCVCC



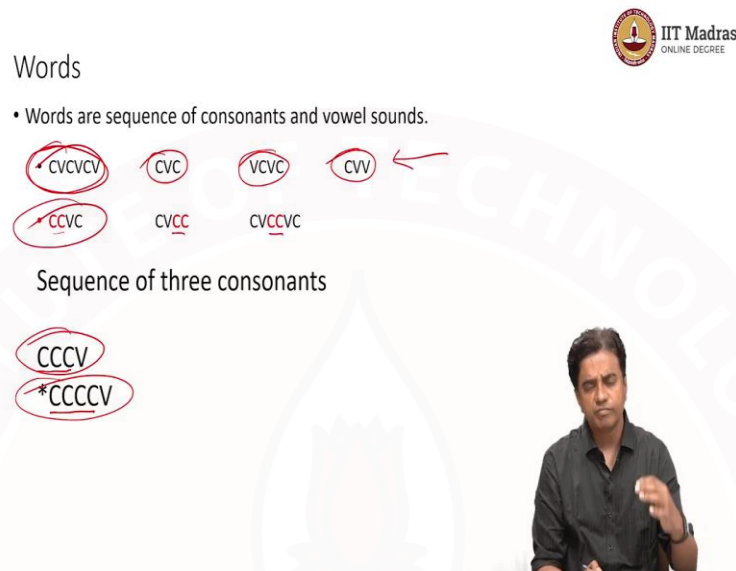
So, and then we see that there is a way in which we have, we see sounds coming in a word. So, that is basically CV, CV, CV. Any alternation of this combination gives us multiple sounds. All words are possible through alternation of these, this sequence. So, a few examples here: words like 'cluster' itself, 'bliss', 'school', 'scooter', and 'blast', just these are random examples. When you write them, you see this is I want you to write it for some time for some words, this is a specific exercise that you will do to check yourself whether you understand this in totality or not.

So, please make a list of any 20 words. Like I said, these are the random words and then you try to write down the sounds involved in those words. For that, you do not have to use phonetic symbols or phonetic alphabet, you can write it in Roman. But do write an approximant symbol like I have done, 'cluster' is spelled this way this is the accurate spelling of cluster. This is spelling of cluster. But when I am trying to identify sounds, I am trying to write 'kay' for 'k', 'l', 'e', 's', 't', 'e', 'r'. So, if you try to find this and then you will see, speak the word for yourself and you will see that these words have 'kl' and 'st'. These are the two instances of cluster in this word. So, and then finally, write it this way that here are the two instances of clusters.

So, this is CC two consonants together, then a will vowel coming in, then again two consonants together cluster and a vowel coming in and then a consonant at the end of it. So, likewise, when you do this exercise for all of them, you will see, 'bliss' has 'b' and 'l' as a cluster, a cluster at the initial reason; 'school', 's' and 'c' two consonants at the initial position of the word, making

a cluster; 'scooter', 's' and 'c' again, at the initial position; 'blast', 'b' and 'l' two consonants as cluster at the initial release. So, these are some of the examples of clusters in English, where we see only two consonants together in a cluster.

(Refer Slide Time: 11:52)



Words

- Words are sequence of consonants and vowel sounds.

CVCCVC CVC VCVC CVV

CCVC CVCC CVCCVC

Sequence of three consonants

CCCV *CCCCV

The slide features a large, faint watermark of the IIT Madras logo in the background. A man in a dark shirt is visible in the bottom right corner, gesturing with his hand.

So, through this, through the organisation of sounds in this particular way, we observe a particular type of thing in a word. So, we see, so here is just the example of same thing that we are giving you, it can be at any other place. I am going to show you an example, that cluster of three consonants is also possible at the initial position of a word.

But keep in mind, unlike the clusters of two consonants, there are more restrictions on a cluster of three consonants. So, here is a very specific thing that requires your attention. You see, this is the fundamental pattern of a word, CV, CV, CV. We can change this sequencing and make it smaller or bigger and we can get multiple types of sequences and we can get multiple types of words.

So, for what is special about it? The special thing is, as long as we have a sequence of CV and CV, we get numerous words including English. We, this is true for all languages, it applies in English as well. So, check any word that comes to your mind randomly and you will find lots of words are possible with these combinations.

However, the moment you start looking at clusters, that is, a sequence of two consonant sounds together in a specific way, the total number of words possible in English comes down to a very

small number. How many words do you know which has got clusters? Your answer could be I do not pay attention to that. That is a very non-natural answer, because when we speak a word in the language, in in our conversational practices, when we talk to others, when we use the language, we do not pay attention to these things, but when we want to specifically pay attention to that, we realise that number of words with clusters is very low.

And so, with that low number also, we have quite a few but we do still see some bit of flexibility that these clusters are also possible with the initial position of a word, at the middle position of a word and the final position of the word as long as we cluster of two consonants. The moment we go to the cluster of three consonants, we find more restrictions, more constraints, that is, constraints on formation of a word.

And naturally, as a result, we see very few words possible with that kind of restrictions, that kind of constraint and this is where, what I want to draw your attention to. So, first constraint is, this sequence of three consonants is only possible, sequence of three consonants in cluster is only possible at the initial position of the word not at the not at any other position. Maybe there are few words where you can argue that it is possible, but largely it is possible only at the initial position of a word.

And when you extend the same thing further, you can check and I am giving you an example, that cluster of four consonants it is a natural question. If a word is possible with a cluster of three consonants at the initial position, is it also possible to have a cluster of four consonants at any position in the word? The answer is no. A cluster of four consonants at the initial position is not possible, at least in English and also in other languages. So, what is the implication of that? And why so? So, we will get to know more about this when we look at examples of cluster of three consonants. But without waiting for an answer to this question, you would have guessed by now, why is it that we have infinite words with this combination, lower number of words with this combination, very few handful words with this combination and no words with this combination?

Answer is pretty simple. As long as we have consonants and vowels alternating, it is easy to speak and therefore lots of words. The moment we put restrictions on the production, we get few word numbers, heavier restriction as cluster, fewer than in fewer than a lot; three consonant

clusters, much fewer very few; four consonants, not possible. Hope this is making sense to you, when I discuss some examples probably it will make more sense.

(Refer Slide Time: 18:00)



Clusters of three consonants

• Spring	/spring/	<u>s</u> <u>p</u> <u>r</u>	CCCVC
• Stress	/stres/	<u>s</u> <u>t</u> <u>r</u>	CCCVC
• Screw	/skrue/	<u>s</u> <u>k</u> <u>r</u>	CCCVV
• Splash	/splash/	<u>s</u> <u>p</u> <u>l</u>	CCVC
• String	/string/	<u>s</u> <u>t</u> <u>r</u>	CCVC
• Scrub	/skrub/	<u>s</u> <u>k</u> <u>r</u>	CCVC



So, here is what I have been talking about so far and here is what you need to pay attention to and then I am sure it will be exciting information for you. And then you can do more exercises. So, remember, the first exercise that we have, that I have pointed to you so far for yourself is take any 20 words, and write down the sounds involved in those words.

At the second stage, try to write down the sequence of consonants and vowels in those words. Specifically, second stages specifically try to find words which may have clusters. Now you know, what a cluster means and see, when you write 20 words together, how many of them are with clusters, that is cluster of two consonants. Pause there and then once you understand what I am going to describe to you, what I am going to explain to you then try to find examples of these types and see how many examples do you come up with.

The point that I was trying to make about constraints becoming heavier, resulting into fewer number of words possible in English, will become much clearer and you will sound way more confident. You will, when you speak words, when you speak a sentence, you will have the confidence that you know a lot about the lot about words. And these are quite observable patterns that are underlying words that we speak. This is nothing earth-shaking. So, let us look at this. So, when we have few words here, and what are those words?

First let us look at very familiar words like 'spring', 'stress', 'screw', 'splash', again 'string', 'scrub'. Just giving you six examples to keep the slide clean. Idea is, there are in this word, there are three consonant sounds at the initial position of a word which is making a cluster. These sounds are 's', these sounds are 's', 'p', 'r' in 'spring', 'stress', say the sound to yourself and it will become clearer.

'Stress' do we hear 's', 't', 'r' together where inbuilt vowel is reduced from both, 's' and 't', that is, first two members of the cluster, and 'r' as the last member retains its 'a', 'str', which does not remain 'a' because of the following vowel it becomes a stress. So, vowel is realised only on the last one 's', 't', 'r' cluster where 's' and 't' have reduced its vowel quality stress.

Speak these words for yourself a couple of times you will realise 'spring', 'stress', 'screw', 'splash', 'string', 'scrub'. You would have guessed it by now, I am going to ask you to find more words of this type. It will be interesting, it will be a very interesting observation, very delicate, intricate information coming out of this exercise which you will feel it was staring at us but we were not paying attention to them.

So, what do we see? We have in a word like a 'spring' 's', 'p', 'r'; in a word like 'stress' we have 's', 't', 'r'; and in a word like 'screw' we have 's', 'k', 'r'. Again, in a word like 'splash', we have 's', 'p', 'l'; in a word like 'string' we have 's', 't', 'r'; in a word like 'scrub' 's', 'k', 'r'. So, try finding some more words of this type which has got three consonants as clusters and see what you notice. So, what I mean by three consonants as cluster is you have C C C in the beginning and in this word you have a vowel coming in e and then final consonant, 'ng' 'spring'. 'Stress', three consonants again a vowel and then a consonant.

'Screw' three consonants 'screw', one can argue here, but you have three consonants as cluster and then vowel coming in. 'Splash' three consonants a vowel and then again, a consonant. So, what do you see here, please pay attention to this one, please pay attention to this. You see that the pattern is almost the same. For all these two things we could have just written C C C V and C. So, this is the pattern underlying all these words. This is what, were, what I wanted you to pay attention to that the underlying pattern of words is completely rule-governed. It is not random.

Then when you pay specific attention, now you go into the details of that. Please pay attention to the sequence of three consonants, which is true for all these 6 examples. You see, we see first

consonant is 's', second consonant is 'p' and third consonant has 'r'. What do you see? Look at, whenever we look at a pattern we try to look at common points and the things that are different. What do we see here?

The first member of this consonant across the board is 's', 's' as a sound. We have discussed 's' as a consonant. Then you see, second member is either 'p' or 't' or 'k' in all of them, either 'p' or 't' or 'k' and third member is in these three all of them are 'r'. In these three, you see one 'l' and two 'r'. So, basically, we can say the, when we are talking about the first three consonants, the first one is always 's', second one is either 'p', 't' or 'k' and third one is either 'r' or 'l'.

So, this is the underlying pattern. Now, it is very interesting to note that, what is interesting to note here? Any word that you find which has got three consonants as clusters in the initial position of a word, can only have this much pattern underlying it. See, what a strict rule this is and because it is so rigid pattern, too many words are not possible. By too many, I mean infinite number of words are not possible.

And when I say limited number of words, even if it is 100, that is not too many given the possibility of infinite words that can be that is probably possible in any language. So, remember, we have been talking about, we can ask these questions to ourselves, we can ask this question to anybody. This question may sound ridiculous, but it helps us understand a lot. How many words of English do you know? It will sound like a ridiculous question, who knows how many words I know? Nobody counts, nobody wants to count and it is true. That is the answer is very simple. We do not know the total number and when we do not know the total number, we can easily say it is infinite number of words possible.

So, remember, with 44 sounds in English 20 vowels and 24 consonants, infinite number of words are possible for a simple reason, that there is no constraint on repetition of sounds in the same word or the length of a word. We do see words, which very rarely, we have words beyond six syllables, we do see words very rarely, which are even five and four syllables. Most of the words that we have are either three syllable words or two syllable words or one syllable word. True. But still, they are infinite, because restrictions are very few, alternations of consonant and vowel is possible.

The moment we make these constraints heavier, that is two consonants together, the number becomes, number shrinks. So, the moment we go to three consonants as clusters, the numbers shrinks even further and we are left with only a few, that is in 100s because of this rigid constraint.

Coming back to this point, what is common between 'r' and 'l'? They are both liquid sounds in natural languages. What is common between 'p', 't', and 'k'? 'P' is a bilabial sound, 't' is an alveolar sound and 'k' is a velar sound. According to places of articulations, there are three distinct places of articulations for these sounds.

But there is another way of looking at it, and then you can see that that is common between these two, that each one of them is a stop sound. That is, stop means when the flow is totally, it is a plosive, the other word for that is plosive another term that we use for that is plosive. A simpler term is stopped because the flow of air for a moment completely gets blocked for the production of the sounds. So, 'p', 'k', 't' that is not how we speak when we speak, but when you have to speak these sounds in isolation, you will realise that these are, there is a total closer total stop and then explosion out of that. Therefore this sound, these sounds are also called plosive sounds. So, either one of the three and then the first one is s, which is a sibilant, which is, you know about the place of articulation of this.

So, this is the underlying pattern of three consonants as clusters. Now, every word that you are going to find which has three consonants as cluster, you are going to observe the following that it starts with a 's' sound. Second sound is either 'p', 't' or 'k' and third sound is one of the two 'r', 'l'. Try finding it out, have fun with this exercise and then you get to know the role of you get to know I hope, by the end of this discussion, you feel that you know quite a bit about words, that is, formation of words, constraints on the formation of words, and how we understand them and why they are so rigidly rule-governed and not random.

And on top of that, we can have infinite number of words possible out of a very finite set of 44 sounds in the language. That is the magic of language, that is how we learn, that is how we pay attention to these facts and learn. This makes you feel good about what you know for English and we look forward to your questions. Thank you.