Introduction to Psychology
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Lecture - 06
Perception
External Factors in Perception

We will now continue our discussion from this very process of Sensation. What we done till now, that we just saw how these sense modalities they acquire the information, external information from the world and then how the signal gets processed in the brain, and then we discussed that well, we all try to assign the meaning to what we have seen and depending on the meaning that we assign to the object that we have perceived, we are seen in fact, not even perceived, we try to you know look at the appropriateness of that meaning. If we are able to give an appropriate meaning,fine perception is taken place, sometimes we do commit error while during that. So, in the process obsession nothing went wrong, but while assigning meaning we do commit an error and that is when we say that illusion has taken place.

We will little later, we will also come to illusion, but right now I will now going to little more detail of the perception phenomena, but before that although I do not want you to go into detail of it, I would just like you to very quickly look at the screen and you see this is the major connection of the visual system. When you look at the major connections ultimately you realized that it is the tertiary and the Paralympic system of the brain which gets activated at the end.

And remember these are the areas of the brain which has to do with emotions. Similarly, if you look at the major connections of the auditory system, right from the process at the level of inner ear, where the nerve starts conducting the information; you realized it finally; once again the sensory mechanism in terms of it is neural under pining goes up to the tertiary in the Paralympic area in terms of order recognition. In terms of smell again we see that the limits gets in the picture and if you look at the test mechanism once again the later life, hypothalamus and amygdala gets into action. What primarily you see here again for even find touch pressure in (Refer Time: 02:34) that. Once again tertiary in the Paralympic area gets activated.

What is important to realize here is that every time, whenever we have this process of sensation taking place and the brain trying to assign meaning to what we have sensed, the areas of the brain which are actually supposed to take care of the emotional aspect that gets activated.

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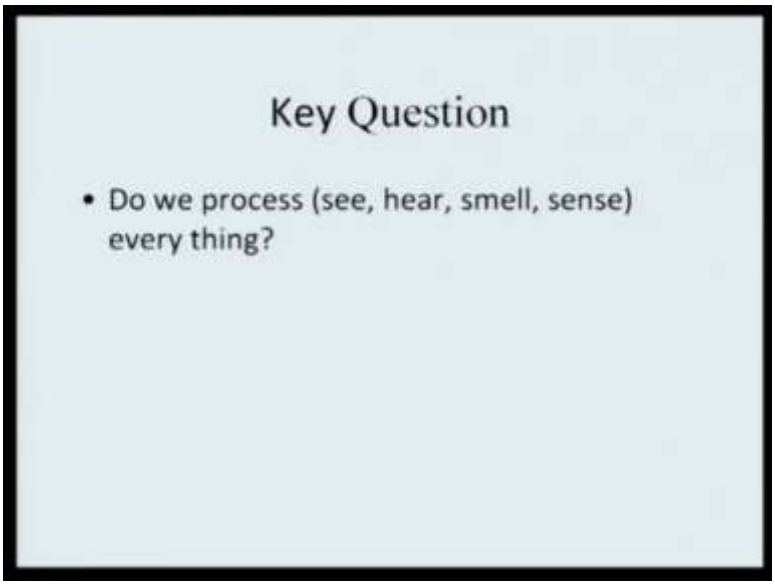

So, whenever we sense from the external world, the process of perception is not what you call free from emotion. So, the moment we try to assign the meaning, remember last time we had discussed in the previous lecture that right at the level of sense modality, we can store the information for very very brief period of time and I told you that remember this whenever we come to our discussion on memory at that time once again we will talk about sensory memory and this was with the reference of iconic memory.

So, memory gets activated there now we are saying that fine, emotion also gets activated now that we have to understood. Now sensation is conducted in the brain how the brain assigns meaning to it the key question is that is it that we processing each and everything that comes to us ? So, do we see everything that is available in the visual spectrum, do we hear everything in the environment, do we smell everything do we sense everything. So, on what ground does the brain decide, that this has to be processed and this has not to be?

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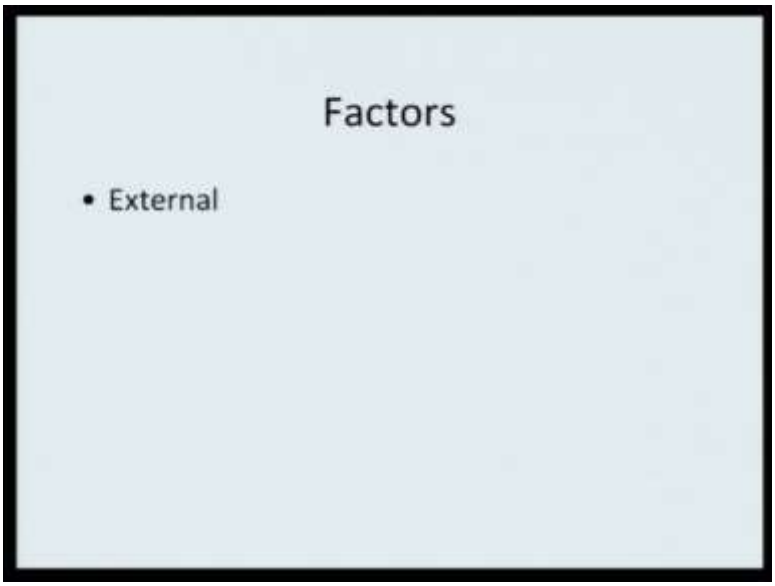

Now there are many things, with respect to perception. I am in a particular type of environment.There are external stimuli around me, which comes to my brain through my sense modality and at the same time I am at a particular type of a position in the given environment. So, the perspective that might particular sense of modality will take, for example, if I am looking at the camera right now, the perspective of the object which is available in my visual field. Other type of external stimuli and at the same time my own decision to act the way I want to at that point in time in environment.

So, there are many many factors that will now come into picture. What we are doing right now for the purpose of understanding the perception process, what we are doing that in this very lecture we would be talking more about those external factors that has to do with the strength of the signal. So, we are looking at the external factors right now, we are not looking at the other aspects, other aspects we come in the coming days. Now the most important thing when it comes to the external factors is the concept called Threshold or Limen.

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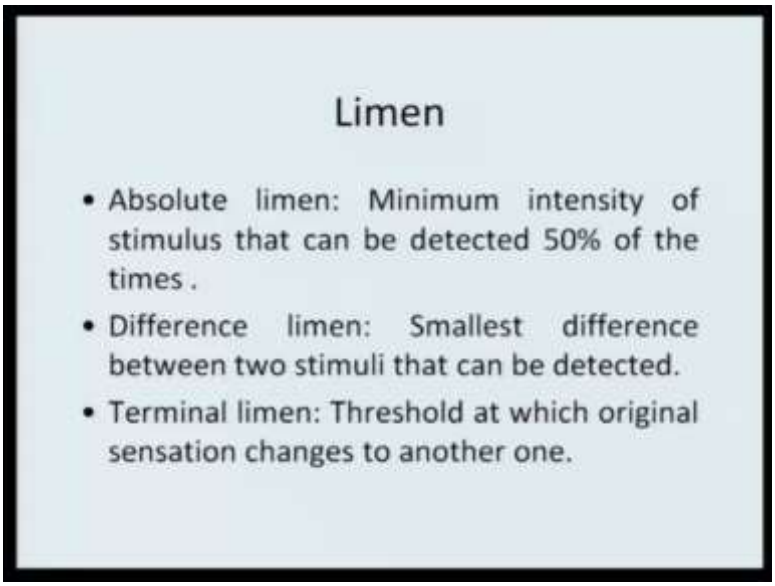

Three terms are to be remembered here, the absolute limen, the difference limen and the terminal limen. Now absolute limen means that this is the minimum intensity of the stimuli that you can detect a minimum 50 percent of the time. So, whenever you have absence and the presence of the stimuli you should be able to detect it half of the time.

Now, difference limen is basically nothing, but it is the smallest difference between two stimuli, that you can detect and then comes the terminal limen where you realized at the threshold changes to the extent that you do not consider the sensation. The perception to be exactly what you thought it initially was the measure of the sensation changes. Now let us understand this with an example you just know on your computer monitor where you or watching this lecture right now, Just minimize the volume make it come to zero and now you start increasing it, slide the slider now and then you realize it although physically the value changes it says 0 1 2 3 4 5 6 likewise no you get a indicator which tells you that the sound quality has changed which has increased, but somehow you are not able to listen to it.

So, the first case when it was 0 there was complete absence of this auditory signal. You can do it, do the same in the visual signal to turn your screen black and then you gradually you start know adding brightness contrast feature and then you realize that although physically things are changing, psychologically you are not able to make out. So, in the first case although the sound level is changing you are not able to detect it, you

are not able to hear it and then comes a time above which you can hear me. So, similarly if you change the brightness contrast feature, there would be a point when you would be able to make out that this is the object available on the screen right now. So, that very incentives of the stimulus were from absence to presence can be detected by you that is called Absolute limen.

Now, although you are able to make out that I am saying something you are not able to detect the increase in the volume. First case was 0 means absence of the process to presence now within presence you want to increase the volume, now you again knows the use the slider and you see that physically the sound level is increasing, but then you realize that the notable difference that you wanted make, that you wanted to increase the volume up to this level, that is somehow of not reaching and then comes a point when you realize that, yes! Now the sound quality has changed, it has increased and then if you now still continue moving it beyond 100 percent one 150 percent 180 percent, then you suddenly realized that this is no moral lecture it is converts into noise.

So, that very threshold, where the intensively of the sound becomes pain full for you the lecture converts into noise is terminal limen. So, in terms of external attributes of the stimuli that we are sensing in order to assign a meaning to it, what is the intensity of that various stimuli, absolute limen, difference limen, terminal limen has important role to play there. Now along with this comes an interesting thing, right now we have talked about it, that we have to make a distinction between the previous and the new state.

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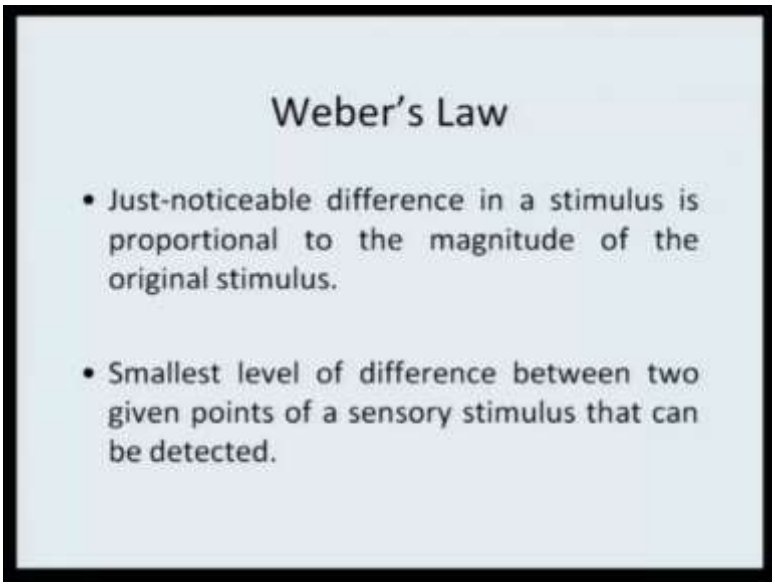

Weber gave a law, basically this is talked about know the area of psycho-physics in experimental psychology we will come to read about it. Here we would be briefly looking at what it means and why it is so important for psychologist to understand with this law - he says that the just noticeable difference in the stimulus is the proportion of the magnitude of the original stimulus.

So, there is a smallest level of difference between two given points of a sensory stimulus that can be detected. So, if you are able to know realize that this is the magnitude of the original stimulus and if the magnitude of their incoming stimulus is above this level, only then that difference can be detected. The best example of it could be that you hold a torch in your hand and go in a bright day light, whether your torch is switched on or off you are not able to make your sense out of it because the outside light is brighter than the light of the torch, but the same phenomena if you repeat in dark situation you would very easily be able to detect that your torch is on; the reason being that their magnitude of the stimulus, the intensity of the light which is imitated by the torch in the first case this is much less than the light already available in the environment.So, during day time you do not detect the torch is on where as in the night dark you are able to detect it.

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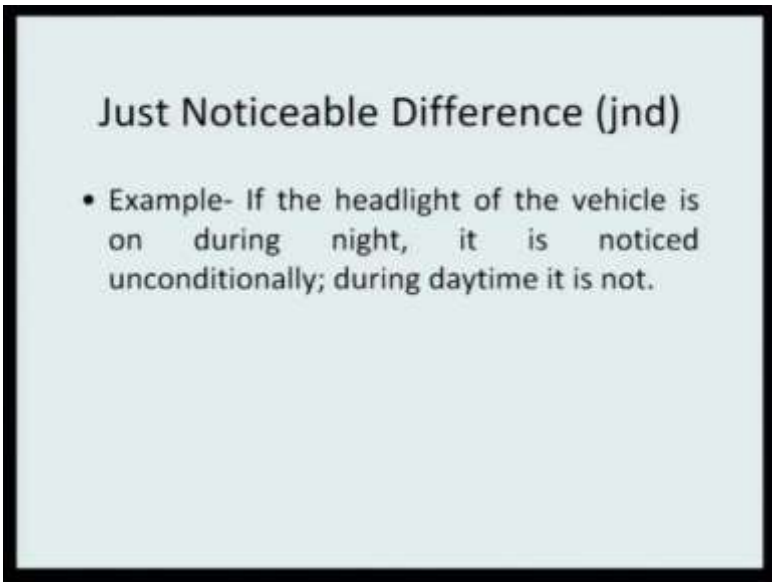

Take another example if the head light of your vehicle is on. Now during day time once again you would not be able to make out whether the head light is on or not. In the dark situation whenever the outside light decreases, you would very easily be able to say that, but the headlight of my vehicle is on. So now, because the existing intensity, the intensity of existing stimuli, if that is strong enough, then the intensity of the new stimuli has to be above that to be detected, that is what is called as Just Noticeable Difference.

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I will give you two examples. The first example is of the changing the brand name, when IBM introduced Lexmark printer. Look at the change in the logo that you see of IBM.

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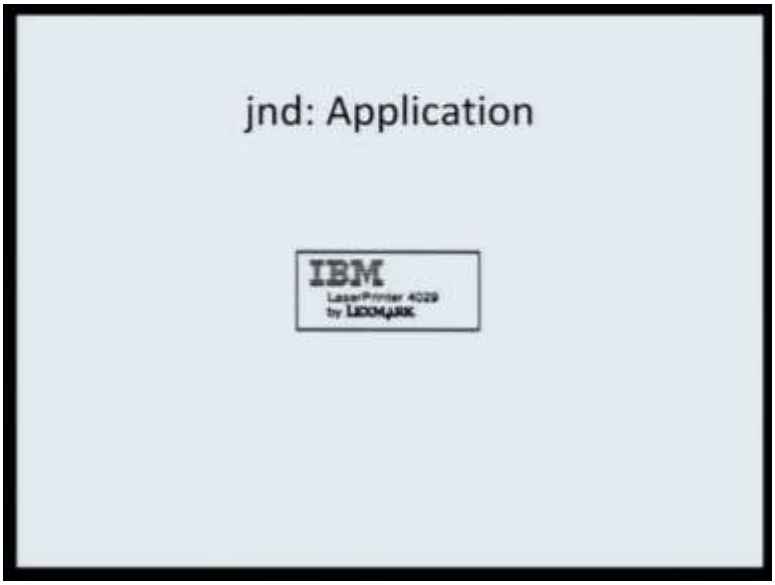

In the first case you see only IBM. Now, you are see IBM Lexmark 4029 by LEXMARK just look at font size also. So, earlier you had only IBM, now you have addition of laser printer 4029 by LEXMARK.

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Now, there is change. Suddenly IBM laser printer 4029 the font size decreases and LEXMARK has replaced the other remaining space.

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And then you see Lexmark goes in the top, laser printer 4029 comes at the bottom and IBM is removed. Now this is an interesting application of just noticeable difference now if you look at the first logo and the last logo you see a big difference. Why? you saw that difference because there was the difference in the space in the defined area of the logo had stark difference, but if you look from one face to the other and gradually if you look at the four phases; that means, that while positioning this printer IBM wanted that in the memory of the users, Lexmark printer should be attached to IBM and therefore, there it should not be considered this is something new that has come to the market rather the existing brand name should suffice the positioning of Lexmark printer.

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Now, let us come to another example. This is the example of Betty Crocker; now Betty Crocker over the years when they changed their brand ambassador.

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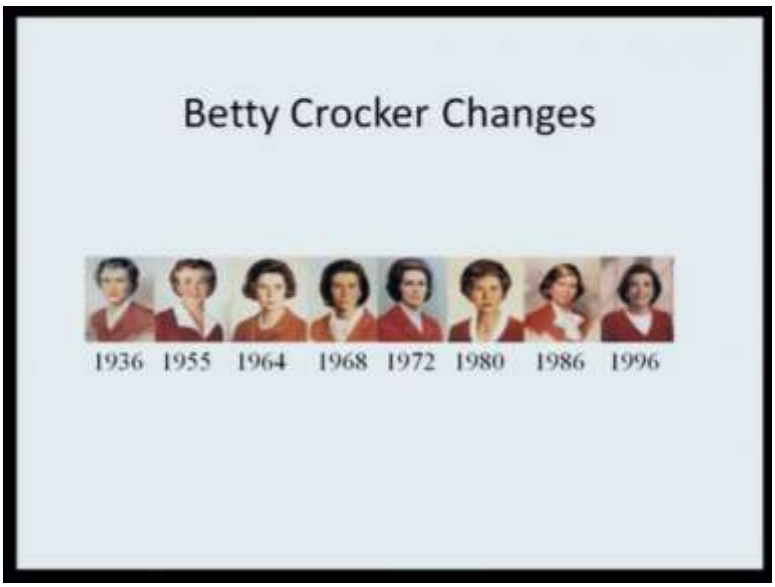

Now, look at this change you know right from1936 to 1996 you see that a series of models were used for endorsing the product. Now the lady in 1936 is far different from the lady that you see in 1996, but if you look at the intermediate faces, the model who endorses the brand 1936 and the get up of the model who indorse the brand in 1955. You see much of similarity. Similarly between 55 and 64; 64 and 68 and then you realize that

Betty Crocker basically what it was trying to do is that the models who were endorsing the brand the difference in their physical appearance, they tried their best to make it come below the just noticeable difference level.

Now, if the previous and then new, these two models, their physical appearance if does not touch the just noticeable different level; that means, you would consider that some makeup has been changed, but by and large the person who endorses the brand remains the same. These are the interesting applications of just noticeable difference our real life.

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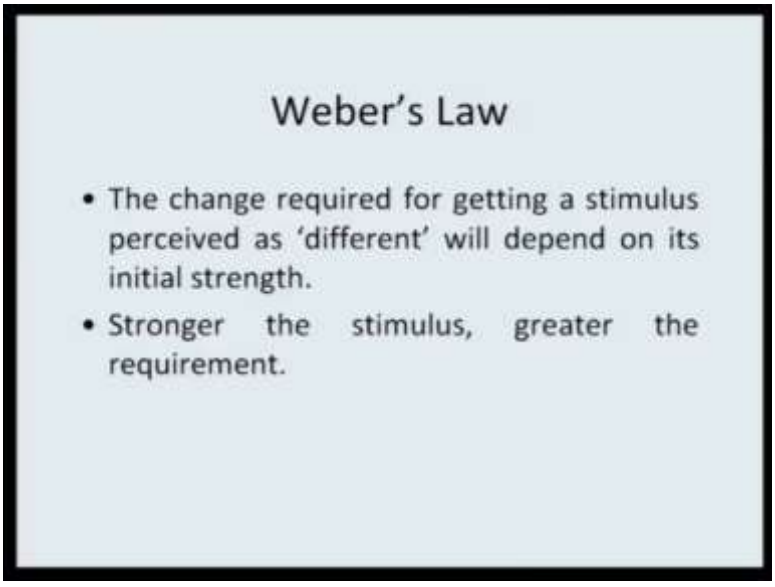

Now, the change that is required for getting a stimulus perceived, as different will always depend on the initial strength. That would mean that stronger is the stimulus in the first case for establishing your brand in the present example, you require that the signal of or the strength of the incoming stimulus should be very very strong. You must have seen these two ads of Madhya Pradesh tourism.

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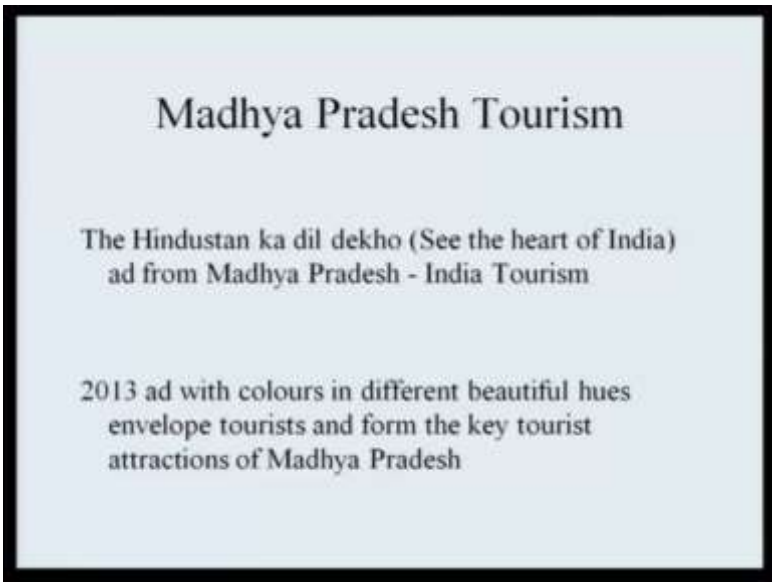

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Now, let us look at the first add. Now, you have a very nice depiction in a very very artistic form the major tourist destiny destinations of Madhya Pradesh has been shown to you. This was one of the very popular ads of tourism and then much later in 2013, another adds for Madhya Pradesh tourism came into being. Now you remember one thing, the way the previous add know which said known Hindustan Ka Dil Deko, See the Heart of India and the way the entire tourist destinations were depicted and the face of the women was taken into account to express the emotional component that would be

embedded in this whole phenomena was done certainly you know something very very exceptional.

Now, when in 2013 Madhya Pradesh tourism decided to replace this very ad by another ad. There was a necessity because the first signal had such strong strength that the next ad had to be much more superior to that in terms of it is signal. I am seeing basically talking about this very example to explain the importance of Weber's law in psychology. Now look at this very ad.

What you see here is that the same tourism destination which was depicted in the previous ad are being once again being visible shown to you, but this visual representation is now in terms of using various colors, in different beautiful hues. Now the form is created of the say tourist destinations that was shown in the previous add also, but instead of showing you that image of, the tourist destination now it is colors in different hues which are used to give you mental image of that and this would primarily now show you that see, the previous ad was so in fact that the next ad to have very strong strength of the signal to be received, if it is going to replace the existing add.

So, in terms of now real life situations this is; however, Weber's law has a very important role.

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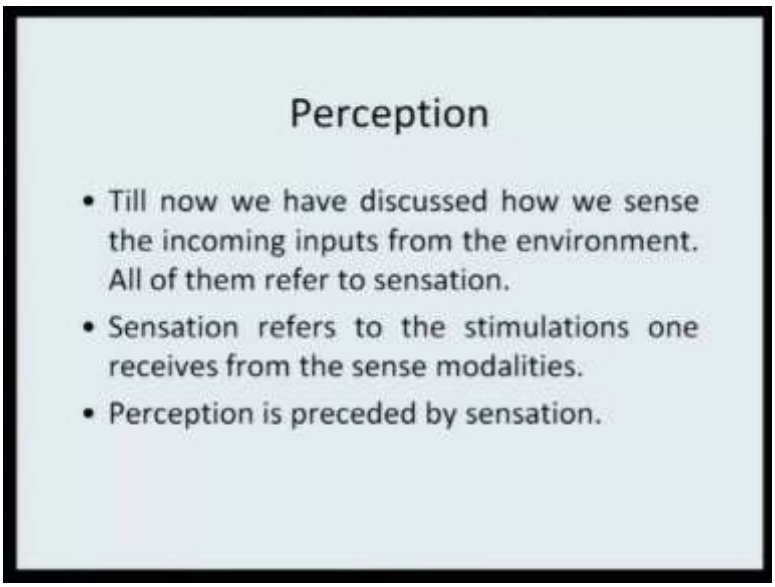

So, till now what we have discussed is that the incoming inputs from the environment, they are assigned a meaning and once we succeed a assigning a meaning to it we said at this is perception.

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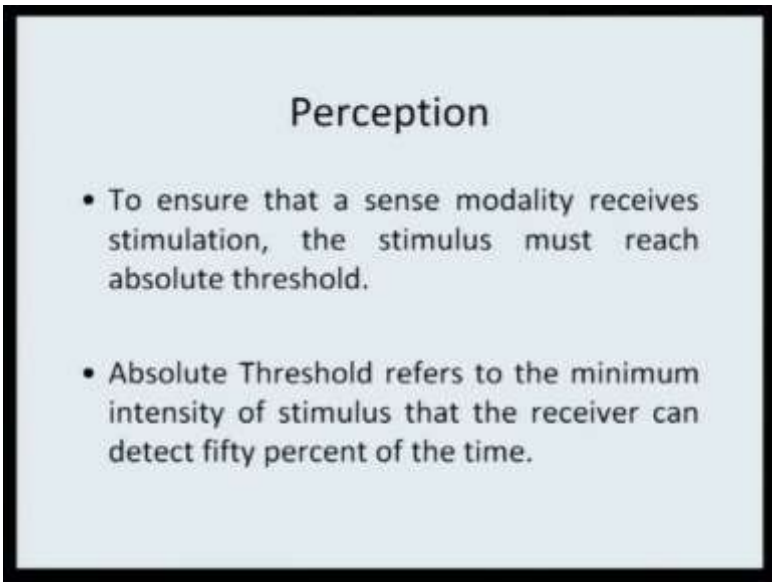

Now, to ensure that sense modality receives stimulation, the stimulus must reach absolute threshold. Therefore absolute threshold becomes the minimum intensity of stimulus that the receiver can detect at least 50 percent of the time.

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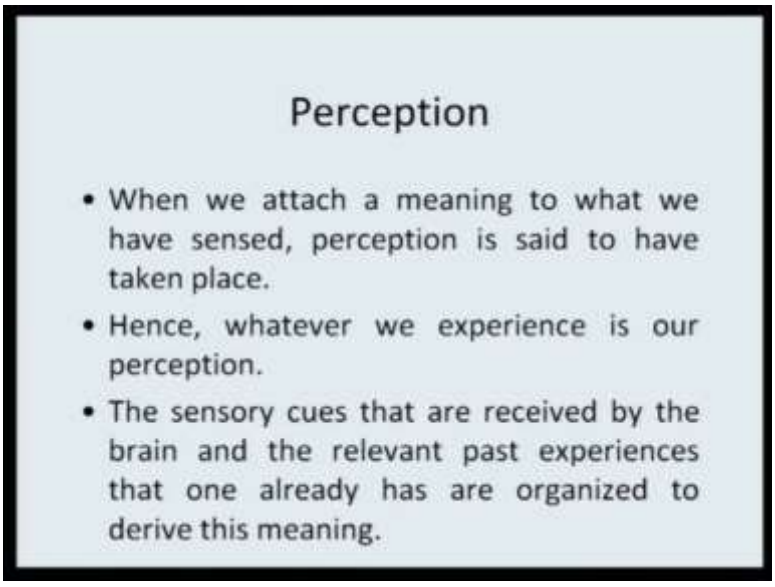

When we attach a meaning to what we have sensed, we say that perception is taken place and whatever we experience is our perception. Therefore the sensory cues that are received by the brain and the relevant past experiences, that one already has, it is derived back to our working memory in order to provide meaning to whatever we have sensed.

So, this is how perceptions takes place, but remember one thing perception need not always emulate reality.

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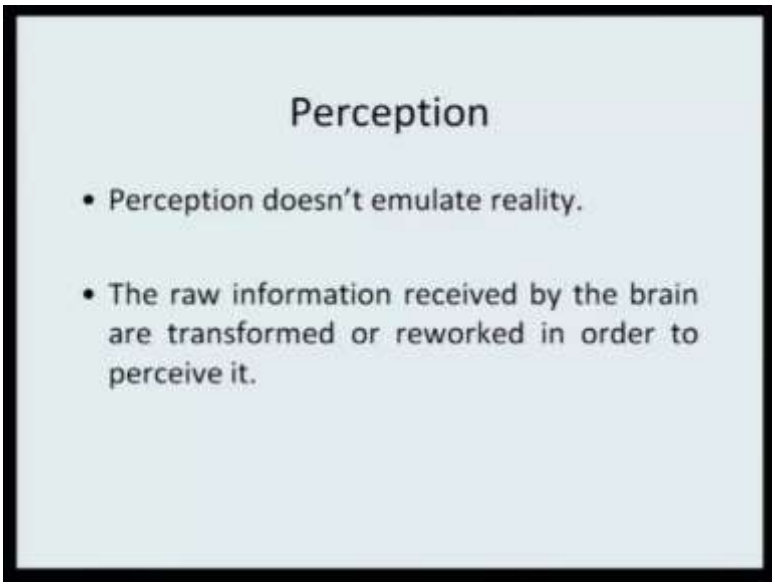

The raw information it is received by the brain is transformed or it is reworked in order to perceive it.

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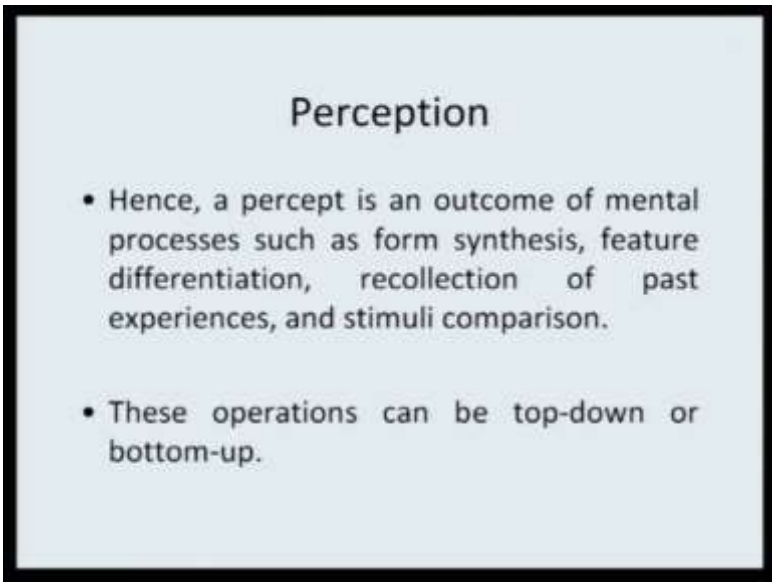

Hence a percept is an outcome of mental process. Such as form synthesis, such as feature differentiation recollection of past experiences and stimuli comparison. So, these operations can either follow top down process or it can follow bottom up process, let us understand this.

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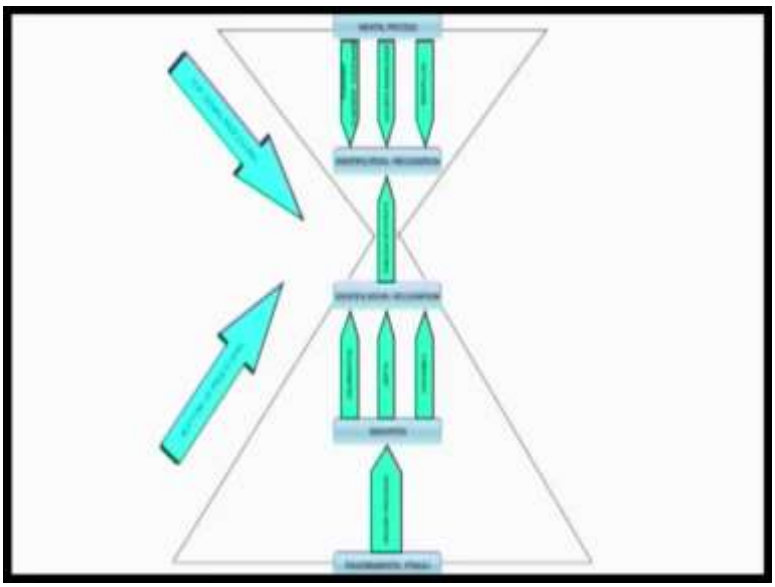

The knowledge and memory pertaining to this stimuli and the language to understand and express it are crucial. Expectations and belief and motivation are also important. All these constitute mental processes and are top down processes. The environmental stimuli

are processed by the sensory organs, this leads to sensation, these stimuli undergo perceptual organization based on their inherent characteristics. These are the bottom of processes. A synthesis of these two processes leads to identification or recognition of the stimuli.

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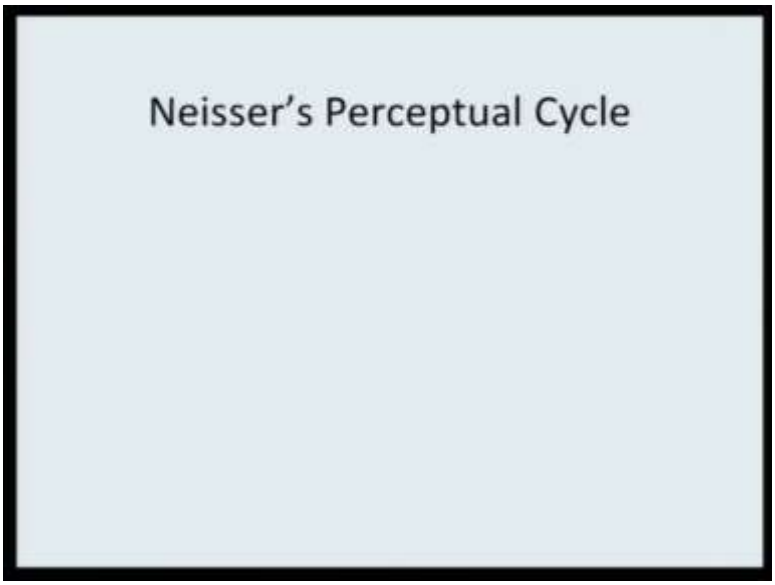

Let us now understand perceptual cycle proposed by Neisser.

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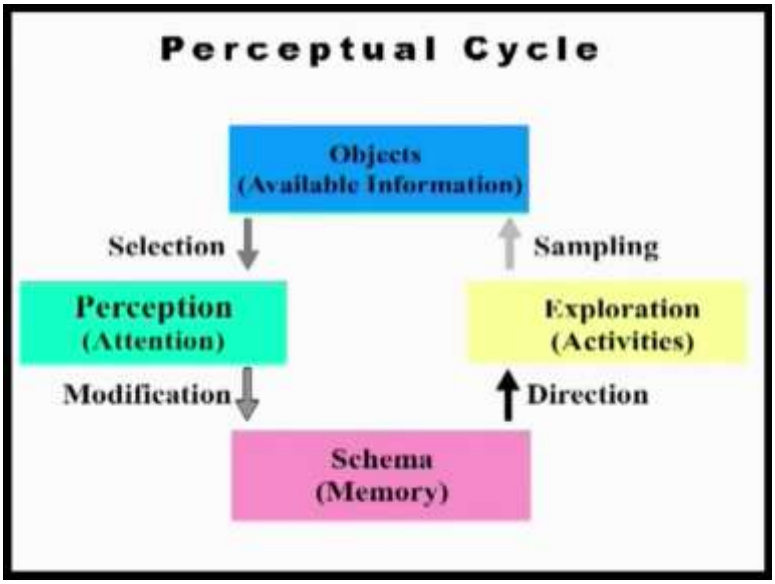

In 1976 Neisser proposed a model integrating the bottom of and top down process into a cyclic process. This model focuses on the perception, attention and categorization. While

perceiving an object, one selectively attends to the available. This is further modified by anticipatory Schemata.

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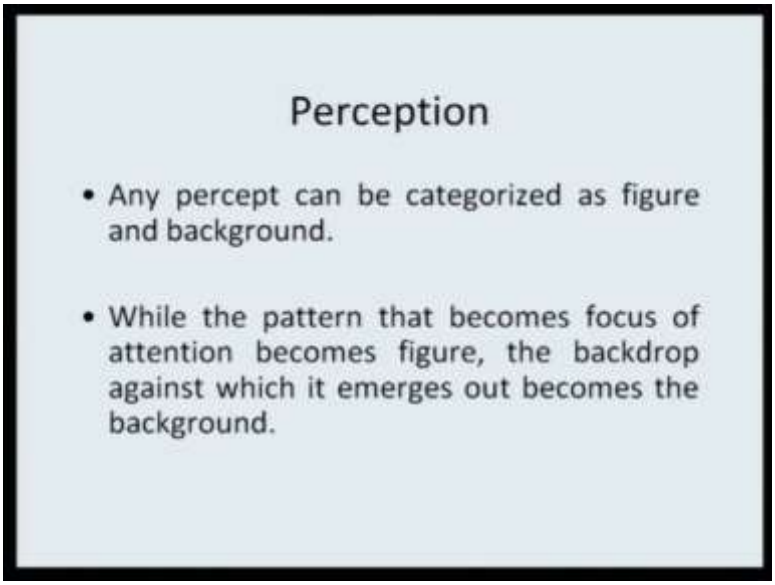

So, what we have understood now is that is any percept that can be categorized for assigning a meaning has to be a differentiated in terms of figure and background. So, while the pattern that becomes focus of the attention becomes the figure, the backdrop against which the figure is seen is considered as background.

For instance if you are looking at me right now, if I am the object, then this green background against which you look at me becomes the background. Say if I write something on this green board and if you are looking at that very object although it is standing front of that green board I become part of the background and the concept, the alphabets sentence is written on the green board becomes the object. So, figure and ground always remains interchangeable in nature and little later, we will come to the concept of contour, where we would be basically talking about the fact that more you are able to make a distinction between figure and the background, more clarity you have in terms of perceiving object in the real world.

So, we will end here and we will once again continue with the strength of the signal in our third lecture.