Introduction to Psychology
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Lecture – 03
Methods in Psychology

Today we are going to take up the issue of the methods that are adopted by psychologists to arrive at certain conclusions. All behavioral studies at the end they would come forward with certain type of findings. Once you realize that there is replication of finding people theorize it. So, hypothesis that you initially made once you realize that repeatedly the hypothesis gets proven this hypothesis gets converted into theories.

So, all the major concepts that you would get in the second week onward sessions they have been examined using one or the other method that we are going to discuss today. So, what we would do today is one by one we would come across the important methods or the major methods that are used in psychology. And once we understand overall what are the methods, you would also go ahead with making comparison. What are the advantages and the limitations of each of these methods?

So, the first method that is the observation method; now observation as you can understand as the name suggests that basically there is an observer who would be looking at either the individual or phenomena. So, you can understand that there could be two broad categories observation method.

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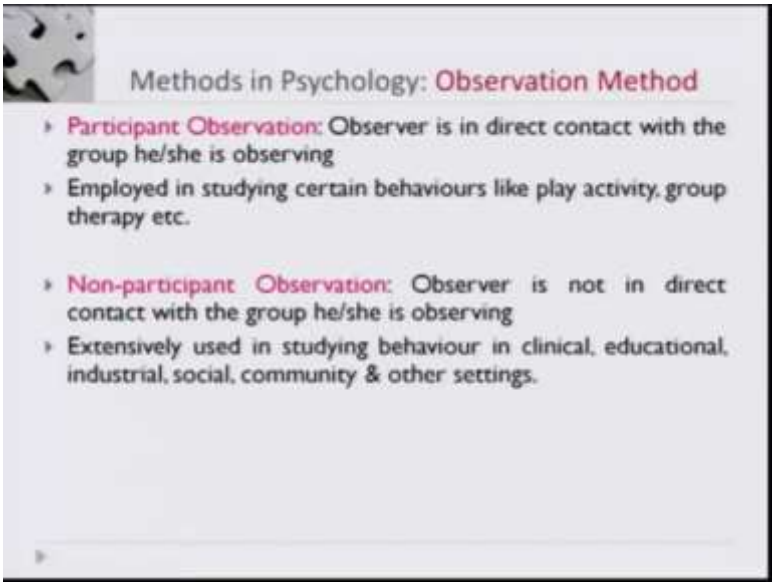

One where the observer participates in the process; so observer is in direct contact with the group he or she is observing, this is called as participant observation. Such type of observations are important when you engage in something like say play activity like group therapy you become part of the group and then you observe it. This is called participant observation.

The other type of observation what is called as non-participant observation; non-participant observation where the observer basically is not in direct contact with the group that he or she is trying to observe. Basically, you would find in clinical set up where there is always one way glass and one group is and other side of the class, whereas the observer is behind the class. The group cannot see the observer, the psychologist but the observer psychologist can see the group. Mostly you will always find in the clinical set up. Even in educational set up, sometime in the industrial set up, social community another setting also you can find the non-participant method being used.

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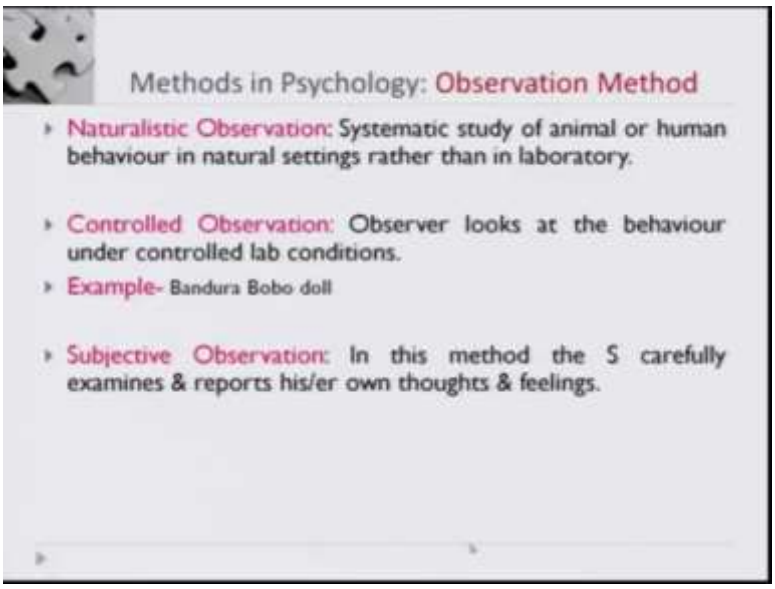

Now, formats of observation method are what is called as naturalistic observation. So, again as the (Refer Time: 03:05) suggest this is the systematic study of animal or human behavior in natural setting. You cannot say bring an animal to the lab to understand the behavior of that very animal in their natural habitat. So, you can not disturb the habitat ,so in that case the only option left is that you as an observer go the naturalistic surrounding and then you make the observation.

The second is the controlled observation where the observer looks at the behavior under controlled lab condition. Banduras Bobo doll example is the very famous example of controlled observation. There is another format of observation what is called as Subjective Observation. In this method the experimenter or the observer carefully examines and reports his or her own thoughts and feelings.

So, you are the participant, who is taking part in that experimentation process, you carefully relook at your own thoughts and feelings and you report it. Now the psychologist judged on the report and this is the subjective observation method.

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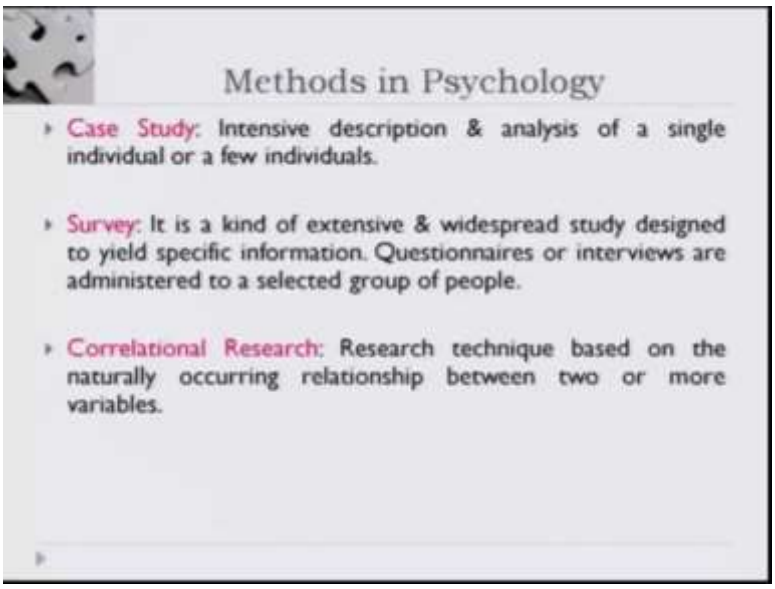

The other important method that you would usually find being used is the case study method, both in the area of organizational behavior in the clinical psychology you will find this very method being used. This is a method where intense description and analysis is done of a single individual or set of individuals. So, one single case and you analyze it at length, to describe it, interpret it. The other could be that you have set of people, the activity and then you make an intense description analysis of a act that is called case study.

Again survey you all know it is a very popular method it is basically a kind of extensive and widespread study which is designed to yield specific information. Say, if you have questionnaires with you, a set of items which intends to seek very specific information regarding a particular aspect of the behavior. Or when you conduct interviews from a selected group of people to gather information and then what you do you analyze it and you come forward with certain type of findings let us see overall this is how people respond, overall this is what people think, overall this is what is the interpretation of people of this very given situation. These are the survey reports.

One very popular type of research that you find in psychology is the correlational type of research. This type of a technique is basically based on the natural occurrence of

relationship between two or more variables. Any two things which are interrelated in natural order. Now what happens there are few things which you can very easily identify that there is a natural connection between the two, say for instance if you have the thunder sound and the lighting effect during the rainy season you very easily correlate that if x has taken place y is bound to happen.

So, you see the light first and then after sometime you hear the sound. And you understand that these two things are correlated they are outcome of the same process because light travels faster therefore you see lighting first and the sound you receive little later. Now this is a natural occurring relationship. In psychology one of the major problems is that there are certain inherent relationships that you have to decipher, because it is not so apparent. So what happens, the psychologist they use correlational research they use this very technique to find out relationship between two or more than two things.

So, you have quantified constructs say for example, the simplest example could be that if you are extremely intelligent your scholastic score should match with it. If you are a person who is very intelligent your marks in certain subjects would be very high, if not all subject. So, there is a correlation. If this is a high, if x is high y is also going to be high, this type of a relationship is called as Positive Correlation that if there is an increase in one variable the other variable is also going to increase, the reverse could be there.

Say like students who are very studious they do not go to a sports field, this is the observation. You say that if one thing increases other thing decreases. So, if your engagement in scholastic activities increases you are activity in the sports field diminishes. So, increase in one variable is associated with decrease in the other variable this is called Negative Correlation.

And the third possibility is that the two construct that you are trying to study they are not at all related to each other. For instance, if I am a residing in a hostel in my hall of residence my hostel if there are 7 dogs in the premise and they bark in the evening hours. And realize that it is the evening hours when I can sit concentrate on my studies. Now

concentration on the books the text that I am referring to and the barking of dog they might takes place at the same time, but it has no correlation.

So ideally what should happen, that things which are dissociated, things which do not have an association when you compute the correlation the statistical technique to compute this relationship you realize that these two things would be disconnected, this should be zero correlation between the two.

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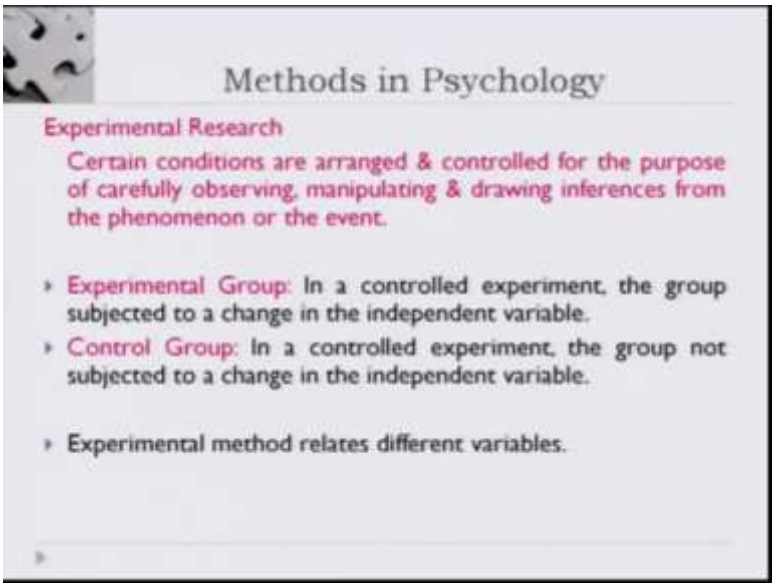

Experimentation of course is the most popular method. Now what happens in experimental research there are certain conditions that are arranged and controlled. Just for a purposeful manipulation of one variable to draw inference so that you can draw a larger picture.

So, what happens people take one group what they call as experimental group, and they take the second group what they call as the control group. Usually in a experimental research what happens; this the first group, the experimental group is exposed to changes in the variables and these variables little later will come to it they are called independent variables. Say for example, if I am trying to study the effect of intelligence on that time taken on certain task and then accuracy of response on that specific task.

Now what will happen these two things the time taken and the accuracy they become the dependent variable and my intelligence is the independent variable. So, effect of this variable on that variable this is what is done in the case of experimental research. And when you have two groups one group which is exposed to changes in the independent variable is called the experimental group. The other group where the independent variable does not undergo any change is called the control group. And what you see is basically the difference in the performance of the first and the second group the experimental and the control group. This is now what is done in the experimental research.

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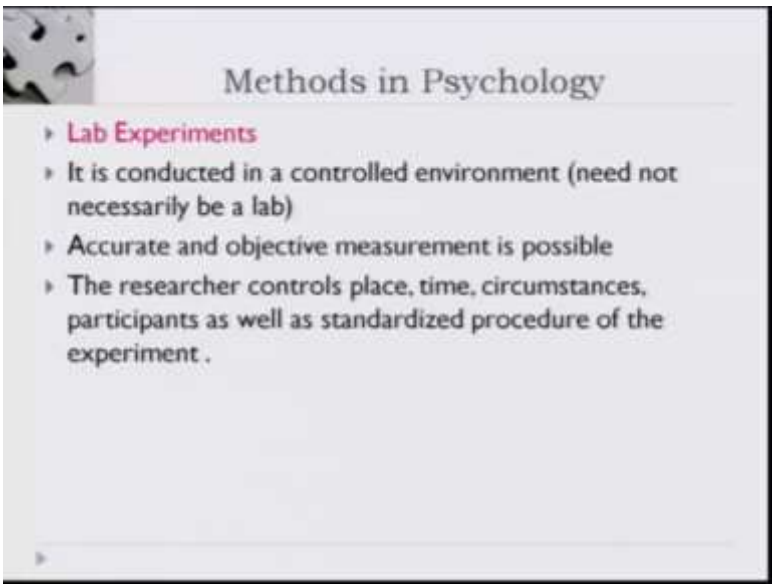

Now in lab experiments what happen? You have a controlled environment, but there could be cases where you still have a better control over the environment, but it is not real lab set up actually. But experimental method basically it gives you accurate and objective measurement. And the second that the researcher has a big control over, place, time, circumstances, and participants. As well as process of this experiment are usually very very standardized. So, experimental method of course has very very; what I should say experimental method is basically one of the very robust methods of deriving findings out of your research.

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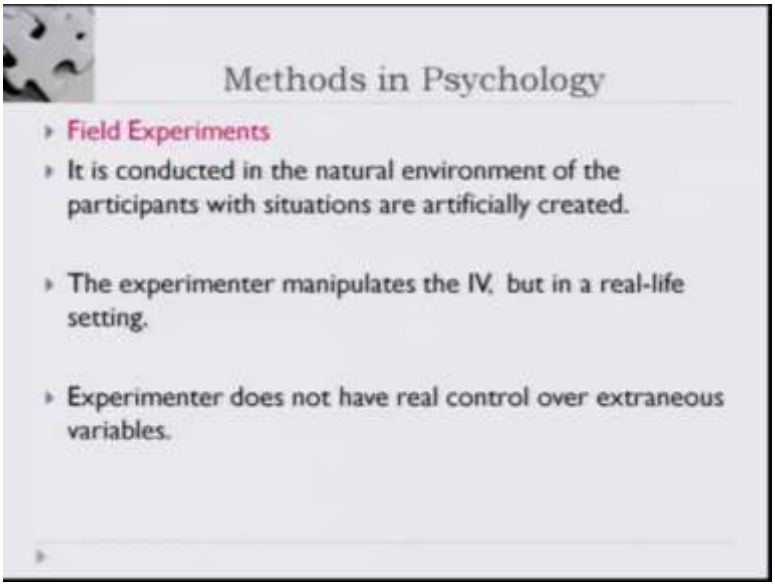

There could be field experiments as well. So, field experiment would be those types of experiments which are conducted in natural environment of the participants where situations are artificially created. So, the circumstances that the individual experience they are artificially induced there, but the participant is not removed from the natural habitat is not brought to the lab center. Now, here also the experimenter basically manipulates the independent variable, but this manipulation done in real life setup. And the experimenter does not have actually the real control over certain extraneous variables.

So, these are the variables which you do not control over. You can think of independent variables, you can plan your dependent variables, you assume that there would be a relationship between the independent and the dependent variable, but then there could be some other types of variables what are called as extraneous variables which you do not have control over.

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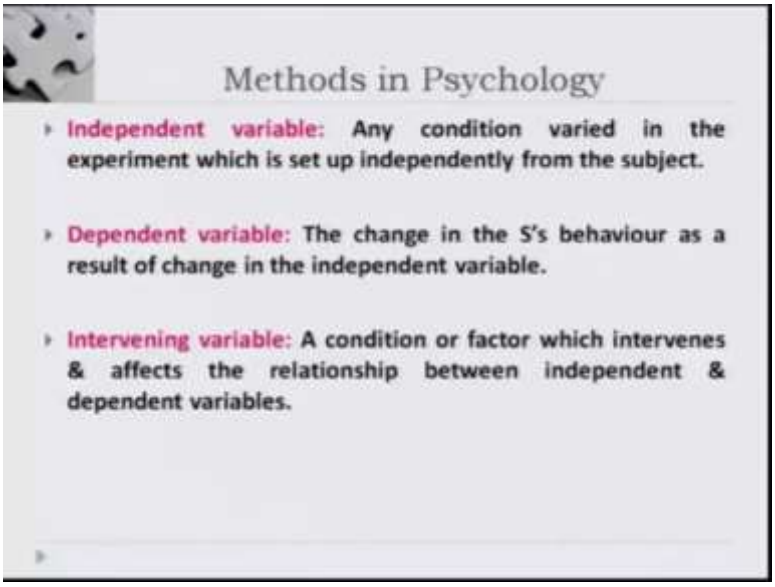

Now, independent variables basically are the conditions that are varied in the experiments. Dependent variables are basically the changes that take place as a consequence of changes in the independent variable. And then we have intervening variables, the extraneous variables. These are those variables which affects the relationship between the independent and the dependent variable. And if you can predict them of course there are methods of controlling them and there is also chance that there could be certain variables which you did not predict, but then does effect the relationship. Usually, you will find that people compute correlation. So, direct correlation between the independent and the dependent variable.

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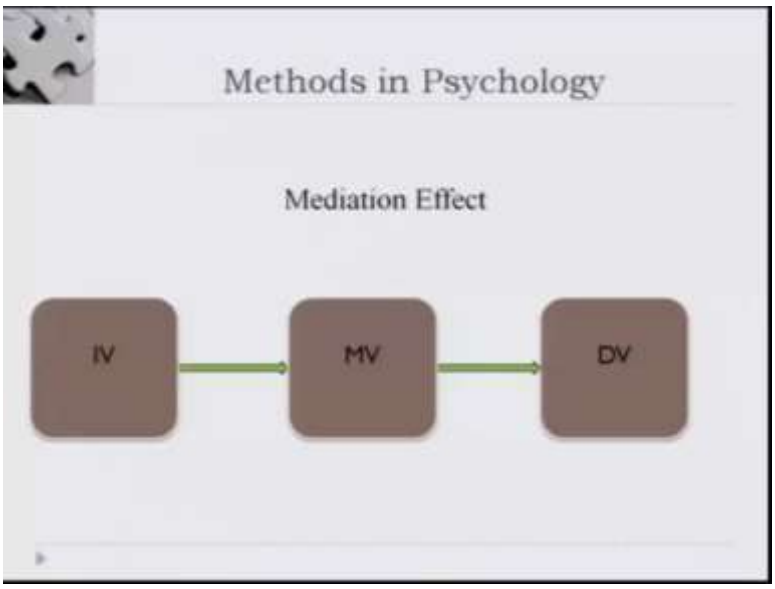

Independent variable on the screen you will find it in a IV, and the dependent variable which you find written DV. You would also find some variables which basically somewhere highly influence the relationship between the independent and dependent variable. One form of relationship is what is called as mediation effect.

So, mediation means what you find written here as a MV. The independent variable influences the dependent variable and it goes through the mediating variable.

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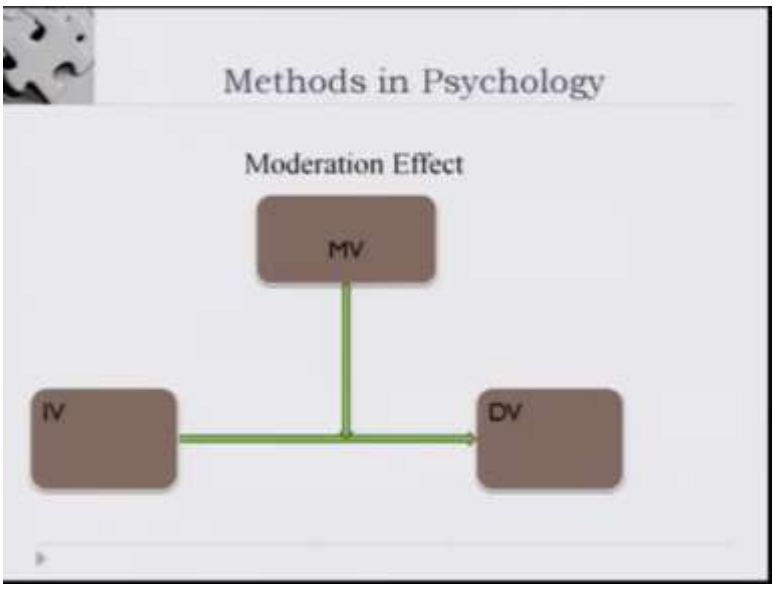

The other type of effect is what is called as the moderation effect, where the independent variable affects the dependent variable, but then there are certain other factors as well which affects this relationship between the independent and the dependent variable. This called moderation effect, because this is introductory psychological course I will not go into the details of the mediation and the moderation effect. But broadly for understanding we have the independent, the dependent and the extraneous variables. You can also for your purpose of analysis you can consider one set variable as either mediating variable or the moderating variable.

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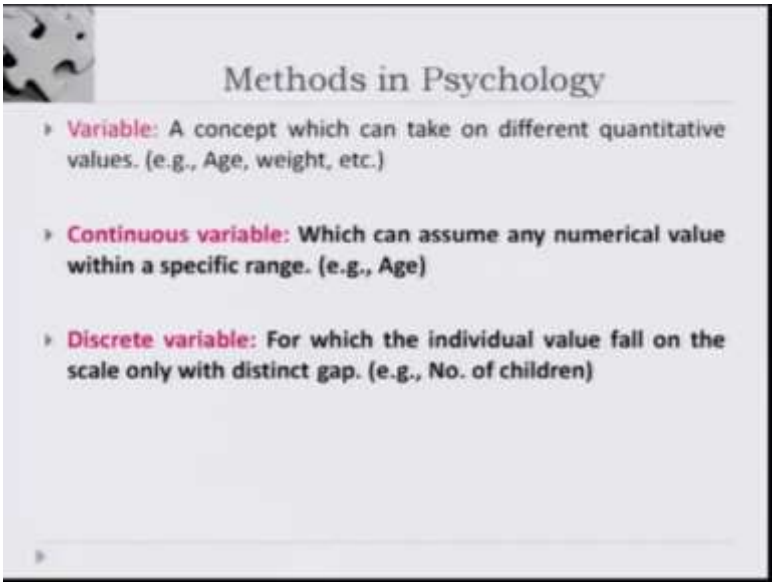

So, variables are basically those concepts which are quantified. Different values are assigned to them, and in terms of the numbers that you assign variables also understood as continuous or discrete variables. So, those variables which can basically assume any numerical value within a specific range they are called as continuous variables.

For example, if you look at a scale, you find that there are two points say 0 1 2 3, but between 0 and 1 also you will find ten different lines on this scale also. So, there is continuity and there is an equal gap between the lines there you know. In real life term say for example, age is a continuous variable. There are few variables which are discrete. Discrete means those variables for which the individual value falls on the scale only with certain gap and the gap is very distinct. Say for example, if you are collecting demographic details and you ask someone how many family remembers do you have or if you ask somebody how children you have; the number would vary and this would be basically discrete variable.

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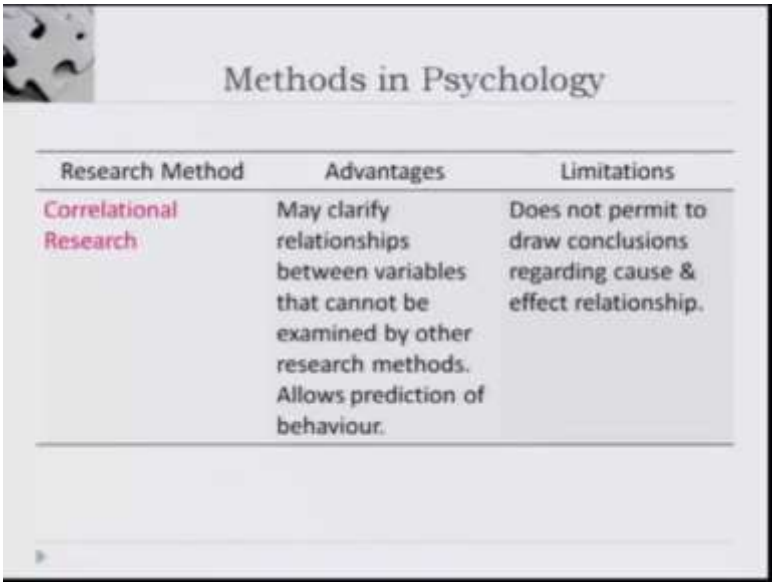

Now, coming back to the methods that we have discussed if we try to look at the advantages and the limitations of these methods - correlation method has a beauty it clarifies a relationship between the variables which usually cannot be examined using other methods. So, it allows you to predict behavior. The limitation of correlation research of course is the fact that it does not permit you to draw the conclusion regarding the cause and effect relationship whether this did lead to that or not that you cannot predict. All you can say that there is relationship between two.

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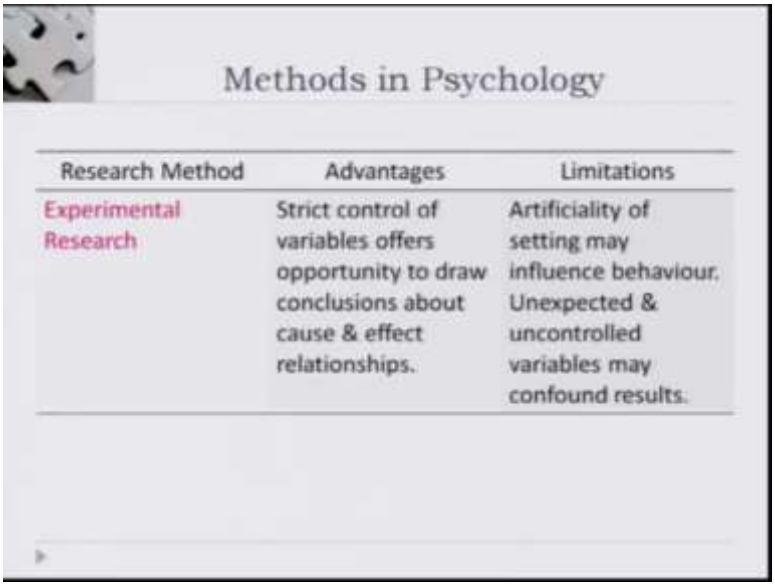

Experimental method on the other hand the greatest advantage is that it has a strict control of variables, and you can draw conclusion about the cause and effect relationship. Something is missing in correlation research that you can do in experimental research. The major limitation of experimental research of course is an artificiality of the setting, and if you make changes in the setting it might influence behavior.

Second and important thing is that the unexpected and uncontrolled variables sometime to confound the result. And passing out the effect of the confounding variable is again a major challenge in experimental research.

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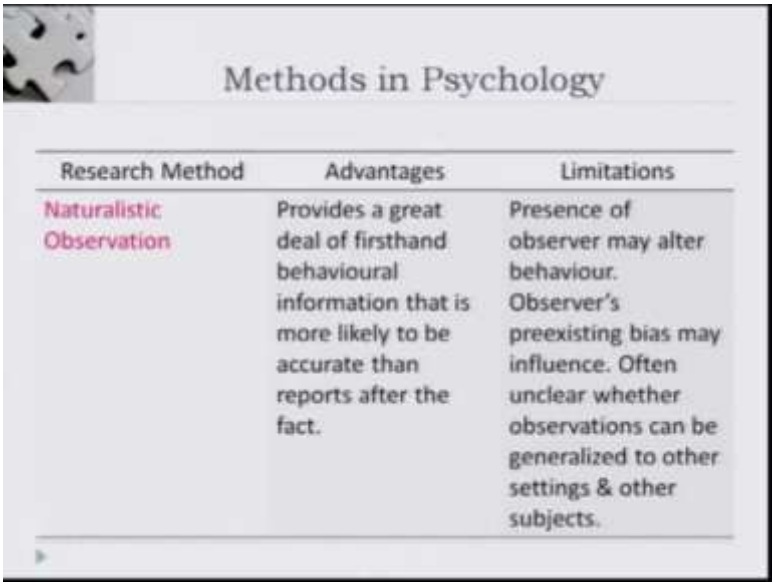

Naturalistic observation we discussed it has a big advantage. It provides you a great deal of firsthand behavioral information and it is likely to be a more accurate. But the problem is that the presence of observer sometime may affect the behavior. Secondly, the observers preexisting bias it might also influence the inference that one is drawing. And it is often unclear whether observation can be generalized to other settings and to other participants other subjects; that is again big limitation of naturalistic observation.

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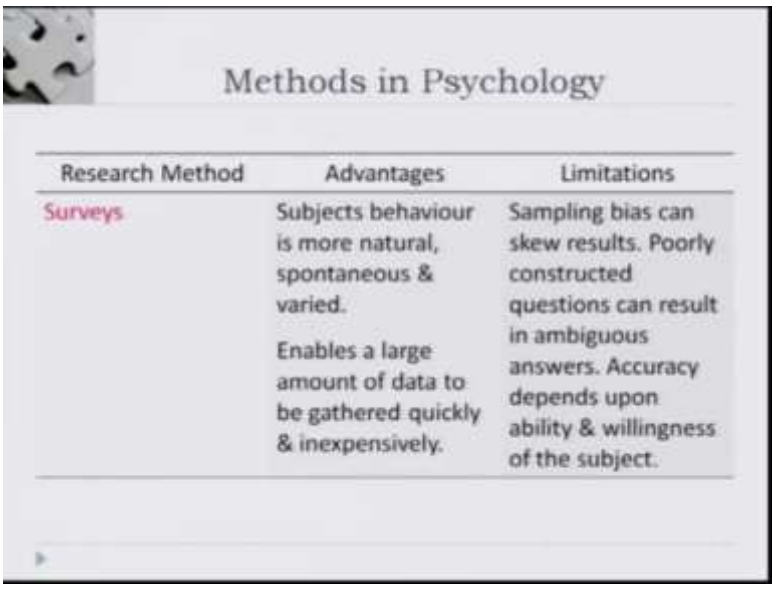

Surveys again it has big advantage. You look at the behavior in the more natural spontaneous and varied fashion. The biggest advantage is that it enables the large amount data to be gathered and by and large it is now least expensive of all the methods usually. But then you have a voluminous data and you can draw inference out of it. The problem of course, with the survey technique is that sampling bias sometime can skew the result. So, if you have not drawn your sample which is a representative of the population then you are findings might be very biased.

Second, because you are using certain questions therefore if you construct poor questions it might result into ambiguous type of answers. And therefore, accuracy depends upon the ability in willingness of the participant both as well as how good is the construction of the items that you are using in your survey.

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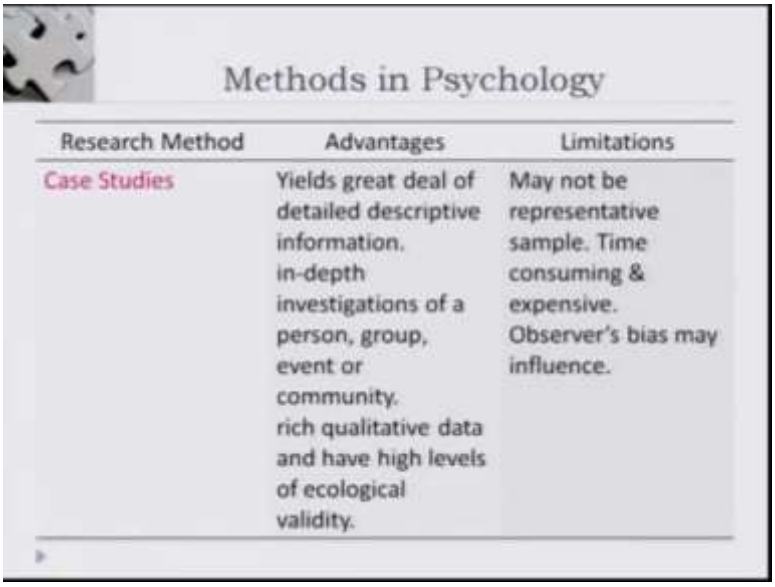

Case studies of course they have advantage. They yield great deal of detailed descriptive information you can go for in depth investigation of the individual of group of the event or of the community. You also have rich qualitative data which has very high ecological validity. So, case study has all those advantages.

The limitation is that you may not actually come across representative sample, because you have come across one individual or a small set of individuals. Because you do not representative samples so usually generalization is a big problem. It is also very time consuming, sometime very expensive, and once again the bias of the observer might influence findings of case studies.

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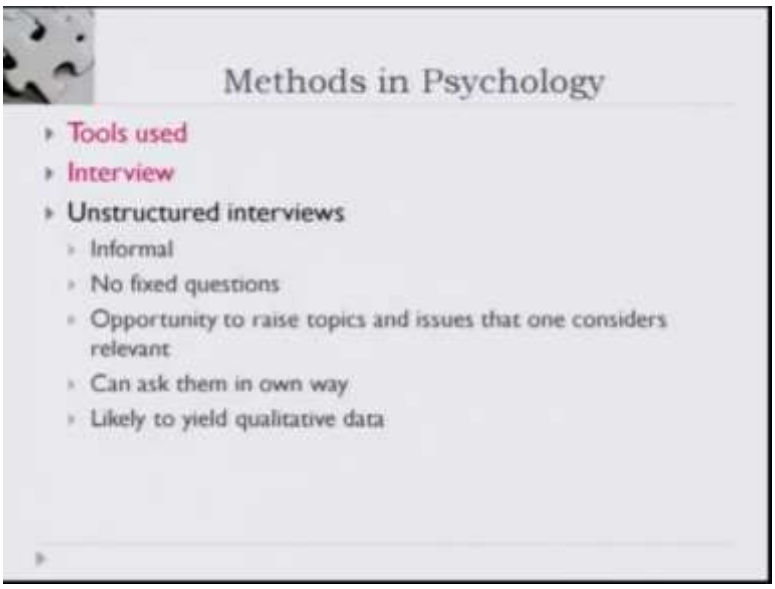

In terms of the tools that psychologist use interview which could be unstructured format it could be in structured format. So, in the unstructured format of the interviews you go ahead with informal interviews where you have no fixed questions. You have the opportunity to raise topics and issues that you consider to be relevant. And you can ask them in one way and this would lead to very rich qualitative data for interpretation.

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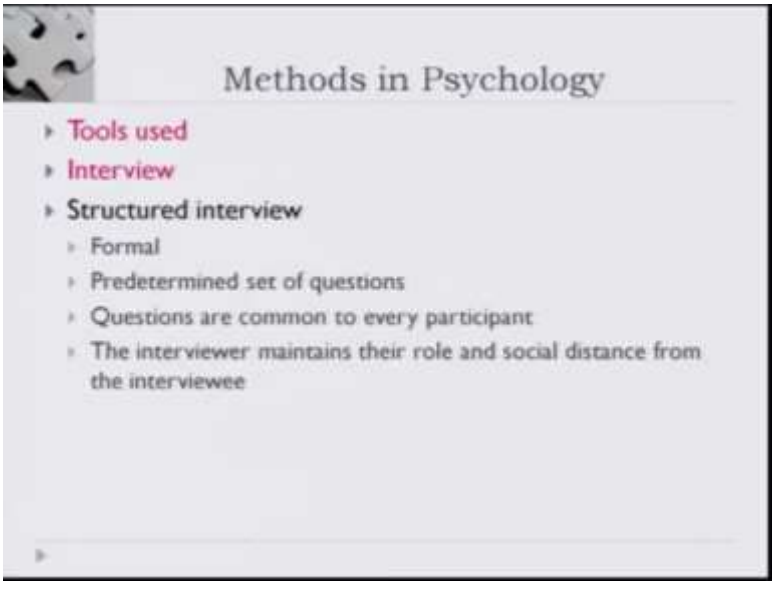

You have the option of structured interview where you conduct in a formal setup, where you set your questions beforehand. So, you have a predetermined set of questions. And the questions that you ask to every participant are common so you do not change the question. The interviewer of course, maintains their role and social distance from the interviewee and then you go ahead with this very interview. All this tools are now popular and you will find then being used.

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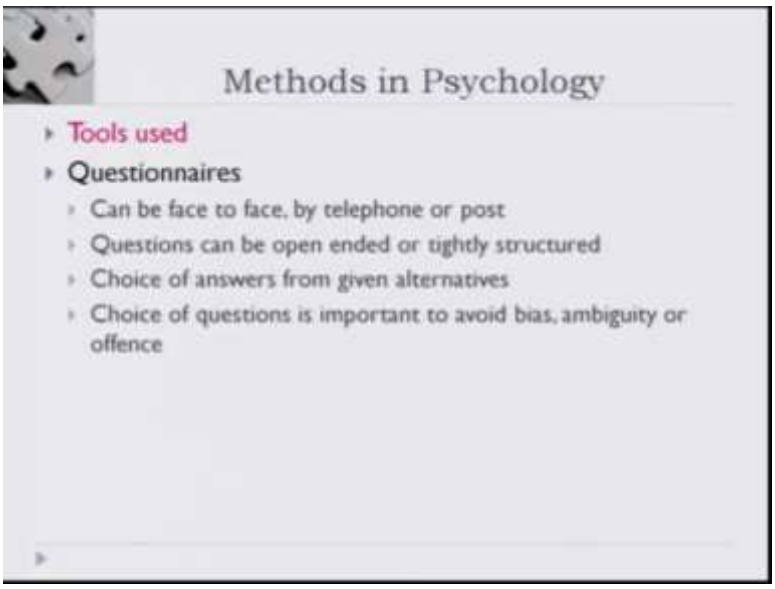

Questionnaires very popularly used it can either face to face, it could be done telephonically, it would be sent by post. Questions usually can be open ended or it could very tightly structured type of questions. You could have choice of answers from given alternatives or you have the choice of question which is important because you want to take get rid of biases ambiguity and you do not want to commit offense to respondent to participant. So, questionnaire again is a very popular tool.

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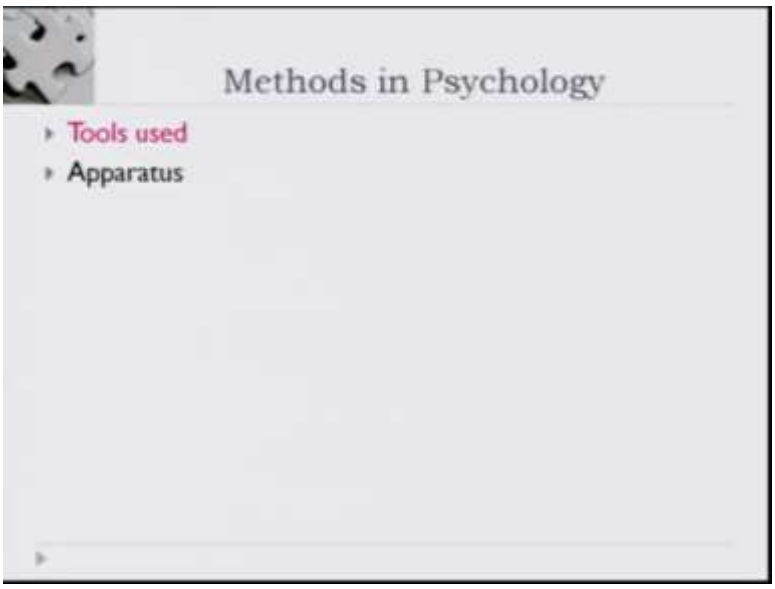

And besides this you find whole lot of apparatus being used in psychology. Nowadays computer assisted tests are there, there are old models know memory drum, tachistoscope, Muller-Lyer apparatus; traditional department laboratories would have whole range of apparatus there. Many apparatus you would find which are more computer centric now, there are specialized software where you can write your own program or design your own experiment.

So, this is overall the tools the techniques that are used by psychologists to understand one or the other human phenomena. The psychological underpinning can be very easily be understood out of it. All of this methods are extensively used all of them, and as discussed towards the end they have their advantages and they have their limitations. And therefore when you read the literature you would realize that some study they use one method, some study they use other method, but remember one thing that irrespective of the method that you use, irrespective of the technique that you use basically you are attempting to understand the interplay of various factors what are called as variables here. And therefore, you analyze the process; the mental process, the behavioral process, the psychological process. This is all about the methods in psychology.

Key words - methods, observation, case study, survey, correlational research, experimental research, mediation, moderation