Introduction to Psychology
Prof. Braj Bhushan
Department of Humanities and Social Sciences
Indian Institute of Technology, Kanpur

Lab Session – 1
Perception

Trail making test is a test of visual attention and task switching. It largely reflects speed and fluid cognitive ability of an individual. You can study visual search speed, scanning speed of processing, bundle flexibility, as well as executive functioning using this test if you remember while going through intelligence, a quick reference was made to army alpha and army beta tests of intelligence. Historically trail making was used to verses general intelligence.

If you look at the work around 1944 this test was part of army individual test of general ability all test that tells you about any given human ability and the seat of such abilities located into the brain. You can very easily know use it to identify brandies functions. This is true for trail making test as well. In the 1950s it was used as a neuropsychological tool for assessing cognitive dais function due to brain damage. It was incorporated in the hallstead retain battery poor performance on trail making associated with brain impairment pertaining to front allow let us now see a demo of this test.

This is basic experiment.

Ok.

To test human attention.

All right.

And this test is very simple there will be 25 dots.

Ok.

You just have to connect these dots.

Without lifting the pen up.

Ok.

Now there will be a trial.

Which I will which we will demonstrate here and then once a trial is over then you can pursue to the main experiment.

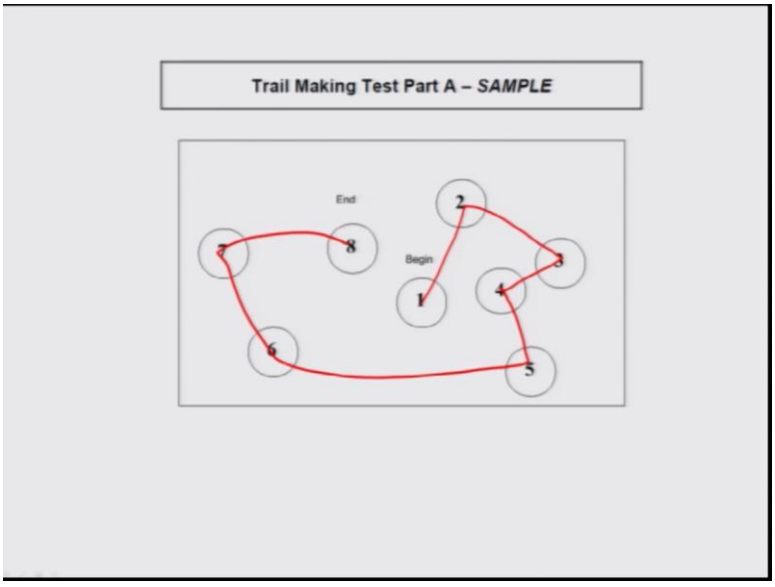
Ok.

So this is a trial on one.

Ok.

So, one is a beginning.

(Refer Slide Time: 01:56)



And eight is the end.

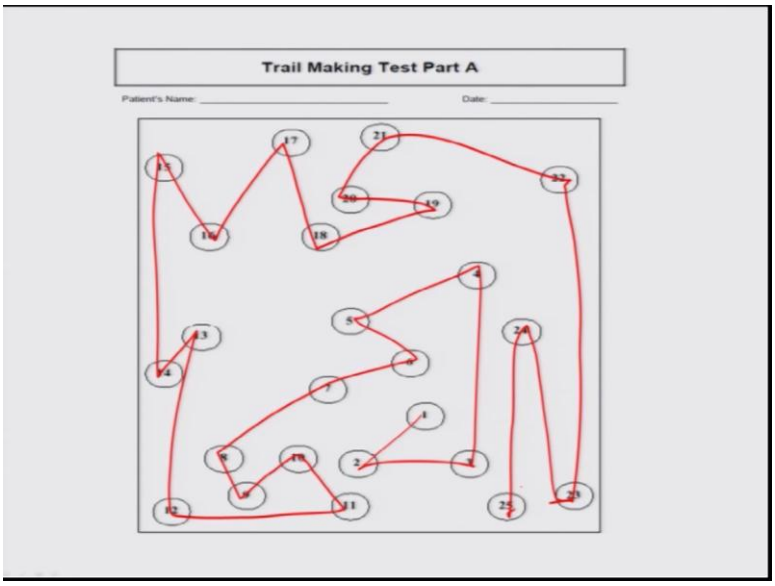
Ok.

So now, without lifting the pen, we just have to connect.

Ok.

You lift is. So we go from 1 to 2, 3 to 4, 5, 6,7 and 8 exactly the same . So now, main the session has 25 dots here.

(Refer Slide Time: 02:15)



Ok.

We just connect the same dot.

As quick as possible without lifting the pen up.

Ok.

So whenever you are ready you may start.

So I am ready.

Please.

You are done.

MSO what is this test exam in this text exam means the visual such a speed.

Ok.

How fast you search the words and then how you process these speed and then mental flexibility of this and then executive functioning because you require to move from one dot to another and then directional and decision making is involved.

Ok.

So, that is why discussed this perform and average speed to perform this test is 75 seconds.

Ok.

And fast as you can do is 25 seconds.

Ok.

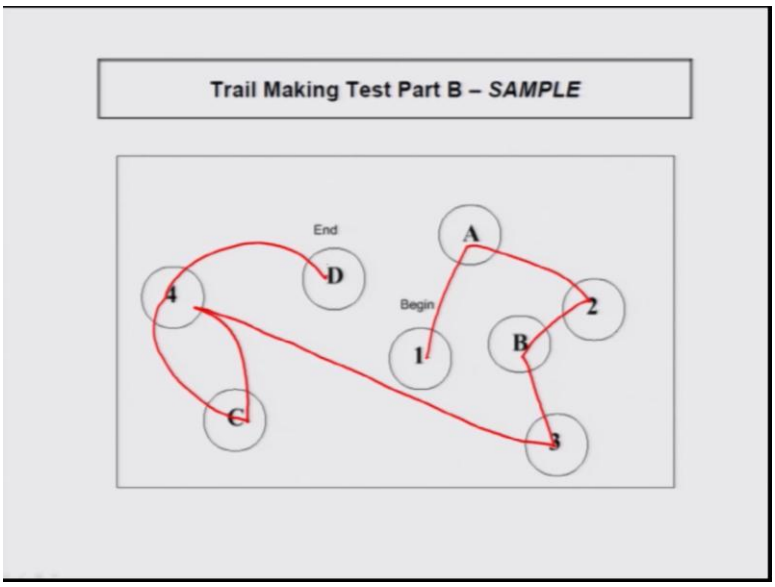
But if you exceed this speed rate.

Then you may lie in the category of deficiency.

Ok.

Now the next test is this one, which is a little bit more complex.

(Refer Slide Time: 03:44)



Ok

Now, when I say complex, why I say complex is because there are numbers as you can see and the alphabets.

Ok.

This requires more cognitive flexibility.

Here now you have to differentiate between the numbers and the alphabets ok

Ok.

Maybe you can a start first you have to follow the numbers.

Ok.

So, you will start from one.

And then.

You go to yes and then for, that then you go to another number, then alphabet, then number now see.

Yes. So then yes see. So have you seen the pattern here? So it is a little bit more cognitive.

Right.

Task involved here and if you make mistake then its fine, but this complex task person who is having attrition deficit, deficiency for them this task is very hard.

Difficult.

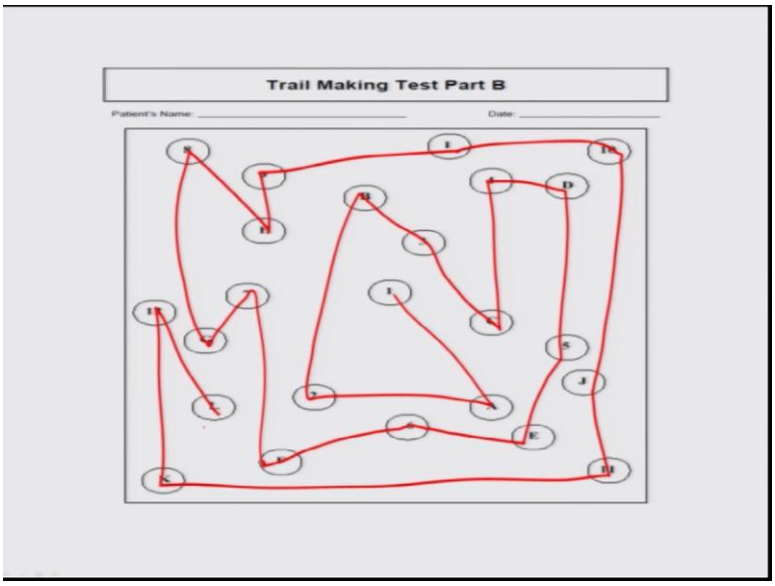
Difficult to follow ok.

Ok.

So, if you ready then we can start with the main trial test. We have to end this yeah this is a main task ok.

Yes.

(Refer Slide Time: 04:59)



You know. So first you go to the word number and then letter.

So, this is it this is the simple test of examine the human attention and along with this we also test the scanning is speed.

Ok.

Then cognitive flexibility and executive function.

Ok.

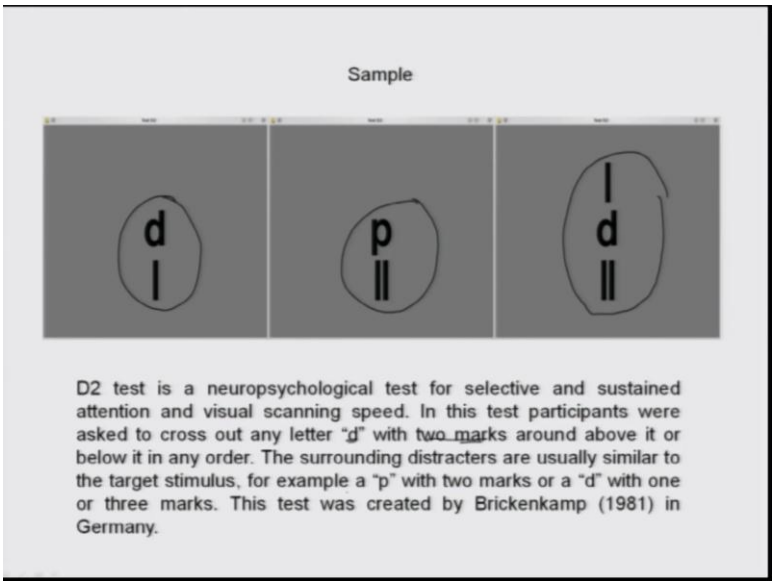
Ok.

Thank you.

Thank you.

Let us now see another lab cession we are D2 test has been administered. The D2 test of attention was originally developed as a cancellation task, by bracken camp in 1981 now it is used as a neuropsychological test to measure visual scanning, selective attention and sustained attention.

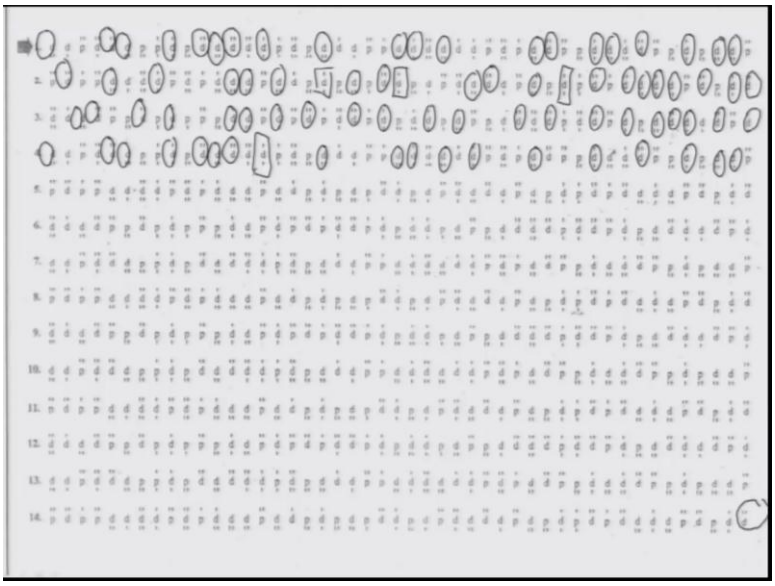
(Refer Slide Time: 06:41)



This is simple test to examine human attention using paper pencil. So he will be given this pen used to pen in, then you can mark your responses as you move. The test is very simple; this test is known as D2 test neuropsychological test for selective and sustained attention as you can see here. So, what do you scan, they will be sheet of paper ,you will be seen number of letters d, p and then what you have to do, you have to mark the letter which is having two marks on it. So this is your target, this is not your target the target is that letter which is with 2 marks. So, here the mark is 3.

This is p the target.

(Refer Slide Time: 07:31)



No this is p. You have to find the target with letter d having two marks just like that, but the d. So I will show you a sample, but these are not target these are the distracters to you. So the test was like this. So you see this letters. So you start from this row first row and then you go as you finished. So the target is this d with 2 dots, d with 2 dots here on either side, but d with 3 dots is no is a distractive you do not, have you skip that and you have also skip the p, p also not the target.

P is also the distracter.

Yes p is also the distracter. So, whenever you are ready you can start from here and then you can mark as faster as you can, make sure that you make less in less mistakes

(Refer Time: 08:12).

Yes, is uncomfortable.

Should we begin.

Yes.

Look here because you are so fast.

That few d's you missed.

For instance this one.

This one.

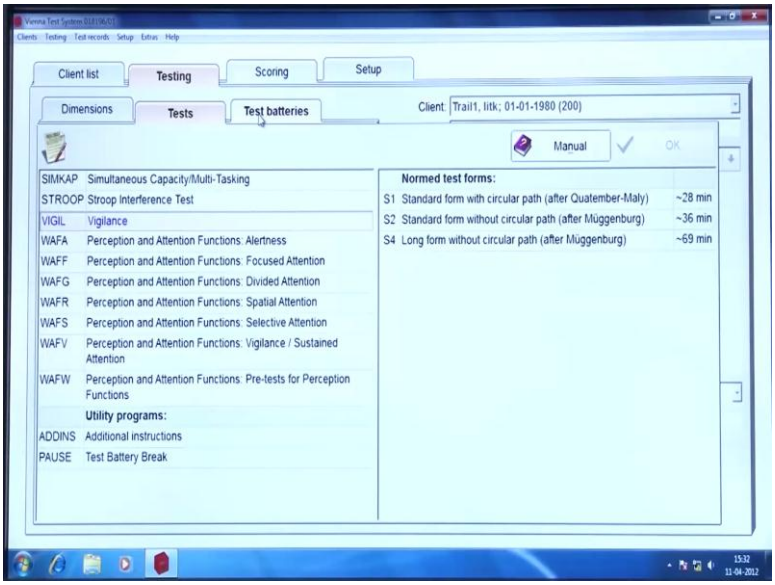
And then this one you know. So all these d s which you missed the target stimuli will be counted as an error. So then we evaluate, but of course, the normal healthy individuals, do this scanning the faster they have to respond, but the people who are having some deficiency they are very slow in such tasks and also they make more errors, sometimes like also in the third line you skip many. So this might be only due to the search or sometime it is very resemble resembling to p. So, that is why, but otherwise your score is to be very.

So, do you taken to account speed also.

Yes, we can take to a counter speed and scanning and that is why because it comes into this all focus attention thank you.

Till now we saw examples of paper pencil based psychological tools. I must share with you that a large number of psychological tools are now available in the computer assisted format. Let us now see a lab session involving the VNR test system.

(Refer Slide Time: 12:48)



With this allows you to run selected test independently or you can even run them continuously by selecting test batteries and of course, you have choice of the selecting different tests to make your own test battery.

In the first test, that you will watch here is perception test, were the subject has to distinguish break test.

(Refer Slide Time: 13:31)

Initially you see a practice test the instructions are written, here the curd square either disappears is bright or it becomes lighter. The subject is supposed to press a green button this square a gets lighter or darker.

Here it mention sometimes a square gets lighter or darker you have work it careful. I f the square gets lighter or darker then please press green button. Then we have to press the green button from this response panel, as soon as possible as quick as possible we can press it. We have to press this button as quick as we can. So here their mentions to next go to the next level we have to press the green button. So we have to again press the green button from this response panel, we will do this.

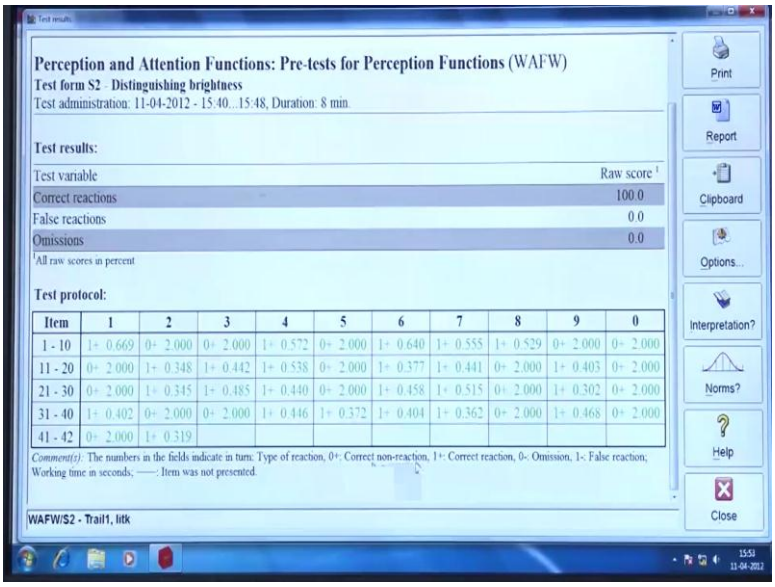
So from here let us begin like it becomes lighter shape.

So, we need to press the green button. Then we have to press a green button it depends on the shades. Then only we have to press the green button, you changes then you have press the green button. So this is all about the demo the practice test it gives that for the

next 4 minutes, where will having a same process now actual test beginning to start with the test lets here and then he to start then again we have to press the green button to start with the test. So here we will press the green button.

So again this is the actual test. This becomes lighter then we I press the green button again, but it changes. So I press the green button. So square we will not to change the same things repeat again and again here we need to press it.

(Refer Slide Time: 16:51)



So here the test ends and it gives information that thank you for participating. So here the test is ended. So, automatically gives you an option to display the result. So for seen or viewing the result you can press this button, display test results or if you directly want take the print out, you can click on the print test results.

So, if you want to view the results we can click on the display test results, this, this report. If we want to take the print out from displays, we can also take the print out we can click the green button, if you want to copy it and print it to the later stage, we can always copy this from the keyboard option and we can paste it to be some other format, like ms word or some other format morals. So this is the entire report and here you have also having option interpretation option, from here you can see entire interpretation related to the result and here is the list of the norms. It norms related to this particular test. So this the target stage from here you can close to the button.

So here the entire report is. So this is the entire test result. So here it will first give you the name. The person's age, gender, the total age in figures, this education level, there is first it gives the name of the test this was FWA. This basically perception and attention function test; this is basically for the perception test functions. We have opted S2 form. So here is giving S2 which is distinguishing brightness test, test administration that date or total test inclusive up the ballet test and the actual test are (Refer Time: 18:52).

So here the actual test result is, the test variable is and the raw score. So here these will raw score. So raw score they are highly variables. So first is a correct reaction. So here you gets 100 percent it means, here false reactions here it is 0.0 it means, again it is omission, it means I was not able to click either right or wrong. Suppose it means it comes under correct reactions, it means it comes under false reaction it means I am was not able to perform 100 vocations. So it gives again.

For example, this is we raw a score of your actual test, we have raw a score I think one number and here is the description of that particular number all raw a scores in percent. It means this raw a score it is in the percentage format. It be move to the bottom. So here is the test protocol for set of rule. So they are total 42 figures which come during it us, which we known as item basic.

So, for the first to 10 item, we will be having this score. This is basically an automatic calculated scored this score is calculated on the base of the norm samples, which has already been inside is BTS system. What kind of norms sample and what is the formula and what number norm samples included in this machine that is that you can find in with this button the norms button. You can go here and click on here and you will get the entire norms how and what methodology this system has used to get this calculations. Again this is for the first to 2 items.

Similarly they 11 to 20, 21 to 30 likewise till 41 to 42 the entire figure is calculated. In the bottom of this tabular format you will get the comments, like the number in the fields indicate in turn type of reactions, 0 plus were able to find just 0 plus. Here it is 0 plus. It means this is a type of reaction. The correct non reaction for 0 plus. Whenever you get 1 plus like this is 1 plus it means correct reactions.

Where ever you get 0 like this one it means omission, wherever you get 1 it means false reaction. Working time in seconds, if you have like this space, this will not appear in this

tabular format because you are not able to see this 0 mark and this 1 mark in this tabular format. If this blank screen blank dash comes in this tabular format, it means item must not present in the test. So this is also not available in the tabular format because this has not been occurred during the test.

(Refer Slide Time: 22:57)

This is an apprentice for (Refer Time: 22:59). In these apprentices you can see that there are two lines one is an arrow headed line, one is a feather headed line. Now this line is fixed what the person has to do is to move this. So that the person can make this line equal into this arrow headed line which can be done by moving this like if you can bring it here, it will be smaller than this line, if we bring it here approximately it will be equal into the arrow headed line.

Now to find out whether the person has done it correctly, we will be see in at the back of it these a scale and with this scale we can measure what is a actual length of the feather headed line which the participants has a fixed in accordance with the arrow headed line. So, in this (Refer Time: 23:49) what you have to do is this is an arrow headed line; this is a feather headed line. You have to adjust this line in accordance with this line. So you can move this side and bring it to a point where you think the lines are not equal. So you can do this.

Done. So we can see that in this a trail the person has made the distance of 12.5cm centimeters. So now, again with the same hand you have to a move this slider again inverse to make equal into this line.

Ok.

Done. So, in this trial, we can see that the length has been approximately 12.4 centimeters. Now in this condition we will ask the participant to make an output movement to make this line equal into the arrow headed line like this. Approximately were the participant will feel it signet, the participant feel stop this slider. Now in this condition as you can see the slider is at the center position, you have to move the slider to toward outside, that you can make this line equal into this arrow headed line.

So in this trial, we can see that the length approximate length of was 11.9centimeters. Now again you have to do the same thing, you have to slide it outside. So that you can make the line equal into the arrow headed line, please do.

So, in this trial you can see the length was approximately 12.1 centimeters.

(Refer Slide Time: 27:02)

This is an apprentice for horizontal vertical illusion. In this you can see that you can move this slider up and what we have to do is we will keep it at a level and will ask the person to adjust this slider, so that this line is equal into this line. So this slider can be move and the participant will keep it at a place, were the participant feel that this line is

not equal into this line and we can see the length of that line from the scale which is behind the operators. So, you can see that this line, this is a movable slider what you have to do is to move this slider downwards, so that this line is equal into this line. So please do that.

Now the length of this line we can see from behind from this scale. This where the person move this slider, so you have to do this task again, you have to move this slider. So that, the line is equal into this line, please do.

Now the length can be seen from behind, this is where the person kept the slider.