CHAPTER IV

METHODOLOGY

Design of the Study

A factorial design of 2x2 is employed in the present study. There are two conditions of personality, i.e. introverts and extraverts and two conditions of sex, i.e. males and females. In all there are four conditions or four cells each consisting 25 subjects who will be tested on perceptual and behavioural norm along with serial positioning effect and anagrams. Thus in all, there are 100 subjects in the four experiments.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>I</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Selection of Sample

1. Initial Sample

A sample of 500 students (250 males and 250 females) of University level was drawn randomly from Himachal Pradesh University, Shimla for the present study, for the session of 1998-99.

The subjects were taken in a group of 10-15 each. First of all they were given Eysenck's personality inventory (Eysenck and Eysenck, 1968) to obtain their
Final Sample

The final sample of 100 subjects were selected on the basis of their scores on personality inventory. Students scoring between 8 to 12 on neuroticism were considered as medium neurotics and at the same time students scoring either 12+ of -8 on the dimension of extraversion were termed as extraverts and introverts respectively. The labelling of introverts and extraverts on the basis of their above mentioned scores are in accordance with the norms based on Indian samples e.g. (Mohan, 1975 and Kumar, 1974). Thus, the final sample of 50 males and 50 females were selected and the design turned out to be having the 100 Ss, the layout of which i.e. 2 X 2 factorial design is presented in Table - I (on page 162)

Tools used

1. Eysenck's Personality Inventory. (EPI) :
   (Eysenck and Eysenck, 1968). Eysenck personality inventory (EPI) is used to select personality groups. It consists of 57 questions. Twenty four are for extraversion/introversion; 24 for neuroticism and 9 for the lie scale. Scoring was done with its key. The
Table - I
Design of the present study
100 Ss

<table>
<thead>
<tr>
<th>Introverts</th>
<th>Extraverts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males (25)</td>
<td>Males (25)</td>
</tr>
<tr>
<td>Females (25)</td>
<td>Females (25)</td>
</tr>
</tbody>
</table>

\[ S_1, S_2, S_3, S_4, S_5 \] (S, S_1, S_2, S_3, S_4, S_5) (S, S_1, S_2, S_3, S_4, S_5)

<table>
<thead>
<tr>
<th>M</th>
<th>F</th>
<th>E</th>
<th>I</th>
<th>Ss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
<td>Subjects</td>
</tr>
</tbody>
</table>

(S = Stage, M = Males, F = Females, E = Extraverts, I = Introverts, Ss = Subjects)

following instructions were given to the subjects and all the doubts were cleared before the proceedings started.

"Here are some questions regarding the way you behave, feel and act. After each question, you are
supposed to encircle 'Yes' or 'No'. Try to decide whether 'Yes' or 'No'. It represents your usual way of acting or feeling, work quickly and do not spend too much time over any question. We want your first reactions, not a long drawn out thought process. The whole questionnaire should not take more than few minutes. Work quickly and remember to answer every question. There are no right or wrong answers and this is not a test of intelligence or ability but simply a measure of the way you behave. After that, forms were taken back and scoring was done with the help of scoring stencil which was placed along the anchoring points on the test booklet. Their scores on E and N dimension were written on the top of the forms. Lie scores were also counted. Subjects who scored more than 12 and less than 8 on neuroticism dimension and -8 to 12+ on extraversion dimension were selected. Also Ss who scored 3 or less than 3 on lie scale were selected for the experiment i.e. subjects scoring more than 3 lie scores were rejected.

2. Sherif's autokinetic effect experiment (1935)

Autokinetic effect is a visual illusion; in a dark room, a light will appear to move around. In this an experience of movement may occur when fixating on a stationary point of light in the otherwise completely darkened room (environment). In this condition a spatial context of background is lacking and there is no fixed
visual framework to which the point of light may be referred. The result is that a single stationary point of light appears to drift or wander irregularly about a phenomena termed autokinetic movement. Typically, the point of light appears to make small excursion, but considerable movement is also noted. There are wide individual differences in the extent and the direction of the apparent movement which is shown to be significantly affected by social influence (Sherif, 1935). Autokinesis is an instrument which is placed in a darkened room (see figure 19). The walls were not visible and there were no physical frames of reference for subjects. In this experiment, subjects were made to sit conformably in a completely darkened room in a group of 4 consisting of 2 males and 2 females, 2 introverts and 2 extraverts. They
were asked to give their precise judgement regarding the movement of the patch of light in terms of inches i.e. 3 inches, 4 inches, 5 inches and so on. There were 4 sessions spread over 2 days i.e. the first two trials were taken the same day and next two trials took place the following with an interval of 15 minutes between sessions. In the first session, they gave the individual judgement because they did not know each other. After that session terminated, the same group of students were asked to make judgments concerning the movement after 15 minutes. In this session they made a judgement to each other then to the experimenter. Similarly, 3rd and 4th readings were taken. The final i.e. the 5th reading was taken after the interval of one week to see the retention of group norms among different personality groups and two sexes.

Before starting the experiment, the following instructions were given to the Ss. "This is a test of autokinetic effect. You will see a point of light on a screen. Look at it. It will wave up and down and you have to tell how much the light moved as it followed its erratic course. First you will be tested individually and then in a group. In all there will be 5 sessions taken separately.

**Scoring**

The judgement for all the five readings summated for the analysis of data. In the first case a
Methodology

A three way repeated measure analysis of variance A X B X (C) i.e. 2 X 2 X (5) will be applied to find out the significance of differences between the said means and their interaction. After that means will be calculated for various personality, sex and five stages. After this, a separate ANOVA of the order of 2 X 2 was applied for the 5th stage to know the significance of personality and sex. In the last, t-value were calculated for differences between 4th and 5th stage to know how the two sexes and personality groups divulged from their respective convergence effects.

Asch's Visual perception test (1951)

This is a visual perception test of line drawing cards. This test of visual perception contains 4 cards. One card containing the standard line and the other 3 cards containing the comparison lines. In this test of Asch's visual perception test' 6 subjects were accomplices i.e. confederates of the experimenter and one was critical/naive subject. Thus, in all there were seven subjects who participated in this experiment. First, the subjects were made to sit comfortably around a table. The confederates were instructed in advance to give wrong judgements and the naive subject was unaware of this fact. In this experiment the subjects thought that they were participating in a test of perceptual skills with a group of six other subjects. They were first shown the standard
line and then were asked to identify which of the three comparison lines best matched the standard line. They were asked to state publicly one after another their judgements. First, the confederates stated their judgements one after another and the naive subject gave his judgement in the last. This procedure was repeated three times with different stimulus cards involving comparison lines (see figure 20 a & b). After the Ss sat comfortably they were given the following instructions:

<table>
<thead>
<tr>
<th>Figure 20 (a)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Standard line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison lines</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Methodology 167
These photos were taken during the Asch experiment. The man in the middle is the subject; all the rest are confederates of Asch.
Methodology

"There are 2 cards. One card contains the standard line and the other card contains the comparison line. This is a test to measure your perceptual skill. Your task is to announce about which of the three comparison lines was identical in length to a standard line. There are three trials and in each trial you have to repeat the same process. Is it clear to you? Now start doing the experiment."

Scoring:

Yielding responses were taken into consideration for each of the three trials for example if the subject yielded 2 times out of three trials then score of 2 will be given for the analysis of data. ANOVA of the order of 2 X 2 was applied for this test.

Anagrams (Adapted version of Dominowski, 1966 used by Sehgal in 1990 and Kapila in 1992)

An anagram consists of several letters which are jumbled up and the subject must rearrange them to form a meaningful word. Anagram structure is the most commonly and frequently used task in research on problem solving. Several attempts have been made to account for the difficulty of anagrams in terms of their structural properties. Dominowski (1966), proposed that letter moves i.e. the No. of letters whose position might be related to solution difficulty. Thus for the word camel, the anagram mceal can be solved with a minimum of two
moves i.e. C to the first position and A to the second while mclea requires 3 moves. The fewer the moves i.e. C to the first position and A to the second while mclea requires 3 moves. The fewer the moves, the better the performance. In this problem solving task subjects had to rearrange the given 15 anagrams in the questionnaire with the time limit of ten minutes. After they sat comfortably, questionnaires were given to them and following instructions were imparted before they started their work which were printed on the problem sheet.

"Here are some jumble up words given below. You have to remake the correct words of these in 10 minutes. Please write the correct words in the space given in front of each word. Work quickly and don't miss any word.

Scoring

Right responses were taken into consideration from the given answers for the analysis of data.

Serial Learning (Use of Nonsense Syllables)

Herman Ebbinghaus developed this method of studying learning and memory. Nonsense syllables are formed by putting a vowel between two consonants. He selected nonsense syllables because he believed that were essentially free of the influence of past experiences and the emotional factors associated with prose, poetry or
common words. A list of 15 nonsense syllables was made. The syllables were arranged and written down in series and the subjects were asked to memorize the list in the same order as it appeared in the series. This type of learning is called the serial learning. In view of the limitations of three letter four letter syllables were used in which the initial or final consonant is double. This list was shown through the memory drum apparatus (see figure 21). The paper strip containing the nonsense syllables is bound around a drum. When the drum is in place on its shaft, the peg on the small wheel engages the cogs of the drum and gives the drum each time a quick push which brings the next line into view. Reduction gear causes the driving wheel to rotate once in 3 secs, which is the interval between exposures when only one peg is inserted. A more rapid rate can be secured by inserting two or three pegs. After the list was exposed to the subjects they were asked to recall the syllables in the same position i.e. in the same order as it appeared in the series. The trials were repeated until the subject was able to recall all the
nonsense syllables correctly and in the same order. Following are the instructions for their problem.

"I, the 'experimenter' will show you the list containing 15 nonsense syllables through the memory drum apparatus. Your task is to go through the list in one exposure and then reproduce the same in the serial order as it appeared in series in the list. I will try to see how soon you can learn these nonsense syllables and how many trials will you take to reproduce the list. Is it all clear? If you have any doubt regarding the experiment kindly ask me and make yourself clear. When I say 'ready' kindly attend the exposure point on the memory drum.

Scoring

In this task number of trials taken to recall the items in serial order were noted for the analysis of data.