The present study was undertaken to investigate the effect of personality, intelligence and sex on the acquisition of efficiency and extinction, as a function of KR on two tasks of weight estimation and Muller Lyer illusion. For experimental verification of the various hypotheses formed, a $2 \times 2 \times 2 \times 2 \times 2$ factorial design was prepared (2 frequencies of KR i.e., 100% and 50%, 2 levels of personality i.e. E and I; 2 levels of anxiety i.e. high and low; 2 levels of intelligence i.e., high and low, and 2 sexes i.e. male and female). Thirty two conditions were thus manipulated. There were 5 subjects for each condition making total sample of 160 subjects (80 males and 80 females). These subjects were selected on the basis of their scores on Junior personality inventory (Mohan and Purang 1969); General Anxiety Scale (Pandit 1969); and Raven's SPM (Raven 1960). All the three tests were administered simultaneously to about 1050 school students of Hoshiarpur City. The subjects who scored $M \pm \frac{1}{2} SD$ on all the scales were selected for the final study. The performance on two tasks, i.e. weight estimation and Muller Lyer illusion, was replicated for the entire sample. The raw data consisted of 160 sets of 50 values each in respect of 50 trials spread over 3 sessions i.e. initial (1-10th); acquisition (11th to 30th) and extinction (31st to 50th trials).

The acquisition and extinction rates were calculated in the same way as was done by Mohan and Dey (1964), Mohan and Gupta (1972, 1984) and Mohan and Vohra (1984).
The analysis of results was done for both the tasks as under.

(i) In order to determine the statistical significance of the acquisition and extinction effect, the t-test with correlated means was used (Garret, 1969). The analysis of variance of the type A x B x C x D x E (Edward 1968) was performed on the mean discrepancies of the last 4 trials of the (i) initial, (ii) acquisition and (iii) extinction series. The acquisition and the extinction rates were also subjected to ANOVA for both the tasks separately. In this way 10 analyses of variance were calculated. The results were analysed and discussed separately for the initial ability, acquisition and extinction effects.

On initial ability, the variable of intelligence on weight estimation and those of E/I, anxiety and intelligence on Muller Lyer illusion, were playing significant role. The high intelligent, low anxiety extraverts were found to be superior to low intelligent, high anxiety introverts.

Regarding the effect of KR on the acquisition of efficiency, it was found that the performance improved significantly after the provision of KR on both the tasks.

(ii) Regarding the effect of different frequencies of KR on acquisition, it was found that the difference between 2 frequencies of KR reached significance at .01 level in respect of mean discrepancies of the last 4 trials of the acquisition series as well as acquisition rates on both the tasks. The 100% KR group was found to be superior to 50% KR group in respect of mean
discrepancies and acquisition rates on both the tasks. These results were in line with the earlier findings of Houston (1947), McGuigan (1959), Mohan and Demrel (1971), Mohan and Gupta (1972), Mohan and Deol (1983) and Mohan and Vohra (1984).

(ii) The results on the variable of extraversion-introversion, indicated the superiority of introverts over extraverts on both the tasks in respect of final performance on acquisition series as well as on acquisition rates. The difference was highly significant beyond .01 level.

(iii) On the variable of anxiety, high anxiety group was performing poorer on weight estimation and better on Muller Lyer illusion in respect of mean discrepancies on the acquisition series. However, this difference was not significant. But when the performance of high and low anxious groups was compared on acquisition rates, the former was found to be superior to the latter on both the tasks of weight estimation and Muller Lyer illusion. The difference was highly significant in the case of Muller Lyer illusion. The results are in line with Morocco (1978) Bethge et al. (1982) and Mohan and Deol (1983).

(iv) The results on the variable of intelligence revealed that the high intelligence group was superior in respect of final performance on acquisition series, but inferior on the acquisition rates of both the tasks. The difference came to be highly significant with respect to both i.e. on the final performance as well as on the acquisition rates. The results are in line with Cromwell (1963), Mohan and Malhotra (1974), Gupta (1978) and
Bayti (1979).

(v) On the variable of sex, females were performing better than males. The difference was significant in respect of acquisition rates on Muller Lyer illusion. The results are in line with Gupta (1978) on line drawing and Mohan and Gill (1981) on Muller Lyer illusion.

Regarding extinction as a function of withdrawal of KR, it was found that significant extinction had taken place at .01 level on both the tasks but that the performance still remained significantly above the initial level. The results are in line with Thorndike (1931), Houston (1944), Grant et al. (1950, 1959), Goldstein and Rittenhouse (1954), Frank (1956), Hartmen and Grant (1960), Lorain (1970) and Mohan and Vohra (1984).

Regarding differential effect of 2 frequencies of KR, E/I, anxiety, intelligence and sex on performance decrement following withdrawal of KR, it was observed that:

(i) On the variable of frequency of KR, 50 % KR group was significantly superior on extinction rates in comparison with 100 % KR group on both the tasks. It means that the group receiving partial KR was more resistant to extinction than that of the 100 % KR group. The results were in line with Hartman and Grant (1960), Myers (1960), Hoer (1962), Lorain (1970) and Mohan and Vohra (1984).

(ii) On the variable of E/I, the introverts were significantly better than extraverts on the extinction rates of both the tasks,
which implied that the introverts were more resistant to extinction than extraverts. The results are in line with Frank (1956), Eysenck (1968, 1971).

(iii) On the variable of anxiety, the high anxious group was significantly better on extinction rates than the low anxious group on both the tasks. It implied that the former group is more resistant to extinction than the latter. The results are in line with Frank (1956) and Taylor and Spence (1956).

(iv) The high intelligence group proved to be significantly more resistant to extinction in comparison with the low intelligence group.

(v) On the variable of sex, females proved to be more resistant to extinction in comparison with their male counterparts. However, the difference between the performance of 2 sexes did not come out to be significant.

Some of the interactions reached significance level on the initial, acquisition and extinction series as well as the acquisition and extinction rates of both the tasks. These are:

(i) The interaction between extraversion x anxiety reached significance at .05 level for initial ability, at .01 level each for acquisition rates, extinction rates and for extinction series of Muller Lyer illusion.

(ii) The interaction between extraversion x intelligence was significant at .01 level each for the acquisition and extinction
series of weight estimation. The same interaction was also significant at .01 level each for the initial, acquisition and extinction series as well as the acquisition rates of Muller Lyer illusion.

(iii) The interaction between anxiety x intelligence was significant at .01 level for both the acquisition and extinction series of Muller Lyer illusion.

(iv) The interaction between extraversion x frequency of KR was significant at .05 level on the extinction series of Muller Lyer illusion.

(v) The interaction among extraversion x anxiety x intelligence was significant at .01 level for the initial ability as well as the acquisition rates of Muller Lyer illusion.

(vi) The interaction among the frequency of KR x extraversion x anxiety reached significance at .01 level for the acquisition rates and the extinction series of Muller Lyer illusion.

(vii) The interaction among the frequency of KR x extraversion x intelligence reached significance at .01 level for the acquisition series of both the tasks. It was also significant at .01 level for the acquisition rates of Muller Lyer illusion.

(viii) The interaction among the frequency of KR x anxiety x intelligence reached significance at .01 level for the acquisition series of Muller Lyer illusion.

(ix) The four level interaction among the frequency of KR x extraversion x anxiety x intelligence reached significance
at .05 level for the extinction series as well as extinction rates in respect of Muller Lyer illusion.