CHAPTER SIX

DISCUSSION - II

So far, we have been discussing the effect of a single factor (field dependence/independence, locus of control and induced frustration) on retention performance of the subjects in chapter five. We can also study the joint effect of any two or more factors at a time. Thus, it may be interesting to see, for example whether field-independent internals in control condition would differ in their retention performance from field-independent externals in experimental condition. In general, when a number of individual or items are grouped according to several factors of classification and these factors are not independent, there is said to be interaction between them. The interaction is a measure of the extent to which the effect upon the dependent variable of changing the level of one factor depends on the level of others. Thus, the two treatments say N and P each of two levels (0 and 1), the effects of four treatment combinations can be written n_0p_0, n_0p_1, n_1p_0 and n_1p_1. If the treatments are independent the effect of varying N from n_0 to n_1 would be the same with p_0 as with p_1. The extent to which this is not so is a measure of interaction.

The combined effects of various independent factors dealt in the present investigation on retention performance would be discussed in the present chapter.

(1) Combined Effect of Field Dependence/Independence and Locus of Control on Retention: It is interesting to see whether the field dependence/independence and internal-external locus of control dichotomize yield any significant interaction effect on retention performance. In other words, the question arises whether subjects having cognitive style of field-dependence and independence who are of different locus of control do equally well on a retention task or is there any interaction effect in respect of their performance. For the present research, it was assumed that the field-independent internals would attain the maximum score and field-dependent externals would attain the minimum score on the retention task of recalling a learned passage, the other two groups would remain in between the two extreme groups. In other words, there would exist an interaction effect of field dependence/independence and locus of control.

A three-way analysis of variance was computed to study the individual
and interaction effect of three variables (field dependence/independence, locus of control and induced frustration) on the retention performance, where in one of the second order interaction was between field dependence/independence and locus of control which yielded an F-ratio of 3.765 which is significant at .01 level of confidence for 1 and 232 degrees of freedom (Table 11). This significant F-ratio clearly indicated that both the factors field dependence/independence and locus of control are dependent on each other as regards to their effect on retention performance of the subjects. It is clear from Table 10 that average retention scores of field-independent internals is 80.565, of field-dependent externals is 71.686, of field-dependent internals is 73.45 and that of field-independent externals is 75.25. The obtained data reveal that retention scores of field-dependents and independents vary genuinely because of their internality and externality, i.e., the obtained difference between field-dependents and independents (figure 30) vary significantly for internals (Average difference=7.15) and externals (Average difference =3.565). The same data also reveal that the average difference between field-independent internals and externals (Figure 31) is 5.945 while that of field-dependent internals and externals is 1.765 and these differences are found statistically significant in the present investigation. We have seen above that field-independents retain more as compared to the field-dependents so as internals in comparison to externals. The significant interaction between field dependence/independence and locus of control signifies that retention potential of internals and externals is affected by their cognitive styles: field-dependence and field-independence. Hence, our hypothesis stands the experimental test.

![Figure 30: Obtained Average Difference Between Field Dependence/Independence For Internals And Externals](image-url)
Davis and Frank (1979), Brooks and Dansereau (1981) Pitrowski (1984), Roberts and Park (1984), Carrier et al. (1984), Collins et al. (1986) have reported excellence of field-independence over field-dependence in respect of their retention potential. Likewise, Standahl (1975), Mitchell and Young (1979), Saunders and Yeany (1979), Mckelvie (1986), Nishikawa (1988), Hagborg et al. (1991), have found that internals outperformed the externals on a retention task. As regards the combined effect of these two factors as studied in the present research, it is also found significant.

(ii) Combined Effect of Field dependence/Independence and Induced Frustration: It is also interesting to see whether induced frustration affects persons with different cognitive style equally or person with one type of cognitive style is affected more by induced frustration than person with another cognitive style on a retention task. To state it more directly, we wanted to study, whether field-dependents and independents would deteriorate their retention performance equally or differently because of induced frustration.

As stated earlier Davis and Frank (1979), Brooks and Dansereau (1981), Pitrowski (1984), Roberts and Park (1984), Carries et al.(1984), Collins et al.
(1986) have found field-independent as better retainer. Separately, it has been found that frustration has deleterious effect on retention (Barker et al. 1941; Child and Waterhouse, 1952, D'Zurilla, 1965). In the light of the above mention effect of field dependence/independence and frustration on retention performance it was hypothesized that the retention performance of the field-independent subjects on the retention task in non-frustration condition would be the best while the performance of field-dependents in induced frustration would be the poorest in the same respect. More specifically, it is assumed that deleterious effect of frustration on retention would be more in the case of field-dependence than to that of field-independence.

In order to test the aforesaid hypothesis, an F-ratio for interaction between field dependence/independence and induced frustration is computed in a three-way analysis of variance (Table 11). The second order interaction between field dependence/independence and condition gave an F-ratio of 6.54 which is significant at .01 level of confidence for 1 and 232 degrees of freedom. The significant interaction variance provides us with a ground that the field-dependents and the field-independents are differentially affected by induced frustration on a retention task of recalling a learned passage.

A perusal of Table 10 reveals that the average retention score of field-independents in control condition is 84.30 and of field-dependents is 81.55 (Average difference of 2.75 Figure 32). Similarly average retention of field-independents in experimental condition is 71.56 while that of field-dependents is 63.58 (Average difference of 7.98 Figure 32).

Figure 32: Obtained Average Difference Between Field Dependence & Field Independence For Conditions
The same data also suggest that the average difference in retention performance of field-dependents in control and experimental condition is 17.97 and while that of field-independent is 12.74. (Figure 33).

![Figure 33: Obtained Average Difference Between Conditions For Field Dependence And Field Independence](image)

It is clear that retention performance of dependents deteriorated more because of induced frustration during the retention interval as compared to the field-independents. As has already been discussed that the field-dependents can not shake themselves free from the constraints of the situation in which they find themselves, submit to the forces of authority and they are not insightful which tend them to be more sensitive towards the frustrating conditions while performing a task resulting to a very poor performance. Contrary to this, field-independents express an active coping in dealing with the environmental forces, emerged as a possessing the necessary qualities in cognitive domain which helps them to analyze the environment into its components and make use of this information selectively without being much perturbed by the frustrating situations. Greater use of mediators also make the field-independents to minimize the effect of frustration on their performance. In a nutshell, both the factors- field dependence/independence and induced frustration- are not only exerting their effect on retention potential of the subject independently but also exert their effects jointly. Hence, the results of the present research statistically confirm the assumption made.

(iii) Combined Effect of Locus of Control and Induced frustration: Equally of interest is to study whether induced frustration affects retention performance of internals and externals differentially. As has already been discussed in the
previous chapter, internals were found to be better retainer than the externals and similarly, frustration was found to exert its deleterious effect on retention performance of the subjects. It was also considered important to probe whether deterioration in performance of internals and externals would vary because of the induced frustration during retention interval. The interaction effect between these two factors was tested in a three-way analysis of variance computed for the factors- field dependence/independence, locus of control and induced frustration (Table 11). The interaction between locus of control and induced frustration yielded an F-ratio of 12.77 which is significant at .01 level of confidence for 1 and 232 degrees of freedom indicating thereby that internals and externals do perform differently on a retention task because of non-frustrating and frustrating conditions. In other words, it can be said that internals and externals do differ in respect of deleterious effect of frustration on them in regard to their retention performance.

A perusal of Table 13, however, does not provide support to the assumption made in the present research. It is clear from Table 13 that average retention score of internals in control condition is 86.37 while that of externals is 79.48 (Average difference of 6.89 Figure.34).

Similarly average retention score of internals in experimental condition is 67.78 and while that of externals is 67.45 (Average difference of 0.25 Figure.34). The same data also suggest that the average difference in retention performance of internals in control and experimental condition is 18.67 while that of externals in control and experimental condition is 11.73 (Figure.35).
Moreover, it is also clear that internals and externals have performed almost equally in the experimental condition when they were made frustrated making the two groups the poorest retainer, externals in control condition have retained more than internals in experimental condition while it was expected that the two group would perform rather equally. A thorough analysis of the obtained data reveals that though internals are better retainer the deleterious effect of induced frustration is exerted more on them than on the externals and the significant F-ratio support the findings statistically. It can be reasoned that since internals are more prone to the aware of informational strategies for successful completion of task, and have more superior retention/recognition in non stressful situations and show comparatively more decrement in retention in comparison to externals because of utilizing repressor mechanism when they are faced with threatening or high anxiety provoking situations, though were the best retainer in control condition had been affected more negatively because of the frustrating situations in respect of their retention performance like that was introduced during the retention interval in the present research.

In crux, though the obtained interaction effect between locus of control and induced frustration is found significant the finding does not support the complete hypothesis based on the proposed interaction model of the present research. Inspite the internals are best retainer the deleterious effect of frustration
is being exerted more on internals as compared to that on externals.

(iv) Combined Effect of Field Dependence/Independence, Locus of Control and Induced Frustration: Up to now interaction effect of either two personality factors or the effect of frustration on retention performance was discussed in relation to any one factor—field dependence/independence or locus of control. The experimental design of the present research was so formed that subjects of different cognitive styles (field dependence/independence) and locus of control (internal and external) were included in two conditions—control (non-frustrated) and experimental (frustrated). This provides an opportunity to see the joint effect on any two or three factors in respect of deleterious effect of one or two factors on retention performance of the subjects. The specific problem here is to study the effect of induced frustration on retention performance of field-dependents and independents who are internals and externals. The role of field dependence/independence in retention was confirmed by several investigators, e.g., Davis and Frank (1979), Brooks and Dansereau (1981), Carrier et al. (1984), Collins et al. (1986). Internals have been found to be better retainer (Standahl, 1975, Mitchell and Young, 1979; Saunders and Yeany, 1979; McKelvie, 1986; Nishikawka, 1988, and Hagberg et al., 1991) and frustration is found to exert its deleterious effect on the performance (Barker et al. 1941; Child and Waterhouse, 1952, and D'Zurilla, 1965). The findings of the present research also go in the same direction. Keeping in view these independent set of findings it was expected that the field-dependent externals would be affected most negatively because of induced frustration during retention interval and the field-independent internals would be affected the least. The other groups were expected to fall at intermediary positions in respect of deleterious effect of frustration. Thus, it was hypothesized that there would arise a significant interaction effect among the three variables—field dependence/independence, locus of control and induced frustration.

To test this hypothesis an interaction F-ratio was computed (Table 11). The obtained F-ratio (F=114.76, P<.01) is significant at .01 level of confidence for 1 and 232 degrees of freedom which provides sufficient statistical ground to retain the experimental hypothesis. In other words, it can be said that there exist a genuine interaction effect among the three variables—field dependence/independence, locus of control and induced frustration on retention performance of the subjects.

A perusal of Table 10 reveals that average retention scores of field-dependent internals, field-dependent externals, field-independent internals and field-independent externals...
independent externals in control and experimental conditions are 79.00 and 67.90, 84.10 and 59.27, 93.73 and 67.50 and 74.87 and 75.83, respectively giving an average difference between control and experimental conditions of 11.10, 24.83, 26.23 and 0.76 for the respective sub-groups (fig.36).

Based on weightages (Table 5) as proposed in the present research it was hypothesized that field-independent internals in control condition would be the best retainer while field-dependent externals in experimental condition would be the poorest retainer. Field-independent externals in control condition, field-dependent internals in control condition and field-independent internals in experimental condition would occupy the second position and field-dependent externals in control condition, field-independent externals in experimental condition and field-dependent internals in experimental condition would occupy the third position as regards to their retention performance. However, the data obtained in the present research do not support the proposed model. Though the interaction effect is significant, the variance for the four sub-groups are different from the proposed difference. It has been found that the difference between control and experimental condition is the maximum (average difference = 26.23) in the case of field-independent internals and the minimum (average difference = 0.76) in the case of field-independent externals, field-dependent externals occupies second position (average difference = 24.83) and the field-dependent internals occupy third position in this regard (average difference = 11.10).
Earlier in this chapter while discussing about the interaction effect of field dependence/independence and induced frustration it was concluded that the deleterious effect of induced frustration was more in the case of field-dependents in comparison to the field-independents and while discussing about the interaction effect of locus of control and induced frustration it was discussed that the deleterious effect of frustration was more for internals as compared to that of externals which was against the hypothesis of the present investigation. Here also, in the same line it has been observed that the deleterious effect of frustration is minimum in the case of field-independent externals. Though, the deleterious effect of frustration is comparatively more in the case of field-independent internals than the field-dependent externals the difference of 1.40 is negligible and can be considered occupying same position in regard to the deleterious effect of frustration. While on the basis of the earlier findings of the present research they would have occupied the third position in the same regard. Similarly, the deleterious effect of frustration should have been the maximum in the case of field-dependent internals on the basis of the findings of the present research as discussed earlier but the obtained data show that they occupy third position in this regard. It may be sum that the two personality factors—field dependence/independence and locus of control are exerting a different pattern of interaction effect while made frustrated as compared to when both the factor are taken separately in interaction with experimental conditions -(non-frustrated and frustrated). However, further research is suggested to throw more light in this concern.