Discussion

Experiment I was designed to see how under two levels of emotional involvement, Ss' retention of affective materials was related to their perception of the intensity of affect of such materials. During the initial rating stage, when the Ss were least emotionally involved, their ratings of the adjectives revealed that the pleasant and unpleasant sets of adjectives were matched with respect to their intensity of affect. Greater emotional involvement was provided to them by attributing the adjectives to their own community during the report reading and final rating stages. Under this condition, results show that perceived intensity of affect gets changed in the predicted direction, and retention is directly related to such changed perception of intensity of affect. Also it was thought that when the adjectives were attributed to a fictitious Lampani tribe, Ss would experience them under neutral non-ego involved situation similar to the initial rating stage. The results presented in table 2, however, reveal that adjectives when ascribed to Lampani were not perceived in the same way as in the initial rating stage. Thus, while providing empirical support to the contention that under greater emotional involvement, retention is related to intensity of affect, the study failed to provide conditions of least emotional involvement for Ss. Such failure was presumably due to the presentation of the reports on Lampani and Bengali together in an ego-involved context. It seems, the fictitious community Lampani was perceived as a rival or inferior group in contrast to Ss' own group. This may be the reason why unpleasant adjectives were rated to have more intense affect and retained better (see table 3) than pleasant adjectives when attributed to Lampani. Since the report about the Lampani community was presented to Ss in the same ego-involved context in which the report about the Bengali was presented, Ss experienced the adjectives attributed to Lampani also under greater emotional involvement, and perceived them in a contrasting context to their own group. Thus, in the case of Bengali, pleasant adjectives were considered by Ss as very pleasant and unpleasant adjectives as not so much unpleasant. In the case of Lampani, on the other hand, as
a contrast effect, they perceived the adjectives exactly in the reverse manner. The Ss reacted as if the pleasant adjectives attributed to Lampangi were not so pleasant after all, but the unpleasant ones attributed to them referred to very strong vices. It may be pointed out in this connection that Taft (1954) found that, in delayed recall, the Negro subjects recalled best the items favourable to the Negroes whereas the Whites recalled best the items unfavourable to the Negroes.

Experiment II

Failure in Experiment I to provide conditions of least emotional involvement for Ss, presumably due to presentation of the report on Lampangi in the same ego-involved context of presentation of the report on Bengali, led to the second experiment. Experiment II was performed to test the validity of the above explanation and to see the relation of affective materials to the intensity of their affect under conditions of least emotional involvement.

Method

Subjects

Sixty volunteer Ss were drawn from an undergraduate college and were randomly assigned to four groups (G₁, G₂, G₃ and G₄) of fifteen Ss each.

Materials, Design and Procedure

The materials used and the design and procedure followed in the present experiment were exactly similar to those of Experiment I. There was, however, one exception; that is, instead of attributing the adjectives to Bengali, the experimenter in this case ascribed them to another fictitious tribe from Africa, 'Kasanda'. Briefly, during the initial rating stage Ss belonging to G₁ and G₃ rated adjectives from Set 1 and Ss in G₂ and G₄ rated adjectives from Set 2 on four different scales. During the report reading stage, G₁, G₃, G₂, G₄ read reports R₂, R₄, R₁ and R₃ respectively. Each of these reports was similar to the corresponding report used in Experiment I except that the word 'Bengali' was
substituted by 'Kasanda, an African tribe'. After reading the report, Ss in each group were asked to rate the adjectives describing Kasanda and Lampani on four evaluative scales. Soon after the final rating, Ss were allowed five minutes for free recall of adjectives which they read in the reports on Lampani and Kasanda. This time no delayed recall was taken, since in Experiment I similar patterns of recall were observed in both delayed and immediate recall.

Results and Discussion

The results were analysed in the same manner as in Experiment I. The averages of mean intensity ratings of twenty pleasant and twenty unpleasant adjectives calculated separately from the initial ratings of thirty Ss on four scales, and the averages of the mean intensity ratings of twenty pleasant and twenty unpleasant adjectives when ascribed to Kasanda and Lampani are presented in table 5. It may be noted that during the final rating stage, the mean intensity rating of each adjective was based on the ratings of fifteen Ss on four scales. Insignificant t values presented in table 5 reveal that pleasant and unpleasant adjectives do not differ with respect to their intensities of affect either during initial rating or during final rating stages. Comparison of these results with those of Experiment I indicates that a neutral non-ego-involved situation was presented to Ss during the final rating stage by substituting Kasanda for Bengali. Both Kasanda and Lampani were fictitious communities and were presented in a non-ego-involved context. Hence, the perceived intensities of affect of pleasant and unpleasant adjectives do not differ significantly when attributed to either of the two communities. Thus, hypothesis 2 finds support from these results.

Analysis of variance of recall scores revealed that neither the difference in the recall of pleasant and unpleasant adjectives nor the difference in the recall of adjectives attributed to Kasanda and Lampani reached significance level (F = 1.633 & F = 1.092 respectively with df = 1/236 in each case). The interaction effect was also insignificant (F/1). This supports the contention that the recall of pleasant and unpleasant adjectives will not differ when attributed to a fictitious
community in a non-ego-involved context. The means of the number of adjectives recalled in each of the cells of 2 x 2 classification are presented in table 6. In Experiment I, Lampani was seen as a contrasting group to Bengali. Therefore, unpleasant adjectives were rated to be more intense and were recalled more than pleasant ones when ascribed to Lampani. But in the present experiment neither intensity of affect nor recall of pleasant and unpleasant adjectives differed when attributed to either Lampani or Kasanda. These results in combination with the results presented in table 3 support hypothesis 4 formulated earlier.

Relation of retention of affective materials to the intensity of their affect under conditions of least emotional involvement could be observed by comparing the intensity of affect of recalled and non-recalled items. Such comparisons of mean intensities presented in table 7 show quite consistently that the means of recalled items are higher than the means of non-recalled items. However, the differences are insignificant. These insignificant differences presumably result from relatively fewer number of recalled items as compared to non-recalled items. In a non-ego-involved context, such as in Experiment II, the ratio of recalled items to non-recalled items is much less than what was observed in Experiment I under ego-involved condition (compare tables 4 & 7). Thus with a reduction in the relative proportion of recalled items to non-recalled items, the relation of intensity of affect to recall observed in Experiment I is less apparent here. Considering all the recall scores for sixty Ss it is however noticed that a total of 326 recalls was obtained as against 874 non-recalled items. The mean intensities of affect for all recalled and all non-recalled items were calculated by taking polarities of rating disregarding algebraic signs (mean = 2.958, SD = 0.929; and mean = 2.820, SD = 0.978 respectively). The difference is significant beyond .05 level (t = 2.23). These results support the hypothesis that, irrespective of the context, mean intensities of affect of recalled items will be higher than those of items not recalled. However, such a tendency would be more clearly shown in an ego-involved situation facilitating retention (as in the case of pleasant adjectives when attributed to Bengali and unpleasant adjectives
affective material is possible in terms of intensity hypothesis than in terms of either the 'frame of reference' or the functional (Taft, 1954) approach. The present experiment is a further test of the generality of the intensity hypothesis.

In his study using interruption technique, Rosenzweig (1943) found that under conditions of low stress subjects recalled more of interrupted than completed tasks. These results were similar to what is commonly known as Zeigarnik effect (Alper, 1952). Under high stress, however, subjects recalled more of completed than interrupted tasks, confirming expectations based on Freudian repression hypothesis. Task- and ego-orienting instructions were used to produce respectively low and high stress conditions for his subjects. Rosenzweig explained these results by assuming that under task orientation, subjects were influenced by a need-persistive drive or a tendency to persist in a task till its completion. Such persistence in the task due to the completion tendency resulted in better recall of interrupted than completed tasks. On the other hand, under ego-orientation, the interrupted tasks were perceived as a threat to the ego. Hence, ego-defensive drive was operative resulting in poor recall of interrupted tasks as compared to completed ones. It is of interest to see how intensity hypothesis can account for these results.

An experiment similar to that of Rosenzweig (1943) has been designed with the assumption that incompletion of a task is always unpleasant and that completion of it is always pleasant for the subject, irrespective of whether the subject is task-oriented or ego-oriented. Empirical evidences from various sources (Handler, 1964) seem to support the above assumption. Moreover, it can always be tested by simply asking the subject to rate his experience with interrupted and completed tasks on a pleasant-unpleasant scale. The usual procedure in experiments using interruption task method is to present the subject with some problems. He is allowed some time to solve each of them. He is not aware when he is going to be interrupted. If the subject is at all involved in the experiment, irrespective of the

---
38Yamaguchi (1965) also reports an experimental study where, on the whole, completed tasks are perceived by the subjects as pleasant and the incompleted tasks as unpleasant.
task or ego orienting instructions, he is bound to experience a personal success with completion of a task and a personal failure with its interruption. Task and ego orientations only provide two levels (low and high) of emotional involvement for the subject.

However, in our experiment, the subjects are not actually interrupted while trying to solve a problem. He is asked to solve each of the problems within two minutes, and to report his solution when asked by the experimenter after this specified time limit. In case of half of the puzzles (i.e., ten) his solutions are reported as 'wrong' by the experimenter, and yet the correct solutions are never pointed out to the subject. Thus, in case of each of these 'unsolved' problems, a sense of incompleteness or failure on the part of the subject is induced. In case of the other ten puzzles, however, the subject's solutions are reported as 'right' by the experimenter, thereby inducing in him a sense of completion or success. Thus, the procedural technique used in our experiment is more accurately described as 'incompletion' technique rather than 'interruption'. It is expected that different levels of emotional involvement will have differential effects on perceived intensity of affects associated with one's successes and failures. Under low emotional involvement, unpleasantness due to incompletion is probably experienced more intensely than pleasantness due to completion because the individual is least defensive. Due to the greater intensity of affect associated with the lack of closure, the subjects tend to memorise the incompletely items to a greater extent as compared to the completed ones. That is, without caring much for the items already completed, they are intensely affected by the incompletely items which, consequently, persevere in their memory. Under high emotional involvement, on the other hand, the individual becomes highly defensive. Therefore, intensity of experience of failure associated with incompleteness is minimised and that of success associated with completion is magnified. In line with this reasoning the following hypotheses were formulated.

1. With low emotional involvement under task-orientation, unpleasantness of a task due to failure or incompletion will be perceived as more intense than pleasantness of a task due to success or completion.

2. With high emotional involvement under ego-orientation, unpleasantness of a task due to failure or incompletion will be perceived
than the absolute level of perceived unpleasant affect (disregarding algebraic sign) associated with unsolved puzzles (Mean = -1.760; SD = 0.733). This difference is also significant at .001 level (t = 6.83). Even when broken down into smaller groups (i.e. Recall and Recognition), similar significant differences are obtained in both the groups (See table 8). These results support hypotheses 1 and 2.

A three-way analysis of variance was used to analyze the retention scores of the Ss. The three different classification were (a) orientation (task versus ego orientation), (b) rated affect (pleasant versus unpleasant affect of puzzles), and (c) retention test (recall versus recognition). Only one of three main effects was significant, indicating that under task orientation retention was better than under ego orientation (F = 11.587; df = 1/112; p < .01). The total and the mean number of puzzles retained in each of the TO and EO groups are presented in table 9.

The reason for poor retention in EO group as compared to that of TO group can be best explained in terms of the degree of motivational stress experienced by each of the groups. EO group faced a more stressful situation, which in turn adversely affected their incidental learning of the puzzles as compared to that of TO group.

It should be noted that purely in terms of motivational involvement the incidental learning as well as total recall of EO group would be expected to be higher as compared to that of TO group. And yet, along with greater motivational involvement, the element of stress or anxiety introduced is also greater in EO setting. This additional factor may be presumed to have a counteracting influence on the incidental learning of EO group. Thus, the negative influence of this factor not only eliminates the positive effect of greater motivational involvement on the recall of EO group but also reduces their recall even below the level of performance of TO group. It may be relevant to quote Alper (1946) again in this connection: "It seems reasonable to hypothesize the principle that ego-oriented traces might have both immediate and recall superiority when ego-orientation is unaccompanied by anxiety, or when the threat to self-esteem is not intense enough to disrupt performance. . . . An experimental technique which assured ego-involvement without the arousal of anxiety rather than merely ego-orientation, should result in statistically significant differences between both task-oriented learning and ego-oriented learning, and task-oriented retention and ego-oriented retention." (pp.246-247)

39
affect of retained and non-retained items irrespective of the nature of the affect and whether the Ss are in TO or EO group. Table 10 presents the comparisons between the mean intensities of perceived affect of retained and of non-retained items. Such comparisons are separately shown for recall and recognition, and for pleasant and unpleasant puzzles in each group. For each comparison the mean intensity of affect of retained items is higher than that of non-retained items. Except in one case, the observed differences are statistically significant. Thus, hypothesis 4 finds support from these results.

**General Conclusion**

The experimental findings, in general, seem to provide empirical support to the contention that differential learning and forgetting of affective material can be explained in terms of perceived intensity of affect of the material. The previous study by Kanungo and Das (1960) and the experiments I & II have used essentially similar techniques of ego involvement, and have arrived at essentially similar results with respect to recall of affective material. But these two experiments have gone a step further in trying to determine whether the perceived intensity of affect of the materials acts as the immediate antecedent condition of selective retention. The intensity hypothesis has been confirmed by the results.

The results of the experiment III, where incompletion technique has been used, also seem to strongly support the notion that intensity of an affective experience as perceived by an individual (or a group of individuals) determines its retention. Irrespective of the quality of affect, an experience that has relatively more intense affect than another seems to create greater impression on the individual and hence is retained better.

All these studies strongly suggest that any variable that can influence or bring about changes in the perceived intensities of affect associated with an individual's experiences is also the variable that indirectly influences the selective retention of these experiences. It
Similarly, the intensity of pleasantness caused due to the rejection of the other will be equal to the degree of its undesirability. Since the intensity of undesirability of the chosen alternative is less than the intensity of undesirability of the rejected alternative, the intensity of unpleasantness associated with the acceptance of the former will be perceived as less as compared to the intensity of pleasantness associated with the rejection of the latter. Here, too, in simple hedonic terms, his pleasantness will be maximised.

Now, in consistency with Festinger's theoretical model the following basic principles may be postulated regarding any situation involving cognitive dissonance.

1. The intensity of pleasantness caused due to fulfilment of a desire is directly proportional to the intensity of the desire; similarly, the intensity of unpleasantness associated with the frustration of a desire is directly proportional to the intensity of the desire.

2. In case of a compulsive choice situation where one of the two alternatives has to be chosen, the magnitude of unpleasantness (or dissonance) caused due to this conflict is directly proportional (a) to the intensity of desirability of each of the alternatives, and inversely, (b) to the difference between these two intensities.

3. When the two alternatives are perceived as equally desirable by an individual, it results in a perfect and irresolvable conflict situation, and the individual fails to make a decision. Thus, both the alternatives remain unfulfilled and the total intensity of unpleasantness caused is the sum total of the intensity of unpleasantness caused due to non-fulfilment of each of the alternatives.

4. In a situation where the two alternatives are perceived by an individual as of unequal desirability, the more intense desire may be considered as the primary motive and the other as secondary. The individual will necessarily seek the fulfilment of the primary motive at the

---

47 This factor of intensity of desirability has been identified by Festinger (1963) as "the importance or value of the elements" (p.18).
cost of the secondary to ensure maximal pleasantness on his part. Moreover, after having made the final choice, i.e., having taken the more desirable course of action, the individual tends to enhance the degree of importance of the chosen alternative and reduce that of the rejected one in order to increase the overall magnitude of resultant pleasantness.

5. As the difference between the intensities of the respective desirabilities of the two alternatives increases, the degree of resistance of the secondary motive to rejection in favour of the primary one decreases; conversely, as this difference decreases, the degree of its resistance to rejection increases. Actually, the relative intensity of the secondary motive as compared to that of the primary one is an important factor that determines the degree of resistance of the secondary motive to rejection in favour of the primary motive. And the degree of this resistance is one of the major determinants of the degree of dissonance associated with a conflict, whether in pre-decision or in post-decision situation. The other determinant, as suggested earlier, is the respective intensities of the two conflicting desires themselves.

6. In post-decision situation, the magnitude of maximal pleasantness caused due to the acceptance of the primary motive is further enhanced by increasing the gap between the desirability of the chosen alternative and that of the rejected alternative. This is done mainly through the defense mechanism of rationalisation.

7. In a situation where a factual information (or authoritative opinion of some other person) is in opposition to one's own belief,
adjectives have been used do not have any motivational relevance for them, their perception is not at all affected by any contextual influences. As pointed out earlier, the presence of cognitive dissonance necessarily presupposes the condition of motivational involvement. In absence of such a condition, no dissonance is produced and, consequently, the subjects do not have to take recourse to any defense mechanism for the reduction of dissonance. Intensities of P and U affects implied by and associated with the respective meanings of favourable and unfavourable adjectives as such are perceived by the subjects in an emotionally neutral context. Thus, the perceived intensities of the P & U adjectives remain as they were. No perceptual adjustment with respect to their respective intensities is initiated by the subjects and the affective intensities do not undergo any change whatsoever.

Moreover, since P and U adjectives are perceived by the subjects as of equal intensity, they recalled them equally well. Irrespective of the quality of feeling tone, more intensely feeling toned adjectives have been recalled better as compared to those with less affective intensity.

In Experiment III, the same basic principles of the theory of cognitive dissonance as restated already can account for the pattern of affective intensity as perceived by the subjects with respect to P and U items in EO context. In case of TO context, however, the principles fail to provide a fully satisfactory explanation for the differential pattern of affective intensity. It may be pointed out that TO context refers to a situation of low motivational stress or involvement as opposed to the high motivational stress involved in EO context. Of course, TO context is not quite comparable to the neutral context of Experiment II, since in the former, due to the introduction of incompletion technique, 'closure' desire operates as a very potent and significant motivational force. But to the extent there is no ego-stress on the part of the subjects, TO context refers to a relatively neutral context of low motivational stress as compared to EO context.

It is found that, in TO context, the unpleasantness caused due to incompletion and consequent lack of 'closure' is perceived as more intense than the pleasantness produced by completion or 'closure'. It
should be noted that greater intensity of U experiences than that of P experiences, as perceived by the subjects in TO context, merely refers to an empirical phenomenon. At this stage, it is difficult to offer a definite answer to the question why they are perceived to be so. And yet, assuming the phenomenon as it is, it may be argued that due to the absence of any ego-stress, the subjects in TO contexts do not have to take recourse to any defense mechanism in order to reduce the dissonance (or unpleasantness) evoked by incompleteness. Another alternative proposition would be that incompleteness in TO context specifically refers to one of those situations where despite people's attempt to reduce dissonance, they fail to achieve the reduction of dissonance. The third theoretically possible alternative might be that the difference between the respective intensities of P and U experiences, as perceived by the subjects initially, is actually reduced to some extent by the subjects by increasing the intensity of P experiences and decreasing the intensity of U experiences as usual. And yet, though somewhat reduced, the magnitude of the difference is not totally obliterated. Even after the reduction of the difference between the respective intensities of P and U experiences, the initial superiority of the former over the latter still persists and is reflected in the subjects' immediate recall performance.

In any case, however, incompleteness in a TO context may be assumed to involve some unknown factors which make the situation somewhat complex and, thus, the results obtained in the context are rather difficult to interpret in terms of the general theoretical model discussed in this chapter. Unless the effects of the interactions between these factors are properly determined, the relevance of the basic explanatory principles of the theory of cognitive dissonance to the experimental findings in this specific context can hardly be specified.

Another important point needs to be emphasized in connection with the results obtained in Experiment III. It may be recalled that Alper (1948) proposed different personality types as an important variable in terms of which four different patterns of selective recall of P and U items, both under TO and EO contexts, would be determined. Our findings in Experiment III, however, do not corroborate this viewpoint. Alper (1948)
suggests that in a sample of S's, unselected for personality factors, these various patterns of personality structures are likely to be represented. Group data for selective recall, therefore, will not necessarily yield significant differences in the direction of recall" (pp.129-130).

Although, in selecting our sample the personality factors were not taken into consideration and no control was attempted in the sample with respect to this variable, the group data for selective recall has yielded significant differences in the direction of recall. The pattern and direction of selective recall under two difference contexts are found to be similar to those labeled by Alper as "the Strong Ego Pattern" (p.130).

There may be two alternative explanations to account for the results obtained. First, the influences of personality structures are not as strong and significant as proposed by Alper and, thus, their differential effects are overshadowed by the more effective influences of two different levels of motivational stress or involvement. And secondly, it may be postulated that among all the four ego patterns suggested by Alper to specify the differential influences of four major personality types on selective recall, Strong Ego pattern is the most common. The other three patterns may be assumed to be rather rare. Thus, a sample of subjects, unselected for personality factors, would be expected to be predominantly composed of strong egos. Consequently, the Strong Ego pattern of recall would be reflected in the results.

Before concluding, it would be pertinent to offer a reply to the advocates of the Freudian concept of repression as well as of other qualitative standpoints who argue against the quantitative approach toward the problem of functional relationship between affectivity and retention. In terms of numerous clinical as well as other empirical evidence of 'repression' of intensely unpleasant experiences, they have challenged the validity of the proposition that affective intensity is the determinant of retention. But what has apparently been overlooked by most of them is the distinction between recall and retention. Although in the absence of any other valid measure of retention, recall is taken to be the indicator of retention, the absence of retention can not necessarily be inferred from non-recall. In other words, although recall
necessarily presupposes retention, non-recall does not necessarily  
presuppose non-retention. At least in this particular case, the  
recall and retention can be clearly discriminated. The fact that the  
clinical psychologists have come to know about these 'repressed'  
emotional experiences, that these 'forgotten' experiences have been  
found, on many occasions, to cause much imbalance in the personality  
structures as well as behaviours of the individuals suffering from  
mental disorders, is in itself a sufficiently conclusive evidence to  
prove that these experiences, though not recalled, are very much re-
tained by them.

If retention is conceived in terms of some memory traces or some  
forms of 'imprint' or 'impression' in the cortex, it can readily be  
argued that these experiences have left rather deep impression in their  
memory mechanism. Though not recalled, the experiences are recorded  
well enough to be manifested indirectly through their personality as well  
as behavioural disorders. Now, it would seem only reasonable that  
recall should not be taken here as a criterion of retention. If an  
individual, some way or other, puts a defensive barrier or sets up an  
artificial censor so as to block the threshold of recall, however  
strong or deep may be the 'imprint' of an unpleasant experience in his  
memory mechanism, it would not be directly recalled by him. It would,  
however, be indirectly reflected in his behaviour.

Actually, in the final analysis, 'repression' may be conceived  
as an artificially imposed barrier which, though apparently makes an  
individual 'forget' an intensely unpleasant experience, does not wipe  
out the retention traces. On the contrary, these 'repressed' and  
apparently 'forgotten' experiences act as very strong forces within  
the individual affecting his personality as well as behaviour in various  
ways.

Thus, we see that the instances of repression of unpleasant  
experiences do not necessarily confirm the proposition that pleasant  
experiences are retained better than unpleasant experiences; nor do they  
satisfactorily refute the intensity hypothesis.

Finally, it is admitted by the present author that the results
of the experiments reported in this study do not prove the general validity of the intensity hypothesis to explain the functional relationship between affectivity and retention. The experiments merely refer to certain experimental contexts where some of the direct implications of the intensity hypothesis have been verified. In order to confirm the general validity of the hypothesis, all the factors related to this particular theoretical area of enquiry as well as all the relevant variables have to be taken into account from a comprehensive empirical standpoint. Only after all the relevant questions as applicable to the relationship between the independent variable (i.e. affectivity) and the dependent variable (i.e. retention) have been satisfactorily answered in consistency with the intensity hypothesis, its theoretical validity can be generalised.

And yet, the results obtained in these experiments certainly provide us with a lead in the positive direction which, if followed up for further exploration, might result in the general confirmation of the hypothesis that affective intensity, irrespective of affective quality, is the determinant of retention.

Thus, the present study makes a modest contribution surely to our empirical knowledge about the specific problem, possibly to our understanding of certain explanatory principles related to the problem, and perhaps to our conceptualisation of a comprehensive theoretical model with respect to an area of enquiry of basic psychological significance.