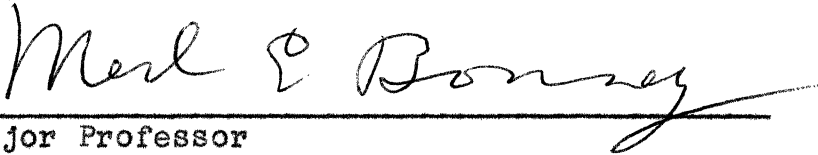



VALENCE OF STIMULUS MATERIAL AS A VARIABLE
IN INCIDENTAL LEARNING

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VALENCE OF STIMULUS MATERIAL AS A VARIABLE
IN INCIDENTAL LEARNING

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CHAPTER I

INCIDENTAL LEARNING

Whether motivation is necessary for learning is a complicated and elusive question. One aspect of this dilemma is the phenomenon of incidental learning. McGeoch has defined incidental learning as "...learning which apparently takes place without a specific motive or a specific formal instruction and set to learn the specific activity or material in question" (7, p. 299). That these conditions have ever been met is questionable; however, many experimenters have investigated the phenomenon.

Illustrative Experiments

Historically the superiority of intentional over incidental learning has been demonstrated. In a study by Myer (8) in 1913, subjects were instructed to count zeros distributed among other colored letters printed on colored paper. They were asked to recall letters other than zeros. Little material other than that which they had been instructed to learn was recalled. It was assumed, therefore, that an intention to learn was an important variable influencing the amount learned.

Shellow (17) also conducted early studies where perception of material was assured but no formal instruction to learn was given. In one experiment the subjects were instructed to learn the names of magazines by looking at their covers. They were then asked questions concerned with various details of the covers. In another experiment Shellow had subjects guess the area of colored forms and then asked for recall of various aspects of the material. In both instances a degree of incidental learning was demonstrated; however, no explicit intent to learn the given material was purposely introduced.

Jenkins (5) has attempted to answer the question, does incidental learning occur without a set to learn? He had subjects, who thought they were acting as experimenters only, read a list of twenty syllables from a memory drum to another group of subjects instructed to memorize the syllables. After the memorizers had made one successful recitation, both the experimenters and memorizers were instructed to return twenty-four hours later to continue the experiment. On their return both were asked to recall the syllables. Although the memorizers were superior to the experimenters in recall, the experimenters did recall a number of the syllables. The important aspect of the experiment, however, was the individual

reports of the subjects. Ten of the twenty-four experimenters reported self-instructed sets to learn the material. Only eight stated they made no attempt to learn. There were also other indications that the absence of formally instructed sets do not rule out the possibility of other sets which may influence incidental learning. Such things as difficulty of pronunciation, position of syllables on the list, and other factors were cited. McGeoch (7) has concluded from Jenkins' study that learning which occurs without formal instructions can be explained as learning under the influence of other sets. As long as such sets exist, it cannot be concluded that they are not responsible for incidental learning when it occurs. Shellow (17) has stated that intentional and incidental learning are alike in that fixation depends on responses of the subjects. The subjects are set or directed toward certain aspects of the material in accordance with habitual interests, meanings, or self-instructed sets. It is for reasons such as these that McGeoch has included the word, "apparently," in his definition of incidental learning.

The question of set in incidental learning has been investigated further. Postman and Senders (13) believe that an understanding of incidental learning hinges on an understanding of set. Also they feel that the various

demonstrations of incidental learning share certain common elements. There is a preparedness and a readiness to respond selectively. This directs the functioning and determination of associations. In the experimental situation a subject has a general orientation toward active response. In an attempt to investigate the generality of set, Postman and Senders varied instructions while holding materials and recognition tests constant. The material consisted of selections from short stories. Five sets of instructions were used. One group was instructed to read for the purpose of timing their reading speeds, another was told they would be tested for comprehension. A third group was given the same directions as the second group; however, they were told they would be tested for details for sequence of events. The other three groups were told they would be tested for details of content, details of wording, and details of physical appearance respectively. All subjects were tested over all aspects of the instructions. The results revealed that scores varied as a function of different instructions, question-categories, and interaction between questions and instructions. Where there were no instructions, only general comprehension was attained; however, when the instructions covered details and sequences, the learning was highly specific. They felt that

if incidental learning occurs without explicit or covert sets to learn then it should occur uniformly. Their results did not support this assumption. Learning outside of explicit instructions varied systematically with the instructions. They suggested that a distinction be drawn between explicit and covert instructions and therefore avoid the distinction between intentional and unintentional learning. It was further suggested that covert set to learn may be the result of earlier established general sets to understand and structure environmental stimuli.

If incidental learning is the result of self-instructed sets, then according to Bahrick (1), incidental learning will occur only when subject-induced sets dominate experimenter-induced sets. To test this he divided subjects into two groups and instructed them to learn the names of a sequence of colored geometric forms. In the test trials they were asked to name the colors. One group was given a money incentive and the other was instructed not to try hard. The high incentive group was found to be superior in intentional learning but inferior in incidental learning; therefore, increased goal demands decreased incidental learning. In a study by Kansler, Trapp, and Brewer (6), Bahrick's findings were re-evaluated using an emotionally based drive, anxiety.

According to these investigators anxiety represents a generalized drive which may facilitate or interfere by eliciting irrelevant task variables. The study was divided into two experiments. In one, anxiety was introduced by the experimenter, while in the other anxiety was measured by the Taylor Manifest Anxiety Scale. The learning task consisted of a series of colored geometric forms of which only the forms were intentionally learned. The results revealed that in both experiments the high emotional drive groups were superior on intentional learning when compared to the low drive groups; however, no significant differences existed between the groups with respect to incidental learning. It was concluded that increased set to a goal task does not work to the detriment of set toward irrelevant learning under high emotional drive. They concluded that emotionally based drives are more situationally oriented and less confined to specific tasks. In other words increased drive level is expended on all aspects of the learning situation.

A new variable which had not received attention in previous experiments, where the superiority of intentional learning over incidental was found, has been investigated by Saltzman (15). He believed that the superiority of intentional learning in other experiments had been due to the fact

that the intentional learners were not required to perform an orienting task. He divided subjects into two groups and had them sort numbered cards into four piles. After three trials the intentional group was given a recognition test for the numbers. They were then given three more trials and instructed to learn. The incidental group was given the recognition test after six trials. The results revealed that, when both groups performed the orienting task, the intentional group was not significantly different from the incidental. It was concluded that, when the orienting task is allowed to interfere with performance of the intentional learners, they do not do better than incidental learners. Subsequent experiments have explored this problem further (9). In one the rate of presentation was varied when intentional learners were given an orienting task and when they were not. At the slowest rate of presentation both intentional groups were superior to the incidental groups. At a three-second rate the intentional group which had not performed an orienting task was superior to the incidental. When the presentation rate was two seconds, neither intentional group was superior to the incidental groups. Another experiment (10) investigated differences between intentional and incidental learners as a function of the nature of the orienting task when the stimulus

material was varied. The orienting tasks were giving meaningful associations to stimulus items and matching stimulus items with geometric figures. The learning materials were nonsense syllables and adjectives. It was found that with nonsense syllables the differences between incidental and intentional learning is a function of the nature of the orienting task. When the task was favorable to learning associations, there was a big difference favoring the intentional learners. With unfavorable tasks there was no difference between the two groups. With meaningful material, differences between incidental and intentional learning were independent of the nature of the orienting tasks. Deese (3) has concluded from such findings that if intentional learning is superior to incidental learning, it is only under certain conditions. Some orienting tasks interfere as well as facilitate learning just as does intent to learn.

It is readily apparent from a review of the literature on incidental learning that the possibility of covert or self instructed sets to learn play an important part in what is incidentally learned. Whether motivation is necessary for incidental learning to occur is still controversial. Experiments dealing with manipulation of orienting tasks show that differences between intentional and incidental learning just

be highly qualified (3). Others have shown that differences between these two types of learning are influenced by the nature of the tests of recall used to measure them (12). A major difficulty in all incidentally learning experiments is the assumption that the subjects have gone through the appropriate motions of learning when no instructions or reinforcement is given to insure such performance. Tolman (20) has stated that motivation is not necessary for learning to occur; however, it is necessary for the increments in performance from which learning is usually inferred. Brown (2) has attempted to explain incidental learning in terms of a need-reduction theory such as Hull's. He states that, when a set to read or observe is aroused by instructions, a set to learn will be evoked. The rationale for this is that in past experiences there has usually been a set to learn and that this set has been rewarded. Incidental learning is explained in terms of stimulus generalization and secondary reinforcement. A situation which is similar to a situation in which learning has occurred in the past will tend to produce a set to learn by way of stimulus generalization. This set is maintained through reward associated with stimuli which have been associated with reward in the past. Brown stated that meaningfulness of material and proprioceptive stimuli arising

from overt pronunciation may be examples of such secondary reinforcement. Another source of motivation in incidental learning has been suggested by Postman and Senders (13). They feel that incidental learning may be the result of covert sets resulting from earlier sets to understand and structure environmental stimuli.

According to Tolman's sign-gestalt theory, learning is the result of a formation of hypotheses independent of motivational and goal events (18). It is these sign-gestalts or expectancies which determine behavior. Certain stimuli called signs are responded to in a certain manner and are followed by stimulus events which become significant. The strength of these sign-significant cognitions depends upon the frequency and recency with which they have been experienced. Tolman (21) has stated that when an organism is repeatedly presented with a particular situation in which he moves or reacts, a set is acquired about what to expect when a stimulus field is presented. It is these field expectancies which account for latent learning when, "and if," it occurs (21, p. 145).

Purpose of Present Study

It was not the purpose of the present study to examine the superiority of intentional over incidental learning if

such is really the case. This study was concerned with examining the differential effect of the type of material to be incidentally learned and its relation to individually initiated sets to learn. More specifically, the purpose was to determine the function of valence of the stimulus material upon what is incidentally learned. The concept of valence assumes a movement toward or away from valenced objects or event. Irrelevant items having a positive valence should stand out from other material and be moved toward psychologically; therefore, they should be more readily incidentally learned.

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CHAPTER II

INCIDENTAL LEARNING AS A FUNCTION OF VALENCE

As Shellow (13) has pointed out, incidental learning may be due to sets directed toward certain material as a result of habitual interests, the meaningfulness of the material, or because of self-instructed sets. When an individual walks down a street or reads a magazine, some things are intentionally perceived and remembered. Other aspects stand out and are remembered because they fit readily into the individual's ego-structure. Of these latter aspects some are psychologically moved toward or away from. In other words there is an internalization or a repression of aspects of the stimulus field in accordance with the perceiver's personality. In Tolman's language expectancies occur and these determine the subject's behavior. At the same time the nature of the expectancies are dependent upon past experiences. Experiments have been conducted which show that the perceptual recognition of words is dependent upon the valence attributed to them (8). For example, words which are unpleasant or socially taboo require a longer exposure time for their recognition. Other investigators have postulated a mechanism of perceptual

defense, called subception, which determines what will be perceived (7). With respect to memory for pleasant and unpleasant events, Meltzer (9) found that college students typically remembered more pleasant events than unpleasant. Tait (15) and Tolman (16) have found that words which have a "pleasant" quality are learned more easily than "unpleasant" words. Also unpleasant words are learned more readily than those judged as indifferent. Tait (15) has found that colors judged as pleasant are more readily recalled. Ratliff (12) has found that when odors are paired with numbers those paired with unpleasant odors are better learned; however, when numbers are paired with pitch and color, those paired with pleasant pitch or color are most readily learned. In studies concerning the pleasantness and unpleasantness of words and their relation to incidental learning, Silverman and Cason (14) and Lanier (6) found a trend which favors the incidental learning of pleasant words over those which are unpleasant. Others (1, 17) have found more conclusive evidence to support this trend.

If it can be assumed that the valence of material to be incidentally learned is a significant variable, then valence should have a differential effect upon amount incidentally learned over and above any generalized set elicited by the

experimental situation or the formal instructions to learn. The specific hypothesis tested by the present study was that material which has been rated as positively valenced will be more readily learned incidentally than material with a negative or neutral valence.

Procedure

Valence was defined in terms of subjects' ratings of words selected from a standard dictionary. A list of two hundred words was selected and administered to seventy-seven students in introductory courses of Psychology at North Texas State University. The instructions were to circle those words which gave the subjects a good feeling or which they judged as pleasant as opposed to unpleasant. They were also instructed to draw a line through those words which they felt were unpleasant or repulsive. From the results eight words which were rated as "pleasant" 98 per cent of the time or more were selected. These words were sweet, honor, free, love, fine, good, enjoy, and soft. The negatively valenced words selected 98 per cent of the time or more were dirty, scum, sick, grave, rot, slob, vile, and hurt. Eight other words rated as pleasant 50 per cent of the time and unpleasant 50 per cent of the time were selected for the neutral group.

These words were drop, elope, deep, heat, test, boss, dry, and thin.

Twenty-four presentation cards, fourteen by twenty-four inches, were prepared. Uniform lettering on the cards was achieved by using block trace around letter forms. The words to be incidentally learned were always placed at the top of the cards. Eight familiar four- and five-letter words were selected at random for the intentional task. In summary there were three groups of cards of eight cards each. One group had the positively valenced words at the top, another had the negative words, and a third had the neutral words. The intentional words were constant for the three groups.

The subjects for the learning task were the same as those who had initially rated the words; however, a time period of approximately one month had passed since the rating. It was not possible to assign subjects randomly to the conditions; therefore, classes at the University were used. The instructions to the subjects were to memorize the words at the bottom of the cards. They were told that three repetitions of each word would be given and it was again emphasized that they were to memorize the words at the bottom of the cards. The instructions were the same for each group. The words were presented in serial order with a presentation interval of

three seconds. After the presentation the subjects were asked to write the words in a free-recall. When this was completed they were requested to turn their papers over and write any other words that they saw or thought they saw on the cards. The response criterion for both learning tasks was the number of words correctly recalled. The occurrence of errors in the incidental recall were also tabulated.

Results

An analysis of variance of the three groups with respect to intentional learning revealed no significant differences; therefore, it was assumed that the groups did not differ in learning ability. The means ranged from 7.23 to 7.50. The groups did differ significantly with respect to incidental learning. The negative valence group learned significantly more words than the neutral group. There were no significant differences between negative and positive groups or between positive and neutral groups. The means for the negative, positive and neutral groups were 2.37, 1.88, and 1.31 respectively. With respect to incorrect responses on the incidental task, the negative group made fewer errors compared to the other two groups. Of the seventy-six responses given by the negative group, only six were incorrect. This represents only

7.9 per cent of their responses. This compares to 22 per cent and 29 per cent incorrect responses for the positive and neutral groups respectively. In summary the negative group learned more than the other groups and was more certain of its responses. On the basis of these results the experimental hypothesis was rejected.

Discussion

According to the results, words which had been rated as negatively valenced were more readily incidentally learned than those which had a neutral valence. Because there were no significant differences between neutral and positive or positive and negative groups, the results were inconclusive with respect to the superiority of valenced words per se over the neutrally valenced. The direction of the means, however, indicate that with a larger number of subjects a superiority might be predicted.

Several explanations are possible with respect to the superiority of negatively valenced words. There may have been a higher association value between the words in the negatively valenced group; therefore, learning would have been facilitated (10). Another possibility may have been that the nature of the intentional material had a differential effect upon the various incidental conditions. For example, relationships of

similarity between the intentional and incidental learning are dependent upon the nature of the relationship (3). A third possibility could have been that different valences evoked different degrees of curiosity or attention for the incidental items. It is also possible that the subjects' ratings of the words were not true presentation of the given valences. A word may have been marked as negative in valence; however, in reality the words could have a positive or neutral valence for the subjects. It is a common observation that adolescents and young adults are sometimes attracted to that which is opposed to present cultural norms. A final possibility was that the presentation of the negative words at the top of the cards presented a threat to the subjects. This threat would evoke anxiety. By learning the words the subjects gained a measure of protection against this threat. That is, they had greater control over the situation and anxiety was reduced.

The above possibilities suggest several specific questions. Were the ratings of the words true presentations of valences or just exercises in picking out "good" and "bad" words? Were the differences in incidental recall due to the similarity between the intentional and incidental items? What effect would varying the valence of intentional as well as incidental items have upon what is learned? Does the

valence of the material to be incidentally learned affect the curiosity about the learning task? Will retention of incidentally learned material change with respect to valence of that material after a passage of time? In order that these questions might be tested, another experiment was conducted.

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CHAPTER III

INCIDENTAL LEARNING WHEN VALENCE AND SIMILARITY ARE VARIED

The fact that subjects may make ratings according to criteria other than that implied in the instructions is obvious. As was pointed out previously, the subjects' ratings in Experiment I may have been an exercise in picking out "good" and "bad" words. For example, the word, slob, can be readily picked out as a word with unpleasant connotations; however, it may in reality have a positive valence for a given group of subjects. One subject who participated in the first experiment made the statement that the positively valenced words were sickeningly sweet and childish. In order to ascertain whether this was the prevalent attitude, the participants would have to be subjected to further tests. The eight positive and the eight negative words were paired in such a way that every word of one group was paired with every word of the other. This allowed every word to be rated in a number of relationships. This new list was administered to twenty-four of the subjects who had participated in the first rating. They were instructed to circle that word in every pair which

they would most like to hear a close friend use in describing another individual. The results of this rating were essentially the same as the first. The words previously rated as positive were chosen 93 to 98 per cent of the time over the negative words. The range for the negative words was 1 to 12 per cent of the time that they were chosen over the positive words. Although it certainly cannot be assumed that all weaknesses of ratings were overcome, the results tended to add validity to the initial rating.

In an attempt to answer the other questions raised, another learning experiment was conducted. If it is assumed that incidental learning is the result of generality of set from the intentional task to the incidental task, then similarity between the tasks would tend to have a differential effect on the amount incidentally learned. Also if the material had a given valence, it is possible that this valence would generalize to contiguous items. The direction of generalization would be away from the material associated with the strongest set.

The subjects participating in Experiment II were ninety-two students enrolled in senior and graduate courses of psychology at North Texas State University. The material to be learned incidentally was the same as that used in the

previous experiment. Four groups and four experimental conditions were used. The variables manipulated were valences and similarity between intentional and incidental stimulus material. Sixteen new words extracted from the ratings (eight positive and eight negative) were used for the intentional task. A two by two factorial design was utilized. The words were paired on the presentation cards in such a fashion that there was a high and low similarity relationship for both positive and negative incidental tasks. The instructions to the subjects, presentation, and recall tests were the same as in Experiment I. Following the test of incidental learning, a series of questions were put to the subjects. These were: 1. Did you suspect that you would be required to learn the words at the tops of the cards? 2. Did you make any conscious attempt to learn the words at the top? 3. Did you use the words at the top as an aid in learning the words at the bottom? 4. Were you curious about the words at the top? After the subjects answered these questions, they returned to the class lecture for the day. Approximately sixty-five minutes later, the experimenter returned to the room and asked for another free recall for any words the subjects could remember.

The number of subjects in each experimental condition was unequal; therefore, to facilitate the use of the analysis of variance technique, subjects were randomly selected from the groups until four new groups of nineteen subjects each were formed. The means for these new groups were not essentially different from those prior to the selection. It was assumed that this equalization introduced no further violation of the randomness assumption than might have already existed, due to the fact that subjects were not randomly assigned initially to the experimental conditions.

Results

When the means for the intentional tasks on first recall were compared, no significant differences were present. These means were 6.9, 6.9, 7.4, and 6.8 for the conditions of high similarity when the valence was positive, high similarity when the valence was negative, low similarity when the valence was positive, and low similarity when the valence was negative respectively. Because there were no significant differences between the groups, it was assumed that the groups did not differ in learning ability. These results are presented in Table I.

TABLE I
 SUMMARY TABLE OF A TWO BY TWO FACTORIAL ANALYSIS OF
 VARIANCE FOR FIRST RECALL ON THE INTENTIONAL TASK

Source of Variation	ss	df	F
Valence	.4737	1	.3146*
Similarity	.2106	1	.1399*
Interaction	.8420	1	.5592*
Within cells	108.4211	72
Total	109.9474	75

*Not significant at the .05 level or better

With respect to incidental recall on the first test of retention, no significant differences between conditions of valence or conditions of similarity were found; however, there was a significant interaction. When the cell means were compared using the T-test, significant differences were found between conditions of valence when similarity was high and between conditions of high and low similarity when the valence was negative. These main effects, however, must be interpreted in terms of the significant interaction obtained in the first analysis. The results of this analysis are presented in Table II.

TABLE II

SUMMARY TABLE OF TWO BY TWO FACTORIAL ANALYSIS OF
VARIANCE OF FIRST RECALL FOR AN INCIDENTAL TASK

Source of Variation	ss	df	F
Valence	4.7500	1	2.4931
Similarity	3.8026	1	1.9961
Interaction	12.6374	1	6.6340*
Within cells	137.1600	72
Total	158.3500	75

*Significant at better than the .05 level

The results of the second recall, after sixty-five minutes, revealed a different pattern. As was the case in the first recall, the intentional groups did not differ significantly in learning after the passage of time. Loss in number of words recalled occurred uniformly for all groups. The results with respect to incidental learning on second recall were different from those for the first. In this analysis there was a significant difference between positive and negative valence, regardless of conditions of similarity which existed. This difference favored the positive groups. There were no significant differences with respect to similarity or interaction. These results are presented in Table III.

TABLE III

SUMMARY OF A TWO BY TWO FACTORIAL ANALYSIS OF VARIANCE
OF INCIDENTAL LEARNING AFTER A LAPSE OF TIME

Source of Variation	ss	df	F
Valence	11.0660	1	6.508*
Similarity	.6448	1	.379
Interaction	4.7497	1	2.793
Within Cells	122.4211	72
Total	138.8816	75

*Significant at better than the .05 level

The yes-no responses to the four questions asked of the subjects following the first recall were totaled and percentages found. With respect to the first question (Did you suspect that you would be required to learn the words at the top?) 46 per cent responded yes. The second question (Did you consciously attempt to learn the words?) was answered 17 per cent yes. Only 20 per cent of the subjects responded yes to the third question (Did you use the words at the top as an aid in learning the words at the bottom?). The fourth question (Were you curious about the words at the top?) was answered yes 72 per cent of the time.

A breakdown of these responses according to the individual groups is presented in Table IV. The four groups were

essentially the same with only a few exceptions. The low similarity, positive valence group tended to be less curious about the words at the top of the cards than was the case with the other three groups. The low similarity, negative valence group tended not to suspect that they would be required to learn the words at the top. Although a small percentage of subjects in every group consciously attempted to learn the words at the top and attempted to use these words as an aid in learning the words at the bottom, a significant number did not.

TABLE IV

PER CENT RESPONSES TO QUESTION CONCERNING SET, CONSCIOUS LEARNING, USE, AND CURIOSITY

Groups	Questions							
	1		2		3		4	
	yes	no	yes	no	yes	no	yes	no
High Similarity Positive	53	47	16	84	26	74	90	10
High Similarity Negative	52	48	24	76	24	76	76	24
Low Similarity Positive	45	55	10	90	13	87	58	42
Low Similarity Negative	33	67	24	76	19	81	71	29

Discussion

The results of the first recall of incidental learning must be interpreted in terms of the significant interaction obtained. When similarity between intentional and incidental tasks was high, positively valenced words were more readily incidentally learned. When similarity was low, negatively valenced words were more readily learned. These results can most economically be explained when the valence of the intentional task is considered. There was more incidental learning associated with those groups with a positively valenced intentional task. This would account for the significant interaction. The results tend to indicate, therefore, that the valence of the incidental task is of secondary importance to the valence of the intentional task. There was apparently a generalization of valence from the intentional task which influenced the valence of the incidental task. Another explanation could be that the valence of the material facilitates or interferes with the generalization of set to learn. For example, learning of a negative intentional task may be more specific than learning of a positive task; therefore, irrelevant material associated with a negative task would have less probability of being incidentally learned.

Although the results from the first recall were not conclusive as to whether set or valence generalized, the results of the second recall may have provided some answers. After a lapse of time the significant interaction dropped out and the only significant difference was between groups with respect to valence. The positive valence groups, irregardless of the intentional task, had the greatest recall of incidental material. There was apparently something more than a simple generalization of set influencing these results. According to a repression hypothesis, the positively valenced words would be more easily retained than the negative words (5). The perceptual studies discussed previously have pointed out the possibility of selective perceptions which determine what will be learned and retained (3, 4). Assuming that it was valence which generalized, the results of both recalls can be explained. At immediate recall, the material contiguous with positively valenced intentional material is most readily learned. An incidental item such as a negatively valenced word would become more positively valenced when paired with a positive intentional task. After the passage of time, these associations would break down and repression would determine that which was recalled.

With respect to the reports of the subjects, there was less conscious intent to learn the incidental tasks than has been found in other studies (2). There was curiosity and a degree of expectancy that the words would be used in some way. A number of subjects reported that they tried to discover the relationships, if any, between the intentional and the incidental task. Others were suspicious that the words at the top were being used to interfere with the learning of the words at the bottom of the cards. Such responses suggest a variety of motives and sets, evoked by the experimental situation, which would possibly have influenced the results; however, the groups did not differ significantly in their response patterns to the various questions. Also the direction of the differences between groups did not reveal a trend or consistent pattern which could be used to explain the differences in incidental learning for the groups.

Conclusions

The first experiment demonstrated that valenced material was more easily incidentally learned than material with a neutral valence; however, these results could be more economically explained in terms of the higher association value between items in the valenced groups. Because of the more

powerful design of Experiment II and the replication intrinsic in such a design, the superiority of negative valenced words, as was found in Experiment I, is questionable. It would appear that valence is a significant variable and that positively valenced words are more readily incidentally learned. This is particularly true after the passage of time. The data on immediate recall in Experiment II pointed out the importance of the valence of the intentional task for what is incidentally learned. The implication from this is that an unpleasant task, irrelevant to an intentional task, will be more readily learned if the intentional task is positively valenced. An irrelevant positive task will not be readily learned if the intentional task is negatively valenced. The reports of the subjects indicated that self-instructed set was not a critical variable in this experiment. Curiosity and a need to understand and structure environmental stimuli was found; however, their influence upon incidental learning could not be determined from the results of this experiment.

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