CHAPTER I

INTRODUCTION

An enigmatic phenomenon which has always been a problem of serious concern to the psychologists is the discrepancy between performance and potential. In recent years, the integration of personality and learning theories has led to the recognition of the fact that intelligence, though an extremely important factor, is not the only determinant of performance; and that personality and motivational variables are as important correlates of learning and achievement as intelligence level of the learner. Besides these organismic variables, increasing attention is being focussed on the influence of such variables as nature of the task, and social aspects of the learning situation on learning and achievement.

The first component of the learning situation is the learner as a unique individual. He is the product of a particular heredity and environment. He has had a multitude of experiences in the past; he has his own needs, desires, abilities, anxieties, and ambitions. He brings to the learning situation all that has happened to him during his past life, and he perceives that situation in the light of his needs, anxieties, abilities, and past experiences. For instance, when a teacher kindly remarks, "I know you will do well", some children may perceive
this as threatening, perhaps unconsciously generalizing from earlier traumatic experiences when an authority figure constantly evaluated their performance which they resented; while others may be motivated to do well and thus may improve their performance. The child, who perceives threat in a greater variety of situations is said to be a high anxious child. Anxiety is a pattern of behavior characterized by restlessness, irritability, discomfort, and impending doom. It is a universal experience of human beings and as a factor in neuroses has long been recognized as a key psychological phenomenon. But in the last two decades there has been a concentrated attack upon it as a personality variable in normal individuals.

Almost everyone of us realizes, on the basis of one's own experience as well as observation of others, that anxiety is a pervasive and profound phenomenon in the modern society. The lives of people are filled with situations that can contribute to anxiety. Competition at every step of life, frustrations, conflicts, and uncertainty are the major sources of anxiety in the modern man. Coleman (1964), calling twentieth century, the age of anxiety, comments, "No longer are civilized men—at least the fortunate majority—the victims of famines and epidemics. The black plague has been replaced by a host of subtler psychological plagues—worry, value conflicts, loneliness,
disillusionment, and doubts as to whether one can weave a successful course through the complex maze of the freeways and blind alleys that make up modern existence" (p. 1). Willoughby (1935) also asserts that "Anxiety is the most prominent mental characteristic of Occidental civilization" (p. 498).

In India, we are presently passing through a crucial period of social change. Old social order is being challenged by the modern ways of living. The impact of modernization on people is that they have been confronted by uncertainty and confusion with regard to values and acceptable standards of behavior. It is not, therefore, surprising to find that anxiety is so common in every facet of our culture. Sinha (1962) also, referring to anxiety, remarks, "Observation of the behaviour of the normal college going population in this country points to the fact that it is fast becoming as much a characteristic of the contemporary Indian scene" (p. 22).

Besides the general anxieties of which the college and school going students are the victims, is the more specific kind of anxiety — test anxiety — which plays a very significant role in their academic performance. The concept of test anxiety was developed by Mandler and Sarason (1952) and since then it has largely been used in research pertaining to anxiety and learning. The present research
has also dealt with this specific kind of anxiety in relation to paired associate learning. Test anxiety has been found to be most relevant to the school learning situations. As Sinclair (1969) remarks, "Within an educational context, Sarason's psychoanalytic position has been found to have greatest relevance" (p. 296). I.G. Sarason (1960) also, on the basis of the available evidence comments, "... the more directly related the content of items on the anxiety scale is to the situation in which subjects are to perform, the more useful is the measure of anxiety in showing interaction between scores on the scale and differential motivating instructions" (p. 405).

Sarason et al. (1969) have given several reasons as to why they made test anxiety central in their research. The authors state, "The first of these considerations was that the test situation is experienced by almost all members of our society. Not only is it a near-universal experience in our culture but the test situation is frequently experienced for some members of our society (such as those who read this book). A second consideration was that both the tester and testee (be it an individual or group test situation) far more often than not perceive the testing situation to have an evaluative or assessment purpose and that it is important to do well, however differently "well" might be defined by tester and testee."
A third consideration was the fact that in our culture the lives of people are very frequently affected by their test performance. It is not hyperbolic to maintain that quality and level of test performance is one of the most important determinants of the lives of members of our society. We are a test-giving and test-conscious culture....

What was decisive in our decision to focus on test anxiety was our clinical experience that such an anxiety was not only frequent but was also associated with severe personality disturbance and concomitant difficulties in the school learning situation" (pp. 8-9).

The significance of test performance is not the feature only of American society but also of other societies which are under the influence of modern civilization. An Indian child's performance is as much evaluated by parents and teachers as that of an American child. Pressure of tests and grades is no less on him than on his American counterpart. Decisions of major consequence to the children are increasingly being made on the basis of their performance in tests. Every year the minimum percentage for admission to the professional and other colleges is quite a source of anxiety to parents regarding their wards' careers. This anxiety of parents is transmitted to their children who are again and again reminded by the parents that only good marks in the examinations can make their
future lives happy. Not to talk of the urban areas, even in the rural areas the parents have an urge that their children should go for higher studies and become doctors, engineers, or other big officers (A fact, noted during interviews with rural parents, Nijhawan, 1972). In fact, there is no need to attempt to prove the pervasiveness of tests and anxiety regarding tests in our culture and to use May's language, to do so is as unnecessary as the proverbial carrying of coals to Newcastle.

Working within the psychoanalytic framework, Sarason et al. (1960) in America, and in a parallel study in India, Nijhawan have been able to trace the determinants of anxiety in the early parent-child relationships. It has been conceived that during the process of socialization, the child is presented with innumerable do's and don'ts by parents and surrogates. At times the child may resent these inhibitions and may feel hostile and resentful towards these authority figures. This desire to retaliate is not satisfactorily expressed and may rather lead to fear and apprehension of punishment. Thus, anxiety is born. This anxiety is carried over to the school where his performance is evaluated by the teachers.

Every teacher engenders in her classroom attitudes towards children's learning, failure, and success. Teachers vary in the ways in which they respond to a child's
inadequate performance. Some teachers respond to a child's failure in a way that increases the child's feelings of inadequacy and insecurity. On the other hand, other teachers, while recognizing the child's failure, do not make him feel that he is being rejected or derogated. The former category of teachers make learning on the part of children, especially those who are sensitive to teacher's attitudes towards them (high anxious), very difficult. The children would hesitate exploring new areas because there, they are likely to commit mistakes, more likely to be punished and thus their fear of failure is increased manifold. On the contrary, teachers who handle children's inadequacies with consideration and understanding, make them feel secure in the classroom. As expressed by Carrol (1985), in this atmosphere of security some anxiety is present, to be sure, but mild anxiety is not inhibitory, actually it spurs the person to new achievements. Every person possesses a drive for growth. If this drive is rewarded by a number of successes he can tolerate a few failures. If on the other hand, he has failed repeatedly, the anxiety which is created holds him back. The basic conflict is the desire to go ahead versus the fear of doing so. The teachers' task here is to set up a situation in the classroom in which the fear of going ahead is kept at a minimum or reduced whenever it is evoked in the child.
Does this mean that the teacher should always use love and reward as techniques of handling children? This leads us to the controversial issue of positive vs negative reinforcement, i.e., whether children should be praised or reprimed in the learning situation. The common view goes in favour of approval. It is obvious that obtaining adult approval is important to the child. Blame tends to be interpreted as punishment and may carry with it unfortunate emotional repercussions as far as the child is concerned. Adult approval, on the other hand, acts constructively in guiding behaviour into desired channel by positive rather than negative information about what to do and what not to do. Thompson (1962) writes in favour of approval: "A wise parent or teacher who realizes the potency of the child's need for social approval can do much to control his behavior. Children who have become negativistic or aggressive under excessive disapproval often blossom under appropriate and sincere administrations of social approval" (p. 149).

However, the occasional use of aversive stimulation contrary to the popular notion of some reformers in education is necessary in proper conduct of education. Children who make mistakes need to be corrected by being told that they are wrong. This correction, if followed by an opportunity to obtain the correct answer and thereby obtain reward can hardly be thought of as disruptive.
behaviour. It is harmful only if accompanied by sarcasm, ridicule or other ego damaging tactics. Moreover, the threat of possible failure is probably necessary to keep some children (low anxious) working and the teacher may occasionally have to remind them that they could do better with more concentration and effort. The low anxious children are usually easy going and have to be stimulated by some stress in order to improve their performance (Sawrey and Telford, 1964). It, therefore, means that performance of the high anxious and the low anxious children would depend on the type of reinforcement they are subjected to.

The present piece of research is an attempt to study the interactive effects of test anxiety, reinforcement and task difficulty on paired associate learning at three levels of intelligence.

NEED OF THE STUDY

Since 1950 when May remarked on the absence of the problem of human anxiety from experimental concerns, hundreds of studies on anxiety have been published. In the last two decades there has been virtually a metamorphosis in the study of anxiety. The empirical research which has been carried out in these years has brought out many fruitful results regarding the effect of anxiety on behaviour. A bulk of studies is concerned with the impact
of anxiety on achievement, intelligence test performance, and performance on learning tasks. The most consistent general finding noted in most of the studies is that anxiety hampers performance of children on many tasks. Sarason et al. (1960) characterize a high test anxious child as dependent, unaggressive, and self derogatory in test-like situations (situations which contain cues indicating that he is being evaluated). Such a child is preoccupied with his own anxiety responses i.e. feelings of inadequacy and as a result cannot pay proper attention and concentration to the task. His anxiety is interfering with adequate perception of external events and with task performance.

As regards academic achievement, studies by Sarason et al. (1960), Cox (1964), Lunneborg (1964), Stevenson and Odom (1965), and Frost (1968) have reported negative and significant correlations between test anxiety scores and school achievement. Similar results have been reported by L.S. Sarason (1961b) for college population. Hill and Sarason (1966) also provide evidence that grade repeaters score higher on TASC than children making normal progress through the grades.

Not only is there a negative correlation between test anxiety and school performance but also a moderate but consistent negative correlations have been found between scores on test anxiety and various measures of intelligence...
This had led some psychologists to suggest that the lower performance of high anxious students can be explained in terms of their lower intelligence. However, this hypothesis is not valid. Sarason et al. present an enlightening discussion on the negative correlation between anxiety and intelligence. Their point of view is that the intelligence tests vary in their test-like ness, and they correlate differentially with the TASC. For example, the Otis tests which are far more test-like than the Davis-Beale have been found to be correlated more highly than the latter with TASC. Second line of argument is that when subjects are equated in intelligence, there appear differences in the performance of high and low test anxious groups. The main conclusion drawn by them was that the test situations are perceived as dangerous and the child feels that he is being evaluated by authority figures whose responses to his failure will reduce the possibility of need gratification and arouse in him impulses towards these figures, the expression of which will create a still more dangerous situation for him. Therefore, his test performance is interfered with.

1 Support to this hypothesis is found in a study by Gudry and Bradshaw (1970) who found that high anxiety had less interfering effect under progressive examining than under terminal examining.
Studies relating to the laboratory learning tasks also suggest that high anxious subjects are affected by ego involving instructions, motivating conditions, and failure reports, more than the low anxious subjects (Mandler and Sarason, 1952; Sarason, Mandler, and Craighill, 1952; I.G. Sarason, 1960; I.G. Sarason and Palola, 1967; I.G. Sarason and Harmatz, 1965; Sassenrath and Kight, 1965; Sinclair, 1969). The reason why high anxious subjects are more affected by ego involving instructions and failure reports may be again that they are more self deprecatory, more self preoccupied, and generally less content with themselves than the low anxious subjects. Moreover, they are sensitive to cues which suggest that they are under evaluation.

A few studies (I.G. Sarason, 1958, 1960; I.G. Sarason and Ganzer, 1963; Sassenrath and Kight, 1965) have shown that subjects scoring high on test anxiety respond more positively to reassurance and reinforcement than the low anxiety subjects. I.G. Sarason (1960) in a series of experiments found no differences, under neutral conditions, between performance of groups which differed in anxiety.

Difficulty of task is another variable which has frequently been manipulated in studies on anxiety and learning. It has been generally found that high anxious subjects perform better than low anxious subjects on easy tasks while performance of low anxious subjects surpasses that of the high anxious.
subjects on difficult tasks. The advocates of drive theory have explained it as a result of multiplicative effect of high drive and task interfering response tendencies elicited by the complex task. An alternate explanation can be that a difficult task may be perceived differently by different individuals. High anxious children may feel threatened by challenging assignments (difficult tasks) while the low anxious may have difficulty in maintaining their interest and effort unless there are such challenges. Hence the level of difficulty of the task has important stress properties and may cause the arousal of anxiety in the high anxious subjects, leading to the evocation of task irrelevant responses which interfere with performance. Korchin and Levine (1957) have actually interpreted complexity of the learning situation not as much a task variable as a stress variable. Recently Spence and Spence (1966) have also referred to situational factors that serve to elicit anxiety. Spielberger has developed Trait-State Anxiety Theory on the assumption that an individual who perceives a particular situation as threatening will respond to it with an elevation in A-State, which interferes with performance.

It follows from the above discussion that considerable attention has been paid to the possible detrimental effects of heightened anxiety and stress on learning and performance but there has not been nearly as much emphasis on experimental
conditions which might facilitate performance in the case of high anxious subjects. However, it is clear that reassurance provided by the experimenter and the cues that the subjects can depend on the experimenter may facilitate the learning of high anxious subjects. Even when the task is difficult, if the subject is encouraged and reassured, stress of the difficult task can be lessened and thus anxiety level may be decreased. On the other hand, it might be essential to give some doze of negative comments to the low anxious subjects in order to keep them working because otherwise they are liable to become complaisant and not bother much for better performance. Some negative reinforcement will raise their anxiety to a level which is optimum for adequate performance. I.G. Sarason (1960) also comments, "Certainly a closer tie-in between studies of anxiety and stress and studies of anxiety and task factors, seems indicated" (p. 406).

A few studies have used verbal reinforcement with high and low test anxiety subjects (Shinkuro and Noriko, 1963; Ruebush and Stevenson, 1964; I.G. Sarason and Harmatz, 1965; Hill, 1967; Silverman and Waite, 1969). The results of these studies are far from unequivocal some of them reveal significant anxiety and reinforcement interaction while others report insignificant results. The differences in the results of these studies could be possibly due to the
different tasks they have used. None of these studies has varied the difficulty of the task. It is very much possible that the role of reinforcement may be different on the easy and difficult tasks because of the amount of anxiety they evoke in the subjects. The difficult task should be more threatening than the easy task to the high anxious subjects. So the positive reinforcement could be more useful for the high anxiety subjects on the difficult task than on the easy task. On the contrary, the low anxious subjects' anxiety may be automatically aroused to the optimum level by difficulty of the task and on the easy task their motivation level may need to be aroused to the desired level by giving them negative reinforcement.

Another variable which has been selected for the present study, in addition to anxiety, task difficulty, and reinforcement, is that of intelligence level of the subjects. A recent extension of drive theory, to encompass intelligence (Spielberger, 1966) takes into account the possibility that individual differences in intelligence and anxiety may have different effects on learning which depend on difficulty of task and stage of learning. The primary hypothesis from which this extension proceeds is that the difficulty of a learning task will depend on the intelligence level of the subjects. Studies by Denny (1966), Katahn (1966) and Spielberger (1966a) show that anxiety facilitates learning at

upper level of intelligence whereas it is associated with poor performance at the lower level of intelligence.

Interactive effects of anxiety and intelligence have not been studied in the Sarasonian framework of anxiety. There is a dearth of studies which have used TASC to study the effect of anxiety in interaction with intelligence on learning. The only prominent studies are those by Ruebush (1960), Cox (1964), and Gaudry and Fitzerald (1971). The latter studies use academic achievement as the dependent variable. Introducing the variable of intelligence in studying the effect of test anxiety on laboratory learning tasks should be worthwhile. Gaudry and Fitzerald who found that while high test anxiety was associated with higher achievement for the most able subjects, it was associated with lower achievement at lower levels, remark: "Extrapolation to the very complex field of academic achievement is likely to involve variables which do not affect the learning of laboratory tasks such as a list of paired associates. It is in this exploratory phase that subsidiary hypotheses can be derived and tested by further studies" (p. 161).

The present study therefore is expected to shed some light on the problems which have not been explicated to a large extent till now. These problems relate to the interactive effects on paired associate learning of, test
anxiety, reinforcement, and task difficulty; test anxiety and intelligence; test anxiety, intelligence, and task difficulty; reinforcement and intelligence; and anxiety, task difficulty, reinforcement, and intelligence.