SOCIAL-EMOTIONAL FUNCTIONING IN PRESCHOOL CHILDREN AS A PREDICTIVE FACTOR OF LATER ACADEMIC UNDERACHIEVEMENT

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A Dissertation submitted to the Faculty of Arts, University of the Witwatersrand, in fulfilment of the requirements for the Degree of Master of Arts.

Johannesburg 1986

ABSTRACT

The present study is a three year longitudinal research project which investigates the effect of social-emotional functioning in preschool children on their later academic performance at primary school. The aim of this study was to assess whether preschool social-emotional functioning was a predictive factor of later academic underachievement.

The variables of social-emotional functioning measured in this study were achievement motivation, the child's sense of competence, and a two-factor model of social-emotional functioning, namely Interest-Participation versus Apathy-Withdrawal, and Cooperation-Compliance versus Anger-Defiance. These variables were assessed in the final year of nursery school. The achievement criteria measured in Grade I were Reading, Arithmetic, Vocabulary and Position in Class, while in Grade II Reading and Arithmetic were. All of the above variables were measured by formal psychometric tests or teacher rating scales. Finally, when the subjects were in nursery school, their intelligence was assessed by the Goodenough Draw-A-Man test, and only those subjects who were within the normal range of intelligence were retained in the study.

Three psychometric measures were used in nursery school to assess social-emotional functioning. Animal Crackers measures achievement motivation in the school situation, and supplies information on five factors of achievement motivation, namely School Enjoyment, Self Confidence, Purposiveness, Instrumental Activity and Self Evaluation. The Dreyer and Haupt Competence Scale is a teacher behavioural rating scale, and gives a measure of the child's competence, independence, and ability to cope in the preschool environment. The Kohn Scales are also teacher rating scales, and supply information on two bipolar factors of social-emotional functioning in a preschool setting. Factor I is Interest-Participation versus Apathy-Withdrawal while Factor II is Cooperation-Compliance versus Anger-Defiance. In Factor I, Interest-Participation indicates the extent to which a child displays

interest, assertiveness and curiosity, and involves himself in classroom activities. In contrast, Apathy-Withdrawal indicates a withdrawal from the classroom environment, and a lack of interest and curiosity. In Factor II, Cooperation-Compliance indicates the willingness of the child to conform to rules, regulations and routines of the classroom, while Anger-Defiance indicates rebelliousness, disruptiveness and defiance, and the creation of disturbances which upset classroom routine.

In Grade I, the tests used to measure academic and cognitive functioning were the Southgate Reading test, the Young Mathematics test, the Briner and Dunn Vocabulary test, and a teacher rating assessment of the child's Position in Class. In Grade II, the child's ability in Reading and Mathematics were assessed by teacher rating scales.

The correlation, or degree of relationship, between the variable of social-emotional functioning and the achievement criteria was calculated by using a Pearson Product Moment Correlation Coefficient. The relative contribution of the set of social-emotional variables on two achievement criteria, the Southgate Reading test and the Young Mathematics test was determined by a linear multiple stepwise regression.

The results of the data analysed by the Pearson Correlations indicate a relationship between various factors of preschool social-emotional functioning and the achievement criteria measured in Grades I and II, with the most correlations found between the Kohn Scales and achievement or underachievement. The relationship between the two different sets of variables also differed according to the sex of the child. In the regression equations, the Kohn factors were found to account for by far the largest proportion of explained variance in the achievement criteria.

The implications of these results were explored, and the importance of the early detection and remediation of social-emotional difficulties in young children was stressed.

DECLARATION

I hereby declare that this Dissertation is my own work and that it has not been submitted to any other University.

PAUL ANDREW GARWOOD

ACKNOWLEDGEMENTS

I would like to express my sincerest thanks to the following people for their respective contributions to this dissertation:

Dr D Shmukler, my supervisor, for her constructive advice, help and enthusiasm, and her patience and understanding.

Prof M Skuy and Dr D Shmukler, for inviting me to be a member of the Early Learning Project team.

Mrs D Snell, for her help and advice with the tests.

My parents, for their continual support and encouragement.

Brian and Shelley, the best friends that a person could have, for caring and helping so much, and for being so patient.

The Transvaal Education Department for granting permission to conduct research in Government primary schools.

The principals, teachers, and pupils of the various schools who participated in this research. Without their cooperation and enthusiasm, this dissertation would not have been possible.

Mrs Alice Robins, for typing the dissertation.

The financial assistance of the Human Sciences Research Council towards the cost of this research is hereby acknowledged. Opinions expressed or conclusions reached are not to be regarded as a reflection of the opinions and conclusions of the Human Sciences Research Council.

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CHAPTER ONE

1. INTRODUCTION

1.1. Social-Emotional Functioning and Academic Achievement and Underachievement

This introduction includes a brief history of the relationship between education and various schools of psychology. Furthermore, the relationship between social-emotional functioning, cognitive functioning and academic achievement will be examined in some detail. Finally, an approach to early childhood education, which attempts to foster the development and integration of affective and cognitive functioning will be presented, and its similarities to the aims of this present study will be demonstrated.

Theories about the relationship between emotional and social functioning, and academic achievement or underachievement, differ considerably within the various schools of psychology, and their attitudes towards the relationship between education and psychology, or psychoanalysis. In a controversial article, Bettelheim (1972) appears pessimistic about any viable relationship between psychoanalysis and education. He feels that up to the present the relationship between the two has been "neurotic" (p424), like a marriage where the two partners are aware of each other's needs, but do not understand each other and cannot work together. However, he admits that education and psychoanalysis are similar in their aims, which are, in his opinion, to enable Man to reach his highest potential, and, in doing so, to create a truly human society. However, although their ultimate aims may be similar, their methods are entirely different. While education attempts to perpetuate the existing order of the outside world, psychoanalysis attempts to revolutionise the existing organisation of the inner world.

In contrast, many other psychoanalysts and psychologists have believed that they could make important contributions to education. By 1920, Adler had established child-guidance clinics for maladjusted and socially-disturbed children in Europe and the U.S.A. (Kirk and Lord, 1974). In these clinics he made use of psychiatrists, psychologists and social workers, a practice still employed today. However, of far more relevance to this chapter was his attempt to translate aspects of Individual Psychology into practical guidelines for educating children. He spent a great deal of time lecturing to teachers in an attempt to instruct them in the principles of human relationships and [illegible]eraction. He saw the school as the prolonged arm of the [illegible], and considered that a close partnership between home and school was essential (Adler, 1930; Handley, 1973).

Adler also argued that the teacher should be able to notice children with [illegible]fficulties, and act as a counsellor to both child and parents. Two further issues raised by Adler still have considerable relevance today. Firstly, he saw the classroom, not simply as a place of instruction, but as possessing an educational purpose beyond this. This purpose was to teach the child to live with his fellow man and to develop social interest. Secondly, he emphasized that teachers should regard a class of pupils, not merely as a corporate body, but as a collection of individuals. Each child should be seen as unique and his own particular problems should be recognized and understood by the teacher (Adler, 1930; Handley, 1973).

However, many other psychologists in the 1920's had different theories about the methods and goals of education. The emphasis was primarily on cognition, and it was assumed that the I.Q. score was the only, or at least the major, predictor of school achievement (Behrens and Vernon, 1978). However, it was also considered by some that other factors, such as family background, personality characteristics and attitudes and interests could contribute to academic success or failure.

As Cole (1974) has pointed out, the emphasis on I.Q. as the major predictor of achievement has not met with total success. In the years that psychologists and educators attempted to predict academic achievement using the I.Q., or other intellective variables, the results of the numerous studies can be summarized by stating that the average relationship between I.Q. scores, or other measures of intellectual functioning, and academic achievement, range btween 0,50 and 0,75. Therefore, one-quarter to one-half of the variability in academic achievement remained unexplained. Thus, research aimed at discovering an explanation for the variance in achievement has had to shift towards the measurement of the role of non-intellective variables, such as personality (Cole, 1974). Wechsler hypothesized that "... intellectual achievement is dependent to varying degrees upon a variety of determinants which are more of the nature of connative or personality traits rather than of cognitive abilities" (Wechsler, 1971, p51). It has been suggested by Eysenck and Cookson (1969) that a lack of suitable personality tests also contributed to the channelling of most research efforts into the cognitive field for such a long period of time. However, they note that in recent years there has been a swing towards the investigation of "temperamental variables" (p109) in relation to scholastic achievement.

As a consequence of this increasing sensitivity to psychological factors, Bruck and Bodwin (1962) note that educators and psychologists have begun to share the assumption that relationships exist between various facets of personality and specific cognitive abilities. This has resulted in academic underachievement becoming the most common reason for referral to school psychologists. Unfortunately, this has also led, in some cases, to the underachiever being equated with "emotionally disturbed", which "... has tended to obscure the growing evidence that the underachievement is really the outcome of several interacting causal factors that exist, both within and outside of the child" (Bruck and Bodwin 1962, p181). This point will be examined in more detail below.

However, in spite of this increasing awareness of the importance of psychological factors in education, Kohn (1977) declares himself unhappy with the lack of empirical evidence into these areas of the child, and the relationship between these factors and his performance at school. Despite the assumption of many clinicians that underachievement is often closely related to a child's social and emotional development, and to the nature of the resolution of his conflicts, Kohn still feels that researchers have neglected this area at the expense of cognitive areas. There has been a great deal of research into the poor academic performance of lower class and minority group children, which showed that these children had deficits in cognitive functioning which preceded their entry into elementary school. This research precipitated the "war on poverty" (p201), and the implementation of intervention programs such as Head Start, to remediate early cognitive deficits. With this repeated emphasis on preschool cognitive deficits as a major cause of underachievement in elementary school, Kohn believes that educators and psychologists still tend to ignore other factors, such as emotional functioning. He quotes Bateman (1966), who pointed out that in spite of the importance of emotional variables to education, there have been few major attempts to use emotional functioning as a predictive factor of later academic functioning, so that no clear-cut conclusions can be drawn about the cause and effect of emotional functioning and academic achievement. Since Bateman's article, little has been published to contradict her view.

This issue of cause and effect has also been discussed by Chazan (1969) and Rutter (1974), and may be summarized in three questions.

1) How closely are emotional functioning and academic achievement related?

2) To what extent are emotional problems the cause, and to what extent are they the effect of academic underachievement?

3) Are *there specific forms of* emotional problems particularly associated with academic underachievement and, conversely, specific forms of healthy emotional functioning associated with academic achievement?

The importance of clarifying the issue of cause and effect is illustrated in studies by Kohn and Rosman (1972b, 1973), Kohn (1977), and Westman, Rice and Berman (1967). Westman et al found that children with adjustment problems in nursery school tend to have adjustment problems later in both primary and high schools, and that these problems tend to be of the same order. Kohn and Rosman also found that early preschool emotional difficulties often persisted in later life, and that a child who was disturbed on one syndrome early in life was likely to exhibit the same pattern some years later. Furthermore, they discovered that certain preschool emotional difficulties interfered markedly with a child's work, and often led to underachievement. This is discussed in detail in a later chapter.

Thus, if a child's academic functioning is deleteriously affected by an emotional problem existing prior to the onset of formal education, it is vital to *identify* and help the "at *risk*" child, since the studies suggest that the emotional problem could persist for some time, and may hamper the child's academic performance throughout his school career For this reason, in the present study, it was considered essential to assess aspects of the emotional functioning of the children at nursery school prior to school entry, and then to follow their academic progress in Grade I and Grade II. Although this would not entitle the author to claim a causal relationship between the two factors, it would enable him to ascertain whether there was any statistical relationship between preschool emotional functioning and later academic performance in primary school. Furthermore, it would help to establish whether certain emotional difficulties are more closely associated with academic underachievement than others.

An article by Wall (1973) illustrates some of the complexities in the issue of cause and effect of these two variables. He feels that it may be too simplistic to ask merely whether underachievement at school causes emotional difficulties, or vice versa. Failure to achieve often means different things to different children, and reactions to it depend largely on the expectations of the school, the parents and the child. In schools that stress particular forms of intellectual success and inter-individual competition, underachievement may be very destructive for the child whose development is otherwise healthy. The child's ability to learn and achieve may vary with environmental factors, and different types of learning become possible with different stages of development. However, at most schools, norms prescribe that at a certain age certain types of learning should be accomplished by the average pupil. Further, parents often have expectations, and if the child fails to meet these expectations this can be a source of anxiety or frustration to the parents, and hence to the child. Thus, any marked difference between what the child is able to achieve, and the expectations of the parents and teachers, may be considered "deviant", and the type and severity of a child's problem may well be strongly influenced by the school, his teachers and his parents.

Wall also points out that in addition to the school or teacher, the child's ability is also affected by the "map" (p15) of his experiences, constructed from his earliest years. This map is steadily modified as development proceeds, and is affected by genetic and environmental factors, interpersonal relationships, and all of the affective and cognitive experiences he has had in relation to people and things. This point is particularly well made by Shapiro and Biber (1973), and their "developmental-interactional" approach to education will be discussed in detail below.

One of the initial problems encountered when discussing a child's emotional functioning in relation to academic achievement or underachievement is the plethora of labels in the literature

used to describe a child whose behaviour is problematic and who is underachieving. This list of labels is impressive. Among them we find terms such as "problem child" (Wall, 1973), "maladjustment" (Chazan, 1969), "emotional disorder" (Rutter, 1974), "neuroticism" (Banreti-Fuchs, 1978; Entwistle and Cunningham, 1968) and "instability" (Eysenck and Cookson, 1969; Wade, 1981a). Kirk and Lord (1974) note that just as the professional terminology referring to these children is varied, so too is the cause of the behaviour, and the behaviours themselves range from minor incidents to manifestations of serious, persistent problems. Many of the definitions appear to be quasi-psychiatric, and there is a general lack of consensus regarding the target population. While surveying various State departments of special education in America regarding their respective terminology of pupils referred for emotional or academic problems, Miller and Epstein (1979) found that 24 terms were in use, the two most common being "emotionally disturbed" and "emotionally handicapped".

In contrast, we have the personal view of Knoblock (1973), among others, who feels that a child labelled "emotionally disturbed" should not be seen merely from the perspective of a deficiency model, but should also be valued for any positive attributes he* may possess, and that the growth potential residing in any child ought to be recognized. Thus, in the present study, it was decided to adopt a more neutral and less judgemental label, and to use the term "social-emotional functioning", and relate this to the child's academic performance. This term has been used by Kohn (1977), Kohn and Rosman (1972a, 1972b, 1973, 1974) and Zaal (1979), and incorporates a large, global part of the child, such as interpersonal functioning and development, self concept, competence, curiosity, interest in and mastery of environment, and attitude to school, home and peers. A further advantage of the

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* The pronoun "he" was used in the present study as a matter of convenience to refer to the child, and stands for both he and she.

term is that it enables the researcher to examine the full spectrum of a child's functioning, from disturbed to health, and to test the relationship between both poles of this spectrum, and achievement or underachievement.

In concluding this discussion on social-emotional functioning and academic underachievement, there are several points in the research findings that require some elaboration. There are often large discrepancies in the research investigating the relationship between these two variables. These discrepancies have been noted by such writers as Banreti-Fuchs (1978), Behrens and Vernon (1978), Eysenck and Cookson (1969), Peterson (1980) and Rushton (1966) and they offer several explanations for these fin[illegible]. Firstly, as already noted, there is considerable incons[illegible]n the terms used to define emotional problems, as well as [illegible] disparity in the definitions of academic underachievement. Secondly, there are large differences in the ages of the children being studied. This is significant, for, as will be shown in the chapters below, the implications of academic underachievement may vary with age, as may the type of problem associated with underachievement. Banreti-Fuchs (1978) claims that a number of researchers have found differences in various personality variables associated with underachievement when comparing two or more different age groups. A third criticism made by the above writers is that there is often no differentiation between the sexes. Many studies have revealed that males and females differ markedly when various psychological factors are correlated with academic achievement. Wall (1973) quotes several studies showing that boys and girls differ from each other, both quantitatively and qualitatively, in emotional adjustment and criteria of achievement, and in the relationship between the two. Finally, in many studies, intelligence, or I.Q. scores, are not tested or taken into account. Thus, children who may have very different I.Q. scores, are treated indiscriminately, with the possible result that a child who is labelled as an underachiever may in fact not have the potential to achieve well in the academic field, simply because of a lack of cognitive or intellectual ability.

1.2 The Developmental-Interactional Approach to Education

Having discussed aspects of the relationship between social-emotional functioning and academic performance, it would be useful to present a framework of early childhood education in which social-emotional functioning, and indeed the entire affective domain of the child, is seen as a crucial, integral part of intellectual, cognitive and hence, academic functioning. Psychodynamic and developmental psychology form much of the basis for this framework, and useful background information is provided by Biber and Franklin (1967).

Biber and Franklin suggest that there is increasing evidence that the quality of environmental stimulation in the child's earliest years has a major influence on his later intellectual functioning. This is consistent with the standpoint of psychodynamic psychology, which has always emphasised the importance of early childhood experience. Furthermore, they maintain that the quality of any child's early learning experiences potently influence to what degree he acquires a courageous approach to the unknown, a desire to initiate and discover, and a feeling of competence and power through mastery, which in turn will give rise to new desires for further explorations and encounters. Thus, psychodynamic psychology, especially the understanding of motivation and autonomous ego processes, has major implications for early childhood education. Biber and Franklin believe that many educators are extremely receptive to advances in psychology, and that education and teaching methods have been influenced by both psychodynamic and developmental psychology. They see much common ground between these two areas of psychology. In particular, development is seen by both as being characterized by qualitative shifts in modes of experiencing the environment. These stages are seen to occur in an invariant sequence, the earlier stages being necessary precursors for the later. Also, both areas of psychology are becoming increasingly aware of the vital interaction between cognitive and emotional functioning in the child. In general, their theories make it possible to understand more clearly the

interaction between the child and his environment, in terms of drives, feelings of mastery, pleasure and fulfillment, and conflicts that need to be resolved.

This large body of theoretical concepts has served as a framework for several approaches to preschool and elementary school education. However, Shapiro and Biber (1973) see a lack of consensus about what constitutes a sound educational program, which stems mainly from some fierce controversies in development psychology. In particular, they see one major dichotomy in the educational programs. The one approach stresses the importance of cognitive and intellectual development, while emotional growth is virtually ignored. The other group of programs concentrate on affective and emotional development, usually neglecting cognitive functioning. However, an attempt has been made to overcome this dichotomy.

The Bank Street College of Education, with whom Shapiro and Biber are associated, has been evolving its own program, the *developmental-interactional approach*, for the past fifty years, and its central concepts have remained consistent. Its main sources are the dynamic psychology of Freud and his followers, such as *Hartmann and Erikson*, and developmental psychologists such as Piaget and Werner, who are concerned mainly with cognitive development. They have also drawn on the experience of educational pioneers such as Susan Isaacs and Harriet Johnson.

In the developmental-interactional approach, the school is seen as responsible for nurturing the child's psychological development in a broad sense, encompassing affective, social, and cognitive functioning. The "developmental" aspect refers to an identifiable pattern of growth, and modes of perception and response, which become increasingly integrated and differential as the child grows up. "Interactional" refers firstly to the child's interaction with his environment, which includes adults, peers and the physical world, and secondly to the interaction between cognitive and affective spheres of development.

> "It is a basic tenet of the developmental-interactional approach that the growth of cognitive functions - acquiring and ordering information, judging, reasoning, problem solving, using systems of symbols - cannot be seperated from the growth of personal and interpersonal processes - the development of self-esteem and a sense of identity, internalization of impulse control, capacity for autonomous response, relatedness to other people".
>
> (Shapiro and Biber, 1973, p689.)

Thus, an indespensible condition of this approach is the interdependence of these developmental processes, and the school should promote the integration, rather than the compartmentalization, of these functions.

Another vital responsibility of the school is to foster the growth of ego-strength, and the individual's ability to deal with his environment at a level appropriate to his stage of development. An important concept of ego-strength is the child's sense of his own competence, which he must be able to use in his interaction with his environment and with other people. Allied to this is the crucial task of the young child constructing a sense of self. One of the most agreed upon concepts in psychology today is that a child's sense of himself as independent and unique is constructed from experiences with other people and objects. The quality and shape of the "self" reflects images of important people in the child's life, and also determines the quality of his future encounters with other people and his environment.

Together with the fostering of ego-strength, the school is also seen as responsible for the development of autonomy in the child. The development of autonomy is again accompanied by the child's sense of himself as unique, with his own thoughts and feelings, and the ability to make choices, initiate and experiment. Since development is a function of the interaction between the child and his environment, it is proposed that the autonomous ego processes of the child acquire increasing motivation to engage actively with the environment and fulfill his curiosity about it. An important point is that the autonomous ego processes are

propelled by motivations independent of instinctual drives, and are a resultant of the quality of support and restraint which govern the child's first encounters. There is a strong similarity here with White's (1959) "effectance motivation", which is discussed in detail in a later chapter. The autonomous ego processes will stimulate exploration, curiosity and creativity, which is one of the stated goals of the developmental-interactional approach.

Within the developmental-interactional approach, the teacher recognizes that conflict is an inevitable part of growth. The child does not operate at one fixed developmental level, but instead his growth is characterized by moments of equilibrium and disequilibrium. Earlier, more primitive modes of organization are not simply eradicated, and the child may sometimes need to regress. Through work and play, and tasks appropriate to the child's level of development, the program provides opportunities for the child to shift backwards as well as forwards, and creates opportunities for the assimilation of different experiences, the achievement of new integration, and the resolution of conflicts in both the emotional and cognitive spheres.

From the above description of the developmental-interactional approach, one can see that the teacher is the most vital figure in the program, and her personal qualities are extremely important. It is she who creates the climate of the classroom, and the psychological and physical environment of the child's life. She should be able to relate to each child as an individual, and should not be surprised or disconcerted at the developing child's conflicts, guilts or anxieties. Another important role is that of a liaison with parents and with other professionals, such as the school psychologist. Thus, she must have the capacity to relate to many different kinds of children, and the knowledge to identify their needs and strengths.

The goals of this approach, as described by Shapiro and Biber, are briefly listed below:-

1) To strengthen the commitment to and pleasure in work, to help sustain curiosity about the environment, and to nurture the intrinsic motivation to pursue selected goals.
2) To broaden and deepen sensitivity to experience and environmental stimuli.
3) To promote cognitive power and intellectual mastery.
4) To support the integration of the affective and cognitive domains.
5) To nurture self-esteem, self-understanding, and acceptance of feelings, wishes, fears and motives, while maintaining a sense of being able to influence events.
6) To encourage differential interaction with people. This includes the capability of trust, and of withholding trust when appropriate, and the communication of ideas and feelings.
7) To promote the capacity to participate in a social order in the classroom. This includes promoting the understanding that trust and responsibility are reciprocal, the participation in the search for solutions to problems, and the ability to accept a rational system of controls and sanctions.

This chapter has stressed the interaction between the affective and cognitive areas of the child, and the developmental-interactional approach was described in detail as a theoretical framework emphasizing this concept. The author sees this interaction between the two areas as crucial, and in the present study, an attempt was made to objectively measure certain aspects of affective, or social-emotional, functioning, and to assess their relationship to cognitive and academic functioning. The affective areas measured were feelings of self-worth and competence, achievement motivation, and a two factor model of social-emotional functioning. These variables will be discussed in detail in the following chapters.

CHAPTER TWO

Self-Concept and Academic Achievement and Underachievement

The self-concept has consistently been viewed by theorists as a central factor in human behaviour (Combs and Snygg, 1959; Rogers, 1951). Rogers (1947) defines self-concept as "the sum total of all the characteristics the individual attributes to himself, and the positive and negative values he attaches to these characteristics" (p140). The self-concept also refers to how the individual perceives himself in terms of ability, value and worth. (Calhoun and Morse, 1977). It is seen as arising from the experience of the self as object, and emanates from a history of interaction with others, and from the evaluation of how one has coped with life. The frequency and nature of interactions with others will have a significant impact. Thus, as Ausubel and Robinson (1969) note, the self-concept is obviously a very complex entity, embracing mental, physical, emotional, moral and social attributes.

In some theories, the role of self-concept in initiating and guiding behaviour has been equated with motivation (Combs and Snygg, 1959; Rogers, 1951). According to Spears and Deese (1973), the self-concept has often been thought of as a cognitive-motivational system believed to explain and predict a variety of behaviours. Combs and Snygg state that the self-concept can be seen as a "... convenient approximation of personality" which can enable a researcher "... to achieve an amazingly accurate prediction of an individual's behaviour in a variety of settings" (p128, 1959).

Thus, variations in behaviour in a wide range of performance situations have been attributed to variations in individual self-concepts, and academic achievement is one important area of performance assumed to be related to self-concept (Purkey, 1970; Smiley, 1967). However studies have failed to yield conclusive

support for this assumption. Although many researchers have found a relationship between self-concept and academic achievement (Bruck and Bodwin, 1962; Cole, 1974; Behrens and Vernon, 1978; Benreti-Fuchs, 1978; Rubin, 1978; Rubin, Dorle and Sandidge, 1977; Williams and Cole, 1968) other studies failed to find any significant relationship between these variables (Butcher, 1968; Green, T.M. 1971; Spears and Deese, 1973; Williams, 1973).

Spears and Deese (1973) explain these contradictory results as being due to an inadequate definition and analysis of self-concept. They maintain that it must be seen as a highly complex construct comprising diverse, and even contradictory, subconstructs and including divergent and perhaps inconsistent behaviour. Wylie (1968) points out that often the self-concept is studied as an oversimplified notion, while in fact it ought to be treated as a very complex, abstract concept.

Another reason offered for the inconclusive results is the tendency for researchers to assume that academic achievement constitutes a desirable, equally relevant and integral aspect of every child's life (Jordan, 1981; Spears and Deese, 1973). This leads to the assumption that a "good" self-concept will lead to good academic achievement. However, Jordan argues that "global" self-concept may be independent of self-assessments of school performance ("academic self-concept"), and may be based on dimensions of experience other than school achievement. She supports the multi-dimensional model of self-concept offered by Shavelson, Hubner and Stanton (1976), which shows the multi-faceted nature of the self-concept that reflects the complexity of the social environment. Jordan further suggests that the correlations which are sometimes found between global self-concept and academic achievement may be due to a confounding of global and academic self-concepts, and the result of a failure to investigate simultaneously the effects of each on a given behaviour.

Spears and Deese (1973) conclude that self-concept may not subsume motivation in school, and that researchers should

investigate the extent to which achievement and competence in school is sought or needed by the individual. School achievement may only be expected when the child feels himself capable of success and when achievement is important to maintaining a feeling of competence. If a child does not have a need for competence in academic tests, the belief that he is capable of adequately performing these tests may not be sufficient to induce a good academic performance. Jordan (1961) feels that a need for academic achievement may be construed as a situation-specific facet of motivation, consistent with White's model (White, 1959).

Adding to the difficulties of researchers is a persistent confusing of the terms "self-concept" and "self-esteem", the problem of their definition, and the lack of and shortcomings in the instruments available to measure self-concept, especially in young children.

There are currently scores of theories and definitions of the self found in the literature. Of all the terms employed to describe or identify some facet of the self, "self-concept" and "self-esteem" remain the most popular (Calhoun and Morse, 1977). Others include "self-actualization", "self-importance", "self-identity", "self-evaluation" and "self-confidence". Many researchers have concluded that it is almost impossible to differentiate between these "self" terms. Wylie (1961) has commented that "the terms are so intertwined and overlapping in the literature that the constructs must be discussed as a group" (p40).

Self-concept and self-esteem in particular are often used synonymously and interchangeably, although they are in fact two separate terms with self-esteem referring to an aspect of self-concept. Calhoun and Morse (1977) see the self-concept as the way an individual perceives himself and his behaviour, while self-esteem refers to the individual's satisfaction with the self.

As an example of the confusion of the terms, many researchers

have used self-esteem scales, in particular the Coopersmith Self-Esteem Inventory, to measure self-concept (Butcher, 1968; Green, T.M. 1971; Jordan, 1981; Williams, 1973).

Calhoun and Morse (1977) feel that the importance of clarifying these distinctions becomes clear when we consider the relative stability of self-concept and self-esteem. The self-concept may be altered only gradually through intense stimulation from significant others, while the self-esteem may change from day to day and in different situations. They feel that it is essential to gain some agreement in the differentiation between the terms for the purpose of instrumentation.

However, because of the confusion between the terms, as well as the complex nature of self-concept, which does not lend itself to easy definition, the designing of instruments to measure this construct has proved difficult. Commenting on the assessment of the self, Coopersmith (1959) has admitted that "it is an ephemeral subject difficult to deal with empirically" (p93). Gergen (1971) goes even further: "Clearly, we cannot measure it directly, as there is no direct access to another's private experience. The most we can do is infer the nature of a particular experience from various overt behavioural indicators" (p16). Jordan (1981) agrees and states that the self can be validly measured by self-report only to the extent that knowledge about the self is both available to and willingly disclosed by the subject.

Butcher (1968), while admitting that reliable instruments to measure self-concept are very difficult to design, sees a need for a continuing effort to draw up valid and effective instruments. He reported that the instrument used in his study (the Coopersmith Self-Esteem Inventory) was not adequate. Williams (1973) also reported that the Coopersmith Inventory may not be adequately sensitive to measure the potentially unstable self-concepts of young children and suggested that there may not be enough school-related items in this test. This point heads us on to two further difficulties encountered in working in the area of the

self-concept of the preschool child.

Anastasi (1968) has written on the difficulties of testing preschool children in any field. The young child is often not motivated to "do his best", and so the intrinsic appeal of the test and the rapport with the tester must be relied upon to provide the motivation. Other factors that may complicate testing at this age are shyness, negativism, distractibility, fatigue and fear.

Furthermore, the self-concept of the preschool child may be tenuous and may not have reached a stable equilibrium, although it will nevertheless influence his adjustment at any specific time. Psychologists are divided as to when the awareness of self, as differentiated from the environment, can be said to have been achieved. Williams (1973) feels that the young child's self-concept may be subject to wide fluctuations in mood, and may vary according to situations, or cyclically according to temperament. As confirmation, she found low retest correlations on self-concept of young children. Rubin (1978) has also found that results in the literature indicate that self-concept ratings become more stable as the child grows older and enters adolescence.

Thus traditional measures of self-concept present difficulties when working with the preschool child with regard to application, comprehension, ranking and reliability. The majority of studies on self-concept have been carried out on older children and adults (Butcher, 1968; Williams, 1973) and it is difficult to apply this research to the pre-grade child.

In the present study it was considered best to use tests that would restrict the measurement of the child's "self" to the school situation, using only school-related items and problems, and to obtain information from both the child and the teacher. The tests chosen were Animal Crackers (Adkins and Baliff, 1973), and the Dreyer and Haupt (1966). Sections of both tests assess aspects of the "self" in the child, and his competence in meeting the demands of social and non-social situations. These tests, and the reasons

for their inclusion in this present study, are discussed in Appendix A, which describes in detail the tests used in this study.

CHAPTER THREE

Achievement Motivation and Academic Achievement and Underachievement

Achievement motivation has a long history of being related to academic achievement (Peterson, 1980). Current studies in early childhood education indicate that a young child's success in school depends on his motivation for learning as well as his intellectual abilities (Adkins and Baliff, 1973). Thus, motivation to achieve has become an increasingly important topic of research. Therefore, the present study assesses motivation to achieve, and correlates this measurement with other indicators of social-emotional functioning in predicting later academic achievement or underachievement.

The concept of achievement motivation, or need for achievement (n Ach), is considered to be one of the most widely used, and perhaps abused, concepts in educational psychology (Chan, 1978). The term has been used to incorporate various concepts such as drives, intentions, desires and incentives, and a child's approach to, persistence on, selection of and performance on cognitive tasks. It has also served to explain why children work or do not work, learn or do not learn, and succeed or fail. The degree to which a child is motivated to perform does appear to be as important as intellectual skills and abilities in affecting school achievement. In the course of this chapter, the theories of writers such as Atkinson, McClelland, and Ausubel will be examined, as well as recent relevant studies in this field. However, before reviewing the major writers in the area of achievement motivation, it is necessary to briefly examine the major theorists of the development of human motivation. Erikson, White and Piaget all stress the vital role of activity in the child, and his interaction with the environment in learning, and in the attainment of competence and personal identity. The major difference in these theorists is that Erikson and White stress the affective components

in motivation, while Piaget concentrates on the cognitive aspects.

Erikson (1950, 1963) describes each individual as passing through eight stages, beginning with infancy, and progressing through childhood, adolescence and adulthood. Each of these stages is characterized by a crisis, and each one makes an essential contribution to the evolution of the individual's ego identity. For Erikson, the ultimate basis for a healthy personality is security of personal identity. Erikson recognised the effect of social factors on the child's development at each of the psychogenetic stages, and saw human personality developing according to steps determined by the individual's readiness to approach and interact with a widening social spectrum. Thus, there is an intricate balance between the instinct-governed child and his environment and his own maturation and society's expectations of him. Positive psychosocial development at each stage will depend largely on how successful the parents are in handling the inevitable frustrations that represent the crisis at each stage.

Two of these stages, initiative versus guilt, and industry versus inferiority, will be discussed because of their importance in determining how the child will cope with the school situation and how motivated he will be to work.

The stage of initiative versus guilt occurs in the fourth or fifth year of life, with three new developments helping to bring the child closer to his crisis. He is able to move about freely, he has attained some mastery of language, and in his imagination he begins to explore such frightening areas as sexual and guilty feelings toward mother and father. If the child can negotiate this stage and emerge with a sense of unbroken initiative, it can serve as a basis for a broader sense of ambition and independence. With this stage comes the impending entrance into school, and the child must tame some of his exuberant imagination, and learn the self-restraint and discipline necessary for formal education. Erikson sees the child as possessing an abundance of energy, enabling him to quickly forget failures, and reapproach desirable

goals with undiminished effort. The child is more ready than at any other time to learn quickly and avidly, and to combine with peers to construct and plan, and profit fully from association with teachers. However, this is also the oedipal period, and how it will affect the child's later personality depends on how skillfully the parents manage to develop a sense of participation, responsibility and initiative out of the child's inclinations and interests, rather than impressing him with a sense of guilt. Only a combination of early prevention and alleviation of hatred and guilt during this period will permit a peaceful cultivation of initiative. The danger of this stage is of guilt, hatred and resignation over goals and fantasies contemplated, including fantasies of aggression, jealousy and rivalry for the opposite sex parent. A cruel and rigid superego developed at this stage may have disastrous effects throughout life. A cultivation of initiative is extremely important, for "initiative is a necessary part of every act, and man needs a sense of iniative for whatever he does" (1963, p247). It is obvious that initiative has very important implications for motivation and achievement at school.

Erikson's fourth stage is industry versus inferiority, and he believes that the early school years are very important to the child's development. At this stage, the child needs a feeling of being useful, and a sense of being able to do and make things well. He also learns to earn recognition by producing good things. His status, not only in the family, but also among his peers, is largely dependent on the number and kinds of things he can do. Thus, his activities become less random and more aimful. The danger at this stage is the development of a sense of inadequacy and inferiority. This sense of inferiority may be due to, or may throw him back upon, thoughts of his failure in the oedipal rivalry, and leave him with a lasting belief in his own inadequacy. If there has been an insufficient solution of the preceding crisis, he may still want his mother more than learning, and still may want to be the baby of the house instead of the big boy at school. He may continue to compare himself to his father, which would provoke guilt, as well as a sense of inferiority. If the child despairs of

his skills and abilities, or of his status among his peers, he may be discouraged from identification with his peers and from showing his true potential and ability at school.

White's "effectance model" can be seen as a supplement, rather than a substitute for Erikson's libido model (Woodworth, 1964). While agreeing with Erikson's stages, and with the theory that some early motivation is psychosexual, White (1952, 1959) feels that much of what infants and children do is aimed at gaining competence and independence, and contends that Erikson's "sense of industry" is based mainly on a sense of competence.

White proposes a theory of motivation stressing the importance of competence as a prerequisite for healthy personality development. The term competence is used to describe a vast range of activities engaged in by the child to master his world - for example locomotion, language, manipulation of objects and interaction with people. He believes that research on curiosity and exploratory behaviour warrants the conclusion that not all motivation is based on tension reduction. Instead, he maintains that individuals are motivated to make an effect on themselves and on the world, even if it means increasing tension.

> "There is no longer any compelling reason to identify either pleasure or reinforcement with drive reduction, or to think of motivation as requiring a source of energy external to the nervous system. This opens the way for considering in their own right those aspects of ... human behaviour in which stimulation and contact with the environment seem to be sought, and welcomed, in which raised tension and even mild excitement seem to be cherished for their own sake ... It is proposed to designate this motivation by the term effectance, and to characterize the experience produced as a feeling of efficacy".
>
> (1959, p328-9).

Thus he stresses the stimulating power of the environment and feels that the pursuit of competence is a major driving force. He does not ignore organic needs, but their satisfaction is thought

often to be secondary to the child's primary interest in becoming acquainted with and dealing with the environment.

In his view, a great deal of the infant's behaviour is oriented towards nonsexual goals in the pursuit of competence. For example, when considering Freud's oral stage, he points out that although the most important event of the period is probably to obtain nourishment and oral stimulation, the feeding child engages in many other activities, not strictly oral, such as playing with the spoon and handling the food. He also takes exception to the importance attached by most psychoanalysts to toilet training. He contends that the most important event for the two-year old child are learning to play with toys, talking and walking, done with the purpose of gaining competence and self-esteem.

White argues that a whole range of human behaviours have been consistently ignored by theorists. Walking, exploring, playing and perceiving have, for the most part, been scarcely considered. He feels that each of these behaviours is derived from an intrinsic need to deal effectively with the environment, and should thus be considered as motivated behaviours, which result in a general feeling of efficacy. The goal of these behaviours is discovering the effects that the child himself has on the environment, and the environment on him.

Although these activities may be done for the fun of it, they serve a serious biological purpose. Part of the fun may be described as a feeling of efficacy, and the purpose is clearly that of attaining competence in dealing with the environment. The long-term consequences of these behaviours are also important. Humans must learn many behaviours to adjust to their world, and it is only gradually, by continual exploration and experimentation, that humans develop enough responses to adjust to the environment. Opportunities to explore and experiment within the school environment provide a potent means of satisfying this need of the developing child.

White's effectance model resembles other theories which stress the stimulating power of the environment, such as Piaget's theme of assimilation and accommodation. In contrast to the previous two theorists, Piaget examines the child's motivation and development from a cognitive, rather than from a dynamic, point of view.

Piaget (1926, 1952, 1954, 1968) writes that although it is obvious that the environment exerts some effects on the child, it does not simply mould behaviour by imposing itself on a passive subject. Instead, from birth, the infant works actively to develop knowledge. In order to do this, he seeks contact with the environment, and, instead of waiting for environmental events to occur, the child seeks increased levels of stimulation and excitation. When an event occurs in his environment, the child does not passively register it, but instead interprets it. It is the interpretation, not the event itself, which affects his behaviour. Thus, intellectual development derives from the interplay of the child with his environment.

Piaget's view of infancy is novel in several respects. For example, in characterizing the newborn baby as an active initiator of behaviour, and emphasizing that even in the first few days of life the infant often seeks stimulation, he differed from many of the major theorists of the time. It had been claimed that the organism seeks to escape from any stimulation or excitation, and when these phenomena occurred the child would take action to reduce them, and return to the desired state of quiescence.

In contrast, Piaget (1952) wrote that not all behaviour could be explained by the child's reaction to undesirable stimuli. In stressing action as the source of thought, he laid emphasis on two general principles of functioning, organization and adaption. Organization refers to the general principle to systematize processes into coherent systems, which could be either physical or psychological. Adaption may be seen in terms of two complementary processes, accommodation and assimilation. Accommodation refers to

the organism's tendency to modify its structures according to the pressures of the environment, while assimilation involves using current structures which can deal with the environment. In this section we are particularly concerned with assimilation, and its three different forms, functional assimilation, generalizing assimilation and recognitory assimilation. The first two are of particular interest as they assist in explaining the activity and motivation of the child. The principle of functional assimilation states that when a child has a structure available, such as sucking, there is a basic tendency to excercise this structure. Generalizing assimilation is closely related to this. Since a scheme needs exercise and repetition, it requires objects to satisy this need. For instance, the sucking scheme, which at first is only used on the nipple, later tends to generalize to a variety of objects, such as a finger, toy or blanket. The baby actively seeks out objects on which to exercise a scheme (functional assimilation), and when he has a structure available, he tends to generalize it to new objects (generalizing assimilation). This is clearly manifested during the early years of language development. Piaget (1926) concluded that much of the baby's language (babbling and repetition of sounds) is not socially directed at all. The production of the sounds appears to provide its own satisfaction. Again this is consistent with the idea that new schemata seek out ways to exercise themselves, similar to White's theory of competence. As Woodworth (1964) states, any act that relates the child to his world seems to delight him. Woodworth feels that the theme of conflict-free activities, so-called by Hartmann (1952), has much in common with Piaget and White. The physical and psychological apparatuses, which include intelligence, perception, memory and motility, as they mature, not only enable the child to cope with his environment, but also provide intrinsic pleasure of a conflict-free nature.

Another important principle of motivation is described in Piaget's explanation of curiosity. This involves an extension of the principle of assimilation, where the infant's attention is directed at an event which is "moderately novel" (Ginsburg and

Opper, 1969, p39). The moderately novel principle is a relativistic one, stressing that what determines curiosity is not necessarily the physical nature of the object per se, but the relation between the new object and the child's previous experience. One object may elicit curiosity or boredom in two different children. The bored child would either have had no experience, or a great deal of experience, with objects highly similar, whereas the curious child would have had experience with objects moderately different. Again, the moderately novel principle is strongly at odds with theories that stress avoidance of stimulation is the only motivation in a child.

Piaget's thoughts on motivation in a young child are clearly seen in his discussion on equilibrium and disequilibrium.

> "...a need is always a manifestation of disequilibrium; there is a need when something either outside ourselves or within us...is changed, and behaviour has to be adjusted as a function of this change... encountering an external object will lead to a need to play, which in turn has practical ends, or it leads to a question or theoretical problem... action terminates when a need is satisfied, that is to say, when equilibrium has been re-established between the new factor that has provoked the need and the mental organization that existed prior to the introduction of this factor."
>
> (1968, p6-7).

The process of cognitive development is a gradual process of construction. Each stage in a child's development is an advance over the previous stage. As each stage is reached, the developing child achieves new modes of adaptation and the ability to assimilate new concepts in the environment. It is only through playing, exploring and questioning that the child comes to distinguish the possible from the impossible, the rational from the irrational. For Piaget, this cognitive activity is an intrinsic and constructive property of organic and mental life, as are eating and breathing in the biological sphere.

Having examined the development of general motivation in the young child, where the emphasis has been on either the cognitive or

the dynamic components of motivation, it is appropriate to now examine the relevance of motivation in an achievement situation. The theories of achievement motivation discussed below tend to stress the interaction between cognitive and dynamic functioning, and the importance of seeing these factors as being interrelated, rather than separate.

Achievement motivation (also called n Ach) in the school-going child is discussed below, primarily according to the theories of Atkinson, McClelland, and Ausubel (McClelland, Atkinson, Clark and Lowell, 1953), (Atkinson, 1964,) (Atkinson and Feather, 1966), (Ausubel and Robinson, 1969), (Ausubel and Hanesian, 1978).

In Chan's (1978) view, both McClelland and Atkinson regard the relative strength of n Ach as following the "general expression model", which implies that motives are concurrently reflected in both fantasy and overt behaviour. Thus high n Ach is associated with high achievement and low n Ach with underachievement. According to Peterson (1980), research at primary school level on the relationship between n Ach and academic achievement, while generally not dealing with achievers and underachievers, does support the general expression model of motivation.

The model of Atkinson and McClelland is based primarily on empirical data and mathematical models, and postulates that n Ach = f (Motive x Expectancy x Incentive). Motive is seen as a personality disposition to strive for success and experience and pride in accomplishment. Expectancy is the subjective probability that performance on a given task will end in success, and Incentive consists of the strength and desirability of the reward.

The model is based on three major assumptions. The first, and perhaps most important, is that there is both an approach and avoidance motive in any child as regards success or failure. That is, the child will want to approach success but avoid failure. In combination, these two factors yield a desire for achievement which may be positive or negative. If an individual's need to achieve is

stronger than his fear of failure, it is likely that he will approach an achievement situation and become involved. However, if the desire to avoid failure is greater than the desire to achieve success, he would seek to avoid achievement situations. (This approach-avoidance conflict was used as a basis for a research study by Wade (1981a), and is described in detail below. Atkinson (1964) consid these two goal orientations to be personality characteristics that endure, despite specific happenings in the child's life.

The second assumption is that the child's motivation to succeed will be influenced by his perception of its difficulty. Research shows that achievement-oriented children prefer tasks that they consider to be moderately difficult, while very difficult or very easy tasks are less preferred by these children.

The final assumption is that the concept of n Ach is relevant only in those situations in which the child perceives himself as responsible for the end result and believes that his performance will be evaluated against a given standard of excellence.

Clearly, n Ach could affect the child's approach to tasks, his interpretation of the outcome of tasks, his selection of and persistence with tasks, and also that a child's personality is a primary determinant of which tasks will be most effective in motivating him (Chan, 1978). A highly achievement-motivated child should respond positively to moderately or appropriately difficult tasks and select realistic academic tasks and goals. The child low in n Ach is more likely to select inappropriate tasks, either too simple or too difficult. With a simple task he is almost guaranteed success, while with a very difficult task he can blame his failure on the task and not reproach himself. Thus it is possible that the child low in n Ach will define unrealistic educational goals, select inappropriate tasks, and seek activities that ensure the avoidance of failure. Similarly, high n Ach children are more likely to persist while failing, while low n Ach children are likely to stop working. Weiner, Frieze, Kukla, Reed,

Rest and Rosenbaum (1971) postulate that the high n Ach child persists because he ascribes his failure to lack of effort, which he can control, while the low n Ach child is likely to stop work, because he sees failure to be the result of a lack of ability over which he has no control.

Chan (1978) sees the child's reaction to failure as having importance for psychologists and educators, who often seem surprised by the lack of effort in a child who may be labelled as lazy. This may occur because the child perceives a lack of ability in himself, and this perception, which may not necessarily reflect his actual ability, reduces his willingness to try or persist in a potentially failing situation.

Finally, the intensity or value placed on incentives varies between individuals. The high n Ach child attributes success to his own effort and ability, and will respond to success with pride and personal satisfaction. However, if the low n Ach child views success as externally controlled, he will not perceive the results of his performance to be a product of his ability. This reduces the value of reinforcers, and lessens the motivational drive of this child to approach achievement-related goals. The child who attributes success to luck or other external forces, can take little pride in his own accomplishments.

Taking Atkinson's premise that all individuals have a motive both to avoid failure and achieve success, and that for any individual in the performance of a task, there is an approach-avoidance, or excitation-inhibition and conflict, Wade (1981a) suggests that there will be two main coping tendencies in response to anxiety caused by such a situation. The first would be [illegible]ded in avoidance behaviour, with attempts to leave the task situation, while in the second approach behaviour will lead to a reduction of anxiety through task completion if coping strategies mediate between anxiety and behaviour.

Wade reported higher levels of attainment for highly anxious,

highly motivated pupils (an inferred strategy of coping) than for highly anxious, low motivated pupils (an inferred coping strategy of avoidance). Wade also found that as regards classroom behaviour, low motivated, highly anxious pupils showed a higher incidence of fidgeting, gazing into space, negative behaviour and disrupting the classroom, as well as lower frquencies of work behaviour than highly anxious, highly motivated pupils.

Lastly, Ausubel and Robinson (1969) concur that n Ach should not be considered to be a reflection of a homogeneous variable. Rather, they felt that it comprised at least three components, these being cognitive drive, ego-enhancement and affiliative drive.

Cognitive drive centres around the need for knowledge acquisition and problem-solving techniques as ends in themselves, the reward lying in the acquisition of knowledge and skills. Ego-enhancement is oriented around the need for self-enhancement. Thus, academic achievement would lead to earned status, generating feelings of adequacy and self-esteem. The affiliative drive is neither task- nor ego-oriented. Rather, achievement is seen as an assurance for the child of the approval of significant other persons in his life, primarily parents or parent substitutes, with whom he identifies in a dependent sense and from whose approval he acquires derived or earned status. The child who enjoys derived status is motivated to retain this approval by meeting their expectations, since this approval confirms his derived status.

The affiliative drive is seen as being the most prominent component of n Ach during childhood. However, at any age n Ach can be influenced by any or all three components. Also, the strength of the components is influenced by interaction between the individual's basic temperament and his interpersonal relationships with his parents, as well as factors of culture and social class.

In their theory, Ausubel and Robinson (1969) postulate a critical point in early childhood between the ages of two and three years, during which time a child's relationship or identification

with his parents begins to exhibit one of two basic forms which will persist throughout school. These two relationships are satellization or non-satellization.

In the satellization relationship, which is the type most characteristic of the early parent-child relationship, the child (the subordinate party) accepts a status dependent on that of the parent (the superordinate party), and the parent unconditionally accepts the child. The child (the satellizer) thereby acquires a vicarious or derived status, wholly a function of the dependent relationship and independent of his own competence or performance. Ausubel proposes that since the satellizer enjoys derived status with its accompanying feelings of intrinsic self-esteem, he will have relatively little need to achieve in order to earn status through his own performance. Since he is accepted on an intrinsic basis by his parents, he does not view academic performance as a measure of his worth as a person, and achievement is merely a means of meeting his parents' expectations and retaining their approval.

In the non-satellization relationship, the child sees his dependency as a necessary but temporary fact of life, requiring certain standards of behaviour and performance expected by the parents. However, he does not accept a subordinate or dependent status as a person. This non-satellizing child could be rejected outright by his parents, or conditionally accepted in terms of his current or potential performance. The only type of status that this child can hope to enjoy is a primary or earned status, reflecting his own accomplishments. Ausubel and Robinson postulate that this non-satellizing relationship occurs for two main reasons. Firstly, the child may be unwilling or unable to accept the subordinate dependent role. A child who is more assertive and independent would be less willing to satellize than a more dependent child. Secondly, the parents may be unable to give unqualified, intrinsic acceptance to the child. Thus the non-satellizer has to earn status through his own achievements since he possesses no derived status or intrinsic acceptance. Because his feelings of self-esteem are almost entirely dependent

upon good performance and accomplishments, academic achievement would be very important to the non-satellizer. For this reason Ausubel proposes that the non-satellizer will exhibit a higher degree of n Ach than the satellizer. Moreover, the main component of the satellizer's n Ach would be affiliative drive, whereas ego-enhancement would be the main component of that of the satellizer. According to the general expression model of Atkinson and McClelland, this would mean that the non-satellizer, with a higher degree of n Ach, would show higher levels of achievement. However, other researchers, including Lazarus, Baker, Broverman and Mayer (1957), have questioned the validity of this model, and have proposed an "alternative channels model". In this model, fantasy would serve as an alternative or substitute channel for the expression of n Ach when this motive is blocked from behavioural expression in reality situations, and it would therefore follow that an inverse relationship between n Ach and academic achievement would exist in some situations.

The plausibility of an inverse relationship between n Ach and academic achievement is evident in Ausubel's work, as he himself states that the achievement of the satellizer is not necessarily inferior to that of a non-satellizer, even though the satellizer may exhibit lower n Ach (Peterson 1990). This may be because two important factors would interfere with the effect of high n Ach on the academic achievement of the non-satellizer. These are fear of failure, and a disablingly high level of anxiety. The non-satellizer's feelings of self-esteem are dependent on success, and he will be motivated to high goals in order to build up self-esteem. However, these goals may be unrealistic in relation to his ability. This child then faces a high probability of failure, and because most non-satellizers have no intrinsic self-esteem, failure is centrally traumatic to the self-esteem, and could produce very high anxiety. This could result in a tendency to retain a permanently damaged self-esteem, together with an anxiety neurosis which may flare up at any time. In the school situation, this anxiety could be very disabling when dealing with new tasks, tasks requiring improvization, or tests and exams.

The satellizer would not experience this amount of trauma with regard to failure or anxiety because he has intrinsic self-esteem. He would also probably not experience the disruptive effects of neurotic anxiety in school situations, but instead would experience a non-neurotic type of anxiety associated with a learning situation.

Having dealt with some of the major theorists in the area, this section will now concern itself with the results and conclusions obtained from empirical research on this subject.

While devising their test for motivation to achieve, Adkins and Baliff (1973) found that achievement-motivated behaviour was the result of the dynamic interaction of five variables. Although the nature of their interaction may not be completely clear, all five ways of participating in the learning situation are considered to be essential to achievement motivation. The five variables or components are School Enjoyment, Self-Confidence, Purposiveness, Instrumental Activity and Self-Evaluation, and are discussed in Appendix A, where this test is fully described.

In short, Adkins and Baliff conclude that a child will be motivated in school only when he expects that achievement will bring him pleasure, when he believes he can achieve, when he can set up his own purposes to achieve, when he knows the instrumental steps that will lead to achievemer and when he can accurately evaluate his own performance.

In forming their concept of achievement motivation, Adkins and Baliff made several assumptions about motivation which they felt had been justified by previous research. They assume that motivation for achievement is learned, and that a child acquires it through interaction with his environment, and with significant individuals in his life. The family is seen as extremely influential in the early formation of the attitudes and values reflected in motivation to learn. This continuing development of motivation will depend on the models he observes, his experiences

in the learning situation and, very importantly, his interactions with his teachers.

These assumptions have been borne out by other researchers. Experiments by Banner (1979) and by Parsons, Adler and Kaczala (1982) have highlighted the effect of parents and their attitudes on a child's achievement motivation, and actual achievement. Banner, reviewing past literature, suggested that maternal attitudes fostering independence and acceptance of the child (suggestive of Ausubel's satellizing relationship) are associated with high levels of achievement, while protective attitudes, limiting independence, related to low achievement. In her study she found that mothers of underachieving sons were more dominant, oppressively rigid and restrictive in the sense of being possessive and intrusive than mothers of average- and high-achieving sons. Mothers of underachieving daughters were more dominant, rigid and restrictive in terms of being protective.

Parsons et al (1982) found that the parents' perceptions of and expectations for their children related both to the child's self- and task-perceptions, and that the child's attitude towards n Ach and actual achievements was influenced more by their parents' attitudes about their abilities than by their past performances. They concluded that parents influence their child's achievement attitudes through their impact as conveyors of expectancies regarding the child's abilities, and not merely, as is widely believed, through their power as role models.

Finally, Wade (1981b) found that the home backgrounds of low-achievement motivated children showed a higher incidence of home problems, such as divorce and marital conflict, than the backgrounds of high n Ach children.

Ausubel and Robinson (1969) also predict that different teacher personalities would elicit either better or worse motivation from the satellizer and non-satellizer. The satellizing child, dominated in early years by affilliative drive,

would probably give of his best to a warm, sympathetic teacher (parent surrogate). The non-satellizing child, with strong ego-enhancement drives and higher anxiety, would require a teacher who is non-threatening but orderly and directive in his approach, so that channels to achievement, and therefore to earned status, are always clear to the child.

Although this is speculative and unproven, research has shown that the social environment of the classroom, peer relationships, and a liking or disliking of teachers or school is a potent factor among low-motivated, under-achieving children.

Fry and Coe (1980) emphasized the impact of the social climate of the classroom on social and emotional functioning of the children, and that various factors of n Ach are related to the classroom setting. A classroom climate characterized by high involvement and support by the teacher and good teacher-pupil relationships, was positively correlated with high academic motivation, desire for self-improvement, enjoyment of learning and desire for academic success. Innovative teaching practices by the teacher were also correlated positively with enjoyment of learning. In addition, pupils in classrooms with good teacher-support and involvement enjoyed reading, felt enthusiastic about their grades and felt significant as individuals. In contrast, classrooms perceived to be authoritarian and teacher-controlled were associated with anti-school feeling and a relative absence of self-improvement desires or enjoyment of learning. Furthermore, pupils in these classrooms felt insignificant as individuals, disliked school work and felt restricted by grades.

Banreti-Fuchs (1978) found that male underachievers tended to dislike school, had little ambition, were non-academically oriented, felt the rules and regulations were too strict and that teachers disliked them. The female underachievers constantly anticipated failure, lacked a sense of accomplishment and felt socially rejected. A dislike of school was also found to be prevalent among poor achievers by Behrens and Vernon (1978).

Thus, for the teacher and psychologist interested in understanding the individual differences in children and their attainments in school, achievement motivation appears to be an extremely important area of study. It may influence the child's approach to school-related tasks, his interpretation of tasks, task-persistence, selection of tasks and other achievement-related behaviours. In turn, achievement motivation appears to be influenced by many factors such as individual personality, feelings about the self, and relationships between the child and his parents, teachers, peers and school environment.

Having established the significance of achievement motivation, it was considered important for this study to attempt to measure it and relate it to the child's actual achievement. The Animal Crackers test appeared to offer considerable promise. Firstly, as was discussed in the previous chapter, the test provides two measurements of the child's "self" in relation to the school situation. In view of the shortage of reliable tests of the "self" for the preschool child, these two measures by themselves were considered important. Furthermore, the test purported to provide information about the child's attitude to school, and hence to his teacher and peers, and of his actual knowledge of the instrumental steps required to achieve, all of which were considered very valuable.

It was also felt that in the future this test may be of value to nursery school teachers. As Adkins and Baliff (1973) note, the teacher needs to know how the child feels about himself in the school environment, and whether or not learning and achievement are important to him. For some children the completion of a task itself may be inherently rewarding. For others the approval of the teacher, peers or parents may provide the positive feelings associated with achievement. If the teacher has specific knowledge about these variables for each child, she can create classroom activities and experiences that will capitalize on motivations that the child already possesses, and that will help to develop other attitudes that will assist in promoting the child's

future learning and motivation.

It should be reiterated that although the primary aim of this study was to discover aspects of social-emotional functioning that are associated with underachievement, it was considered of equal importance to ascertain which aspects of functioning may be related to achievement and bring this information to the attention of nursery school and primary school teachers.

CHAPTER FOUR

Kohn's Two-Factor Model of Social-Emotional Functioning and Academic Achievement and Underachievement

In contrast to the more limited and situation-specific picture of the child's functioning and development offered in the previous two chapters, the two-factor model of social-emotional functioning devised by Kohn and Rosman presents the researcher with a global picture of the child's emotional and interpersonal functioning in the preschool situation. The model does not merely differentiate between the presence or absence of pathology, but covers the entire spectrum from healthy to disturbed behaviour.

Two of the major handicaps affecting young, school-going children are emotional impairment and academic underachievement (Kohn, 1977). Confirmation of this is provided by Rutter (1974), who writes that of all the problems seen in school-aged children, learning difficulties and underachievement are among the most common, and that children who underachieve frequently suffer from emotional or behavioural disorders. One of Kohn's main aims in his research was to attempt to clarify the relationship between emotional impairment and academic underachievement which is closely related to the child's social and emotional development. Also, although underachievement can be correlated with many different types of emotional difficulties in school children, the direction of cause and effect is not clear, since lack of achievement or failure may create emotional problems.

However, Kohn and Rosman worked with preschool children and investigated their emotional functioning before they began school. They were therefore in a position to determine whether emotional difficulties which existed in the preschool child, thus anteda ing the onset of formal education, were related to underachievement in later years.

A further criticism of Kohn's towards research into this area was that many of the researchers treated the term "emotional disturbance" in an undimensional way, without differentiating between various types of disturbance or between the degrees of severity of the disturbances. Kohn (1977) hypothesized that although early emotional impairment in preschool children may be predictive of later academic underachievement, not all types of impairment are equally related to scholastic performance.

In a review of the literature on emotional disturbances in young children, Kohn (1977) showed that in the previous 50 years two major syndromes or factors had repeatedly emerged. He felt that the recurrence of these findings had great theoretical as well as practical significance.

The first factor is a pattern of passive, shy, inhibited and withdrawn behaviour, while the other is one of antisocial, hostile and aggressive behaviour. This concurs with Rutter (1967), who noted that this dichotomy of syndromes has perhaps been one of the most universal of all the diagnostic distinctions in child psychiatry. Because Kohn's two-factor model is based on these two syndromes, the main points of his literature reviews of the study of these syndromes during the last 50 years are briefly presented below (Kohn and Rosman 1972a, 1973; Kohn 1977).

In the 1920's and 1930's researchers first began to distinguish between "personality problems" and "behaviour or conduct problems" (Paynter and Blanchard 1929). In the first category, "personality problems", they placed symptoms such as shyness, apathy, excessive day-dreaming, inferiority feelings and fearfulness. These symptoms primarily affect the individual and his internal adjustment. The second category included problems which interfered with the child's adjustment to norms and regulations of organized society and was termed "conduct problems". Examples of this were stealing, fighting, temper tantrums, truancy and defiance of authority. Several other authors also differentiated between "personality problems" and "conduct problems". Under

the first category were added timidity, overinhibitedness, seclusiveness and worrying. Under the latter, terms such as assaultive tendencies, cruelty, malacious mischief, inadequate guilt feelings, gang activities and absconding from home were added.

Peterson (1961) also identified two basic syndromes of emotional disturbance in samples of "normal" children rated by teachers on the "Peterson Problem Checklist". Factor analysis again revealed two major syndromes which Peterson also called "personality problems" and "conduct problems". Peterson, like Kohn, was dissatisfied with these two terms. He felt that although the meaning of the terms was conveyed, both problems are expressions of personality, and both affect conduct. In one case impulses are expressed and society suffers, while in the other case impulses are inhibited and the individual suffers. Peterson found that the generality of these two syndromes appeared enormous, and that the two factors remained the same, whether testing "normal" or hospitalized children, delinquents in jail, young children or adolescents and whether the source of information was a case history, a rating scale or a questionnaire.

Finally, Schaefer, Droppelman, and Kalverboer (1965) developed a Classroom Inventory to assess both desirable and undesirable behaviour in a classroom setting. Three dimensions were found to account for most of the variability of a child's school functioning. These dimensions were: Factor I - Extraversion vs Introversion; Factor II - Love vs Hostility; Factor III - High vs Low Task Orientation. The first two factors were found to correspond closely to the two categories of personality and conduct problems used by Peterson and others. However, Kohn (1977) feels that the importance of Schaefer's work is that by testing both desirable and undesirable behaviour he provided evidence that each factor not only represents a syndrome of emotional disturbance, but also extended along a continuum to a polar opposite in the realm of healthy functioning. This is important in the light of Kohn's insistence that the two syndromes

be seen as bipolar, possessing a healthy as well as a disturbed dimension.

With the two factors in mind, Kohn and Rosman (1972a) began to establish their own two-factor model of social-emotional functioning in preschool children. These two factors will be discussed at length below in the discussion of their research, as it becomes clearer during the course of this research what precisely was measured by each factor.

There has been a paucity of research studies tracing the possible causes of these two fundamental syndromes of emotional impairment (Kohn, 1977). Kohn hypothesized that one of the most probable antecedents would be found in the parent-child relationship. It is not the intention of this chapter to examine in any great detail the etiology, dynamics or long-term prognosis of either of the two syndromes. However, it is well to briefly discuss these points to underline the vital importance of the early detection, treatment and remediation of these "at risk" children, as Kohn (1977) found considerable evidence that these syndromes tend to persist over long periods of time.

After a brief review of the literature, Kohn concluded that these two syndromes have different root causes, although both these roots may be traced back to the family and the parent-child relationship. Certain patterns of family interaction were found to produce either one of these syndromes. The angry, defiant child was often found to suffer from "parental rejection" which was often quite direct, the parents being openly hostile.

Three other studies not reviewed by Kohn tend to agree with this and add more detail to the picture. McCord, McCord and Howard (1961) found parents of very aggressive boys were rejecting, unaffectionate, punishment-oriented and inconsistent in the use and method of discipline. The parents themselves were often socially deviant and their marital relationship full of conflict. This finding was confirmed by Coopersmith (1967), who found that

aggressive children tend to come from families in which rejecting, punishing parents have low expectations for their children. Such children usually develop low self-esteem and he postulated that there may be a direct relationship between low self-esteem and aggression. This point of view was also adopted in a study by Bloom, Shea and Eun (1979), who administered the Piers-Harris Self-Concept Scale to a group of behaviourally-disordered children from six to twelve years old, referred to a child centre for aggressive and antisocial behaviour. Compared to the aggregate mean scores of normal children, the subjects' group score was very significantly lower. Bloom et al concluded that the presence of aggressive behaviour appears to be strongly associated with depressed self-concept scores.

It appears as if less is known of the aetiology of withdrawn, apathetic behaviour. Kohn (1977) found that this type of child often came from a family environment in which he was intensely overprotected and severely controlled. There was a great deal of "family repression" which may include factors such as an extremely dominating mother, a hyper-critical father, inconsistent parental discipline and an extremely unsociable mother or father. The child may also suffer from a physical deficiency, such as chronic physical complaints, abnormal growth patterns, or auditory or speech deficiency.

Telford and Sawrey (1972) feel that the withdrawn child is of particular educational concern because he is not as attention-seeking and disruptive as the aggressive child. The overly aggressive child stands out as an individual whose adjustment to school is not adequate, whereas the withdrawn child is likely to go unnoticed. His behaviour never disrupts classroom procedures and the teacher, busy with classroom control and teaching, can easily overlook such a child. Withdrawn behaviour, therefore, can prove extremely serious because of this tendency for it to go unnoticed and undealt with, until it perhaps becomes extremely pathological. Telford and Sawrey claim that withdrawal serves to reduce anxiety. The child perceives others as a source of discomfort and pain and

finds social isolation less threatening than social contact.

A similar picture of the withdrawn child, is painted by Gibson (1976), who sees the withdrawn child as fearful, secretive and apathetic, unable to cope with everyday problems and experiencing great difficulties in forming relationships. Rather than facing the realities of everyday life, the child turns to daydreaming and fantasy as a means of escape. As Bernard (1973) notes, this isolates the child even more, cutting him off from interaction with peers, with the result that his already fragile sense of reality can become even more shaky. Gibson, like Telford and Sawrey, warns that teachers often ignore the withdrawn child, focusing instead on the aggressive, disruptive child.

In an examination of the long-term prognosis of these children, Kohn (1977) draws some extremely disturbing conclusions from research which included some extensive follow-up, as well as retrospective, studies. In his summary Kohn points out that all of the studies indicate the potential importance of these two major childhood syndromes as forerunners to adult disorders. A number of studies support the view that the aggressive, defiant child has a worse long-term prognosis than the withdrawn child for three main reasons. He is less likely to experience a remission of his symptoms, he is at greater risk of developing a psychiatric disorder requiring hospitalization, and he is more likely to clash with the law in later life. However, where there is extreme apathy and withdrawal the implications for risk of adult pathology and hospitalization are very serious. Lastly, there is a trend for emotional impairment in childhood to persist for long periods of time, with aggressive antisocial behaviour showing greater stability. This makes it, therefore, a stronger predictor of future problems than withdrawn behaviour. Thus we can see the urgent need for early detection and prevention for the "at risk" child, as poor social-emotional functioning may have serious repercussions, not only for the child and his academic achievement, but also for his adult future, and for society as a whole.

Having established this evidence of a two-factor model o.. social-emotional functioning, Kohn and Rosman (1972a) reported the development of two instruments that could assess these two dimensions of functioning in a preschool setting. The two instruments, in the form of teacher-rating scales, were designed with different theoretical premises in mind. The Social Competence Scale was designed to measure the young child's mastery of the preschool environment, while the Symptom Checklist was intended as an inventory of clinically important behaviours which could be observed in a preschool setting. These two instruments were found to generate a massive amount of information and each was subjected to a factor analysis. The Social Competence Scale yielded two major factors, which were bipolar and which were labelled:

Factor I : Interest-Participation versus Apathy-Withdrawal;
Factor II : Cooperation-Compliance versus Anger-Defiance.

These factors that emerged were interpreted by Kohn and Rosman to reflect the major adaptive demands which a preschool setting makes on a child. Firstly, how to use the opportunities for learning and pleasurable play activities and interaction with peers, and secondly, how to live within the rules and norms so that an orderly group process can be maintained.

The Symptom Checklist also yielded two major, unipolar factors, labelled:

Factor I : Apathy-Withdrawal;
Factor II : Anger-Defiance.

Following the factor analysis, Kohn and Rosman illustrated more precisely what was measured by each factor. In Factor I, Interest-Participation versus Apathy-Withdrawal, the healthy pole indicates the extent to which a child displays interest. curiosity and assertiveness, and the extent to which he involves himself in classroom activities, uses the opportunities of the classroom and obtains satisfaction appropriate to a preschool setting through

positive interaction with peers. The disturbed pole indicates a withdrawal from the opportunities of the classroom, a lack of interest and curiosity, and a failure to elicit the cooperation of peers in carrying out classroom or play activities. Thus the negative Factor I pole was conceptually similar to the "personality problem" syndrome identified by other researchers.

In Factor II, Cooperation-Compliance versus Anger-Defiance, the healthy pole indicates the willingness of the child to conform to rules, regulations and routines of the classroom, and comply with the teacher's requests and suggestions. The negative pole indicates defiance, and the creation of disturbances which upset normal classroom routine. It also indicates rebelliousness, disruptiveness and hostile interactions with peers, and is thus similar to the "conduct problem" identified in the literature.

Since both Factors I and II are bipolar and the negative poles appear to suggest "conduct" and "personality problems", Kohn and Rosman concluded that the two syndromes were both ends of a continuum that ranged from apathy and withdrawal or anger and defiance, on the disturbed poles, to interest and participation or cooperation and compliance on the healthy poles. Both instruments focused on overt classroom behaviour, which enabled the researcher to use the generally untapped resource of the teacher's knowledge of a child's functioning.

In compiling the Social Competence Scale Kohn and Rosman approached social competence in the classroom on the basis of the child's interpersonal relations, and assessed the child's mastery of the preschool environment largely from the point of view of his interpersonal functioning. In an attempt to define high and low competence, Kohn and Rosman initially used the work of Chance (1959). Chance wrote that psychoanalytic theory describes an individual's way of coping with conflict as comprising at least two kinds of polar opposites; active versus passive, and acceptable versus unacceptable (or friendly versus hostile). When one combines these two dimensions, one finds four different categories

of behaviour, namely positive-active, negative-active, positive-passive and negative-passive. (In this framework, "personality problem" can be seen as falling into the negative-passive section, and "conduct problem" into the negative-active sector.) Kohn and Rosman used these categories as a starting point for the description of interpersonal functioning in the classroom. They made the additional assumption that the positive-active sector represented high-competent functioning, and that the other three sectors represented incompetent ways of functioning, namely: i) domineering, hostile behaviour; ii) withdrawn, defiant behaviour; and iii) passive, dependent behaviour. Supporting the contention of Biber (1961), they also point out that the absence of psychiatric symptoms is not necessarily synonymous with health. Thus, with the Social Competence Scale, they wanted to do more than differentiate between the presence or absence of pathology, but to cover the entire spectrum from health to disturbance. In this way they could differentiate between various levels of healthy functioning. In contrast, the Symptom Checklist was designed to assess the presence or absence of behaviour generally considered symptomatic of emotional impairment, and was intended as an inventory of major clinical symptoms. In devising this scale, they drew on their own clinical experience, as well as on recorded case material, to compile a list of items descriptive of symptoms and problems likely to be manifested in a preschool setting. However, although the difference in the nature of the two scales has been made clear, in view of the very high correlations between the corresponding factor dimensions of the scales, and for the purpose of further increasing the reliability of measurement, the corresponding factor scores were often pooled in Kohn and Rosman's experiments.

In a further study Kohn and Rosman (1972a), as well as factor analysing the two scales, tested the cross-instrument generality and the longitudinal persistence of the two factors. In view of the high degree of generality of the two factor dimensions in the literature, two hypotheses were postulated. The first was the congruence hypothesis, namely that in spite of the wide variety of

labels used by different researchers, they were dealing with only two major dimensions of social-emotional functioning, which have considerable generality over a number of instruments. The second hypothesis, the persistence hypothesis, was that if a child scored high on one of the dimensions at one age level, then he will score high on the same dimension at a later date.

These hypotheses were tested in a longitudinal study, involving a sample of over a thousand children, divided equally between male and female, between the ages of 35 to 70 months. The children were rated independently by two teachers on the Social Competence Scale and the Symptom Checklist, as well as on the Peterson Problem Checklist and the Schaefer Classroom Inventory. The children were rated four times at six-monthly intervals. Significant correlations were found with the corresponding factor dimensions of both the Peterson and Schaefer scales, confirming the wide generality of these two factors, and thereby confirming the congruence hypothesis. Kohn (1977) wrote that the high degree of correspondence between corresponding factor dimensions from instruments developed independently by other researchers not only provided empirical evidence of the generality of the two-factor model, but he also felt that it was rare in social science for a phenomenon to reappear with such regularity. Furthermore, he considered that the emergence of these two factors would provide a major impetus for research on academic achievement and social-emotional functioning. These two dimensions had frequently appeared in the literature and the recurrence of these findings promised great theoretical as well as practical significance. Each team of researchers had designated their own labels for the syndromes emerging from their studies, and this had led to a confusing proliferation of labels and obscured the fact that similar dimensions of functioning were being studied.

The prediction made about the two factors in the persistence hypothesis was also well-supported by their findings. This meant that the two-factor model was measuring more or less enduring personality attributes, or predispositions, with the Factor II

dimension, Anger-Defiance, proving to be more stable over time than Factor I, Apathy-Withdrawal.

To add further potency to the two-factor model, the validity and clinical relevance of the model was also demonstrated. Kohn (1977) formulated two hypotheses for this study.

1) A group of children with known psychiatric disorders will score significantly higher on Apathy-Withdrawal and Anger-Defiance than a group of "normal" children.

2) Within a group of "normal" children those judged to be more "disturbed" by independent raters will score higher on Apathy-Withdrawal and Anger-Defiance than those judged to be less disturbed.

In the study these hypotheses were both proved to be correct, and the clinical validity and relevance of the two-factor model was well established.

Having systematically tested and validated the two-factor model, Kohn and Rosman from 1972 to 1977 began to investigate the relationship between social-emotional functioning and academic underachievement.

In the 1972 study they used their two scales to test the hypothesis that a child's preschool social-emotional functioning is related to later academic functioning and intellectual achievement (Kohn and Rosman, 1972b).

In the light of previous findings Kohn and Rosman suggested that Factor I (Interest-Participation vs. Apathy-Withdrawal), but not Factor II (Cooperation-Compliance vs. Anger-Defiance) was related to academic achievement. Thus they made the following four hypotheses:

1) The higher a child scores on Interest-Participation while at

nursery school, the better prepared he is in terms of the general knowledge required at school entrance, and he will therefore score higher on a readiness test.

2) The child who scores high on Interest-Participation prior to school entry will maintain the momentum acquired and will continue to achieve above average in early grades of elementary school.

3) The child's standing on Factor II is unrelated to achievement at school entry, or in early grades of school.

4) In the early years of primary school the hypothesized patterns between Factors I and II hold equally for boys and girls.

The first two hypotheses were fully confirmed. The data showed that the correlations of Factor I, as measured during the pre-school period, with intellectual achievement, held up until the end of second grade. The children high on Apathy-Withdrawal were low achievers compared to children high in Interest-Participation. The correlations with the Metropolitan Readiness Test show that the effect antedates the onset of formal education. The correlations with later achievement measures indicate that the effect is maintained through the first two years of formal education.

The third hypothesis was confirmed for boys, but not for girls. For boys, none of the correlations between the negative pole of Factor II (Anger-Defiance), and academic achievement, was significant. On the other hand, for girls, five out of the ten correlations between the preschool social-emotional measures and second grade achievement measures were significant, while none of the correlations between the preschool measures and the first grade measures were significant. The results suggest that by the end of the second grade, girls who score high on Anger-Defiance are low in achievement when compared to girls who score high on Cooperation-Compliance. As a result of the finding, the fourth hypothesis postulating no sex difference was not confirmed. Kohn and Rosman

suggest that a possible explanation for this finding may be that girls, who are angry-defiant, form an increasingly negative relationship with their teachers, which is counter-productive to achievement. Although the same situation should hold for boys, they argue that anger or defiance appears to be more tolerated by teachers and society in boys, and because of this greater tolerance, any association between anger-defiance and under-achievement in boys will emerge at a later age level, if it emerges at all.

In order to further clarify the findings and rule out possible spurious findings due to the effect of the background variables on both the social-emotional and achievement variables, the background variables were partialled out by computing partial correlation coefficients. (The background variables were mother's education, occupational level of household head, race, family income and minority-group status.) The findings still indicated that the first three hypothesis hold, even after each of the background variables had been separately taken into account. Furthermore, no correlation was found between Interest-Participation and I.Q., which may have accounted for the correlation between this factor and academic achievement.

Kohn and Rosman argue that these findings firmly implicate the Factor I dimension, Interest-Participation versus Apathy-Withdrawal, with intellectual functioning and school achievement. The results suggest that a child who is curious, assertive and alert will learn more from his environment than a child who is withdrawn and passive. The latter child will almost certainly have diminished contact with his environment, and may even actively avoid such contact. This argument is in line with other studies quoted by Kohn and Rosman (1972 b) which suggest that emotional independence from peers and teachers, the ability to operate spontaneously and constructively in a preschool setting, curiosity and interest, are all predictive of further achievement and even of high I.Q. scores. All the above attributes are contained in the factor Interest-Participation.

A further suggestion by Kohn and Rosman is that the Interest-Participation factor has implications not for the child's interaction with his environment, but also for his mental activities. They feel that there is an increasing acceptance of the concept of "mental activity" as a mediator of intelligence. According to Pines (1970), Bruner feels that coping with and learning about the environment involves active mental processes, such as initiative, intention, hypothesis formation and testing, and feedback from outcome to preconception. It is possible that the dimensions of Interest-Participation versus Apathy-Withdrawal involve not only the child's overt behaviour in the environment, but also the mental activities postulated by Bruner. The child who scores high on Interest-Participation may be more mentally alert and more active in hypothesis formulation and testing. In contrast, the apathetic, withdrawn child may be less alert, and not interested in trying to make sense of what goes on around him and indifferent about formulating or confirming hypotheses about himself or his environment.

Thus, the data suggest that for both sexes the relationship between Factor I and intellectual functioning predates the child's entry into school, and has its beginnings early in the child's development. Kohn and Rosman feel this probably occurs during the first three years of life.

On the other hand, the relationship between Factor II and intellectual functioning was less clear. For boys there appeared to be no relationship, while for girls significant correlations emerged only with second-grade scores. However, in the course of further research this relationship became clearer.

In their following study, Kohn and Rosman (1973) expanded their area of research to include the effects of a child's disadvantaged status on his cognitive functioning. They explained that in recent years there had been an increasing concern with the low educational attainment of lower-class and minority-group children. This had led researchers to concentrate on the cognitive

deficits in "disadvantaged children" in the preschool years, while neglecting research into the relationship between emotional development and academic achievement. Thus the purpose of the 1973 study was to determine, via hierarchical regression, the extent to which cognitive ability at the preschool level is a function of two main variables, background-demographic variables and social-emotional functioning. The background variables included social class, race, family size, family intactness and welfare status. The sample consisted only of boys from three social classes. They were rated on the Social Competence Scale and Symptom Checklist, and cognitive ability was assessed by several intelligence and cognition tests.

The major finding was that cognitive ability is a function of both background variables and social-emotional functioning, and that prediction of cognitive ability at a preschool level is substantially enhanced when information about both these variables is available. In brief, background variables as a group accounted for 6 to 22% of the variance in cognitive functioning, while social-emotional factors accounted for 4,8 to 20,6% of the variance. Jointly, they accounted for 12,7 to 34,5% of variance in cognitive functioning.

In the light of previous findings, Kohn and Rosman had expected that background variables would account for significant variance in cognitive functioning, but they expressed surprise that social-emotional variables ranked almost equal in importance.

The results thus confirmed their hypothesis that differences in cognitive functioning between healthy and disturbed children are already apparent in preschool years, and that the disturbed child arrives at school ill-prepared, cognitively, for the academic demands. As they had hypothesised, not all dimensions of social-emotional functioning were equally related to cognitive functioning. In line with their previous findings, Factor I, but not Factor II, was significantly related to most of the cognitive measures. However, it must be stressed that this finding applied

only to boys, and only to the preschool period.

In a previous study, Kohn and Rosman (1972 b) had speculated that Factor I (Interest-Participation versus Apathy-Withdrawal) has an influence on cognition in several ways. Firstly, the child who scores high on this factor learns more about his environment through his curiosity, asserciveness and high level of interaction. They feel that this hypothesis was supported by the finding that children scoring high on Interest-Participation did well on tasks which drew heavily on past experiences, such as the Stanford-Binet, the Preschool Inventory, and one of the cognitive tests, Verbal Cognition. Secondly, they had speculated that a child scoring high on this factor is more mentally alert, and engages in mental activites such as hypothesis formulation and testing, attention and discrimination. They consider this supposition to be justified by the high correlation between Interest-Participation and another of the cognitive tests, Visual Cognition. Finally, they argue that the correlation between Interest-Participation and Verbal Expressivity implies that a child scoring high on the healthy pole of Factor I is more articulate and engages more readily in conversation than the apathetic child, and that it is plausible that Verbal Expressivity exerts an effect on all tasks requiring overt verbalizatic

The implications of the three variables, preschool social-emotional functioning, cognitive functioning and demographic variables for early elementary school achievement, were again explored, one year later, in a longitudinal study (Kohn and Rosman, 1974). They also discussed a strategy of intervention directed at the social-emotional components of academic performance, while reiterating the point that most intervention programmes focused primarily on cognitive deficits.

The social-emotional and cognitive functioning of the children were assessed during the preschool period, while criterion variables of academic achievement were tested in second grade. The subjects were all boys.

Briefly, the results yielded the following information:

1) Cognitive variables accounted for 19 - 22 percent of variance in achievement.
2) Demographic variables accounted for 19 - 22 percent of variance in achievement.
3) Social-Emotional variables accounted for 16 - 22 percent of variance in achievement.

Again, the Factor I dimensions, Interest-Participation, was significantly related to the achievement criteria. Thus, in summary Kohn and Rosman felt that the child most likely to utilise his thought processes in a productive manner, and to make gains in cognitive achievement, is one who is active, assertive, curious, and involved in classroom activities. However, they concede that more research is needed to demonstrate that such a child does achieve in school, and that a child scoring high on Interest-Participation does, in fact, exhibit these behaviours in the school situation, and does engage in the kind of thought processes hypothesized by Kohn and Rosman during previous studies. From their study, they see some implications for strategies of intervention. They hypothesize that social-emotional functioning, relevant to intellectual functioning, consists of two components, a person-specific component, that is, a personality predisposition, and a situation-specific component. In previous studies described above, Kohn and Rosman had shown that their two-factor model showed stability over time and across settings. This study again demonstrated significant correlations between preschool personality functioning and later school achievement, further evidence of a person-specific component. This component suggests that over a relatively wide range of learning conditions, children who are well adjusted on Factor I learn more, and children who are disturbed on this factor learn less.

In an earlier study, (Kohn, 1968), indirect evidence for a situation-specific component was found while testing various day centres. Large centre-to-centre differences in the average amount

of Apathy-Withdrawal and Anger-Defiance were found (in the study), and these differences could not be accounted for by differences in the backgrounds of the children. Kohn and Rosman suggested a child's interest at school was to some degree a function of the encouragement, approval and nurturance provided by the teacher, as well as a function of the extent to which the lessons were designed to encourage creativity, experimentation and pleasure. This implies that a classroom and learning environment can be created to arouse optimal degrees of Interest-Participation.

The situation- and person-specific components of social-emotional functioning thus suggest two types of strategies of intervention to improve cognitive performance, one directed at creating optimal learning environments, and the other to improve the person-specific component of social-emotional functionin The latter would involve a therapeutic approach for the child high on Apathy-Withdrawal, and Kohn and Rosman (1974) suggest that long, sustained corrective emotional experiences would be recommended for the withdrawn child in order to remediate both his personality disturbance and his cognitive functioning. However, intervention must differentiate between the child whose underachievement stems from cognitive deficits, and the child whose poor achievement is largely accounted for by social-emotional disturbance.

Finally, in 1977, Kohn published a book containing the results of his most ambitious project to date, which covered a span of five years and studied more than 1 200 children (Kohn, 1977). The main objective of this projec was to demonstrate the usefulness of the two-factor model of social-emotional functioning, with three major foci. They were:

1) The prevalence of emotional impairment and academic underachievement in childhood.
2) The longitudinal persistence of emotional impairment.
3) To clarify further the relationship between emotional impairment and academic underachievement.

In the study, social-emotional functioning was measured by Kohn's two-factor model, while academic attainment variables were assessed by standardized tests. These were the Metropolitan School Readiness Test, Verbal and Arithmatic tests from the Metropolitan Achievement Test and various teacher ratings.

The two main findings of interest for this present study were the sex differences in emotional impairment, and a further elucidation of the relationship between social-emotional functioning and academic achievement and underachievement.

As regards sex differences, Kohn found substantial evidence in the literature that during the elementary school years, emotional impairment was more widespread among boys than girls. However, when looking at specific symptoms of impaired functioning, he noted that considerable sex differences had been found by researchers. Among boys, acting-out behaviours, such as stealing, lying, attention-seeking, over-activity and temper-tantrums were more prevalent, while girls appeared to suffer more from difficulties such as shyness, anxiety, passivity, timidity and fearfulness.

In Kohn's study two main findings appeared. Firstly, when boys were compared with girls during the preschool period and at each subsequent grade level, boys were rated significantly more disturbed on both syndromes, Apathy-Withdrawal and Anger-Defiance. The result with respect to Apathy-Withdrawal was in marked contrast to most previous research findings. However, the boys were rated far higher on Anger-Defiance than on Apathy-Withdrawal when compared to the girls. Secondly, as Kohn had expected, when the two groups were examined seperately the boys were found to be more impaired on the acting out syndrome of Anger-Defiance than on Apathy-Withdrawal. Conversely, the girls as a group showed higher levels of Apathy-Withdrawal than on Anger-Defiance.

Thus, to some extent these findings were not supported by previous researchers, many of whom had speculated that the higher

degree of pathology generally found among boys arose from greater difficulty experienced by boys in meeting academic requirements (Kohn, 1977). However, Kohn felt that this could not be the only explanation since his research revealed sizeable sex differences before the onset of formal education. He hypothesized that the difference between the sexes may be related to the greater amount of aggression shown by boys from an early age (Feshbach, 1970). This greater aggressiveness and boisterousness of boys may be perceived by day-care teachers as an obstacle to the orderly conduct of classroom activities and thus the boys were marked higher on the scales for aggression. The finding that the boys scored higher on Apathy-Withdrawal than girls did not appear to surprise Kohn. Despite previous research in his hypothesis he had anticipated slight, if any, sex differences on Apathy-Withdrawal and the sex difference on Apathy-Withdrawal was much less significant than that on Anger-Defiance.

Kohn noted with alarm a marked increase in pathology and underachievement as the children progressed through school. Boys fared worse than girls and their social-emotional functioning deteriorated markedly during the first two years of elementary school. Both boys and girls showed increasing disparity between actual and expected academic achievement during the first four years of elementary school. Commenting on this, Kohn wrote that "an appalling picture of emotional impairment and academic underachievement emerged" (1977, p127). He felt that it was plausible that if curricula and teaching styles were more imaginative and appealing, then the child's social-emotional functioning and cognitive functioning would improve. He also felt that there was a probable link between Interest-Participation versus Apathy-Withdrawal and the extent to which the environment is stimulating or boring. Also, in recent years, the non-educational aspects of school have gained increasing recognition. Biber (1961) and Minuchin, Biber, Shapiro and Zimiles (1969) have maintained that as a socializing institution, the school is second only to the family and can have considerable impact on the child's mental health, for better or worse. Decreasing or increasing

levels of disturbance may be taken as indicative of the extent to which the school is exerting a wholesome or a detrimental influence on a child's mental health. Kohn does concede, however, that the negative impact of factors in the community beyond the family and school cannot be ruled out as a possible explanation of the findings.

Both the two major factors of preschool social-emotional functioning, Apathy-Withdrawal and Anger-Defiance, correlated significantly negatively with the achievement criteria, the correlation for Apathy-Withdrawal being more significant than that of Anger-Defiance. Thus, it was established that emotional impairment, tested at a preschool level, was predictive of underachievement in elementary school, with Apathy-Withdrawal being the more potent predictor. In line with previous research findings, emotional impairment was found to be more closely associated with poorer performance in Arithmetic than in Verbal Achievement. This was also the first study to show Anger-Defiance to be firmly implicated as a predictive factor of underachievement.

Although all the factors showed persistence over time, the acting-out behaviour of Anger-Defiance was more stable over time than the recessive behaviour of Apathy-Withdrawal. Likewise, Interest-Participation was less stable over time than Cooperation-Compliance. Interest-Participation appears to be the most delicate of the factors, requiring the most careful environmental nurturance to be maintained and strengthened.

In evaluating Kohn's model, perhaps the major contribution is in providing a unification of two important streams of psychological research, namely competence and symptom formation. It has been noted that the study of competence has been neglected by both clinicians and researchers in developmental psychology (Garmezy, 1977). Instead, one finds in studies of children a great deal of "problem" literature, dealing with topics such as adjustment difficulties, social failures and blocked

potentialities. In the words of Murphy (1962) "... we became obsessed with failure ... thus there are thousands of studies dealing with maladjustment for each one that deals directly with the ways of managing life's problems with personal strength and adequacy" (p2). However, in the last twenty years a revitalization in developmental psychology has begun to provide us with information attempting to explain healthy as well as deviant personality information in children. (Garmezy, 1977.) Kohn, in his two factor model, sets deviant apart from healthy functioning, and provides a continuum marked by these two polarities at opposite ends. It is interesting to note that in the literature of adult psychopathology there are many studies attesting to the vital importance of competence as a factor significantly implicated both in the resistance to the encroachment of psychopathology, or to the rapidity of recovery when breakdown occurs.

As regards Kohn's division of symptoms into two major groups, Garmezy sees one aspect of symptom formation that suggests a similarity between childhood and adult disorders. He notes that the cluster of adult behaviour identified as "turning against the self" versus "turning against others" is paralleled in Kohn's two-factor model. Although Garmezy admits the continuity or discontinuity in life span developmental psychology, he feels that two of the most severe forms of psychopathology, chronic schizophrenia and antisocial personality disorders, appear to lean heavily in the direction of continuity of incompetence from childhood through to adulthood. Thus Garmezy sees a restricted congruence between childhood and adulthood and specific forms of early and later symptom formation. ·trates the critical importance of early identificati . intervention with potentially disturbed preschool chil.. d Garmezy feels that Kohn has gone a long way in helping to identify early signs of inadequate functioning.

By using Kohn's two-factor model in this study, it was hoped that a wide spectrum of a child's functioning could be assessed, and related to academic performance. It was considered as

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By using Kohn's two-factor model in this study, it was hoped that a wide spectrum of a child's functioning could be assessed, and related to academic performance. It was considered as

important to discover the types of healthy functioning that were related to achievement as it was to ascertain the types of impaired functioning associated with underachievement. Also, if it were found that certain types of healthy functioning were associated with achievement, it was felt that a knowledge of these particular attributes would be of some help in designing any form of intervention programme.

The studies by Kohn have demonstrated the practical value of the two-factor model in clinical and mental health research. There is also considerable evidence for the reliability and validity of the Kohn scales (Khan and Hoge, 1983 dimension has been shown to be a valid clinical indicator, to be relatively independent of the other, to predict uniquely to itself, and to be differentially related to achievement. The syndromes were found to cover almost the entire spectrum of emotional functioning in the classroom situation. An analysis of the curvilinear relationship between the t factors, and performance on the achievement tests, showed that t whole continuum of social-emotional functioning, from health to disturbance, was involved in school learning. Not only were emotionally impaired children handicapped in school achievement, but emotionally healthy children achieved better in academic subjects. For the above reasons, as well as the fact that limited research has been done linking the other scales used in the present study (namely Animal Crackers, and Dreyer and Haupt), with academic performance, it is hypothesized that the four factors in the Kohn scales will be more significant predictors of academic performance than the factors in the other two scales.

CHAPTER FIVE

METHOD

5.1 Background to the Present Study

The present study is part of a larger investigation called the Early Learning Project (Skuy and Shmukler, 1980). This was a large scale longitudinal research project undertaken by the Department of Education and the School of Psychology at the University of the Witwatersrand.

The rationale for the Early Learning Project stemmed largely from the developmental-interactional approach to education (Shapiro and Biber, 1973), which was examined in depth in Chapter 1. Briefly, the basic tenet of this approach is that the growth of cognitive functioning cannot be seperated from the growth of emotional and interpersonal processes. Thus, the emphasis is placed on the interdependence of developmental processes, which is seen as critical to the later adjustment of the child.

Another aspect of the developmental-interactional approach emphasizes the interaction between the child and his environment, and the clarification of the relationship existing between the child's development and the environments in which this occurs. The school, and the home, are thus seen as promoting (or suppressing) the child's psychological development in the broad sense, including affective, social and intellectual development.

The broad aims of the Early Learning Project were as follows:

i) to assess the relationship between various developmental factors, and initial primary school adjustment and performance.

ii) to identify differences in the development of children in various settings, including socio-economic status, school and

home environments and cultural backgrounds.

iii) to develop appropriate environments and strategies at the preschool stage, and at initial school entry, for accommodating differences and promoting development and competence.

This present study therefore had the advantage of having available for analysis a comprehensive body of data, as a result of the large sample and the administration of a formidable range of standardized tests and rating scales.

5.2 Rationale for the Present Study

Inherent in the developmental-interactional approach is that the understanding of the cognitive processes of the child is a far cry from the understanding of the child himself. For Handley (1973), the obvious question is why two children, with the same I.Q. score, and of the same age, sex and socio-economic status, may differ so markedly in their academic attainment. As has been discussed, a great deal of the research into academic achievement or underachievement has shifted towards the study of the role played by affective variables. However, as Kohn (1977) notes, although researchers have found correlations between many affective variables and underachievement in school-going children, the question of cause and effect is not clear. There have been few studies concerned with the preschool child entering primary school for the first time, using social-emotional functioning as a predictive factor of later achievement or underachievement, so that no clear-cut conclusions can be drawn about the cause and effect of social-emotional functioning and academic attainment. In the present study, the children were assessed on both criteria in nursery school and in elementary school, and this provided an ideal opportunity to further clarify the relationship between preschool social-emotional functioning and later academic achievement.

5.3 Hypotheses

In this study, the following three hypotheses were formulated:

Hypothesis 1 Preschool social-emotional functioning is related to later academic achievement and underachievement.

Hypothesis 2 The relationship between preschool social-emotional functioning and academic achievement and underachievement will differ according to sex.

Hypothesis 3 Interest-Participation, Cooperation-Compliance, Apathy-Withdrawal, and Anger-Defiance are more significantly related to, and more predictive of, later academic performance than the variables in the Animal Crackers or the Dreyer and Haupt tests.

5.4 Definition of an Underachiever

The underachiever in this study was defined as a child whose intellectual potential lies within the normal range (i.e. whose score on a test of intellectual ability is between 90 - 110) but who is achieving academically or cognitively at a level below his class average.

Academic achievement was measured by various cognitive tests in Grade I, as well as teacher's ratings on subjects taught in Grade II.

5.5 The Early Learning Project Sample

The subjects for this project comprised 426 preschool children from 12 nursery schools in the Johannesburg area. There were 244 males and 182 females, and their ages ranged from 55 to 82 months. All were eligible for primary school the following year. The nursery schools were registered with the Department of Health of the Johannesburg Municipality, and were classified by this authority according to the socio-economic area they serve. The project utilized this criteria for the classifications of the

schools, and Table I shows the breakdown of the 12 schools according to their socio-economic classification.

Table I

Upper-Middle (SES 1)		Middle (SES 2)		Low (SES 3)	
Schools	No.	Schools	No.	Schools	No.
A	39	D	36	H	27
B	128	E	44	I	18
C	17	F	36	J	8
		G	30	K	12
				L	31
Total number of children	184		146		96

Table II gives the mean ages and the age range, for boys and girls in each of the three SES groups.

Table II

	SES 1		SES 2		SES 3	
	Boys	Girls	Boys	Girls	Boys	Girls
No.	117	67	77	69	51	45
Mean	5 yrs 10 mths	5 yrs 9 mths	5 yrs 11 mths	5 yrs 11 mths	5 yrs 9 mths	5 yrs 9 mths
Range	4 yrs 9 mths to 6 yrs 5 mths	5 yrs 3 mths to 6 yrs 7 mths	5 yrs 1 mth to 6 yrs 10 mths	5 yrs 3 mths to 6 yrs 9 mths	5 yrs 3 mths to 6 yrs 8 mths	5 yrs 3 mths to 6 yrs 9 mths

The study suffered a severe attrition rate after the nursery school stage, particularly with SES 3. The parents of a number of the children from the upper-middle and middle SES groups either moved out of the Johannesburg area, or emigrated. A few children were kept back at nursery school to repeat the year and a fairly large number of children, especially from the SES 3 group, simply disappeared.

Table 3 gives the numbers of boys and girls for each SES group over the two subsequent years of the study.

TABLE III

	GRADE I (1979)	GRADE II (1980)
SES 1		
Boys	79	69
Girls	50	48
Total	129	116
SES 2		
Boys	58	51
Girls	47	38
Total	105	89
SES 3		
Boys	29	19
Girls	24	18
Total	53	37

5.6 The sample for the Present Study

The sample for the present study was taken from the above sample, but included only those children whose scores on the Draw-a-Man Goodenough test fell within the normal range of intelligence, that is between 90 - 110 points. A major criticism of many studies investigating the relationship between emotional factors and academic underachievement, is that intelligence, or a score on any test of intellectual or cognitive ability, is not assessed and is therefore an important uncontrolled variable. As

a result children who may have very different cognitive and intellectual abilities, are grouped within the same sample. A child who scores below average on an intelligence or cognitive test, and who performs poorly on academic subjects, cannot necessarily be described as an underachiever, and may, in fact, be a high achiever by his own intellectual standards. The Draw-A-Man test is discussed in detail in Appendix A.

TABLE IV

Valid cases = 394	Missing cases = 32
No. of children between 85 and 115	= 263 (66,75%)
No. of children above 115	= 65 (16,49%)
No. of children below 85	66 (16,75%)
Mean = 100,19	
Standard Deviation = 16,68	

The number of children scoring between 90 - 110 was 200, 117 boys and 83 girls. However, due to the fairly high attrition rate suffered by the project, by Grade II this number was considerably diminished. Table V presents the number of children in Grade I and Grade II within the normal range of intellectual ability (90 - 110) according to sex.

TABLE V

	GRADE I	GRADE II
Boys	91	89
Girls	67	63
Total	158	152

It should be noted that the sample is no longer classified according to socio-economic status (SES), and sex was the only differentiating variable. Firstly, it was not considered feasible to divide the sample further into smaller groups according to sex and SES, as this would have necessitated the creation of nine groups and the numbers in each group became too small for valid and

reliable statistical results to be obtained. Secondly, disadvantaged status has been found to be a handicap to cognitive functioning and to a lesser degree to emotional functioning (Kohn, 1977). Indeed, in the Early Learning Project, Snell (1982) found that low SES groups did not perform as well as the higher groups on cognitive tests. However, the rationale behind using the DAP as a screening device was that any child, from any SES, who was lacking in cognitive or intellectual skill, would not be included in the sample, which only included children within the normal range of intellectual functioning. Finally, as regards the deleterious effects of disadvantaged status on social-emotional functioning, although the children in the Early Learning Project sample were classed as low SES in terms of White South Africans, they were not realistically comparable to Kohn's (1977) definition of disadvantaged status, or low SES, as this term included within its parameters minority race-group status, slum-dwelling, welfare assistance or extreme poverty.

5.7 Procedure

The study was conducted in three separate phases. The children were tested and rated at yearly intervals in nursery school, Grade I and Grade II. The testing programme was conducted by this writer, and third year students from the School of Psychology and the Department of Education, under the supervision of Dr Shmukler and Prof Skuy.

The children were tested and assessed both individually and in groups, and teacher rating scales were also utilized after the teachers had received training from members of the research team. A full list and description of the tests and rating scales used during each phase is given below. Two types of measures were used: i) cognitive and academic measures and ii) tests and rating scales of social-emotional functioning.

5.7.1 Phase 1

The nursery school children were assessed on a battery of tests, measuring both cognitive and social-emotional functioning. This took place in September 1978.

i) Cognitive Test:

a) Goodenough Draw-A-Man (scored according to the procedure set down in the Aston Index, Newton and Thomson, 1976).

ii) Social-Emotional Tests and Rating Scales

a) Animal Crackers : Test of Motivation to Achieve (Adkins and Baliff, 1973).
b) Kohn Scale (Kohn and Rosman, 1972(a)).
c) Competence Rating Scale (Dreyer and Haupt, 1966).

5.7.2 Phase II

The children, now in Grade I, were assessed on three tests measuring cognitive functioning, as well as a teacher rating scale assessing academic achievement. This took place in August 1979.

i) Cognitive Tests

a) English Picture Vocabulary Test (Brimer and Dunn, 1963).
b) Southgate Reading Test (Southgate, 1971).
c) Young Group Mathematics Test (Young, 1973).
d) Teacher Rating Scale (to assess child's academic performance as reflected by end of year "Position in Class").

5.7.3 Phase III

Measures of the Grade II children's academic achievement were taken from teacher rating scales. This took place in September 1980.

i) Cognitive Assessments

a) Teacher's rating of child's ability in Reading and Arithmetic.

A full description of each test is given in Appendix A.

5.8 Statistical Design

i) t-tests were performed on the results obtained for the male and female groups for all the social-emotional variables used in this study, to test whether either of the two groups scored significantly differently on any of these independent variables. The tests were two-tailed, and a significance level of 0,05 or better was assumed.

ii) The Pearson Product Moment Correlation Coefficient was used to obtain the degrees of relationship, or correspondence, between the cognitive, or academic achievement criteria variables, and social-emotional variables. McCall (1970) points out that this formula permits easy computation with a large number of subjects, and, in addition, since the assumption underlying the Pearson Product Moment Correlation is that the relationship between the two variables is linear (Roscoe, 1969), the formula provides the appropriate sign for the correlation coefficient, indicating positive or negative relationships. A significance level of 0,05 or better was assumed.

iii) Linear multiple regression was used to determine the relative contributions of a set of predictor variables on two separate dependent variables, Reading and Arithmetic. The step-wise approach used entered the independent variables into a predictive equation in an order corresponding to their contributions, selecting the best

predictor first from the whole set of predictors, then adding the second best, and so on, until all the predictors have been related to the criteria in order of importance.

CHAPTER SIX

RESULTS

As a first step, possible differences between male and female subjects on the predictor variables were examined by means of t-tests. Secondly, the data were analysed by means of a Pearson Product Moment Correlation, in order to examine the relationship between preschool social-emotional functioning, as assessed by standardized tests and rating scales, and later academic underachievement in Grades I and II, as assessed by standardized tests and teacher rating scales. An attempt was also made to determine whether the relationship between preschool social-emotional functioning and academic underachievement differed according to sex.

Finally, a stepwise multiple regression was used to test the hypothesis that certain factors of preschool social-emotional functioning are more strongly related to, and more predictive of, later academic underachievement than others. The stepwise regression was used on two different criteria variables (Reading and Mathematics) in order to find the best linear combination from the assessed prediction variables.

6.1 t-tests between Male and Female Groups (see Table VI)

As noted in the introductory chapters, there are many indications in the literature that males and females, and their academic performances, are affected differently by different social-emotional factors, and they are reported to have obtained different scores on tests measuring these factors (Behrens and Vernon, 1978; Kohn, 1977; Wall, 1973). Thus, t-tests were performed on both groups for all the social-emotional variables used in the study. If males and females obtained different scores on the independent variables, it would affect the relationships between these variables and the criterion variables, and the independent variables would have to be treated differently for each sex.

TABLE VI Table of t-tests of Male vs Female on Social-Emotional Variables

N = 178
N of Males = 101
N of Females = 77

	t values	df	2-tail prob	Mean Male	Mean Female	Std Error Male	Std Error Female
ANIMAL CRACKERS							
1) School Enjoyment	-0,72	174	0,470				
2) Self Confidence	-0,92	174	0,358				
3) Purposiveness	1,49	174	0,137				
4) Instrumental Activity	0,20	174	0,839				
5) Self Evaluation	0,57	174	0,569				
TOTAL	0,11	176	0,915				
KOHN SCALES							
Interest-Participation	1,80	148	0,074				
Apathy-Withdrawal	-1,52	140	0,131				
Cooperation-Compliance	-0,95	141	0,342				
Anger-Defiance	1,89	141	0,061				
DREVER AND BRIEF SCALE							
1) ITEM 1 (Eat)	2,01	162	0,046	2,248	2,039	0,067	0,079
2) ITEM 2 (Ladder)	1,14	166	0,255				
3) ITEM 3 (Blocks)	1,02	166	0,308				
4) ITEM 4 (Boxes)	0,98	164	0,329				
5) ITEM 5 (Costume)	0,05	166	0,963				
TOTAL	1,92	166	0,056				

Two-tailed tests, 0,05 level of significance

Table VI shows the results of the t-tests between males and females on the independent variables. The tests were two-tailed and a significance level of 0,05 or better was assumed.

As can be seen, the only variable that distinguishes between the two groups is an item from the Dreyer and Haupt Scale, ITEM 1 (X and another child (Y) are playing with a bat and a ball. They appear evenly matched in skill and control. Soon, however, child Y calls out "I'm better than you. I hit more than you." What would X do in such a situation?) The males scored significantly higher on "competence" than the females.

6.2 Relationship Between Predictor Variables and Measures of Academic Achievement in Grade I and Grade II

Using a Pearson Product Moment Correlation, scores on various criteria of academic performance were inter-correlated with the predictor variables of social-emotional functioning. The criteria used to assess academic performance were as follows:-

Grade I
Brimer and Dunn Vocabulary Test
Young Mathematics Test
Southgate Reading Test
Position in Class (as indicated on teacher's report)

Grade II
Teacher's Rating of Reading
Teacher's Rating of Arithmetic

The predictor variables of social-emotional functioning, on which the children were tested in nursery school, were as follows:-

Animal Crackers (5 factors, and a total score)
Kohn and Rosman Scale (4 factors)
Dreyer and Haupt Scale (5 factors, and a total score)

As noted above, there are indications that the academic performance of males and females are affected differently by different social-emotional factors. Thus, three different correlation tables were drawn up, one for the whole sample, and one each for the male and female samples.

Significance levels of 0,05 or better were assumed, and the significance of the correlation coefficients are noted with asterisks.

An inspection of the tables indicates that the majority of the correlations obtained in this study are not high. Many writers (McCall, 1970; Roscoe, 1969) have pointed out the problem of obtaining large correlation coefficients in the behavioural sciences, and, in a study of this nature, one would be suspicious of very high correlations. What is of particular interest is the direction and significance of the degree of association between variables. The correlations are not taken to indicate anything with regard to cause and effect. Campbell and Stanley (1963) discuss the difficulties in inferring causality from correlational data. They point out, however, that correlations are useful for suggesting hypotheses regarding causality. This is because while the significance of a correlation does not provide evidence that one variable had a causal effect on the other, the absence of a relationship leads to the positive conclusion that they did not causally influence one another.

(In some cases, because of incomplete teacher rating forms, or absenteeism on the child's part, certain variable scores were missing. In the case of these missing values, a mean score was substituted before the correlation was calculated.)

Total Sample (See Table VII)

Animal Crackers

The correlations between the Animal Crackers variables and the criterion variables are very scant. The significant correlations are Self-Evaluation with two Grade I measures, Southgate Reading and Position in Class, and with Grade II Reading. Purposiveness

TABLE VII Correlation Coefficients Between Academic Achievements, in Grade I and Grade II, and the Predictors

TOTAL SAMPLE N = 158 Grade II N = 152

GRADE I N = 158

ANIMAL CRACKERS		GRADE I				GRADE II	
		Vocabulary	Mathematics	Southgate Reading	Position in Class	Reading	Arithmetic
School Enjoyment	SE						
Self Confidence	SC						
Purposiveness	PURP			.161*			
Instrumental Activity	IA						.140**
Self Evaluation	SRE			.194**	.145*	.256**	
TOTAL	SCOT						
MOHN SCALES							
Interest-Participation	KREIP		.192**	.262**	.189**	.170*	
Apathy-Withdrawal	KREIN	-.155*	-.161*	-.309***			
Cooperation-Compliance	KRE2P		.171*	.295***		.403***	.274**
Anger-Defiance	KRE2N	-.181*		-.170*		-.303**	-.205**
DREVER AND BRUPT SCALE							
Bat	ITEM 1	.172*		.184*			
Ladder	ITEM 2						
Blocks	ITEM 3						
Boxes	ITEM 4		.141*	.142*			
Costume	ITEM 5						
TOTAL				.195**			

Significance Levels
* p 0.05
** p 0.01
*** p 0.001

also correlated positively with Southgate Reading, and Instrumental Activity with Grade II Arithmetic.

Kohn and Rosman Scales

Different factors of this scale correlated with all the criterion variables. The two negative factors (Apathy-Withdrawal and Anger-Defiance) both correlated negatively with Vocabulary and Southgate Reading, while Anger-Defiance was also correlated negatively with Grade II Reading and Arithmetic, and Apathy-Withdrawal with Young Mathematics.

The two positive factors, Interest-Participation and Cooperation-Compliance were both positively related to Young Mathematics, Southgate Reading, and Grade II Reading. In addition, Interest-Participation was also positively related to Grade I Position in Class, while Cooperation-Compliance correlated positively with Grade II Arithmetic.

It should be noted that all four factors were significantly related to Southgate Reading, and that three were related to Young Mathematics and Grade II Reading. All the correlations between the positive factors and the criterion variables were positive, while the negative poles correlated negatively with the dependent variables.

Dreyer and Haupt Scale

The significant relationships between these variables, and the criterion variables, were few. Item 1 was significantly related to Vocabulary and Southgate Reading, while Item 4 was correlated significantly with Young Mathematics and Southgate Reading. The Total score was also significantly related to Southgate Reading.

Total Male Sample (see Table VIII)

Animal Crackers

There were no significant correlations between any of the Animal Crackers items and the criterion variables.

Kohn and Rosman Scales

Again, the Kohn and Rosman Scales provided most of the significant relationships. As with the total sample, the two positive factors, Interest-Participation and Cooperation-Compliance correlated positively with Southgate Reading, with Interest-Participation again relating significantly to Position in Class, and Cooperation-Compliance again positively correlated with Grade II Reading, and also Grade II Arithmetic.

As in the total sample, negative Factor I (Apathy) related negatively with Southgate Reading, and negative Factor II (Anger) with Vocabulary. Both of these negative factors were negatively related to Grade II reading and arithmetic, as they were in the Total Sample.

Dreyer and Haupt

There were only two significant correlations, Item I with Vocabulary and with Southgate Reading.

TOTAL FEMALE SAMPLE (see Table IX)

Animal Crackers

With the Female Sample, there were more significant correlations than with the total sample. Three of the factors, School Enjoyment, Self-Confidence and Self-Evaluation, and the Total Animal Crackers score, correlated with Grade II Reading. The Total score also correlated with the Southgate Reading, and

TABLE VIII TOTAL MALE SAMPLE N = 91

		Grade I N = 91				Grade II N = 89	
		GRADE I				GRADE II	
ANIMAL CRACKERS		Vocabulary	Mathematics	Reading	Position in Class	Reading	Arithmetic
School Enjoyment	SE						
Self Confidence	SC						
Purposiveness	PURP						
Instrumental Activity	IA						
Self Evaluation	SEE						
TOTAL	SSOT						
KOHN SCALES							
Interest-Participation	KNF1P			.277**	.190*		
Apathy-Withdrawal	KNF1N			-.312**		-.262*	-.229*
Cooperation-Compliance	KNF2P			.295**		.445***	.303**
Anger-Defiance	KNF2N	-.190*				-.241*	-.197*
DENVER AND HALPT SCALE							
Bat	ITEM 1	.200*		.287**			
Ladder	ITEM 2						
Blocks	ITEM 3						
Boxes	ITEM 4						
Costume	ITEM 5						
TOTAL							

Significance Levels
* p 0.05
** p 0.01
*** p 0.001

TABLE IX TOTAL FEMALE SAMPLE N = 67

		Grade I N = 67				Grade II = 63	
		GRADE I				GRADE II	
ANIMAL CRACKERS		Vocabulary	Mathematics	Southgate Reading	Position in Class	Reading	Arithmetic
School Enjoyment	SE					.449***	
Self Confidence	SC					.303*	
Purposiveness	PURP				.216*		
Instrumental Activity	IA						
Self Evaluation	SEE					.511***	
TOTAL	SCOT			.228*		.421***	
KOHS SCALES							
Interest-Participation	KRF1P	.316**	.220*				
Apathy-Withdrawal	KRF1N	-.252**		-.282**			
Cooperation-Compliance	KRF2P		.525***	.332**		.323**	.242*
Anger-Defiance	KRF2N	-.296**	-.343**	-.354**		-.383**	-.241*
DREYER AND HAUPT SCALE							
Bat	ITEM 1						.259**
Ladder	ITEM 2						
Blocks	ITEM 3						
Boxes	ITEM 4	.272**		.278**			
Costume	ITEM 5						
TOTAL							

Significance Levels
* p 0.05
** p 0.01
*** p 0.001

Purposiveness with Position in Class.

Kohn and Rosman Scale

The correlations with the second factor (Cooperation-Compliance versus Anger-Defiance) were particularly prevalent. Anger-Defiance was negatively related to Vocabulary, Young Mathematics, Southgate Reading, and Grade II Reading and Arithmetic, while Cooperation-Compliance was positively related to all these variables except Vocabulary.

Interest-Participation was positively related to Vocabulary and Young Mathematics, while Apathy-Withdrawal correlated negatively with Vocabulary and Southgate Reading.

Dreyer and Haupt Scales

As with the two previous samples, there were few correlations. Item 4 correlated positively with Vocabulary and Southgate Reading, and Item 1 with Grade II Arithmetic.

Summary

The Animal Crackers test and the Dreyer and Haupt Scale provided few correlations, and no discernible patterns. (The only significant relationship to be repeated was that of Self-Evaluation with Grade II Reading in the Total and the female samples).

By contrast, the Kohn and Rosman scales featured prominently in all three samples. Cooperation-Compliance and Anger-Defiance were significantly correlated with Grade II Reading and Arithmetic in all three samples, and in the male sample Apathy-Withdrawal was negatively correlated with the two Grade II criteria as well.

Southgate Reading correlated with Apathy-Withdrawal (negatively) and Cooperation-Compliance (positively) in all three samples, with Interest-Participation (positively) in the male and

the total sample, and with Anger-Defiance (negatively) in the female and the total sample.

Young Mathematics was related to Interest-Participation and Cooperation-Compliance (both positively) in both the total and the female samples.

Vocabulary was negatively correlated with Anger-Defiance in all three samples, and with Apathy-Withdrawal in the female and total samples. Finally, Position in Class was positively correlated with Interest-Participation in the male and in the total samples.

6.3 Linear Stepwise Multiple Regression

The final stage of statistical analysis in this study involved linear multiple regression. This procedure investigates the contribution made by a combination of independent variables, X_1, to a dependent variable, Y. Specification of this relationship takes the format of a linear function between the dependent and independent variables:

$$Y^1 = A + B_1 X_1 + B_2 X_2 \ldots + B_k X_k$$

where Y^1 is the estimated value of the dependent variable y;
A is the y - intercept of the regression line;
B_j is the regression coefficient; and
X_1 is the value of the independent variables.

The A and B_1 coefficients are selected according to the least squares principle, which implies that the sum of the squared residuals $(Y - Y^1)^2$ is minimized (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975).

This method allows for the determination of the relative contributions of a set of predictor variables on a single dependent variable, and, in addition, it has the potential for a stepwise

approach which enters variables into the predictive equation in an order corresponding to their contributions. In the stepwise regression programme in the SPSS manual (Nie et al, 1975), the computer automatically selects the best predictor first from the whole set of predictors, then adds the second best, the third, and so on, until all the predictors have been related to the criterion in order of importance.

There are various methods, such as beta weights and unstandardized regression weights to assess the effect of the independent variable X_1, on the dependent variable, Y. There are also two F-tests, and this study makes use of one. This F-test provides an indication of the significance of the multiple correlation coefficient (multiple R), while the other examines the significance of the regression coefficient (B). This latter test was not used in this study.

According to Kerlinger (1973), this statistical procedure is an extremely useful one and is based on powerful mathematical methods. Although he warns of certain limi tions and difficulties in the use of this technique, there are clearly a number of advantages.

Firstly, linear multiple regression allows for a flexible approach in analysing the data, which is not limited to searching for direct causality, and which allows for the examination of the more complex aspects of the interrelationships between the variables.

Secondly, the technique provides both a descriptive and an inferential analysis of the data.

Thirdly, the contribution of the variance gives both the descriptive and inferential power to the technique.

Finally, in the present study, in which an attempt is being made to examine issues on a wide range of data, and the multiple

R's tend by necessity to be low, this technique can improve understanding by highlighting the smaller contributions.

When using this technique, it is important that the independent, or predictor, variables are also independent from each other. That is, one may not use variables which are highly correlated with each other, nor may one use an overall, or composite, test score, together with the separate component scores which make up the overall score. Thus, for example, one may not include the overall Animal Crackers score in the same regression as the five component scores. For this reason, the total Animal Crackers score and the total Dreyer and Haupt scores were not included in the regressions. Similarly, since the positive and negative poles of the Kohn scales were polar opposites, and were thus perfectly negatively correlated with each other, they could not be included in the same regression.

Thus, four analyses, using stepwise regression, were carried out on the whole sample. The analyses were:

A) Southgate Reading Test (Grade I) with twelve independent variables. These consisted of the five component scores of the Animal Crackers test, the five items from the Dreyer and Haupt test, and the two positive poles from the Kohn scales, namely Interest-Participation and Cooperation-Compliance.
B) Southgate Reading Test with the five Animal Crackers and five Dreyer and Haupt items, as well as the two negative poles from the Kohn scales, Apathy-Withdrawal and Anger-Defiance.
C) Young Mathematics Test (Grade I) with the same independent variables as in A.
D) Young Mathematics Test with the same independent variables as in B.

Table X shows the predictors used in the Regression Analyses against the two criteria, Reading and Mathematics.

In tables XA, XB, XC and XD the following information is

TABLE X Regression Analyses of Factors with both Reading and Mathematics as Dependent Variables

ANIMAL CRACKERS

SE	School Enjoyment
SC	Self Confidence
PURP	Purposiveness
IA	Instrumental Activity
SFE	Self Evaluation

KOHN SCALES

KRFIP	Interest-Participation
KRF2P	Cooperation-Compliance
KRFIN	Apathy-Withdrawal
KRF2N	Anger-Defiance

DREYER AND HAUPT SCALE

ITEM 1	_____ and another child are playing with a bat and ball. They appear evenly matched in skill and control. Soon, however, child X calls out "I'm better than you. I hit more than you." What would _____ do in such a situation?
ITEM 2	Child X and _____ are both pulling at a ladder, each screaming loudly: "I had it first." What would _____ do in such a situation?
ITEM 3	_____ is building a garage. Child X has been annoying him by removing blocks and telling him how silly his garage looks. What would _____ do in such a situation?
ITEM 4	The teacher brings a collection of boxes of different sizes, shapes and colours, etc, to school and puts them on the table. What would _____ do in such a situation?
ITEM 5	_____ is dressing up in a costume and having difficulty with some pieces of apparel. What would _____ do in such a situation?

provided:

The multiple R indicates the multiple correlation between the criterion variable and a linear combination of predictors. R^2 indicates how much of the common variance is explained by the linear combination of predictors, and reflects the overall accuracy of the prediction equation (Nie et al, 1975). The F-test is applied to test whether the observed linear association is statistically significant, together with the overall equation, as well as determining the significance of the Multiple R. The regression coefficient is the value obtained in the chosen equation, which raises the explained variance by the amount stated.

Table XA Stepwise Regression with Southgate Reading as the Dependent Variable

The prediction offered by the independent variables is fairly low, yet as stated above, even small contributions to the explained variance cannot be lightly dismissed.

Adopting the equation that raised the explained variance by at least 2 percent, the following result was obtained:

Reading = 0,197 (Constant) + 0,252 (Cooperation-Compliance) + 1,088 (ITEM 1) + 0,257 (Interest-Participation) + 0,480 (Purposiveness).

The multiple R in this equation is 0,466. The contribution of the above variables in the equation accounted for 19,9 percent of the variance in Reading. The two positive Kohn factors were both important Cooperation-Compliance by itself accounted for 10,7 percent of the variance, while Interest-Participation accounted for 2,4 percent. Jointly, they accounted for 13,1 percent of the variance. ITEM 1 (from the Dreyer and Haupt scale) accounted for 4,3 percent, and Purposiveness, from the Animal Crackers test, accounted for 2,5 percent of the variance in Reading.

Summary Table of the Multiple Correlations with Reading as the Dependent Variable, and the Regression Equation

TABLE XA

A READING

	MULTIPLE R	R^2	F	Coefficient that raises the explained variance by at least 2%
KRF2P	0,328	0,107	11.922**	0.252
ITEM 1	0.387	0.150	8.652**	1.088
KRFIP	0.417	0.174	6.804**	0.257
PURP	0.446	0.199	5.949**	0.480
IA	0.459	0.211	5.076**	0.197 (Constant)
SFE	0.473	0.224	4.516**	
SC	0.476	0.227	3.899**	
ITEM 3	0.479	0.229	3.419**	
ITEM 4	0.480	0.231	3.029**	
ITEM 5	0.481	0.231	2.703**	
ITEM 2	0.481	0.231	2.432**	
SE	0.481	0.231	2.205**	

Significance Level ** p 0.01

Regression Equation = READING = 0.197 (Constant) + 0.252 (KRF2P) + 1.088 (ITEM 1) + 0.257 (KRFIP) + 0.480 (PURP)

R = 0.446 R^2 = 0.199 F = 5.949** 4 + 96 df

Table XB Stepwise Regression with South Gate Reading as the Dependent Variable

Compared to the previous result, slightly less of the variance in Reading was accounted for. The following equation, which raised the explained variance by at least 1 percent, was adopted:

Reading = 14,784 (Constant) - 0,300 (Apathy-Withdrawal) + 0,573 (Purposiveness) + 1,351 (ITEM 4) - 0,345 (Instrumental Activity).

A multiple R of 0,425 was obtained, accounting for 16,8% of the variance by the combination of predictors. The negative Kohn factor Apathy-Withdrawal, was very important, and alone accounted for 9,3 percent of the variance in Reading. Also important were Purposiveness, which accounted for 3,4 percent of the variance, ITEM 4, which accounted for 2,9 percent of the variance, and Instrumental Activity, which accounted for 1,2 percent of the variance.

It is noteworthy that three of the Kohn factors, two positive and one negative, figured prominently in both these equations, and accounted for a large percentage of variance in Reading. It is also interesting that Purposiveness was the only factor which was included in both equations. Finally, it should be noted that both the Animal Crackers variables included in the equations, Purposiveness and Instrumental Activity, concern the child's ability, preparedness and knowledge of the correct procedures to become involved in, and execute, various school tasks.

Table XC Stepwise Regression with Young Mathematics as the Dependent Variable

The only significant factor in this regression was Interest-Participation, which accounted for 4,2 percent of the variance in Mathematics. The multiple R was 0,204. Since only one factor was significant, no equation was adopted.

Summary Table of the Multiple Correlations with Reading as the Dependent Variable, and the Regression Equation

TABLE XB

B READING

	MULTIPLE R	R^2	F	Coefficient that raises the explained variance by at least 1%
KRFIN	0.304	0.093	10.109**	-0.300
PURP	0.356	0.127	7.100**	0.573
ITEM 4	0.395	0.156	5.987**	1.351
IA	0.410	0.168	4.852**	-0.345
SFE	0.425	0.180	4.177**	14.784 (Constant)
ITEM 1	0.435	0.189	3.665**	
SE	0.438	0.192	3.147**	
SC	0.439	0.193	2.752**	
ITEM 5	0.441	0.195	2.441*	
KRF2N	0.442	0.195	2.186*	
ITEM 3	0.443	0.196	1.974*	
ITEM 2	0.443	0.196	1.792	

Significance Levels ** p 0.01
* p 0,05

Regression Equation = READING = 14,784 (Constant - 0.300 (KRFIN) + 0.573 (PURP) + 1.351 (ITEM 4) - 0.345 (IA)

R = 0.410 R^2 = 0.168 F = 4.852** 4 + 96 df

Summary Table of the Multiple Correlations with Mathematics as the Dependent Variable, and the Regression Equation

TABLE XC

C MATHEMATICS

	MULTIPLE R	R^2	F	
KRF1P	0.204	0.042	4.317*	
KRF2P	0.239	0.057	2.973	
ITEM 1	0.269	0.072	2.526	
ITEM 3	0.297	0.088	2.328	
ITEM 4	0.319	0.102	2.164	
SE	0.338	0.114	2.016	
SFE	0.345	0.119	1.797	
PURP	0.349	0.122	1.590	
IA	0.353	0.124	1.438	
ITEM 5	0.356	0.127	1.309	
ITEM 2	0.359	0.129	1.197	
SC	0.360	0.130	1.095	

Significance Level * p 0.05

Table XD Stepwise Regression with Young Arithmetic as the Dependent Variable

None of the independent variables in this regression was significant, and thus no equation was selected.

Summary Table of the Multiple Correlations with Mathematics as the Dependent Variable, and the Regression Equation

TABLE XD

D MATHEMATICS

	MULTIPLE R	R^2	F	
ITEM 4	0.183	0.033	3.413	
KRFTN	0.240	0.058	2.991	
ITEM 3	0.270	0.073	2.541	
SET 3	0.299	0.899	2.371	
ITEM 1	0.324	0.105	2.221	
SFE	0.334	0.112	1.972	
PURP	0.338	0.115	1.719	
IARP	0.343	0.117	1.529	
ITEM 5	0.345	0.119	1.363	
ITEM 2	0.348	0.121	1.237	
SCT 2	0.349	0.122	1.121	
KRF2N	0.350	0.122	1.022	

CHAPTER SEVEN

DISCUSSION

In the following discussion, the results of the t-tests will first be briefly examined. Then the three hypotheses formulated in this study will be discussed in detail with reference to the results obtained, firstly with the Pearson Product Moment Correlation Coefficients, and then with the stepwise multiple regression.

7.1 Sex Differences as Revealed in t-tests between Male and Female Groups on the Independent Variables

The results obtained from each psychometric test will be discussed separately.

A) Animal Crackers: A test of Motivation to Achieve

There were no significant differences between males and females on any of the five subtests, nor on the total score. Adkins and Baliff (1973) obtained means, distributions and standard deviations for various ethnic subgroups of children, and for both sexes, but they made no mention of any significant sex differences. Since no reference was made to sex differences in the test manual, they do not appear to have regarded this as a significant factor.

B) Dreyer and Haupt Competence Scale

The results of the present study indicated that the male group scored significantly higher on item 1* than the female group.

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* X and another child, Y, are playing with a bat and ball. They appear evenly matched in skill and control. Soon, however, child Y calls out "I'm better than you. I hit more than you." What would child X do in such a situation?

This result contradicts the finding of Dreyer and Haupt (1966) that there were no sex differences.

This item appears to require elements of assertiveness, confrontation and perhaps aggressiveness. Since the boys scored higher on Kohn's factor of Anger-Defiance, which implies confrontation and assertiveness, it is not too surprising that boys scored significantly higher than girls on this item. However, it is surprising that boys scored slightly (but not significantly) higher on all four of the other items. It would seem to imply that the teachers, who filled in the questionnaire, saw boys as more competitive, independent, capable of handling difficult situations, and of solving problems in the school situation. Again, this may be a result of boys showing more assertive and aggressive behaviour, and the girls demonstrating more shy, and withdrawn behaviour. Despite Kohn's argument, the teachers may have seen the boys' type of behaviour as being more competent. The other possibility is that the raters in this study, who assessed the completed questionnaires, judged these qualities of assertiveness to be more "competent".

C) Kohn's Two-Factor Model of Social-Emotional Functioning

In the present study, boys scored higher on Anger-Defiance, but the difference did not quite reach significance ($p = 0,06$). As regards the Apathy-Withdrawal factor, there was no significant difference between the two groups. This lack of significant differences between the two groups is opposed to Kohn's findings, but is in line with the bulk of research in this area examined by Kohn (1977).

In his largest study, Kohn (1977) found that boys scored significantly higher on both Anger-Defiance and Apathy-Withdrawal. However, the difference between the sexes on Apapthy-Withdrawal was considerably smaller than on Anger-Defiance. (Kohn dealt only with the negative poles in this part of his study, and therefore did not mention any sex differences in Interest-Participation or

Cooperation-Compliance.)

From his examination of the literature, Kohn expected boys to score higher on Anger-Defiance, but he admits that his finding concerning Apathy-Withdrawal was contrary to the large majority of studies. In his survey of relevant research, Kohn found that boys showed a far higher prevalence of anti-social, aggressive, acting-out behaviour than girls, while a higher proportion of girls than boys showed neurotic, shy and withdrawn tendencies.

The differences in findings between this study and Kohn's regarding Anger-Defiance may be to some extent due to the difference between the two samples used. The major differences between the two are family status, socio-economic and ethnic status. In Kohn's sample, the children came from lower-, lower-middle, and middle class families, slightly more than 50% of which were one-parent households. 56% of the children were black, 27% were white, and 17% Puerto Rican. Approximately 45% of the families had annual incomes of below $5000, and 9% had an annual income of below $3000. The children in the sample for this present study were all white, and most came from middle- or upper-class families. Only 16% of the entire sample came from one-parent families.

Kohn found that race and ethnic variables accounted for a small but significant portion of variance in Anger-Defiance, and that white children rated lower on this syndrome than black or Puerto Rican children. Disrupted family life was the most potent demographic predictor of disturbed behaviour, and boys suffered from this more than girls, especially on the Anger-Defiance factor. Thus, one would expect less Anger-Defiance from the children in this present study, than from the children in Kohn's study, especially from the boys. Therefore, the finding that boys scored higher, albeit not significantly, than girls, appears reasonable.

Although Kohn admits that his finding that boys scored significantly higher than girls on Apathy-Withdrawal was contrary

to other research findings, he unfortunately does not attempt to explain this result. It is therefore difficult to ascertain why the present study differed from Kohn's, in which the girls scored slightly, but not significantly, higher than boys on this factor. However, this result is in line with most of the studies in this field (Kohn, 1977). Moreover, the sample differences already mentioned above may have had a significant influence on this result as well.

7.2 Discussion of Hypotheses

In this study, the following three hypotheses were formulated:-

Hypothesis 1 Preschool social-emotional functioning is related to later academic achievement and underachievement.

Hypothesis 2 The relationship between preschool social-emotional functioning and academic achievement and underachievement will differ according to sex.

Hypothesis 3 Interest-Participation, Cooperation-Compliance, Apathy-Withdrawal, and Anger-Defiance are more significantly related to, and more predictive of, later academic performance than the variables in the Animal Crackers or the Dreyer and Haupt tests.

Hypotheses 1 and 2 will be examined together in this discussion, while hypothesis 3 will be examined separately. Hypotheses 1 and 2 will be discussed with reference to the results obtained by the Pearson Product Moment Correlation Coefficients. Hypothesis 3 will be examined with reference to the results obtained from the Linear Multiple Regression. In the discussion of Hypotheses 1 and 2, the results of each psychometric measure of social-emotional functioning will be discussed separately.

7.2.1 Hypotheses 1 and 2

A) Animal Cracker: A Test of Mocivation to Achieve

The most surprising feature of the results of this test is that, while there are a few significant correlations between motivation to achieve and the achievement criteria for girls, there are no significant correlations for boys. Thus, in this test, hypothesis 2 was confirmed, and hypothesis 1 was confirmed for girls. Since there were no sex differences in the t-tests for Animal Crackers, the test itself could not have been an influencing factor in the result.

Specifically, for girls, achievement motivation and reading appear to be strongly related. Three sections of the Animal Crackers test, namely School Enjoyment, Self-Confidence and Self-Evaluation, as well as the Total score, were correlated with Grade II Reading. The Total score was also correlated positively with Grade I Reading, while Purposiveness was significantly related to Position in Class (Grade I).

While Adkins and Haliff (1973) warn that the five sections of the test may not be as statistically reliable as their combination in the Total score, they do provide useful information on aspects of n Ach and their relationship to actual achievement. The fact that three sections of the test, including Self-Confidence and Self-Evaluation, as well as the Total, correlate with Grade II Reading, while only the Total score correlates with Grade I Reading, leads one to make two tentative suggestions. Firstly, that measures of the "self" in girls are strongly related to achievement, particularly reading, and secondly, that this relationship may increase as the child progresses through school. These points will be dealt with in more detail below, when the results of the combined sample are discussed.

In an attempt to explain these results, particularly the sex difference, it would be helpful to examine three recent studies, by

Peterson (1980), and Wade (1981a) and (1981b), whose research indicates the complexity of the concept of achievement motivation, which is not always acknowledged by researchers. They also suggest that the relationship between achievement motivation and academic achievement is far from straightforward, and that other personality variables may interact with n Ach, and further complicate its relationship with achievement. Finally, Wade's research shows that the relationship between these two variables may differ according to sex.

Peterson (1980) chose to study only boys, because, as her literature review showed, boys and girls often show very different patterns of relationship between various personality variables and academic achievement, and she felt that there was a need to treat the sexes differently. Implicit in this rationale is that a study of girls may have produced very different results to those obtained with boys.

In her study, she found that there was no difference in the strength of achievement motivation between achievers and underachievers. Although she postulated that achievers and underachievers would not differ in the strength of their motivation to achieve, she felt that the motives underlying the achievers' and the underachievers' n Ach would differ considerably. She saw n Ach as a personality variable profoundly influenced by the self-concept, and a central assumption in her thesis is that the achiever has a self-concept based on intrinsic self-esteem, while the underachiever has a self-concept based on extrinsic self-esteem. If the underachiever has a self-concept based on extrinsic self-esteem, he would have a very strong need to earn self-esteem through accomplishments and achievements, and would therefore exhibit a high n Ach. However, through the work of Atkinson (1964) and Ausubel and Robinson (1969), one would reason that the underachiever would also have a strong fear of failure, and that failure would be traumatic to him because he has little or no intrinsic self-esteem.

According to the theory of Ausubel and Robinson on the satellizer and nonsatellizer, discussed above, it was also postulated that because the nonsatellizer's self-esteem is dependent upon his own achievements he would be highly motivated towards achievement in order to enhance his self-esteem. However, according to their reasoning, the high n Ach of this child may not be converted into actual achievement for two main reasons. These are a disruptive level of anxiety and a fear of failure. Since the very high level of achievement constantly needed by the nonsatellizer may not be commensurate with his actual ability, he faces a fairly high probability of failure. As mentioned above, any failure is likely to be traumatic to this child, and will probably cause acute anxiety. This in turn may lead to the development of a damaged self-esteem, together with an anxiety neurosis which would prove disruptive in the work environment, especially when the child is faced with tests or novel learning situations. Thus, it is apparent that if a child does not possess intrinsic self-esteem, it may be very difficult for him to transform his expressed n Ach into reality.

In this way, anxiety, and the handling of anxious feelings, may prove to be important interacting variables in the relationship between n Ach and actual achievement. Peterson hypothesized that underachievers would show more anxiety, and less ability to handle anxious feelings, than achievers. Her results demonstrated that although there was little difference in their levels of anxiety, the underachievers showed a marked inability to handle anxious feelings, while achievers showed the ability to deal with anxious feelings constructively. Instead of being overwhelmed by these feelings, the achievers were able to put them into perspective. This implied that achievers were able to gain insight into their problems, and were in a better position than underachievers to handle problems in a constructive manner. In an anxiety-provoking situation, such as a test, achievers are more likely to handle their anxiety and perform creatively and productively, in contrast to the underachievers, who are likely to have their efforts disrupted by anxiety, which will make achievement difficult.

Two studies by Wade (1981a, 1981b) also dealt with anxiety, and appear to make this role even more clear. Wade believed that the relationship between achievement motivation and actual achievement may be more complex for boys than for girls. Her studies were based on the premise that measures of anxiety and of achievement motivation may be indicative of coping strategies. As previously mentioned, Atkinson's (1964) theory of achievement motivation makes the assumption that all individuals have both a motive to achieve success and a motive to avoid failure. This implies that for any individual in a task situation there is an approach-avoidance, or excitation-inhibition confict.

Wade (1981a) suggested that a high score on achievement motivation together with a high score on anxiety might indicate a coping strategy of approach, and may be related to high achievement. On the other hand, high anxiety, coupled with low achievement motivation, might be indicative of a coping strategy of avoidance, leading to low achievement. This hypothesis was largely borne out, although again there were considerable sex differences.

For boys, there were significant differences in academic achievement between highly-anxious highly-motivated and highly-anxious low-motivated pupils, while for girls there was much less difference. There was, however, a close link between anxiety, motivation and actual ability for girls. Wade felt that this may mean that Atkinson's motivational pattern is less relevant for girls than for boys. Instead, girls are probably more conformist, and their affective tendencies may tend to be precluded by situational demands.

The conformity of girls appears to be well established. Freedman, Carlsmith and Sears (1974) write that in past research, sex is the strongest and most consistent factor that has differentiated people in the amount that they conform, with females conforming far more than males. In contrast to the male sex-role of initiative, success and achievement (Marlowe and Gergen, 1969), our culture prescribes docile, submissive, passive and compliant

behaviour in the female, behaviour that often overrides any other personality variable. Thus, given high levels of anxiety, Wade feels that little difference may be expected in cognitive performance by girls, while for boys, high levels of anxiety could have a detrimental effect on performance, unless moderated by very high levels of achievement motivation.

In her studies, Wade included three distinct teaching styles, and found that the relationship between the boys' achievement motivation, anxiety, and actual achievement also varied with styles of teaching. This led her to two further speculations, which applied primarily to boys. The first was that the presence of extrinsic motivational incentives, given by teachers, has a differential effect on achievement according to levels of motivation and anxiety, and according to sex. Here she stressed the importance of trait interaction as a variable when using motivation as a predictor, since Atkinson's (1964) theory makes no allowance for interaction. The second speculation was that additional extrinsic incentives stemming from outside the classroom, such as parental encouragement, mediated between ability and achievement, again especially for boys.

As well as differences in achievement, Wade (1981b) felt that differences in classroom behaviour between boys and girls may be caused by extrinsic motivational incentives, given by parents and teachers. The parents of the highly-motivated, highly-anxious boys appeared to be more "pushing" than the parents of the other children. She concedes that this is not unexpected in terms of sex role and parental ambition, and feels that parents are more pushing in respect of their sons than their daughters, and that this may add to anxiety in these boys.

There are two important issues stemming from Wade's studies. Firstly, the interaction of other personality traits, such as anxiety, has an effect on the relationship between achievement motivation and achievement, especially for boys. Secondly, the attitude of the teacher and parent, and their relationship with the

child, is an important factor in achievement motivation, again more so for boys. The importance of the parent and the teacher on achievement and achievement motivation is well documented (Adkins and Baliff (1973), Ausubel and Robinson (1969), Banner, (1979), Banreti-Fuchs (1978), Behrens and Vernon (1978), Fry and Coe (1980) and Parsons et al (1981)). However, Wade is the only writer in this group to produce evidence that the achievement motivation of boys may be more susceptible to negative influence from teachers and parents than girls.

If one accepts the conclusion that teachers play a large role in achievement motivation and achievement, and that their interpersonal relationships with their pupils are especially important, then there is a large body of literature suggesting that the relationship between teacher and boy is far more likely to be negative than that between teacher and girl (Snell, 1902). Gregory (1977) feels that teachers are more positively disposed towards the behaviour and work of girls, and might be more willing to tolerate problems in girls than in boys. To aggravate the situation, Rutter (1974) states that boys are more difficult behaviourally at school, and present more behavioural problems than girls. Further, Gross (1978) and Kagan (1964) write that boys may be socialized differently towards school than girls, and as a result may view school, and academic work, more negatively. Hence, the boy-teacher relationship is more likely to be negative. Thus, if Wade's finding that the influence of teachers has a differential effect on achievement motivation according to sex is correct, then the achievement motivation, and achievement, of boys, is more liable to suffer.

From the above discussion, it is apparent that achievement motivation, which is one of the most widely used, and abused, concepts in educational psychology, is also an extremely complex concept, and difficult to measure and define. It does not appear as if there is a simple, straightforward relationship between achievement motivation and actual achievement, and it is likely that other personality variables, such as anxiety and self-esteem,

as well as teacher-pupil relationships, interact with achievement motivation, and complicate its relationship with achievement, especially when dealing with boys. However, if a simple correlation between aspects of achievement motivation and criteria of school achievement is sought, it appears as if it is far more likely to be found in a sample of girls, rather than boys, as was the case in this present study.

As regards the total sample, the correlations between the Animal Crackers test and the achievement criteria were scant. The section of the test which correlated the most with the achievement criteria was Self-Evaluation, which correlated significantly with Grade I Reading, Grade II Reading, and Position in Class. The other two sections which correlated with the achievement criteria were Purposiveness, with Grade I Reading, and Instrumental Activity, with Grade II Arithmetic. Purposiveness is defined by Adkins and Baliff (1973) as the ability to set up purposes for directing behaviour, and an ability to work towards future goals. It implies an awareness of the future implications of present behaviour, and reflects a practical attitude towards work. Instrumental Activity is closely related to Purposiveness, and suggests a knowledge of, and an ability to engage in instrumental steps towards accomplishing established purposes. This component also reflects an orientation towards autonomous activity, and an ability to initiate specific behaviour that will ensure success in the task at hand. These concepts are mirrored in Peterson's (1980) study. She claimed that achievers have a more realistic sense of what is involved in achievement, and the steps needed to accomplish a task. They also display more overt and mental activity concerned with actually doing something about attaining an achievement goal. Thus, these two sections of the test appear to be important elements in both achievement motivation and achievement, and this was further illustrated in the Regression equations with Grade I Reading, which are discussed below.

It is interesting to note that of the measures of "self" in Animal Crackers, it is Self-Evaluation, and not Self-Confidence,

which appears to be the more important. For the purposes of the test, Adkins and Baliff defined Self-Evaluation as the child's ability to evaluate his own performance. It is reflected in items that test whether a child knows when his work is right, when he is doing well at school, what he can and cannot do, and whether he always does his best. Again, this can be compared to the picture of the achiever painted by Peterson (1980). With his self-concept based on intrinsic self-esteem, he shows the ability to judge himself, and his performance, accurately and realistically.

Since Self-Evaluation is the variable of the test that correlates the most with the achievement criteria, especially Reading, it is worth examining very briefly some studies investigating the relationship between measures of the "self" and academic achievement. Many investigators have found a positive relationship between "self-esteem" or "self-concept", and various criteria of achievement, usually reading, or language ability, and arithmetic (Chang, 1976; Cole, 1971; Rubin, Dorle and Sandidge, 1977; Williams and Cole, 1968). However, most of these studies were performed on older primary school children. Also, as noted above, a great deal of criticism had been levelled at many of these studies. In many of these studies, self-concept appeared to be inadequately and simplistically defined and measured, and the terms self-concept and self-esteem were often used synonymously and interchangeably.

Few studies have been made of the very young child, and those that have been performed have reported conflicting results (Williams, 1973). A brief look at some of the studies bear out her contention. Rubin (1973) hypothesized that the child's self-esteem would be less firmly established at an early age, and would become more stable, and more highly correlated with achievement, as the child grew older. This hypothesis proved correct. In her longitudinal study, the correlation between self-esteem and achievement was tenuous in nine year old children, but became much stronger with children aged twelve and fifteen years. Rubin stressed in her study the need for more reliable and

valid measures of the self-esteem of young children. Williams (1973) and Butcher (1968) found no relationship between self-esteem and academic achievement in young children. Both used the Coopersmith Self-Esteem Inventory (SEI), and both expressed some dissatisfaction with this test.

The fact that there were correlations between Self-Evaluation, and Reading in Grades I and II, and position in class, may mean that this component of the Animal Crackers test is in some ways more sensitive in measuring aspects of the "self" in very young children than many other instruments, such as the SEI used by Butcher and Williams. It also highlights the importance of feelings of "self" in the areas of achievement motivation and achievement.

In summary, achievement motivation, as measured by the Animal Crackers test, was significantly related to certain criteria of achievement in girls, in particular Reading. In contrast, there was no relationship between any component of achievement motivation and the achievement criteria for boys. It was hypothesized that the relationship between these two variables is an extremely complex one, and may be profoundly influenced by other personality variables such as self-concept, self-esteem and anxiety, or by important figures in the boys' lives, such as parents and teachers. In the total sample, Self-Evaluation was found to be the most significant variable in the relationship between achievement motivation and academic achievement.

B) The Dreyer and Haupt Questionnaire

In order for the teacher to assess the child's competence, an adaption of the Dreyer and Haupt questionnaire was used. The questionnaire, and the factors that it assesses, have been discussed above and the description of the test appears in Appendix 1.

As was mentioned above, this questionnaire was used in the

present study mainly as an adjunct to the Animal Crackers test. However, in contrast to Animal Crackes, this questionnaire gives an indication of the nursery school teacher's own view of the child's competence and ability to cope in the preschool situation.

Strelitz (1977) noted in her study that the teacher and the child may view the child's competence somewhat differently. In this study, she used the questionnaire to measure both the teacher's and [illegible]ild's evaluation of the child's competence. Although she [illegible]tive correlation between the two different sets of asse[illegible]e correlation was fairly low, and Strelitz suggested that competence may be perceived differently by teacher and child, although she did not elaborate much on this idea. However, she reported that the nursery school teacher's evaluation of the childrens' competence accounted for less of the explained variance in the childrens' adjustment to primary school than the childrens' own assessment of their competence. Unfortunately, a confounding factor may have been that assessments of adjustment to primary school took place during the first term of the academic year, and Strelitz felt that many of the children may have been experiencing stress caused by the transition from nursery school to primary school.

In the light of Strelitz' study, it was difficult to predict what results, if any, would be obtained in this present study. However, it was felt that the teachers' assessments of the preschool childrens' competence would have some relationship with the achievement criteria.

In the present study, the correlations between the Dreyer and Haupt questionnaire and the achievement criteria were almost exclusively with verbal skills, these being either Grade I Vocabulary or Grade I Southgate Reading. Only two items from the

questionnaire, Item 1 and Item 4*, and in one case, the Total score, correlated with the criteria.

For the male sample, only Item 1 correlated significantly with the cognitive variables, namely Grade I Vocabulary and Grade I Reading. It was not surprising that the male, rather than the female, sample should show these correlations since the males scored significantly higher than the females on Item 1 in the t-tests. This item reflected competence in the form of assertiveness and competition, and one may expect boys to score higher than girls. It is interesting, however, that this item should correlate with verbal skills. It seems to indicate that these boys are competent, in the sense of assertiveness and competition, not only in the social situation, where verbal ability may play an important role, but are also verbally competent in the academic situation.

In the female sample, Item 4 correlated positively and significantly with the same cognitive criteria as the boys, Grade I Vocabulary and Grade I Reading. Item 4, in contrast to Item 1, does not deal with competition and assertiveness, but rather with curiosity, creativity and imagination. Since there was no significant difference between males and females on this item in the t-test, the results suggest that competence, in this sphere of ability, is related to verbal skills among girls, but not boys. However, a very surprising result was that for girls, item 1 correlated significantly with Grade II Arithmetic. This is the only correlation between the Dreyer and Haupt scale and a Grade II achievement criterion. The result may indicate that as girls grow older, a certain amount of assertiveness and competitiveness, which

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* Item 1: Child Y and another child are playing with a bat and ball. They appear evenly matched in skill and control. Soon, however, child X calls out "I'm better than you. I hit more than you." What would child Y do in such a situation?

Item 4: The teacher brings a collection of boxes of different sizes, shapes and colours, etc, to school and puts them on the table. What would child Y do in such a situation?

was found to be far more prevalent in boys, is of assistance in Arithmetic achievement, an area where boys are often considered superior (Anastasi, 1958).

In the Total sample, Item 1 was correlated with Grade I Vocabulary and Grade I Reading, and item 4 with Grade I Reading, and Grade I Arithmetic, and the Total questionnaire score with Grade I Reading. Again, the items correlate mainly with verbal abilities.

In summary, there are two main points of note in these results. Firstly, the teacher's evaluation of a preschool child's competence, as defined by Dreyer and Haupt, is mainly related to verbal skills, namely Reading or Vocabulary, and the items of the questionnaire which correlate with these skills differ from male to female. Thus, both hypotheses 1 and 2 were confirmed.

Secondly, the relationship between the evaluation of competence and the achievement criteria are almost exclusively confined to Grade I. It would appear as if the nursery school teacher's assessment of this particular variable has value and predictive validity for a short duration, and bears little relationship to academic achievement in Grade II.

C) Kohn's Two-Factor Model of Social-Emotional Functioning

The results of this study support the first hypothesis that the presence of emotional problems prior to school entry is related to later academic underachievement. In contrast, healthy social-emotional functioning in the preschool child is related to later achievement at primary school. All of the four poles of Kohn's bipolar two-factor model correlated either positively or negatively with many of the achievement criteria for the whole sample, and for the male and female samples independently. In addition, there were different patterns in the relationships between the criteria variables and the Kohn factors for the male and female samples, thus confirming the second hypothesis regarding sex differences.

For clarity, the relationship between each bipolar factor and the achievement criteria will be discussed seperately.

Factor 1 : Interest-Participation vs. Apathy-Withdrawal

Both factors were fully defined in Chapter 3, and will be very briefly summarized here. Interest-Participation denotes interest and curiosity in the child, positive interaction with peers and involvement in classroom activities. By contrast, Apathy-Withdrawal indicates shyness, passivity, lack of interest and curiosity, and isolation from peers. Previous findings by Kohn and Rosman (1972b, 1973, 1974) firmly implicated Interest-Participation with later achievement. They postulated that this variable influenced learning, and hence achievement, in two ways. Firstly, a child who is curious and alert will learn more by interacting with, and trying to make sense of, his environment. Secondly, it was felt that this factor had a stimulating effect on the child's mental activities, involving inner mental processes such as initiative, intention, and hypothesis formation and testing. In contrast, the shy, inhibited child isolates himself from people and objects, is listless in his mode of thinking, and indifferent about forming or testing hypotheses about his environment.

Kohn and Rosman further suggested that, both at nursery school and primary school levels, Interest-Participation was to some degree a function of approval, encouragement and nurturance provided by the teacher, as well as a function of the extent to which lessons and activities were designed to encourage creativity, experimentation and pleasure. This implies that a learning environment can be created to arouse optimal degrees of Interest-Participation. However, they also warned that Interest-Participation was less stable over time than Cooperation-Compliance, and that it was the most delicate of all the factors, requiring the most careful environmental nurturance to be maintained. These points are extremely important in the light of the results obtained in this present study. In their earlier

studies, Interest-Participation vs Apathy-Withdrawal was found to be very firmly related to achievement, while the relationship between Factor II (Cooperation-Compliance vs Anger-Defiance) and achievement was tenuous, and was only finally established in a later study.

It was disappointing, therefore, that in this present study, Interest-Participation obtained less correlations with the achievement criteria than the other poles. There also appeared to be little pattern in the correlations, both with Interest-Participation and Apathy-Withdrawal, in contrast to Kohn's (1977) results. However, Kohn used only two achievement variables, Verbal and Arithmetic Achievement, from the Metropolitan Achievement Tests, as well as teacher ratings of Level within Grade, Grade Placement and Academic Standing. (Level within Grade and Academic Standing were similar to the Position in Class used in this present study.) Also, as mentioned in Chapter 4, the sample used by Kohn differed vastly from the sample used in this study, in terms of size, socio-economic status and ethnic groups. Furthermore, the two samples of children may well have been exposed to very different teaching methods and classroom environments. Finally, Kohn's sample were all third grade pupils, while the children in this present study were tested or rated in both Grade I and Grade II. For these reasons, the results of this study were not expected to mirror exactly those obtained by Kohn. He found that for both boys and girls, Interest-Participation was positively related to Verbal and Arithmetic Achievement, as well as Level within Grade, while Apathy-Withdrawal was negatively related to all these criteria for both sexes.

In the present study, the Interest-Participation scores for the total sample were positively correlated with Grade I Mathematics, Grade I Reading, Position in Class (Grade I), and Grade II Reading. For the male sample, Grade I Reading and Position in Class were positively correlated with Interest-Participation, while for females Vocabulary (Grade I) and Grade I Mathematics were positively correlated with this pole. As regards

Apathy-Withdrawal, in the total sample this was negatively correlated with Vocabulary, Grade I Mathematics and Grade I Reading. For the males, there were negative correlations with Grade I Reading, Grade II Reading and Grade II Arithmetic, while for the female sample there were negative correlations between Apathy-Withdrawal, and Vocabulary and Grade I Reading. There are several features in these results that deserve some elaboration.

Firstly, it is interesting that females scoring high on Interest-Participation scored high on Grade I Mathematics, while the males scoring high on Interest-Participation scored high on Grade I Reading. Kohn (1977) quoted several sources, including Anastasi (1958), who cite evidence that, in the general population, girls perform better on tests depending on verbal skills, while boys score higher on test of arithmetic reasoning. Kohn expected his results to be in line with these research findings, but, although he found girls to be superior to boys in verbal achievement, he found no sex difference in arithmetic performance. Therefore, the finding of this present study that girls, but not boys, who scored high in Interest-Participation achieved well in Vocabulary would appear to be in agreement with Kohn. However, Snell (1982) found a fairly large amount of disagreement in the literature regarding reading, and concluded that no definitive statement could be made concerning sex differences in reading. On the other hand, she found that research indicated that girls achieved less well than boys in arithmetic, probably because of cultural and sex-role expectations. In her study, however, she found no sex difference in either arithmetic or reading. Thus, the results of this present study showing that a high level of Interest-Participation is related to high Mathematic achievement in girls and high Reading achievement in boys may be in contrast to other research findings, although there appears to be some controversy and discrepancy on this point. It could be argued that because children who score high on Interest-Participation are more creative and curious, they may be regarded as "exceptional" children, in that their work may be less stereotyped, and may not conform to the norm. Instead, their interests and creativity may

be channelled into many diverse areas. These may include subjects in which their own sex are not expected to excel, according to sex-role conformity. If this is so, the dimensions of Interest-Participation become all the more valuable and desirable.

The results of this present study were in agreement with Kohn (1977) in that he found that Factor I, but not Factor II, was associated with Level within Grade. Its equivalent in this study, Position in Class, was related to Interest-Participation in both the total and male samples.

However, there is another important discrepancy in the results of the present study and that of Kohn's (1977). He found that the negative poles of both Factors I and II, suggesting emotional impairment, are more closely related to poor achievement in Arithmetic than in Verbal tests, and he cited other research confirming this. In this present study, Grade I Reading was related to Apathy-Withdrawal in all three samples, while Grade I Mathematics and Apathy-Withdrawal were related only in the total sample. Furthermore, in the negative poles of both factors there are far more correlations with Grade I Reading than with Grade I Mathematics. In fact, the amount of correlations between Grade I Reading and all four poles is a noteworthy factor in this study.

One explanation for the higher number of correlations with Grade I Reading than with Grade I Mathematics may be in the actual tests used in this study. The Southgate Reading Test has been used "extensively and continually since its construction" (Pumfrey, 1976, p 101) in national and local surveys in Britain. The reliability of the test is said to be 0.9545 (Southgate, 1971), and extensive validation studies have been carried out. On the other hand, no studies on reliability or validity are quoted for the Young Mathematics Test. Thus, while the Southgate Reading Test appears to offer a very accurate and valid picture of reading ability, the accuracy and validity of the Young Arithmetic Test is unknown, and is in question. It seems possible that it is not offering a valid measurement of Mathematical ability. However, as

the results stand, Interest-Participation vs Apathy-Withdrawal stands as a very powerful influence in Grade I Reading, both positively and negatively.

Finally, it is interesting that for males, underachievement appears to become more strongly related to Apathy-Withdrawal as the child grows older. In Grade II, both Reading and Arithmetic are negatively correlated with this factor, which seems to suggest that Apathy-Withdrawal becomes more of a hindrance to the boys' achievement as they progress through school, while it is unrelated to the girls' achievement in Grade II. This result highlights the warning given above. The apathetic, withdrawn child, because of the very nature of his disturbance, may go completely unnoticed by the teacher, in contrast to the angry, acting-out child. With the very withdrawn child, often the only characteristic that is noticed is one of the resultant "symptoms" of the problem, which is the underachievement, for which he may be punished, or labelled as lazy or stupid. Apathy-Withdrawal appears to affect the work of boys far more than girls, which may be expected, since most research indicates that this behaviour is more uncommon, and perhaps more pathological, in boys than girls (Rutter, Tizard and Whitmore, 1970).

In conclusion, while it is clear that Interest-Participation is related to later achievement, and Apathy-Withdrawal to later underachievement, it is disappointing that there were not more correlations with Interest-Participation and the achievement criteria, and that a more consistent pattern did not emerge. Interest-Participation appears to be a far more healthy and desirable attribute than Cooperation-Compliance (Kohn, 1977) and it is disturbing that children who demonstrate this attribute in nursery school do not show better academic achievement in elementary school. It is even more disturbing when one examines the pattern for Factor II, Cooperation-Compliance vs Anger-Defiance, as a very clear pattern emerges, and achievement and underachievement appear to be strongly related to this factor.

Factor II : Cooperation-Compliance vs Anger-Defiance

Cooperation-Compliance refers to the willingness of a child to conform to the regulations and routines of the classroom, and to comply with the teacher's requests and suggestions. Conversely, Anger-Defiance denotes rebelliousness, disruptiveness, creation of disturbances that upset classroom routine, and hostile and aggressive interactions with peers. Although Cooperation-Compliance is seen as the positive pole of Anger-Defiance, Kohn (1977) does not appear convinced that it is always healthy or desirable. He sees a danger that a cooperative, compliant child may become so obedient and "good" that he gives up his own initiative and creativity. In his research, he found that over time Cooperation-Compliance predicted to Apathy-Withdrawal and hypothesized that the quality of a child's environment largely determined the direction and period of time of the change, if any occurred. However, he discovered that Anger-Defiance was more stable over time than its counterpart in Factor I, Apathy-Withdrawal. This was confirmed in this present study, and both poles of Factor II were found to be more stable over time than those of Factor I, in that both poles correlated with both Grade II achievement criteria for all three samples.

Specifically, Cooperation-Compliance was positively correlated with Grade I Mathematics for both the total and the female samples. It was also positively correlated with Grade I Reading, Grade II Reading, and Grade II Arithmetic for the total, male and female samples. Anger-Defiance was negatively correlated with Vocabulary in all three samples, with Grade I Reading in the total and female samples, and with Grade I Mathematics in the female sample. Finally, like Cooperation-Compliance, Anger-Defiance was correlated significantly with Grade II Reading and Grade II Arithmetic, for all three samples, this time, however, negatively.

Thus, the pattern that emerged was fairly clear. With one exception, Cooperation-Compliance was related to Reading and

Arithmetic in all three samples in both grades. Anger-Defiance was related mainly to verbal achievements (Vocabulary and Reading) in Grade I, and was related to Arithmetic and Reading for all three samples in Grade II. Again, this last result for Grade I was in contrast with Kohn's contention that an emotional difficulty, in this case Anger-Defiance, is more strongly related to poor achievement in Arithmetic rather than in Verbal skills. This was discussed above, and the reason for this result could once more lie in the actual tests used, the Southgate Reading Test and the Young Mathematics Test, and the possible difference in their reliability and validity.

The results of this present study are in complete contrast to Kohn's previous findings that both poles of Factor I were more strongly related to achievement or underachievement than those of Factor II. Indeed, in three studies (Kohn and Rosman, 1972b, 1973, 1974) either no correlation was found between the two poles of Factor II, and the achievement criteria, or else a very tenuous one existed for girls only. It was only in 1977 that it was firmly established that Factor II was also related to achievement, although less significantly than Factor I.

In order to explain these results, it is necessary to examine Kohn and Rosman's (1973) argument that social-emotional functioning, relevant to intellectual functioning, consists of two components. These are a person-specific component, that is a personality predisposition, and a situation-specific component. The person-specific component suggests that over a fairly wide range of learning conditions, a child who is well-adjusted learns more, and a child who is disturbed learns less. However, it is the situation-specific component that is of particular interest in this discussion. In 1968, Kohn found large school-to-school differences in the average amount of Apathy-Withdrawal, and Anger-Defiance, in children, that could not be accounted for in the backgrounds of these children. He therefore suggested that a child's interest, or lack of it, at school, and his level of Interest-Participation, Apathy-Withdrawal, Cooperation-Compliance,

or Anger-Defiance, was to some degree a function of the teacher's encouragement and nurturance, and a function of the extent to which lessons, or classroom activities, and the social climate of the classroom, encouraged creativity and experimentation. As mentioned previously, Kohn concluded that optimal degrees of Interest-Participation could be aroused by the correct learning environment. It was also demonstrated in the above discussion that Interest-Participation obtained the least correlations of all the four poles with the achievement criteria. One may conclude from this that, either because of different teaching methods employed, or because of the nature of the school system in this country, Interest-Participation, and its concomitant attributes of creativity and curiosity, are not nurtured or encouraged in the classroom. Furthermore, the fact that Cooperation-Compliance is far more strongly related to the Achievement criteria than Interest-Participation, in terms of the number of correlations obtained, implies that in both Grade I and Grade II children who are obedient and compliant achieve better than other children. One may imply further that the children in this study might have been encouraged by teachers, and by the classroom environments to be obedient and "good", rather than to allow their creativity and curiosity to develop. Since the relationship between achievement and Cooperation-Compliance appears to become larger in Grade II, one may assume that this pattern continues through school. If these implications and assumptions are correct, then it would appear to be a rather sad reflection on our school system if a child's curiosity and creativity is not allowed to develop to its full potential, or indeed, if these qualities are somehow stifled in preference to conformity and obedience, in the quest for academic achievement.

Finally, although it was stated above that, in the male sample, Apathy-Withdrawal becomes more strongly related to underachievement as the boy progresses through Grade II, it would also appear from these results that in all three samples the acting-out, angry, defiant child, underachieves to a greater extent than the recessive, withdrawn child, again in contrast to Kohn's

findings. It may be that, if obedience and compliance are actively encouraged in the classroom, and accepted as desirable qualities, then the acting-out child will be perceived by the teacher to be disruptive of classroom routine, and more of a nuisance than the withdrawn child. The relationship between the angry, defiant child and the teacher may become increasingly negative, and the child's work may suffer accordingly. However, it is also possible that the emotional disturbance of the acting-out child, especially the female, may be more disruptive to efforts to work and achieve than that of the withdrawn child.

To summarize, the results support hypothesis 1, in that the presence of emotional difficulties prior to school entry are strongly related to later academic underachievement. Also, a result of great importance is that healthy social-emotional functioning in the preschool child is related to achievement in primary school. All of the four poles of Kohn's scales correlated either positively or negatively with most of the achievement criteria for the whole sample, and for the male and female samples independently. In addition, there were different patterns in the relationships between the achievement criteria and the Kohn factors for the male and female samples, thus confirming hypothesis 2.

The importance of Kohn's model is evident, and its significance for preschool and primary school children becomes even more apparent in the third stage of the results, the stepwise multiple regressions. It will be shown that in the regressions, three of the four poles of Kohn's scales are extremely important predictors, accounting for the largest amounts of explained variance in the selected criteria.

7.2.2 Hypothesis 3

This hypothesis states that Interest-Participation, Cooperation-Compliance, Apathy-Withdrawal and Anger-Defiance are more significantly related to, and more predictive of, later academic performance than the variables in the Animal Crackers or

the Dreyer and Haupt tests.

A multiple stepwise regression technique was used to test this hypothesis on two achievement criteria variables in Grade I, the Southgate Reading Test and the Young Mathematics Test. As mentioned above in the results section, this method allows for the determination of the relative contribution of a set of predictor variables on a single dependent variable, and enters these variables into a predictive equation in an order corresponding to their contributions. This technique, being both descriptive and inferrential, enables the hypothesis to be tested, in that it selects the best predictors and gives an indication of their efficiency as predictors of the criteria selected.

In this study, results were only obtained for the total sample with the stepwise regression. Although this statistical technique was attempted for male and female samples seperately, the relatively small number in each sample dictated that the degrees of freedom obtained were too small to allow for accurate and reliable interpretation of results.

In all of the equations chosen, the explained variance accounted for by the predictors is low. However, it should be noted that only social-emotional factors were used in the regression analysis. If cognitive factors, such as intellectual potential, school readiness tests of verbal and arithmetic skills, and other indicators of academic ability had been included among the predictors, the explained variance for both the Southgate Reading Test and the Young Mathematics Test would undoubtedly have been raised substantially.

In most of the studies reviewed in the first four chapters of this dissertation, tests of Reading, or Verbal Achievement, and Arithmetic Achievement, were the two criteria most often used to measure Academic Achievement. In this study, it was decided to adopt the same two criteria. It was felt that the formalized Southgate Reading Test and the Young Mathematics Test, measured in

Grade I, would probably yield a more thorough assessment of the child's ability in these two areas than the teachers' rating scales completed in Grade II.

It was noted in the Results chapter that, when using this technique, it is important that the independent, or predictor variables are also independent. That is, one may not use variables which are highly correlated with each other, nor may one use an overall, or composite test score together with the seperate component scores that make up the overall score. Thus, for example, one may not include the overall Animal Crackers score in the same regression as the five component scores. Therefore, the total Animal Crackers score and the total Dreyer and Haupt score were not included in the regressions. Similarly, since the positive and negative poles of the Kohn scales were polar opposites, and thus perfectly negatively correlated with each other, they could not be included in the same regression.

Thus, four analyses were carried out on the whole sample. The analyses were:

Regression A

Southgate Reading Test with the five scores of Animal Crackers, the five items from the Dreyer and Haupt test, and the two positive poles from the Kohn scales, namely Interest-Participation and Cooperation-Compliance.

Regression B

Southgate Reading Test with the mal Crackers scores and the five Dreyer and Haupt items he two negative poles from the Kohn scales, namely Apath al and Anger-Defiance.

Regression C

Young Mathematics Test with the same independent variables as in Regression A above.

Regression D

Young Mathematics Test with the same independent variables as in Regression B above.

Regression A

The prediction offerred by the independent variables was fairly low, yet, as is previously discussed in the dissertation, even small contributions to the explained variance cannot be regarded lightly. An equation which raised the explained variance by 2 percent was adopted, and contained four variables, all of which were significant at the 0.01 level. The contribution of the four variables in the equation accounted for 19,9 percent of the variance in Reading. The two positive Kohn factors were both important. Cooperation-Compliance by itself accounted for 10,7 percent of the variance, while Interest-Participation accounted for 2,4 percent. Jointly, they accounted for 13,1 percent of the variance. The Dreyer and Kept Item accounted for 4,3 percent, and Purposiveness, from Animal Workers, accounted for 2,5 percent of the variance in Reading.

It is of some concern that Cooperation-Compliance accounted for a larger amount of explained variance than Interest-Participation. Kohn considered that although Cooperation-Compliance is the positive pole of Anger-Defiance, this behaviour is not always healthy or desirable. In his research, Kohn (1977) found that amounts of Cooperation-Compliance and Anger-Defiance may be a function of the school environment and the attitude of the teacher. He found that over time, Cooperation-Compliance predicted to Apathy-Withdrawal, largely as a result of the school environment.

A possible explanation for these results may be that cooperative-compliant children do better in a structured situation than the interest-participating child. Whereas the interest-participating child may be using his own creativity and iniative

and not steadfastly following the pace dictated by the classroom or the teacher, the cooperative-compliant child is obedient, follows rules and regulations, and is well disciplined. The latter would appear to be ideal attributes for a formal testing situation such as the Southgate Reading Test.

Furthermore the teaching methods in this country might be better suited to children who follow instructions and do not question the subject matter being taught in a curious or exploratory way. Assuming that this method of teaching predominates in our schools the teacher may well prefer to teach a cooperative-compliant child, as he may upset the teaching patterns and classroom routines less than a curious, questioning child. If the teacher does prefer teaching the cooperative, compliant child, it is natural that he would do better in tests of academic achievement.

However, it is encouraging that the Interest-Participation was also found in the regression to be the third most potent predictor of reading. Kohn felt that this was the healthiest pole, denoting aspects of creativity, curiosity and alertness, as well as active interaction with, and activity in, the classroom environment.

It is noteworthy that the second and fourth factors in the regression equation also imply activity and involvement within the environment. The Dreyer and Kagan Item 1 denotes elements of assertiveness and competitiveness while Purposiveness concerns the child's ability to set up purposes for directing his behaviour. Apart from Cooperation-Compliance, the other three factors in the equation all imply active, meaningful participation in the learning process.

Since the Kohn factors, Cooperation-Compliance and Interest-Participation, were the first and third most potent predictors in the equation, hypothesis 3 was confirmed.

Regression B

Compared to the previous result, slightly less of the variance in the Southgate Reading Test was accounted for. An equation which raised the explained variance by 1 percent was adopted, and again contained four variables, all of which were significant at the 0.01 level. The contribution of the four variables accounted for 16,8 percent of the variance in Reading. The negative Kohn factor, Apathy-Withdrawal, was very important, and alone accounted for 9,3 percent of the variance in Reading. Also important were Purposiveness, which accounted for 3,4 percent of the variance, Item 4 from the Dreyer and Haupt scale, which accounted for 2,9 percent of the variance, and Instrumental Activity (from Animal Crackers), which accounted for 1,2 percent of the variance.

The importance of Apathy-Withdrawal in the regression equation was expected in the light of Kohn's previous research (Kohn, 1977). As noted above, researchers have warned of the danger of ignoring a child who is seen as apathetic and withdrawn in the school and classroom setting. This child remains quiet and uninvolved in the classroom, rather than being curious, and interacting in a participating way. The teacher may attempt to entice the child to participate in classroom activities, and will most likely fail. Since she can only give a limited amount of attention to each child, the teacher may tend to deal rather with the children who make themselves seen or heard, such as the angry, defiant child. Thus the academic problems of the withdrawn child.

This may also explain the finding with regard to the lack of importance of Anger-Defiance in the regression, since the emotional and academic difficulties of the acting-out child is more likely to be dealt with by the teacher. The unimportance of Anger-Defiance in this regression analysis was not entirely unexpected when taking into account Kohn's previous research. In two studies, Kohn and Rosman (1972b, 1973) found that for boys, Anger-Defiance was not significantly correlated with the achievement criteria. It was

only established later that Anger-Defiance was significantly related to academic underachievement for boys and girls (Kohn, 1977).

The other three factors in the equation account for a similar amount of explained variance as the last three factors in Regression A. They are also similar to these factors in Regression A, and are directly opposite to the components found in Apathy-Withdrawal. The Dreyer and Haupt Item 4 deals with creativity, curiosity and imagination, similar to the qualities found in Interest-Participation. Instrumental Activity concerns the child's knowledge of and ability to engage in instrumental steps leading towards established purposes. Other qualities involved in Instrumental Activity are an orientation towards autonomous activity, and appropriate use of time.

The importance of Purposiveness was illustrated by the fact that it was the only factor which was included in both equations. This factor concerns the child's ability and preparedness, and knowledge of the correct procedures to become involved in, and execute various classroom tasks, and an ability to set up purposes for directing his behaviour. The occurence of Purposiveness and Instrumental Activity in the equation illustrate the importance of active, directed, autonomous activity in the classroom.

Since Apathy-Withdrawal was the most potent predictor in the equation, and accounted for by far the largest amount of explained variance, hypothesis 3 was confirmed.

Regression C

The only significant variable in this equation was Interest-Participation, from the Kohn scale. It was significant at the 0.05 level, and accounted for 4,2% of the variance in Young Mathematics. Since only one variable was significant, no equation was adopted. Hypothesis 3 was not confirmed.

Regression D

None of the variables in this regression were significant, and no equation was adopted. Hypothesis 3 was not confirmed.

The lack of significant results in regressions C and D, with the *Young Mathematics Test as the dependent variable*, corresponds with the lack of significant results in the Pearson Correlations, a matter which was discussed earlier in the chapter. One explanation for the higher number of correlations with Reading rather than with Mathematics, and the lack of significant results in the regressions with Mathematics may lie in the actual tests themselves. While the Southgate Reading Test appears to offer a very accurate and valid measure of reading ability, the accuracy and validity of the Young Mathematics Test is unknown, and it appears as if it may not present the researcher with a valid measurement of Mathematical ability. However, the regressions again emphasize the importance of the Kohn scales as preschool predictors of later academic achievement.

In summary, there were three major predictive variables which accounted for much of the explained variance in Reading, namely Cooperation-Compliance, Apathy-Withdrawal and Purposiveness. Two of these variables are Kohn factors. Thus, hypothesis 3 was confirmed with regard to Reading.

For the mathematics test, only one variable, Interest-Participation was found to be significant in Regression C, and no variables were significant in Regression D. Thus, no equations were adopted for these two regression analyses, and hypothesis 3 was rejected for Mathematics. However, this result must be seen in the light of the criticisms of the Young Mathematics test.

CHAPTER EIGHT

CONCLUSION AND IMPLICATIONS OF THE STUDY

This study has established that a relationship between social-emotional functioning and academic achievement does exist. All three of the hypotheses were, in the main, confirmed, and it is apparent that preschool social-emotional functioning is a predictive factor of later academic achievement. It was found that not only were emotional difficulties predictive of later underachievement, but of equal importance, it was established that healthy emotional functioning was a predictive factor of good achievement in primary school. The study has therefore identified children in the preschool stage who are at risk of developing academic problems in primary school. The foundations of achievement and underachievement appear to be fairly well laid down before the onset of formal education, and without some form of intervention a tragic waste of potentially talented pupils, who may be experiencing certain types of social and emotional difficulties, seems inevitable.

The interdependence of emotional and academic functioning highlights the importance of seeing the child from a perspective which links the cognitive and intellectual development of the child with his affective and interpersonal processes. Such a perspective is exemplified by the developmental-interactional model of education. This model stresses that the child's sense of competence and self-worth is directly linked to his interaction with, and feedback from, his environment. Psychodynamic psychology stresses the importance of the early environment on the child's feelings of self, and this study has also emphasized the important role of the school environment on the child's development. The school environment is a crucial initiator of the child's future ability to interact in a healthy way with his world. Therefore, the school has a responsibility to identify the child's level of development and to recognize the importance of the interaction between the environment

and the child, as well as the continual interaction between the child's cognitive and affective spheres.

Thus the responsibility falls upon both the parent and the teacher to promote and foster a healthy developmental environment. For the parent, the main function appears to be the facilitating of the development of a sense of self worth, competence, initiative and industry in the child. However, a discussion of the general role of the parent is beyond the scope of this study. The main task of the teacher lies in the recognition of problems in the pupil.

The role of the teacher in the emotional domain of the pupil has sometimes been a subject of controversy, and a vital question is who should take the responsibility of identifying, diagnosing and remediating an emotional problem in a child. Some researchers have suggested that the teacher should attempt to recognize or diagnose symptoms of emotional difficulties in a pupil, and should institute therapeutic environments and form therapeutic relationships with such pupils (Adkins and Baliff, 1973; Adler, 1930; Butcher, 1968; Cole, 1974). With respect, this author would like to disagree with these distinguished writers. Many of the teachers in this country receive little training in the diagnosis, remediation or treatment of emotional difficulties in children. Also, the teachers carry a heavy burden merely to complete their hours of teaching. At the least, the primary school teachers are expected to teach the "three Rs", and maintain classroom order. There is also some pressure on them from outside bodies to look out for gifted children in the classroom, and to make the class stimulating for them. At the same time, the teacher is supposed to accept the slow child and avoid making him feel inferior. Finally, the same teacher is supposed to identify children with learning disabilities.

This would appear to be enough work without becoming part-time therapists. However, this is not to suggest that the teachers have no role in the identification of children with emotional difficulties. One of the most rewarding aspects of this study was working closely with nursery and primary school teachers, and noting,

almost without exception the keen interest, regard and sensitivity that the teachers displayed towards all the pupils. It is suggested that the teachers would constitute extremely good and accurate referral agents.

Thus, the most constructive proposal would be for schools to *employ more full-time clinical or counselling psychologists, and make* them a more integral part of the school system. They would have two major functions. These would be the assessment and diagnosis of children, and therapeutic intervention with those who have social-emotional difficulties. Since the academic efforts of children appear often to be hampered from Grade 1 onwards by social and emotional difficulties, it is suggested that a battery of tests, assessing cognitive and social-emotional functioning be administered by the psychologist to every class of children entering school, and that the child be assessed at intervals throughout school. Also, the class teacher may refer any child who presents with problems in the classroom or playground environments to the psychologist.

All too often only the "symptoms", namely underachievement, is sometimes treated unconstructively and unsympathetically by teachers and parents (Peterson, 1980). With the help of a psychologist, the teacher may be able to discover the underlying cause, which in many cases may be an emotional one. Also, it appears to be important in most cases for any school psychologist to involve the parents of children with emotional difficulties in the treatment of these children. It was noted previously in the discussions of the development of the self, achievement motivation, competence, Anger-Defiance and Apathy-Withdrawal, that most writers see the parents as a crucial factor in the formation of these personality variables. It would seem as though if one is to attempt to treat children who are struggling in any of these areas the cooperation and participation of the parents would be crucial.

Many parents have become slightly "misguided" in the competitive, achievement-oriented society which has become the norm, and may have lost sight of qualities other than achievement, valuing

the achievement more than their child (Peterson, 1980). They may interfere with their child because of their lack of awareness of the developmental processes through which the child passes. As White (1972) has poignantly written "Attaining a sense of competence in the early years is no mean achievement. The human environment often seems little disposed to welcome it" (1972, p215.) The presence of a school psychologist may hopefully alleviate this situation to some extent. He or she may be able to instruct the parents, or give general talks on child development, and stress that each child develops at his own rate, according to his own pattern, and not according to chronological age or societal demands.

The emphasis has been laid on the appointment of clinical, or counselling, psychologists to be appointed in the school, since in this study the traits associated with underachievement appear to be core personality variables, such as low achievement motivation, a low sense of self, a low sense of competence, and the areas dealt with in the Kohn scales, which, as observed, are often forerunners to more serious emotional disturbances in the child. It would appear that the remediation of such problems in the child may well require therapeutic intervention by a trained clinician or counsellor.

Finally, although it has not been recommended that teachers institute therapeutic interventions with the children they should note that the fostering of Interest-Participation in their pupils (i.e. the encouraging of interest, curiosity, creativity, assertiveness, and an active involvement in classroom activities) may lead to greater school enjoyment and academic achievement.

As regards future research, an attempt should be made to extend the thrust of the present study, which looked at the relationship between social-emotional functioning and intellectual performance in white upper class children, to the requirements of different population groups.

In terms of education in the South African setting, there is a pressing need for research into the effects of early deprivation,

and the development of programmes to counteract the possible effects of this. A major challenge in the formulation of future research programmes is the development of an appropriate theoretical framework that takes into account all the influences in a child's life, as well as the development of suitable, adequate tests for all the underprivileged groups.

The theorstical model discussed in this present study, namely the developmental-interactional approach to the education of young children, has the advantage of being a continually evolving programme, that stresses the interaction between a child's social and emotional growth, and the environment. This model could be used as an important starting point for examining education within a broader framework that incorporates all of the aspects of the child's development from all socio-economic and racial backgrounds.

Future research with children of other ethnic groups will be hampered by the shortage of valid, reliable measurements of their social and emotional development, and there is thus an urgent need to construct tests that could resolve this shortage. The lack of appropriate tests is further exacerbated by the lack of research data on children in the black population. It will therefore also be important to accumulate a store of research data on other ethnic groups as soon as possible.

LIMITATIONS OF THE STUDY

1) Perhaps the major limitation of this study was the use of the Goodenough-Draw-A-Man test as a measure of intellectual ability, since this test remains essentially a test of non-verbal intellectual functioning. Unfortunately, no other adequate group intelligence test for preschool children appeared to be available.

   A far more adequate and satisfactory measure of intelligence would have been obtained by using certain other formal

intelligence tests, such as the WPPSI. However, this, and many other intelligence scales, cannot be used as a group test. As Anastasi (1968) notes, for most intelligence tests at the preschool ages, individual testing is required, and it would have been an impossible task to attempt to test 420 children individually on any formal intelligence scale.

However, the Goodenough-DAP Test is suitable for preschool children, and in many ways the test does have considerable merits. These merits, and the disadvantages, are discussed fully in Appendix A. The Draw-a-Man test has for many years been used extensively in clinics and in research studies as a measure of intellectual functioning, although it is often used as a supplement to other verbal scales of intellectual ability (Anastasi, 1968).

2) In this study, as in many others, a measure of personality, in this case achievement motivation, was tested only once. It must be borne in mind that this type of variable is not static, but is changeable, especially in young children, and ideally should be measured on several occasions over a period of time. Although this problem was overcome with the Kohn and Rosman, and the Dreyer and Haupt scales, where teachers rated children whom they had known very well over a period of time, the drawback here was a possible "halo effect", where the teachers may have been unduly influenced by a single favourable (or unfavourable) trait, which may have coloured their judgement of a child's other traits.

3) An inherent limitation of correlational data is that one can draw no specific conclusions about cause and effect between dependent and independent variables. Another problem is that the correlations obtained may be an artifact of a third common variable, and thus interpretations made from correlational methods must be made with some caution.

4) In the two regression analyses in this study, a significant proportion of the variance was not accounted for. However, this

would have been improved if variables other than social-emotional factors had been entered into the analysis. For instance, in the regression equation with Reading as the criterion, if other indicators of intellectual ability, such as vocabulary and spelling ability, and school readiness, had been used, then the explained variance would have been substantially raised.

5) The sample of the study suffered a severe attrition rate after the nursery school stage, despite vigorous efforts to locate missing children. This would appear to be a hazard of many longitudinal studies. However, the considerable benefits inherent in longitudinal studies far outweighs any such limitation.

APPENDIX A

DESCRIPTION OF TESTS USED IN THE STUDY

A.1 TESTS OF SOCIAL-EMOTIONAL FUNCTIONING

A.1.1 Animal Crackers : A Test of Motivation to Achieve

Animal Crackers measures achievement motivation in young children (Adkins and Baliff, 1973). The purpose of this test is to provide information on five important variables of achievement-oriented behaviour, which are not primarily attributable to intellectual abilities. Achievement oriented behaviour is regarded as a result of the dynamic interaction of these five variables, and each of these five areas is hypothesized to be an essential component of achievement motivation. Although the nature of their interaction is not completely clear, all five ways of participating in the school situation are regarded as essential to achievement motivation.

These five variables are:

1) School Enjoyment: This variable attempts to ascertain whether the child expects to enjoy working and accomplishing in school. The degree to which the child expects pleasure from achieving in school is reflected in items in which he indicates whether he likes to learn and whether he prefers certain learning activities to other activities.

2) Self-Confidence: This area focuses on the child's concept of himself as successful or unsuccessful in achieving his goals. The items dealing with this area describe situations of winning and leading, and relate generally to the child's self-image.

3) Purposiveness: The child's ability to set up purposes for directing his behaviour is reflected in this area. The items suggest

working towards future goals. A common denominator for these items might be an awareness of the future implications of present behaviour.

4) Instrumental Activity: Closely related to purposiveness of behaviour is the knowledge of and ability to engage in instrumental steps towards accomplishing established purposes. Items in this area deal with an orientation toward autonomous activity, the appropriate use of time, and interaction with others.

5) Self-Evaluation: The items in this area attempt to ascertain the child's ability to evaluate his performance. Self-evaluation is reflected in items that test whether the child knows when his work is right, when he is doing well in school, what he can and cannot do, and whether he always does his best.

Thus it may be seen that measurement of the self is an important part of this test, although it was designed primarily to measure achievement motivation. While Adkins and Baliff warn that these individual areas measured on their own are not as statistically sound as their combination in the whole test, they do provide useful information on patterns of performance in children. The test can provide the researcher with knowledge of how a child feels about himself in the school situation, and his image of himself.

Animal Crackers employs an objective-projective technique that requires the child to choose between alternative behaviours, described verbally, that show differences in motivation. The behaviour is engaged in by a variety of animals. Each test item consists of an illustration of two identical animals and two verbal descriptions of the animals' behaviour. The child is told that he has his "own animals", and that h. animals behave as he behaves. They like what he likes and they do what he does. The examiner points to each animal in turn and describes its activity, or behaviour, and asks the child to identify his own animal.

The test was administered to groups of five children at a time.

A practice session of about 10 minutes was completed to provide training in the mechanical aspects of the task. The testing time ranged from 30 to 45 minutes.

The examiner was equipped with 1 Administration Booklet and 1 Examiner's manual, while each child was equipped with 1 test booklet, 1 pencil and 1 eraser. The children were placed far apart so that no copying could occur. The testing was generally scheduled for early in the morning after the children had settled into their daily routine, and it was planned so that the scheduled time did not conflict with special events, break-time, tea-time, etc.

Adkins and Ballif determined the reliability of Animal Crackers by the extent to which scores were consistent and accurate. Internal consistency was measured by reliability coefficients expressed as KR20s (Kuder-Richardson formula 20). They found that the KR20 reliability coefficients for the 12-item component scores ranged from 0,65 to 0,82. For the total test, the KR20 reliability coefficient was 0,90.

Adkins and Baliff also made some assumptions about the validity of Animal Crackers. They claim content validity through the construction of items in accord with general theory, and that interpretation of factors afforded evidence for construct validity. Because Animal Crackers retained the theoretical basis of its predecessor, a test called "Gumpgookies", evidence for criterion validity was assumed in some of the research on this earlier test. Findings included low positive correlations with age and intelligence, and statistically significant relationships between test scores and teacher rating scales of motivation.

A.1.2 The Dreyer and Haupt Competence Scale

An adaption of the competence schedule of Dreyer and Haupt (1966) was used in order to measure the teacher's appraisal of the child's competence. This same adaption was used by Strelitz (1977). Dreyer and Haupt (1966) used a structured doll-play interview,

presenting 5 social and non-social problem situations, dealing with such content as competition, independence and reaction to frustration. The situations were presented through a combination of verbal instructions and manipulation of the doll figures. With the dolls used as a medium, the child was asked what he would do to cope with the situation. However, like Strelitz (1977), in this study a different technique was used. The teacher was given a list of the same five problem situations that the child might encounter, and was asked to describe how the child would, in her opinion, handle the situation. By this means, it was hoped to discover if the child was seen by the teacher as being capable of meeting the demands of social and non-social situations at school. In this way, the Dreyer and Haupt Scale was seen as an adjunct to the Animal Crackers measures of "self", which assessed how the child felt about himself in the school situation. The teachers' answers were marked on a three-point scale, ranging from a competent response to an incompetent response. The following definitions, given by Haupt and Dreyer, were used in the scoring:

Competence: The child is seen by the teacher as effectively capable of handling the situation, or problem, functioning by his own efforts. For example, the child will remain with the situational problem, state his intended action, or implies that he will act.

Incompetence: The child is seen by the teacher as unable, or incapable of handling the situation or problem by himself. For example, he may walk away from the situation, or call the teacher for help in a way that clearly indicates his own feelings of incapacity, or he may insist that he cannot do it.

A list of scoring criteria was drawn up by 4 raters, two of them doctors of psychology, and 2 of them candidates for master of psychology degrees. In 1977, Strelitz found that inter-rater reliability of each item was 0,84 or greater.

The Competence Scale was included in the Early Learning Project's teacher questionnaire, and was scored by the class

teachers.

A.1.3 The Kohn Rating Scale

The Social Competence Scale is one of the two teacher rating instruments designed by Kohn and Rosman (1972(a), 1972(b)) and Kohn (1977), which focus on the child's overt classroom behaviour, and his behaviour in the school setting. The Social Competence Scale was designed to assess a child's functioning in the preschool setting, and more specifically a young child's mastery of the preschool environment, and the quality of his interpersonal relationships. The Social Competence Scale measures the whole range of functioning from health and disturbance and therefore permits discrimination not only of varying degrees of disturbance, but also of varying degrees of healthy functioning.

Factor analysis showed that the Social Competence Scale measured 2 major and relatively orthogonal dimensions, or factors, of social-emotional behaviour. The two factors of the Scale are bipolar and are called:

Factor I : Interest-Participation versus Apathy-Withdrawal.
Factor II : Cooperation-Compliance versus Anger-Defiance.

The Factor I dimensions reflect the use of opportunities available in the classroom. The positive items indicate interest, assertiveness and involvement in classroom processes, and positive interaction with peers. The negative items indicate withdrawal from the opportunities of the classroom, lack of curiosity, passivity, and failure to elicit the cooperation of peers in carrying out activities.

The Factor II items deal with conformity to the rules and routines of the classroom. The positive items indicate living within the classroom structure, complying with rules, and obeying the teacher. The negative items reveal rebelliousness, disruptiveness

and hostility.

The Kohn Social Competence Scale was included in the Early Learning Project teacher questionnaire, and was scored by the classroom teacher, on a five point scale. (From "never", or "almost never" indulges in the activity mentioned in the question, to "always", or "almost always".)

Of the 64 items of the scale, the 20 items with the highest positive and negative loadings on Factors I and II of the Social Competence Scale, according to Kohn's factor analysis (Kohn, 1977) (Kohn and Rosman, 1972(a)), were used. It was felt that the teachers could not possibly fill in the entire list of items for each child, as well as completing the extensive Early Learning Project questionnaire.

The Kohn Symptom Checklist was devised in conjunction with the Social Competence Scale. The Checklist was designed as an inventory of clinically important behaviours which could be observed in the preschool setting, and was intended to cover major clinical symptoms manifested by the child, which are generally considered indicative of emotional impairment. The Symptom Checklist measures only varying degrees of pathology, whereas the Social Competence Scale measures the whole range of functioning from health to disturbance.

The Symptom Checklist also measures two major factors. These two factors cover types of functioning similar to the negative poles of the two factors of the Social Competence Scale. The two factors are unipolar, and are labelled:

Factor I : Apathy-Withdrawal
Factor II : Anger-Defiance

Factor I items denote passivity, withdrawal and inhibition of functioning, while Factor II items cover feelings of anger, hostility and defiance.

Of the 49 items in the scale, the 10 items with the highest loadings on Factors I and II, according to Kohn's factor analysis (Kohn, 1977, Kohn and Rosman (1972(a)) of the Symptom Checklist, were used. As previously stated, it was felt that the teachers were already overburdened with the amount of questionnaires required to be completed. Validity of long questionnaires may be in doubt.

In view of the high correlation between the corresponding factor dimensions of the Symptom Checklist and the Social Competence Scale and for the purpose of further increasing the reliability of measurement, Kohn (1977) pooled the corresponding factor scores from the two scales. The same procedure was carried out in this study.

Therefore, following Kohn and Rosman (1972a), and Kohn (1977), for the purposes of this study the two scales were combined into one. The thirty items used in this study were listed in two of Kohn's publications (Kohn and Rosman, 1972a; Kohn, 1977).

As could be expected from the apparent similarity across the Symptom Checklist and Social Competence Scale dimensions, when Kohn (1977) measured the magnitude of their linear correlations, he found that the corresponding factors were highly correlated. The correlation for Factor I was -0,75, and for Factor II was -0,79. (High Social Competence scores indicate high competence, whereas high Symptom Checklist scores indicate a large number of negative symptoms.) The correlation between Factors I and II on both instruments were low, being -0,13 and -0,25 respectively.

Kohn found high interrater reliability (teacher versus principal) in the global ratings (i.e. the Symptom Checklist and Social Competence Scale combined). The correlation was 0,82. The interrater correlations between pairs of teachers were 0,73 for both Factors of the Symptom Checklist, and 0,77 and 0,80 for Factors I and II respectively on the Social Competence Scale.

Validation of the Symptom Checklist and the Social Competence Scale was found with high correlations with both the Peterson Problem

Checklist (1960) and the Schaefer Classroom Behaviour Inventory (1965). The median of the correlation between the corresponding instruments and the Kohn Scales was 0,78.

A.2 TESTS OF COGNITIVE FUNCTIONING

A.2.1 Young Group Arithmetic Test

This is a simple test of mathematical understanding designed for administration to children of a wide range of ability from the ages of 6.6 years to 8.6 years. Norms are provided from below 5.6 years to 10.2 years. No reading is involved as the test is orally administered.

The test was administered individually. Scoring was followed according to the criteria set down in the manual. One half of the test (the front page) was administered before the mid-morning break, and the second half (the second page) immediately after the break.

The first half of the test is divided into two sections, an oral and a computation section. The oral section consists of fifteen items. The question is read slowly and distinctly, and seven seconds are allowed before the next question. The questions consist of a series of pictures of objects (apples, boats, cups, etc) and the child is asked a question about the number of objects in the picture, or how many are missing, etc. The computation section consists of fifteen items, which involve the addition of two numbers. Eight minutes are allowed for the children to work out the fifteen items.

The second half of the test follows the same format, with fifteen oral questions concerning a series of pictures, and fifteen computation items, involving subtraction.

No studies on reliability and validity are quoted by the author (Young, 1973).

A.2.2 Southgate Group Reading Test : Test 1

The Southgate Group Reading Test is a test for the objective assessment of reading abilities of children (Pumfrey, 1976). It was especially devised for use with children in the early stages of reading acquisition. Southgate (1971) felt that many other reading tests suffered from two main limitations. Either they are individual tests, or if they are group tests, their norms do not extend far below a reading age of seven years.

This test is envisaged as a preliminary survey of reading ability. It provides the tester with a simple, speedy and reliable method of making a preliminary assessment of the reading ability of pupils still in the initial stages of learning to read.

The test is contained in an illustrated booklet, and consists of 30 items. 16 of the items involve selecting a word to match the picture named by the tester. The child is required to find the correct word, out of 4 possible alternatives, corresponding to the picture shown, and draw a ring around it. In the other 14 items, the child has to underline one word dictated by the tester, from a set of 5 words. The child begins with 4 practice items, during which the tester helps the child, and makes sure that he has drawn a circle around the correct item.

A maximum of 20 children per group is advised for testing. The test is not timed, but the total time taken is usually 15-20 minutes. The children are seated, facing the tester, each with a pencil, and spread out so that copying is impossible. If a child draws a ring around a word, and then tells the tester that he has drawn it around the wrong word, the tester should tell him to cross it out and draw a ring around the word that he really wants. If a child says that he cannot find a word, the tester tells him to leave it. A child who is a poor reader will be unable to find many of the correct words towards the end of the test. If the tester sees that a child is in difficulty, he should tell the child that if he cannot find the right word, he should leave the box empty.

A table of norms is given, which comprises raw scores from 5 to 27. From the raw scores, reading ages can be obtained. The reading ages vary from 5.9 years to 7.9 years. (Southgate feels that the test will be most useful for children between 6 and 7.5 years old.)

Pumfrey (1976) states that this test has been used extensively in national and local surveys in England. He, like Southgate, feels that the reliability and validity of the test have been proved, and are satisfactory. The test was standardized on 2,329 children from Worcester in 1957. Extensive validation studies have been carried out on this test. Correlations of between 0,87 to 0,95 have been reported. The reliability of the test is said to be 0,9545 (Snell, 1982).

A.2.3 Brimer and Dunn English Picture Vocabulary Test

The Brimer and Dunn English Picture Vocabulary Test (E.P.V.T.) was devised in 1963, as an adaption of the Peabody Picture Vocabulary Test. However, the authors completely reconstructed the test for use with children in England.

The E.P.V.T., Test 1, was designed for children from 5 years to 8 years 11 months, to assess levels of listening vocabulary, but the test results can be more generally interpreted as a measure of verbal ability, and vocabulary.

One important characteristic of the E.P.V.T., and where it differs from most vocabulary, and verbal tests, is that it does not require the child to have any reading attainment, and is therefore functionally independent of reading skill (Pumfrey, 1976). The test can thus be administered irrespective of any reading skill displayed, and can give information on the child's degree of verbal comprehension, which is diagnostically relevant to the understanding of reading difficulties and other verbal learning handicaps. The test may be used in any situation in which a measure of verbal ability is required, and Brimer and Dunn feel that the test possesses

advantages over non-verbal tests as reading-free predictors of future language attainment.

Test 1 is designed only for individual administration, as Brimer and Dunn feel that young children are unlikely to perform well in group conditions. The test consists of 40 items, preceded by 3 practice items. Each test item is constituted by a page of 4 numbered pictures, and a word spoken by the tester. The subject must tell the tester the number of the appropriate picture, or simply show the tester the appropriate picture.

There is no time limit for the testing, and testing proceeds at the rate set by the subject. The child should be seated comfortably, facing the tester. The tester should adjust his position so that he can see the selected picture if the child responds by pointing. Only one page of 4 pictures is shown at one time, and the child should have a full face view of the page from a comfortable viewing position.

The testing proceeds until the subject makes 5 errors within a space of 8 consecutive items. This is termed the ceiling point. The raw score is obtained by subtracting the number of errors in the test, up to and including the ceiling item, from the number of the ceiling item.

Standard scores are provided for the test. They are numerically like intelligence quotients, but are not derived from a ratio of mental age to chronological age. They are normalized scores with a mean of 100 and a standard deviation of 15. The standard score relates a particular child's performance to that of a child of the same chronological age on whom the test was standardized.

The standardization was carried out on samples of 3240 and 5084 Wiltshire children, selected so as to ensure close agreement with English national characteristics. Pumfrey (1976) feels that the internal consistency reliabilities of the test are fairly high, from 0,87 to 0,89. Re-test reliabilities are to be published soon. He

feels that the content validity is adequate, although other evidence of validities is sparse and the intercorrelations presented are open to many interpretations. Brimer and Dunn admit that the evidence of validity is so far limited.

A.2.4 Goodenough Draw-A-Person Test

The Goodenough Draw-A-Person test was developed in 1926. Harris (1963) felt that of the many intelligence tests, the Goodenough Draw-a-Man was perhaps the most unusual in basic conception, brevity and general convenience. It has been widely used to survey the intellectual status of young children, to study children with hearing handicaps, suspected neurological deficiencies, and severe intellectual and conceptual deficiencies. It had also been used to study personality, delinquency and adjustment problems. It is also part of the Aston Index, a battery of tests designed to assess learning disabilities.

Emphasis is placed upon the subject's accuracy of drawing a human figure, rather than on any artistic skill, and items are scored for the inclusion of body parts. However, the scoring guide is not only for large body parts, such as head, trunk, arms and legs, but is also for smaller, more intricate body items such as eyes, nose, nostrils, lips, ears and fingers. Clothing items, such as hats, coats, shorts, belts, trousers and shoes, are also scored.

The Goodenough Draw-A-Person test was chosen in this study as a reliable and efficient group test of intelligence, as it was found to be impossible to test all the children on an individual intelligence test.

As regards group tests, it was felt that there were disadvantages with conventional intelligence tests. As noted by Anastasi (1968), individuals unaccustomed to testing may be somewhat disadvantaged and handicapped on group tests. (It must be noted that children from certain of the nursery schools had been exposed to

extensive testing, while children from other nursery schools had experienced no testing.) A test such as a group intelligence test can be a much stranger experience for a preschool child than for one with months or years of school experience. Moreover, preschool children are likely to be difficult to test as they have little interest in their performance, follow their own impulses and are difficult to coerce. In conclusion Anastasi (1968) points out that the testing of preschool children presents many problems in administration and scoring, and she feels in general that all tests designed for preschool children ought to have individual administration and scoring, and requires a specially trained examiner, who is alert to signs of fatigue, drowsiness, fear, inattention and other adverse conditions.

It was felt that a drawing test would minimize these effects. As Burns and Kaufman (1972) point out, most children love to draw, and most often they will produce pictures of humans.

Anastasi (1968) reports that the reliability of the Goodenough Draw-A-Person test has been investigated in numerous procedures. A high retest correlation was found, and McCarthy found high split-half, and scorer, reliability. Readministration of the test showed no significant difference in performance on different days. Examiner effect, and the effect of art training were found to be minimal. Motor coordination was also found to play a negligible role. The majority of correlations with other intelligence tests were found to be over 0.50 (Anastasi, 1968). McCarthy (1944) claims a good degree of validity for the DAP, with a correlation of 0.74 with the Stanford-Binet. She feels that it is attractive as both a clinical and a research tool.

For reasons of space, only the protocols of the tests of social-emotional functioning are given in the following Appendixes. The tests of cognitive functioning are lengthy, and are also readily available.

Only certain items from the teacher rating scales were used in this study.

ANIMAL CRACKERS TEST ITEMS

The alternatives for each item should be read with equal animation and appropriate emphasis, indicated by the underlining of certain words. Words that are underlined once should be read with moderate emphasis; those underlined twice should be read with heavy emphasis. NOTE THAT THE RESPONSE POSITIONS INDICATED HERE IN THE *EXAMINER'S MANUAL* ("RIGHT" OR "LEFT" DESIGNATION IN PARENTHESES PRECEDING EACH RESPONSE ALTERNATIVE) REFER TO THE CHILD'S RIGHT OR LEFT--THE OPPOSITE OF THE POSITIONS IN THE *ADMINISTRATION BOOKLET*, ON THE *ITEM CARD*, AND IN THE "DIRECTIONS FOR GROUP ADMINISTRATION" IN THIS MANUAL, WHICH REFER TO THE EXAMINER'S RIGHT OR LEFT.

1. *(left)* This bear shows its school work to the teacher.
   (right) This bear hides its school work.

2. *(left)* This penguin colors a picture as fast as it can.
   (right) This penguin colors inside the lines of a picture.

3. *(right)* This pony reads when it should be reading.
   (left) This pony plays when it should be reading.

4. *(right)* This puppy is slow getting ready for school.
   (left) This puppy is fast getting ready for school.

5. *(right)* This lamb watches the teacher put things away.
   (left) This lamb helps the teacher put things away.

6. *(left)* This lion wants someone to help it write.
   (right) This lion writes with no help.

7. *(right)* This monkey thinks puzzles are too hard.
   (left) This monkey can put puzzles together.

8. *(left)* This rabbit likes to spend the day at school.
   (right) This rabbit likes to stay at home.

9. *(right)* This kitten feeds its pet every day.
   (left) This kitten forgets to feed its pet some days.

10. *(left)* This elephant tries to catch the ball.
    (right) This elephant lets the ball roll away.

11. *(left)* This duck looks outside when the teacher writes on the board.
    (right) This duck watches when the teacher writes on the board.

12. *(right)* This giraffe always does its best.
    (left) This giraffe does its best when someone is watching.

13. *(left)* This bear tries to learn a new dance.
    (right) This bear keeps on doing an old dance.

14. *(right)* This penguin asks the teacher what it must do to finish its work.
    (left) This penguin knows what it must do to finish its work.

15. *(right)* This pony wants to come to school tomorrow.
    (left) This pony wants to stay at home tomorrow.

16. *(left)* This puppy knows the way to the store.
    (right) This puppy wants someone to show the way to the store.

17. *(left)* This lamb stops playing if it does not win.
    (right) This lamb keeps on trying to win.

18. *(left)* This lion likes school a little bit.
    (right) This lion likes school very much.

19. *(right)* This monkey learns to sing a song with the others.
(left) This monkey talks while the others are learning a song.

20. *(right)* This rabbit will try to do only easy things.
(left) This rabbit will try to do some hard things.

21. *(right)* This kitten keeps working and finishes its house.
(left) This kitten stops working because its house fell down.

22. *(right)* This elephant wants to work a little longer.
(left) This elephant wants to stop working now.

23. *(left)* This duck gets its things ready for a bus ride.
(right) This duck watches the others get ready for a bus ride.

24. *(right)* This giraffe is too little to hit a ball.
(left) This giraffe can hit a ball.

25. *(left)* This bear can only do easy things well.
(right) This bear can do some hard things well.

26. *(left)* This penguin wants to learn something new today.
(right) This penguin wants to do what it learned yesterday.

27. *(right)* This pony's mother makes it go to school.
(left) This pony is glad it goes to school.

28. *(left)* This puppy shows the things it makes to others.
(right) This puppy hides the things it makes.

29. *(left)* Something bad will happen to this lamb.
(right) Something good will happen to this lamb.

30. *(right)* This lion stops to look at its work to be sure it is right.
(left) This lion hurries to finish its work as fast as it can.

31. *(left)* This monkey tells its friends that school is hard work.
(right) This monkey tells its friends that school is fun.

32. *(left)* This rabbit knows it can tell a funny story.
(right) This rabbit does not know if its story is funny.

33. *(right)* This kitten puts the puzzle piece anywhere.
(left) This kitten puts the puzzle piece where it fits.

34. *(right)* This elephant tries again if its work is not right.
(left) This elephant stops trying if its work is not right.

35. *(left)* This duck tries to write.
(right) This duck watches the other one write.

36. *(right)* This giraffe does good work in school.
(left) This giraffe does not know if its work is good or bad.

37. *(right)* This bear's mother tells it what to take to school.
(left) This bear knows what it should take to school.

38. *(right)* This penguin does not know what it will make with clay.
(left) This penguin tells the others what it will make with clay.

39. *(left)* This pony keeps its flower to show the others.
(right) This pony throws its flower away.

40. *(left)* This puppy goes out to play if it cannot write its name.
(right) This puppy writes again if it cannot write its name.

41. *(left)* This lamb likes to sit far from the teacher.
(right) This lamb likes to sit near the teacher.

42. *(left)* This lion can do what the teacher says to do.
(right) This lion asks the teacher to show it what to do.

43. *(left)* This monkey cannot find the things it makes.
(right) This monkey keeps the things it makes.

44. *(right)* This rabbit starts to paint a picture with the first color it sees.
(left) This rabbit looks for the right color to paint a picture.

45. *(right)* This kitten is working.
(left) This kitten is looking around.

46. *(right)* This elephant thinks its clown is good.
(left) This elephant wonders if its clown is good.

47. *(left)* This duck tries to do things well.
(right) This duck does not care if it does things well.

48. *(left)* This giraffe forgets what the teacher says to do.
(right) This giraffe does what the teacher says to do.

39. *(left)* This pony keeps its flower to show the others.
(right) This pony throws its flower away.

40. *(left)* This puppy goes out to play if it cannot write its name.
(right) This puppy writes again if it cannot write its name.

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(right) This lamb likes to sit near the teacher.

42. *(left)* This lion can do what the teacher says to do.
(right) This lion asks the teacher to show it what to do.

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(left) This kitten is looking around.

46. *(right)* This elephant thinks its clown is good.
(left) This elephant wonders if its clown is good.

47. *(left)* This duck tries to do things well.
(right) This duck does not care if it does things well.

48. *(left)* This giraffe forgets what the teacher says to do.
(right) This giraffe does what the teacher says to do.

49. *(right)* This bear can only do things if the teacher helps.
(left) This bear can do some things by itself.

50. *(right)* This penguin is tired of going to school.
(left) This penguin is glad it goes to school.

51. *(right)* This pony watches the teacher show how to do something.
(left) This pony looks around when the teacher shows how to do something.

52. *(left)* This puppy tries harder when it does poor work.
(right) This puppy thinks all its work is the same.

53. *(left)* This lamb stops trying if there is no prize.
(right) This lamb keeps on trying even if there is no prize.

54. *(right)* This lion can dress itself.
(left) This lion needs help getting dressed.

55. *(right)* This monkey likes to play outside when others read.
(left) This monkey likes to get books to read.

56. *(right)* This rabbit is tired of its toy and leaves it.
(left) This rabbit thinks of a new way to play with its toy.

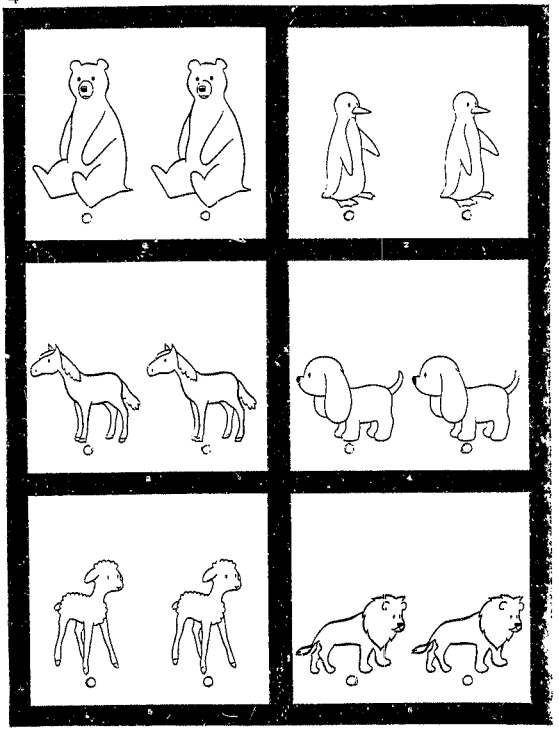
57. *(left)* This kitten works hard to learn to read.
(right) This kitten will learn to read only if it is easy.

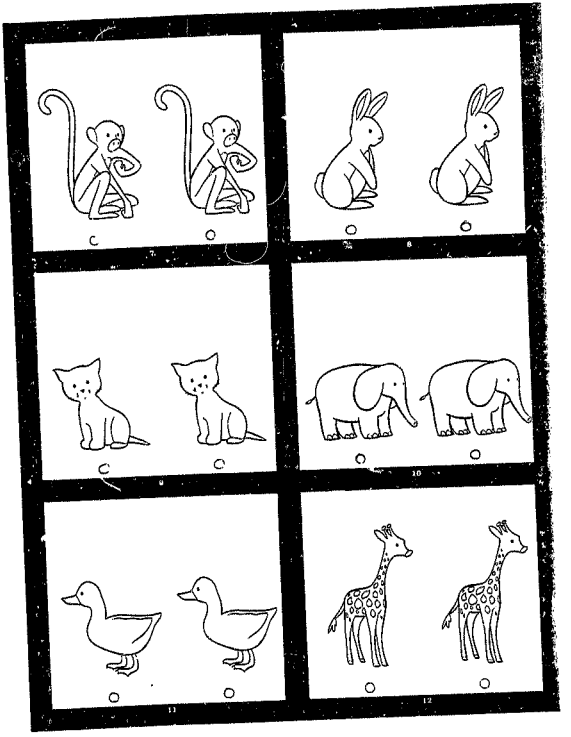
58. *(left)* This elephant never wins a game.
(right) This elephant sometimes wins a game.

59. *(left)* This duck stops trying to write numbers.
(right) This duck can learn to write numbers.

60. *(right)* This giraffe likes to learn some of the time.
(left) This giraffe likes to play all of the time.

4





DREYER AND HAUPT COMPETENCE QUESTIONNAIRE

Describe how you believe the child named on this form would handle the following situations.

1. _____ and another child are playing with a bat and ball. They appear evenly matched in skill and control. Soon, however, child X calls out: "I'm better than you. I hit more than you".
   What would _____ do in such a situation?

2. Child X and _____ are both pulling at a ladder, each screaming loudly: "I had it first".
   What would _____ do in such a situation?

3. _____ is working on a task. Child X has been teasing him by telling him how silly he is.
   What would _____ do in such a situation?

4. The teacher brings a collection of boxes of different sizes, shapes and colours etc. to school, and puts them on the table.
   What would _____ do in such a situation?

5. _____ changes his shoes after gym and is having difficulty with his laces.
   What would _____ do in such a situation?

KOHN RATING SCALE

RATING CRITERIA

Rate each child on a five point scale as defined below

1	2	3	4	5
never or hardly ever	sometimes	about half the time	usually	almost all of the time or always

1) Child gets others interested in what he's doing
2) Child manifests interest in many and varied types of things
3) Child displays enthusiasm about work and play
4) Child can give ideas to other children as well as go along with their ideas
5) Child is able to express his own desires or opinions in a group
6) Child has difficulty getting the attention of the group
7) Child demonstrates little interest in things and activities of his environment
8) Child fails to secure cooperation when he has to direct activities
9) Child is at a loss without other children directing him or organizing activities for him
10) Child spends time sitting around, looking around, or wandering around aimlessly
11) Child cooperates with rules and regulations
12) Child responds with immediate compliance to teacher's directions
13) Child is able to accept teacher's ideas and suggestions for play or ways of playing
14) Child makes transition from one activity to the next easily
15) Child puts things away carefully
16) Child disrupts activities of others

17) Child expresses open defiance against teacher's rules and regulations
18) Child is hostile and aggressive with other children (teases, taunts, bullies, etc.)
19) Child tries to prevent other children from carrying out routines
20) Child quarrels with other children
21) Keeps to himself; remains aloof, distant
22) Fails to play with other children
23) Fails to take part in activities unless urged
24) Has a mournful, downcast expression, looks solemn, seldom smiles
25) Stares blankly into space
26) Gets angry when interrupted at play by adults as part of normal routines (not punishment)
27) Treats other children with deliberate cruelty; bullies other children or hits or picks on them
28) Screams, bangs objects, etc., when angry, irritated or frustrated
29) Fails to obey or follow instructions or directions of adult; "talks back" to adults
30) Gets angry or annoyed when addressed by adult, even in a friendly manner (not reprimand)

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All information is for Research purposes only and is strictly confidential.

EARLY LEARNING PROJECT

REPORT ON CHILDREN FOR GRADE I, 1979

NAME OF CHILD: _____

INSTRUCTIONS: Please complete this form in respect of the abovementioned child. We realise that Schools have different headings under which they report on their children's progress. We would appreciate it if you used just those headings that apply to your school. Any additional or alternative headings which you use, may be added in the spaces provided.
Please fill in the results in terms of the code that you usually use (e.g. 1=Very Good, 5=Weak), but kindly indicate the code being used in the space provided below.
If you don't have the information for any of the headings provided, it is quite in order for these to be omitted.
Thank you very much.

SCHOLASTIC PROGRESS	Term 1	Term 2	Term 3
1. ENGLISH			
(a) Reading			
Comprehension			
Technique			
Independent Reading			
.....			
.....			
(b) Written Work			
Spelling			
Creative Writing			
Written Language			
.....			
.....			
(c) Oral			
Speech			
Conversation Skills			
Language Structure			
Language Understanding			
.....			
2. AFRIKAANS			
Lees			
Mondeling			
Taal en Opstel			
Spel en Diktee			

P.T.O.

		Term 1	Term 2	Term 3
3.	THEMATICS			
	Mental Arithmetic			
	Written Arithmetic			
	Maths. (Algebra, Sets Etc.)			
4.	HEBREW			
	Siddur			
	Reading			
	History-Laws & Customs			
	Chumash			
	Oral			
	Written			
5.	Health Education/Biology			
6.	Nature Study/Study of Environment			
7.	Arts & Crafts			
8.	Handwriting			
9.	Religious Instruction			

PERSONAL SKILLS	Term 1	Term 2	Term 3
Self Confidence			
Independance			
Co-operation with Class Mates and Teachers			
Participation in School Life			
Attention/Concentration			
Interest in Music			
Perseverance			
Interest in Physical Activities			
Interest in Manual Activities			
Eagerness to Learn			

SCHOOL ATTENDANCE: Days Absent___

PASS/FAIL:

POSITION IN CLASS:

One of Poorer Students | Below Average | Average | Above Average | One of Best Student

REMARKS: (Special Achievements, Teacher Comments Etc.)

ADDITIONAL HEADINGS:

.....

.....

.....

CODE:

UNIVERSITY OF THE WITWATERSRAND

DEPARTMENTS OF EDUCATION & PSYCHOLOGY
1 Jan Smuts Avenue, Johannesburg, 2001

All information is for Research purposes only and is strictly confidential.

EARLY LEARNING PROJECT
TEACHER RATING SCALE

Name of Child:_____

Name of Teacher:_____

School:_____

Dear Teacher,

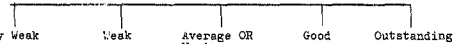
The child (children) we are asking you to rate is (are) part of a study on Early Learning initiated two years ago. We are currently evaluating their progress, and would be most grateful for your co-operation.

1. Please indicate your impression of _____ on each of the items below. Do so by placing an 'X' at the point corresponding to the description you select in each case.

2. Please put your 'X' at one of the five poles only.

e.g.

1. In relation to the rest of his/her class, how would you assess his/her reading ability.



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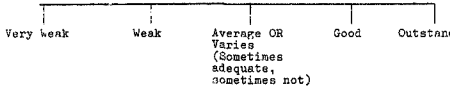
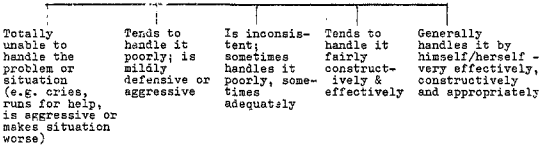
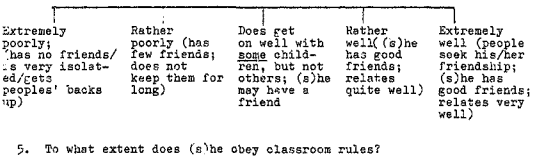
2. In relation to the rest of his/her class, how would you assess his/her arithmetic ability. 160



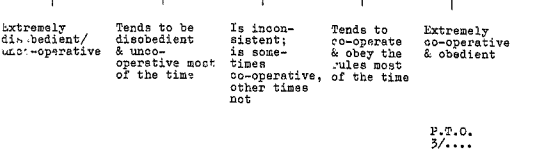
3. If a problem, or difficulty, or new situation arises, how does (s)he handle it?



4. How well does (s)he get on with classmates?



5. To what extent does (s)he obey classroom rules?



P.T.O.

3/....

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