"A study of the relationship between children's academic ability and their constructs of self and school-related attitudes"

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Abstract

The main purpose of this study was to investigate the relationship between children's level of academic ability and their constructs of self and school-related attitudes. The subjects participating were 201 boys and 356 girls in the 10 plus and 12 plus age groups who were attending three middle schools where different forms of grouping were practised. First, it was demonstrated that children of high ability tended to be construed more positively than their low ability classmates both by their peers and teachers in respect to attitudes and behaviour in class, but not, on balance, in respect to peer relationships. Secondly, a relationship was noted between children's level of academic ability and construct of self dimensions concerned with academic achievement and with attitudes and behaviour in class; but not in the area of peer relationships. Thirdly, the relationship between academic ability and school-related attitudes was found to be limited and confined largely to boys. In broad outline, data from all construct measures indicated that a firm association existed between children's ability; how they were construed by others; and how they construed themselves on scales concerned with academic competence and attitudes and behaviour in class. In contrast, inter-relationships concerned with peer relationships were much less marked. A subsidiary purpose of the study was to investigate the possible influence of partial ability grouping (setting) on the relationship between academic performance and the other variables under consideration, but no effects which could be directly attributed to that practice were identified. Finally, it was established that (irrespective of its "accuracy") there was a positive and highly significant relationship between children's level of academic self constructs, their constructs of self on the other dimensions studied and their school-related attitudes. Learning conditions in schools which might promote positive but "realistic" academic constructs of self were discussed.
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General Introduction

This study is primarily concerned with the relationship between the constructs of self and school-related attitudes of children of differing levels of academic ability. Its main objectives are threefold. First, to attempt to determine how children in the contrasting academic criteria groups are construed by their peers and teachers. Secondly, to investigate the constructs of self of children of differing ability levels. And thirdly, to examine children's school-related attitudes in relation to their standard of academic competence.

Implicit in these objectives is the recognition that an apparently common environment can be construed in different ways by different children. This is a governing principle of Kelly's theory of personal constructs, the theoretical position adopted in this study, which proposes that each individual interprets his experiences and makes sense of his environment within the framework of a construct system which is personal to him. A person's constructs are formed through interaction with people and events of significance to him. Of generally acknowledged critical importance are a person's constructs of self which are acquired, like any other set of constructs, through a process of social interaction. Their importance stems from the belief that constructs of self are instrumental in determining how an individual interprets his environment and reacts to it.

The interaction process just described necessarily operates within the school situation, and in this study, the focus of attention is on the personal constructs of children of varying standards of academic competence. It should be noted that although each construct system is unique, the commonality corollary associated with Kelly's theory of personal constructs recognises that similarities between patterns of constructs exist and it therefore justifies the search for common features among the construct systems of children in the contrasting academic ability groups under consideration.

A number of previous studies have been concerned with this issue but few of them, particularly in this country, have included construct of
self dimensions as major variables in the experimental design. The prediction made here was that teachers' and peers' constructs will differentiate between children of varying ability levels in the academic area but not necessarily in the area of peer relationships; that a similar trend will be found in respect to children's constructs of self; and that in turn, children in the various academic criteria groups will differ in their attitudes towards school and interest in school work. In brief, it was suggested that teacher, peer and self constructs on measures relating to academic work and attitudes and behaviour in class will be more positive in respect to children of high academic standing than they will be in respect to those of low academic standing. Findings on the peer relationships measures were not expected to be so directly related to academic ability.

To test the hypotheses arising from that general prediction, a number of test instruments were devised which related to different areas of interaction between children and their school environment. Subjects rated their peers of high and low academic standing on dimensions concerned with attitudes and behaviour in class and peer relationships; and they also completed sociometric tests designed to determine children's social and academic position as seen by their peers. In two of the participating schools, teachers rated children in their forms on three scales which were concerned with pupils' level of task orientation, their attitudes in class and their peer relationships. Children completed a number of constructs of self scales which centred on academic standards, attitudes and behaviour in class and peer relationships. They also completed three measures relating to attitudes to school, interest in school work and attitude towards the importance of doing well in school work.

A subsidiary area of enquiry was concerned with the practice of setting which involves grouping children according to ability in selected curriculum areas for part of the school day only. The proponents of setting maintain that the comparatively narrow range of achievement found in set groups allows individual differences in ability to be more easily provided for, while at the same time in other curriculum subjects, children
of differing ability levels can associate freely. It was predicted here that since setting is likely to make children more aware of the relative level of academic competence of themselves and others, then the relationship between academic ability and the variables under consideration in this study will become more pronounced in set classes than in mixed ability classes. Despite the inconclusive nature of previous findings on this issue, this prediction formed the substance of the hypothesis relating to this first subsidiary area of enquiry.

A second minor objective of the study was to enquire more directly into the concomitants of children's constructs of self in respect to their academic ability. In this connection it was predicted that children high in academic self construct level are also likely to hold more favourable constructs of self on other dimensions and more favourable school-related attitudes than do children low in academic self construct level. The purpose of the hypothesis generated in this section of the investigation was to determine the extent to which children's academic constructs of self (whether "realistic" as judged by external criteria or not) were positively related to self-assessments in other areas and to their school-related attitudes.

A separate introduction to the relevant literature now follows in which the theoretical framework adopted in the study is outlined and in which the procedure for evaluating previous research in the area is indicated.
INTRODUCTION TO RELEVANT LITERATURE

This study is mainly concerned with investigating children's notions about themselves, their peers, and with certain aspects of their school environment. In pursuing this end, studies drawn from a number of different areas of psychological enquiry will be examined and it seems desirable at the outset to outline the salient theoretical assumptions which will be used in attempting to explain and interpret the research findings presented here.

An examination of the literature relevant to this study reveals the use of a number of different terms such as construct, scheme, self-concept, self-image, attitude and level of aspiration. Despite obvious differences between them it can be reasonably asserted that they are all categories of knowing which represent attempts by the individual to make sense of and to bring order into his environment. In endeavouring to establish a conceptual framework within which such social-psychological phenomena can be evaluated, it would seem necessary to take account of general learning principles. And further, since much of personality theory is concerned with inter-personal relationships, insights from that source too, must be considered.

The perspectives of Piaget and Kelly represent the general theoretical orientation subscribed to here. It is the Piagetian conceptualisation of the acquisition and development of knowledge which is in the main adopted; and it is from Kelly's theory of Personal Constructs that assumptions are drawn concerning the behaviour of man in social interaction. It would be clearly inappropriate to try to show how these two theories stand in relation to other similar and dissimilar psychological orientations. All that will be attempted is an identification of the central features of the Piagetian and Kellyian theories and to demonstrate the explanatory and unifying functions they serve in the review of literature which follows.

Piaget and the acquisition and development of knowledge.

A convenient starting point is to examine differences in the Empiricist and Nativist explanations of how knowledge is acquired. The beginnings of the Empiricist-Nativist controversy pre-date the emergence
of psychology as a separate academic discipline but these two strongly contrasting versions of how man makes sense of his world and organises his environment can still be discerned in contemporary psychological thought.

According to the Empiricist position, a baby's mind at birth is a blank sheet and therefore all knowledge is acquired through experience. Thus knowledge is seen as a copy of reality derived solely from perception. Associated with the Empiricist tradition is an emphasis on the passive rather than the active nature of learning; and more attention is given to the nature of stimuli presented to the organism than to what the organism does with the stimuli.

In contrast, the Nativist tradition posits the existence of inbuilt categories of knowing which are genetically determined and which account for the acquisition of knowledge. The tendency within this orientation is to stress the importance of maturational processes in learning and thus attention is centred more on the organism itself than on the stimuli with which it comes into contact.

In opposition to both the Empiricist and Nativist traditions is Piaget's theory of cognitive epistemology where the interaction between the organism and its environment is considered to be the basis of learning. According to this view, knowledge does not exist solely in the individual, nor in an apparently independent object or event. Essentially, it is a construction of reality by the organism itself. Thus the Empiricist perspective is rejected because the copy of reality conception of knowledge it proposes subordinates the individual almost entirely to the environmental forces to which it is exposed. So, too, is the nativist school found wanting because of its assertion that innate cognitive categories exist into which external stimuli are directly received. Within the Piagetian framework however, information is always mediated through the mental structures of the individual himself and is never a direct copy of reality.

The Genevan School has produced evidence to show that the basic cognitive processes of perception imagery and remembering are not separate entities but are manifestations of a central intelligent activity. It then follows that what the organism perceives, images and remembers is governed by the general level of understanding it has reached. Perceptions are not simply copies of things seen but are a function of the cognitive framework of reference which individuals bring to bear on an object in the environment.
The basic cognitive processes undergo successive changes in the course of development. Piaget uses the term "scheme" to denote category of knowing which is defined by Furth (1968) as "the internal form of a specific knowing activity... the structure or organisation of actions as they are transferred and generalised by repetition in similar or analogous circumstances". Perhaps a scheme might also be described as a repertoire of behaviour acquired through commerce with a particular set of circumstances within the environment and which can be modified to meet changing circumstances.

Schemas and schemes need to be compared on a developmental scale and what Piaget has done is to formalise his findings in the language of logic and mathematics. In respect to grouping, for example, Piaget first determined all the groupings which were logically possible and then measured groupings children actually made against the logical possibilities previously established. Thus, in this and similar ways, a common yardstick was constructed against which cognitive development could be measured.

It is not the intention to describe the sequential changes which occur in the course of intellectual development; nor will the underlying explanatory principles of Piagetian theory be outlined. All that it is important to stress at this point is that although Piaget's main concern has been with children's understanding of the physical world, the cognitive processes he has described and the developmental stages he has identified can also be applied to social phenomena.

**Kelly's theory of Personal Constructs.**

The central focus of Kelly's theory is on the person, or more particularly on how the person construes his environment. The theory is set out in the form of one fundamental postulate and eleven corollaries, and the impression of man which emerges is one of a thinking being who strives to make sense of his world, who seeks to confirm or disconfirm his predictions, and who is capable of autonomous action.

Kelly attaches great importance to a philosophical assumption which he calls constructive alternativism. The idea he wants to convey is that any construction placed on any event is capable of modification. The notion of an objective reality is rejected and it is proposed instead that human beings always impose their own subjective interpretation on events; and that further, these interpretations themselves are open to reconsideration.
At first reading, a theory based on the principle of constructive alternativism where the uniqueness of construct systems is stressed seems to have little bearing on interpersonal relationships. However, the commonality and sociality corollaries which elaborate the fundamental postulate have a distinct application to social phenomena. The commonality corollary recognises that there can be similarities of construction of experience existing among people but the essentially dynamic nature of construct systems is still underlined by Kelly (1970) who points out that different experiences may have led to similar constructions of events. In any case, he suggests, the possibility always exists that constructs which are similar now may undergo changes in the future. Nevertheless, the commonality corollary does acknowledge that people at any given point in time may construe a given experience in similar ways.

The sociality corollary even more directly illustrates the involvement of Personal Construct theory in interpersonal relationships. Formally stated it reads: "To the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person". The first point to establish in this connection is that the sociality corollary covers one aspect only of interpersonal relations and not the entire range. But the form of interaction described by Kelly is of an active and potentially productive nature where a conscious effort is made to see a situation through another person's constructs. However inadequate or inaccurate the attempt might be, it represents a marked advance over a purely egocentric psychological set towards interpersonal relations and it makes autonomous moral behaviour possible. A further point to note is that the act of interpreting the constructs of others may influence the conduct of the persons so engaged; and thus social influences in the formation and change of personal constructs are implicitly recognised.

Kelly's theory does not set out to provide an explanation of how constructs originate and develop. What it has contributed, however, is a detailed and systematic description of the processes of construing. Constructs are classified according to the functions they serve, and their inter-relationships are examined. In so doing a comprehensive account is given of how construct systems differ from person to person which is of considerable utility in understanding phenomena commonly placed within the sub-discipline of social psychology.
The Piagetian and Kellyian perspectives compared.

A number of writers, notably Salmon (1970) and Bannister and Fransella (1971), have commented on the common ground existing between the theoretical formulations of Piaget and Kelly. In both theories, the purposive, active and enquiring nature of man is emphasised; considerable attention is given to basic cognitive processes which mediate behaviour; and a single unifying principle is adopted, in the one case adaptation, in the other anticipation.

Nevertheless, two main differences in emphasis are readily observed. First, Piaget's main focus is on how children construct the physical world whereas Kelly's central concern is with constructs of people. Secondly, Piaget concentrates on the identification of children's changing cognitive structures from infancy to adolescence; Kelly, on the other hand, is more interested in the dynamic construct systems of adults.

One difference of significance needs to be examined and that concerns the relative positions of the two theories in regard to the "objective truth" issue. Kelly takes an unequivocal stand. By offering constructive alternativism as a basic philosophical assumption he discards the notion of absolute truth. However, as previously suggested, his commonality and sociality corollaries imply some form of consensus among people and therefore it seems that the idea of relative truth along a continuum is accepted.

Piaget's position is less clear cut. Here, as elsewhere, he holds a constructivist view by which he means that knowledge exists only as the outcome of an interaction between a knowing organism and an object in the environment, but he does not comment specifically on the objective truth issue. Piaget chooses to use a logico-mathematical framework in tracing the development of cognitive growth because he believes that logico-mathematical structures are basic to all academic disciplines as indeed recent developmental studies of, for instance, children's thinking in History and Music suggest. But Piaget ignores other differences between academic disciplines such as the tests which are applied to validate knowledge. Clearly, criteria for evaluating scientific work are much more established and command more agreement than - say - criteria for assessing literary products; but this is an issue which does not concern Piaget. Neither has he much to contribute on the matters of value.
judgements and moral decisions which also influence all academic
disciplines and which are independent of intelligence alone, once the
formal operational stage of thinking is reached.

Although there are differences between the two theories, and
although the valuable insights and experimental work associated with
other perspectives are acknowledged, the theories of Piaget and Kelly
are considered to be the most appropriate for providing a structure to
the material to be presented here. In each of the areas central to
this study - constructs of person, self-constructs and attitudes - a
brief general and theoretical discussion of each dimension precedes an
examination of its influence in school settings.

The chapter headings are as follows:

Chapter 1  Constructs of persons
Chapter 2  Interpersonal constructs in the school situation
Chapter 3  Constructs of self
Chapter 4  Children's self-constructs in the school situation
Chapter 5  Children's school related attitudes
Chapter 6  The effects of ability grouping

One further point needs to be explained. In the review which
follows a stringent selection of material was necessary and therefore
comment on matters which are extensively dealt with in standard sources
is restricted.
In this chapter, consideration is given to social-psychological phenomena referred to variously as interpersonal perception, person perception, social perception and impression formation. Sometimes these terms are used interchangeably, and sometimes to indicate a difference of emphasis; but what they all have in common is a direct concern with an individual's processes of knowing the internal and external states of other people.

In various social psychological sources - as represented for example by Brown (1965), McDavid and Harari (1966), Warr and Knapper (1968) and Cook (1971) - there is agreement that no essential difference exists between the perception of people and the perception of objects and events; and as a consequence, the study of person perception is increasingly conducted against a background of general psychological theory and practice. This is in accord with the theoretical principles sketched earlier in this study. Specifically, it is submitted that person perception is the outcome of an interaction between a knowing organism and an object (in this instance a person) in the environment. Constructs of persons can, in Piagetian terms, be regarded as a class of scheme, and like all schemes they change in structure as children proceed from one stage of thinking to the next. The other perspective which was singled out for special comment in the introduction, Kelly's theory of Personal Constructs, extends and elaborates the Piagetian notion of scheme in respect to persons. Within this perspective a construct is defined, apparently simply, as a way in which some things are seen as being alike and yet different from others. But Kelly goes on to give a detailed classification of constructs of people according to the function each one serves and to show how they coalesce to form construct systems of various kinds.

With these major theoretical principles in mind, this part of the review of relevant literature is organised as follows.

First, the relationship between social development in general and cognitive growth will be explored.

Secondly, developmental trends in constructs of others elicited from children will be examined. In other words, only those studies in
in which children have been directly asked to describe peers will be considered at this point.

Thirdly, developmental trends in children's constructs of others where constructs have been provided by the investigator will then receive attention.

Finally, a short account follows of issues concerning the relationship between cognitive complexity and constructs of persons.

1. The relationship between social development in general and children's cognitive growth.

Studies of children's social attitudes and behaviour within a developmental framework are comparatively few, although of course age trends in children's moral judgements have been under close scrutiny for some time. But what does emerge, clearly if quite predictably, is that the developmental processes which govern children's mental and affective functioning are also to be discerned in the progressively refined frameworks children use in construing the behaviour of other people.

None of Piaget's publications since "The Moral Judgement of the Child" deals at length (or empirically) with social interaction although frequent references to affective and social aspects of development appear elsewhere in his later writings. For instance, Piaget and Inhelder (1969) write: "the decentering of cognitive constructions necessary for the development of the operations is inseparable from the decentering of affective and social constructs. But the term social must not be thought of in the narrow sense of educational, cultural or moral transmission alone; rather, it covers an inter-personal process of socialization which is at once cognitive, affective and moral".

Feffer and Gourevitch (1960) set out empirically to establish a link between children's structuring of the physical world and their ability to assume different social perspectives. Of particular interest to them was the characteristic of children at the pre-operational stage of thinking known as centration, which essentially refers to the tendency of young children to focus on one attribute only of a stimulus object to the exclusion of all others. Two sets of tasks were given the children; the first consisted of conventional Piagetian tests of conservation, the second of a projective role-taking kind where subjects were asked among other things to tell a story from the viewpoint of three of its characters. In all 68 boys between the ages of 6 and 13 completed the tasks and the predicted relationships were confirmed. Assessments of the ability to
decentre in the two apparently distinct fields were found to be positively related to each other as well as being positively related to chronological age.

Burns and Cavey (1967) were concerned with a related matter, namely the change from egocentric to sociocentric behaviour which is associated with the ability to de-centre. Their subjects, 39 in number, were recruited from the three to six age range. In part of this experiment, four pictures were used showing, for example, a boy frowning while attending a party - and the subjects were asked to describe the feelings of the children so depicted. As a check, similar drawings were shown where no children's faces appeared, and the subjects were asked to say what their own feelings would be in a like situation. Among the younger children only one interpretation of the situation was found to be admissible. If they, the subjects, enjoyed parties, then they assumed that the children depicted in the illustration also liked parties irrespective of the incongruity of the facial expression. This finding was taken to provide evidence of the function of centration in the social awareness of children.

More recently, Burke (1971) challenged Piaget's observation that young children are totally egocentric and unable to understand the viewpoints of others, although Burke did acknowledge that social sensitivity increased with age. In the most interesting part of his experiment, Burke told eight stories to his 200 white middle class subjects who were in the 3 to 8 year age range. In the stories they, the subjects, were represented as behaving in ways which might make another child feel happy, sad or angry. Examples are sharing candy; refusing to let another child play; and pushing another child off a table. Subjects were also shown three pictures portraying happy and/or angry faces from which they were asked to select the one which best indicated the feelings of the other child in the story. The findings suggested that children as young as three years of age could identify the specific situations which could evoke different kinds of reactions in others. In particular "happy" responses in other people seem to be well established as early as three to three and a half years. Burke therefore concludes that the ability to de-centre in social relationships comes much earlier than hitherto reported. One possibility - and it is a possibility only - is that when very young children make the apparent shift to a sociocentric position they recognise that their feelings would be in
similar circumstances and to that extent there is growing sensitivity
to the viewpoint of others. Whether they would recognise feelings in
others dissimilar to their own, and whether they could relate the effects
of their own behaviour to the feelings of other children, are matters open
to question. Further, the fact that the sample consisted of middle-class
children suggests that in any event these children would be in advance of
the general population in this respect.

In general, the studies of Feffer and Gourevitch (1960), Burns and
Cavey (1967) and Burke (1971) considered in this section, confirm the view
that the cognitive processes of centration and egocentricity observed in
children's thinking about the physical world are also basic to their
construing of social objects and events. Further, a developmental sequence
from egocentric thought to sociocentric thought in interpersonal relation­
ships is reported in all three studies, although some difference exists as
to the age when the transition occurs. It was tentatively suggested that
a first stage towards social understanding is when an individual's response
is similar to that of another person's and is recognised as such, but that
an understanding of the full complexity of cause and effect in interpersonal
relationships and the ability to recognise feelings dissimilar from one's
own do not emerge until a later stage of development.

2. Developmental trends in constructs of others elicited from children.

The studies which will now be examined have one important feature in
common, namely that the constructs of others have been elicited from
children and not supplied by the investigator. Thus children's own
descriptions of peers and adults are used to form the basis of a developmental
scale and it is assumed that the constructs so obtained have relevance and
meaning to the children who use them. If age trends are to be established,
however, it is necessary for the investigator to categorise children's constructs
and as will be seen shortly, a difficulty arises in reviewing the literature
because different forms of classification have been used in different studies.

In a recent major study, Scarlett et al (1971) investigated children's
descriptions of peers using Werner's organismic theory as a developmental
framework. Perhaps the essence of Werner's theory is best conveyed by
quoting directly his orthogenetic principle which states: "whenever
development occurs, it proceeds from a state of relative globality and lack
of differentiation to a state of increasing differentiation, articulation,
and hierarchic integration". (Werner, 1957, p.126).
The application of the orthogenetic principle to the construing of persons was recognised by Scarlett and his co-workers who set out to study the development of interpersonal perception in a sample of 90 boys drawn in equal numbers from the first, third and fifth grade of three elementary schools. Each subject was interviewed twice. In the first interview each boy was asked to describe four persons in turn—a boy he liked, a boy he disliked, a girl he liked and a girl he disliked. In the second interview each subject listened to a tape recorded story about two boys who visited a zoo and he was then asked to retell the story in as much detail as possible, and in particular, to describe the two central characters. The boys' descriptions of their acquaintances were scored by assigning each personality construct to one of the following four categories:

1. **Concrete-**we constructs. Constructs in which the subject did not distinguish between himself and the other, but described what they do together (e.g. "we play together").

2. **Egocentric-concrete constructs.** Constructs which were both concrete, in describing what the other person does in particular contexts, and egocentric, in that the object of the sentence was the describer himself (e.g. "he hits me" or "he gives me things").

3. **Non-egocentric-concrete constructs.** Constructs which referred to concrete behaviours, but did not include the subject himself in the sentence, (e.g. "he plays baseball" or "he hits people all the time").

4. **Abstract constructs.** Constructs which referred to abstract attributes of the other person, that is, to qualities that were not limited to a specific context (e.g. "he is intelligent", "he is kind").

One feature of the analysis should be particularly noted. Only what might loosely be termed interpersonal qualities were scored; responses referring to other criteria such as physical appearance, where the person lived and so on, were ignored.

As expected, there was a highly significant increase with age in the average number of constructs used (p.001) and an inspection of the four categories of construct across the three age groups showed that the predominant type of construct varied very much with age (p.001). For instance, egocentric concrete constructs were favoured by grades 1 and 3 while abstract constructs featured prominently among 5th graders.
Further, the investigators were able to show a steady increase in the mean number of abstract constructs used in each grade — .3 in Grade 1, 1.2 in Grade 3 and 1.6 in Grade 5. In the nonegocentric-concrete category, the proportion of constructs used at each level was Grade 1, 3%; Grade 3, 30% and Grade 5, 31%.

A second finding concerned individual variations in the differentiation of peer descriptions depending on the relationship of the other person to the subject. In the younger age groups, the liked boy tended to be described in the greatest detail while all girls were described in the least detail. Only in the fifth grade were more differences reported in descriptions of liked and disliked girls, a finding which perhaps suggests the influence of increasing contact between the sexes at this age level. Although the boys used a greater number of constructs to describe those they knew best and mixed with most, the constructs used were still typical of their stage of development and were not of a higher level.

In brief, the developmental order of constructs was as postulated by Werner and Piaget and proceeded from the egocentric to the non-egocentric and from the concrete to the abstract in form.

A similar enquiry was conducted by Little (1957) who administered a group form of Kelly's Role Repertory Grid test to 86 children between the ages of 10 and 18. Each construct obtained was classed under one of the following three headings which it is necessary to describe fully.

1. **Psychological constructs.** These include any statement about personality characteristics (e.g. friendly - not friendly) or highly general interests (e.g. likes deep philosophical discussion - doesn't go in for that).

2. **Role constructs.** These included traditional socio-economic distinctions (e.g. both are teachers - not a teacher) as well as more specific interests (e.g. likes dancing - doesn't dance).

3. **Physicalistic constructs.** These included pure physical description (e.g. tall - short) as well as highly behavioural observations (e.g. absent from school - here today).

The constructs comprise an inferential non-inferential scale where apparently role constructs occupy a middle position between physicalistic and psychological constructs in respect to degree of inference involved.

The first main finding was that the total number of constructs used increased with age and that marked increases were found in the absolute number of psychological and role constructs elicited. However,
physicalistic constructs reached their peak in early adolescence. Thus the steady increase in psychological focussing and the decrease in use of physicalistic characteristics in early adolescence and in pre-adolescent girls lends some support to the progressive sequence suggested by theories of cognitive development. But the peak of physicalistic constructs was reached at around 13 years, and this, it should be noted, is a much later age than would be predicted by Piagetian theory. No really satisfactory reason can be advanced to explain this finding.

So far, only the absolute number of constructs elicited has been considered and it is now necessary to examine the proportion of constructs used in each category. Little makes three points here.

"(1) During the pre-adolescent period (10 - 13), girls tend to use predominantly physicalistic constructs such as height, hair colour, etc., while boys tend to use a far larger proportion of role constructs such as club activities, professions, etc. Neither group uses psychological constructs at all frequently.

(2) At adolescence (13 - 14), both sexes use predominantly physicalistic constructs, though in contrast with pre-adolescence, boys are particularly physicalistic at this stage. There are no increases in psychological constructs noted at this stage.

(3) In later adolescence (14), both sexes use predominantly role constructs, with a tendency for a proportional increase in psychological construct usage."

It is by no means clear why role constructs should be used so extensively by pre-adolescent boys and predominantly by both sexes in later adolescence. Little himself suggests that role construing may not necessarily be an intermediate stage between physicalistic and psychological construing and he further suggests that his findings call into doubt the notion of fixed stages in construct development. Unfortunately in the Role construct category, the data do not indicate the proportion of traditional socio-economic distinctions made as opposed to specific interests identified which might give a clue as to personality characteristics. One additional point merits consideration. The form of test given was a group one and there was therefore no opportunity to question children further on their initial responses and to encourage them to verbalise their constructs more fully. It is possible, then, that the difficulties which arise in
interpreting Little's findings derive in part from the form of test used and from the system of categorisation of constructs adopted.

Elsewhere, Little (1968b) briefly summarises findings from four studies (which presumably includes the one just reported) in which age and other differences in social construing were investigated. It seems that while the number of psychological constructs increase with age, the proportion of psychological constructs does not. Furthermore, a greater number of psychological constructs are used when describing well-known figures on the test than when differentiating figures less well known. The suggestion is that physicalistic and role constructs enable crude classifications to be made initially which are later refined when psychological constructs are brought into play.

In brief, Little's investigations demonstrate that there is an increase in the use of psychological constructs with age and partial support is therefore given to the sequence of construing suggested by theories of development. Nevertheless, the pre-dominant use of physicalistic constructs in early adolescence is difficult to explain within this framework. A further discrepancy also exists in that physicalistic and role constructs are still used extensively even at the most advanced stage of cognitive development. One factor of importance which may be operating is degree of acquaintanceship with the role persons presented for assessment. Thus more psychological constructs may be used as a degree of familiarity with the object person increases, but this is a matter requiring further detailed investigation.

Brierley (1967) was interested in much the same problems. She individually administered a standard form of the Kelly R.R.G. test to three groups of 7, 10 and 13-year-old children, numbering 270 in all. She determined on six classes of construct described in the table below, in which are also given the percentages of type of construct used at each age level.

<table>
<thead>
<tr>
<th>Table 1.1</th>
<th>Percentages of six types of construct elicited from children in three age groups.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinship (e.g. &quot;brother&quot;, &quot;father&quot;)</td>
<td>2.9  2.7  1.3</td>
</tr>
<tr>
<td>Social role (e.g. &quot;these are children&quot;)</td>
<td>29.5 26.9 8.8</td>
</tr>
<tr>
<td>Appearance (e.g. &quot;skinny&quot;)</td>
<td>32.3 30.6 8.9</td>
</tr>
<tr>
<td>Behaviour (e.g. &quot;plays musical instrument&quot;)</td>
<td>24.3 31.0 41.3</td>
</tr>
<tr>
<td>Personality (e.g. &quot;is nosey&quot;)</td>
<td>9.8 18.4 39.7</td>
</tr>
<tr>
<td>Literal (e.g. &quot;have same Christian name&quot;)</td>
<td>0.2 0.0 0.0</td>
</tr>
</tbody>
</table>
The Behaviour category also includes such responses as "sit together in class", "he gets into trouble", "she acts silly" and "she likes conversation". The last three could easily be re-worded and classed as personality constructs, viz. "troublesome", "silly" and "talkative". However, Brierley observes that there were relatively few responses of this kind and that the benefit of doubt was always exercised so as to depress numbers in the personality category.

The striking feature of Table 1.1 is the late emergence of personality constructs and the comparatively small number of personality constructs used even among the oldest children. In contrast to Little's findings, however, there is a considerable decline in the number of physical appearance descriptions given by children, and the same trend is observed in relation to social role. No data were given bearing on the relationship between frequency of contact with person construed and categories of constructs but children selected the role titles "father", "mother", and "myself" most frequently from amongst the fourteen provided.

Brierley used a second technique with her two older age groups, a sentence completion test which included items related to families, friends and disliked peers. The findings were quite different from those obtained from the REP test. Descriptions were given more often in terms of personality constructs than other constructs; 84% in the case of 10 year olds and 77% in the case of 13 year olds. An interesting reversal in age trends is again apparent in the data.

The difference in proportion of personality constructs obtained from these two measures cannot easily be explained, but in the main, Brierley's findings do indicate an increasing refinement in children's descriptions of their families and peers. One section of this study is devoted to an analysis of adjectives used by children in the three age groups. The predominant use of "naughty", "nice" and "rough" at 7 gives way to more specific descriptions at 10; while at 13 children are more commonly described, for example, as being "studious", "sympathetic and friendly", "a bully" and "troublesome" and self-important.

The same trend was reported in a rather loosely described but nevertheless insightful study by Watts (1944). He suggested that children divide people into two classes, those who please them and those who don't; and accordingly, they speak in terms of "kind" and "unkind" and "good" and "bad" people. Later on, between the ages of seven and eleven, children
gradually come to differentiate between the various shades of the "nice" and the "good" and between those of their opposites. In support of his point, Watts set eleven-year-old junior school children this sentence completion test: "If I were to marry a prince", said the princess, "I should expect him to be..................". Watts writes: "The answers showed that the vague term "nice" which was all too common at 7 became gradually specified with increased age, as "well-mannered", "polite", "courteous", "agreeable", etc.; that "good" became more narrowly defined as "honest", "truthful", "unselfish", "steadfast", etc.; and that "kind" became "generous", "sympathetic", "helpful", "good-natured", etc.

Incidentally, Watts, too, comments on children's centration on obvious physical characteristics in their earliest attempts at classifying people.

Collin (1958) was also interested in the strategies children use in their cognition of others but his main focus was on children's ability to make inferences from the overt behaviour of others. His subjects comprised three groups of 10, 13 and 16-year-old children totalling 712 in all. They were shown four silent film sequences in which samples of boys' "good" and "bad" behaviour were shown respectively, after which they were asked to write down what they thought of the boys and the things they saw them do. Collin found that some children made no inferences at all but confined themselves simply to describing the action they had seen. Secondly, some subjects used inferences in describing some parts of the film sequence but not others. Thirdly, the remainder used only inference in making their judgements. Expected age trends were reported which suggested that inference is a relatively late developmental phenomenon. Some sex differences were also noted which suggested that girls tend to use inference more than boys.

One more study will be cited which has a bearing on criteria 11-year-old children use in judging peers. It is a study by Austin and Thompson (1948) who asked 487 children directly, to give reasons for the sociometric choices they had previously made. An analysis of the 2,256 responses so obtained produced the following result:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of children indicating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheerful, kind, co-operative,</td>
<td>53.3</td>
</tr>
<tr>
<td>generous, etc.</td>
<td></td>
</tr>
<tr>
<td>Frequent association and similarity</td>
<td>22.0</td>
</tr>
<tr>
<td>of interest</td>
<td></td>
</tr>
<tr>
<td>Physical appearance and intelligence</td>
<td>6.8</td>
</tr>
<tr>
<td>Nice, friendly, unclassified</td>
<td>17.4</td>
</tr>
</tbody>
</table>

Table 1.2 - Reasons for friendship choice
This classification appears to be rather crude and there may well be considerable overlap between categories, but the proportion of children using what could be called personality constructs is high.

In considering as a whole the studies reviewed in this section where constructs of peers and adults were elicited from children, one major trend stands out. In all the developmental studies considered, a growing shift from concrete to abstract construing was reported, thus supporting the sequence of person construction suggested by theories of cognitive development. The emergence as age increased of what were variously described as abstract, psychological personality and inferential constructs was consistently reported and the work of Watts (1944) and Brierley (1967) pointed to a progressively refined and specific use of adjectives to describe personality characteristics as a function of age.

Agreement among the studies reviewed was not complete, however, and the discrepancies may be attributed in part to two main causes. First, the techniques used to elicit constructs differed; and secondly, and more importantly, each investigator adopted a different method of categorising children's constructs.

In more specific terms, the first point of disagreement centres around the proportion of personality constructs used at each age level. According to Little (1967), whose subjects were adolescents, while the number of psychological constructs increases with age, the proportion of psychological constructs does not. In contrast, Brierley (1967), whose oldest subjects were only 13, reports a rise in the percentage of personality constructs from 9.8% at 7 years to 39.7% at 13 years. Responses from her sentence completion test showed a decrease in personality constructs from 84% at 10 to 77% at 13 but as such a high proportion of personality constructs was used in any case, this finding may not be of particular significance. As Scarlett et al (1971) did not take into account physical constructs, their study is not directly comparable with Little's or Brierley's. Nevertheless, in terms of their system of categorisation, the percentage of mean personality constructs used showed a steady increase from 9% at 6 years; 20% at 8 years to 40% at 10 years.

On balance, then, the evidence appears to be in favour of an increase in the proportion of personality construct usage with age.

The second point of disagreement concerns the use of physical constructs. Watts (1944) commented on children's centration on obvious physical characteristics in their earliest attempts at classifying people,
a finding strongly supported by Brierley (1967). But whereas Brierley reported a drop in proportion of "appearance" constructs from 32.2% at age 7 to 8.9% at age 13, the use of physicalistic constructs by Little's subjects reached a peak at 13, and they were still used extensively in later adolescence. In both studies, children were asked to describe people well known to them so that the subject's degree of familiarity with the role figure cannot alone account for the discrepancy. One possible explanation is that in extending his physicalistic category to include highly behavioural observations such as "absent from school", Little inflated the number of descriptions in this category and made direct comparisons with other studies impossible.

The third source of disagreement centres around the use of role constructs. Little reported a high frequency of their use at all ages but here, too, Little included specific behaviours such as dancing in this category and so comparison with other studies is again made difficult. Certainly Scarlett et al were able to show that from 8 years of age onwards there was a marked increase in what they called nonegocentric-concrete construing which was basically concerned with perceptions of the behaviour of others. Brierley, too, confirmed the trend but reports a sharp decline in social role constructs used from 26.9% at 10 years to 6.8% at 13 years. Different methods of analysing constructs may again therefore provide an explanation for the contradictory findings reported in this respect.

Two further general points need to be stressed. First, although proportions of constructs in each category and at each level have been given in some of the studies considered here, no indication is given of the relative importance the individual attaches to each construct category. In other words, no attempt has been made to order constructs hierarchically in terms of their value to the individual or to explore possible age trends in hierarchical construing. Thus, while the use of physical constructs may continue well into adolescence, we do not know the importance attached to them vis-a-vis psychological construing at this age level.

Secondly, in essence, it appears that young children are only able to categorise others very simply or predominantly on the basis of physical appearance and overt behaviour. As they grow older, other categories become available, but this does not mean that the earlier forms of categorisation are entirely discarded. Indeed, they would still seem to serve a useful function in some circumstances throughout the whole of
adulthood. There is thus one essential difference between the
construction of persons and the construction of the physical world.
In the latter instance, decenteration on obvious aspects of shape or
size is complete when the concrete operational stage of development
is reached; in the former case centring on physical attributes may
well continue to some degree but not exclusively throughout life. In
this respect, then, centration on physical attributes of people is not
directly parallel with centration on physical objects.

If, however, when an adult uses physical constructs he also
implicitly or explicitly brings associated personality constructs into
focus (as in the case of stereotyping), then physical constructs take
on a more advanced character and would then be much more in line with
established developmental stages.

In summary, and despite reported inconsistencies, the main trend
of the literature strongly supports the position that the developmental
processes of personal construing are a function and reflection of
general cognitive growth.

5. Developmental trends in children's constructs of others where
constructs have been provided by the investigator.

A brief consideration will now be given to a further group of studies
still concerned with developmental trends in person construction but in
which constructs have been selected on theoretical or a priori grounds by
the investigator. Essentially, two questions are posed in studies of
this kind:

1. Do children's responses to the same role figure change as a
function of age?

2. Are children consistent in their use of adjective ratings?
   (In other words are the inter-correlations between the
   adjective ratings in the expected direction?)

Age trends in ratings of persons will be considered first.

Many of the studies concerned in this matter have used Osgood
Semantic Differential rating scales in determining age trends, and often
the familiar factors of Evaluation (good-bad), Potency (strong-weak) and
activity (active-passive) form the frame-work against which results from
various age levels are compared.

Di-Vesta's (1966) developmental study of the semantic structures of
children is representative and makes a useful starting point.
One hundred subjects in each of grades 2 to 6 were asked to rate a number of concepts which included people on an Osgood scale; and evidence was presented which showed the stability of the three-factor dimensions down to the second grade. A progressive refinement and differentiation was also evident. Maltz’s (1963) study took much the same form although his subjects consisted of children drawn from the 2nd., 4th., 6th. and college grades. Again changes with age in the direction of greater differentiation were reported although the extent of the change differed according to the concept being used. Kohn and Fiedler (1961) working with high school and college students confirm the same trend among older age groups.

In a cross-cultural study of interpersonal perception among adolescents, Fiedler and Hoffman (1962) also pointed to the importance of age as a factor in interpersonal construing and the writers were able to show how subjects increasingly differentiated not only between people, but between themselves and those around them.

Attention now turns to the second matter raised earlier which concerns the consistency with which children rate the adjectives supplied. A conventional test-retest reliability study was reported by Di-Vesta and Volk (1966) where children from grades 2 to 7 were used. In general, the Osgood technique was shown to be a stable instrument down to the third grade (approximately eight year olds) under immediate test-retest conditions. The test was also administered after a four-week interval and the coefficients of stability determined this time were lower, particularly among 2nd. and 3rd. grade children. It thus seems that younger children had difficulty in interpreting the meaning of Osgood scales at least in relation to the concepts given. Maltz (1963), whose study was referred to near the beginning of this section, also reported that standard deviations of concept judgements for young children were significantly higher than those of an older age group. Again it seems that the meaning of the concepts for young children are not as consistent as for older children and Maltz suggests that consistency is not reached until about the 4th. grade.

Before summarising the findings reported here, it must be pointed out that the Osgood Semantic Differential Scales have been criticised on a number of grounds. Specifically, Cook (1971) raises three points:
(i) that the three factors are derived from group data and that they therefore do not necessarily represent factors that occur in every individual set of ratings (or even any set),

(ii) the adjectives tend to be vague, some are not usually applied to people at all, and it is possible that the inappropriateness of the adjectives tends to inflate correlations between scales,

(iii) the repeated emergence of the three factors suggests that the semantic differential is not uncovering the three basic sets of association rules for judging people, but is rather telling us something about the meaning of words in general; that is, that ratings using adjectives tend to correlate and produce three factors.

Conclusions from the representative studies cited in this section where supplied constructs have been used in determining developmental trends in person construing can be quickly summarised. There is evidence for an increasing differentiation between people as a function of age as reported by Di-Vesta (1966), Maltz (1963), Kohn and Fiedler (1961) and Fiedler and Hoffman (1962). The last named investigators also indicated that adolescents increasingly differentiated not only between people as they grew older but between themselves and those around them. Di-Vesta and Volk (1966) reported that young children seem incapable of making consistent responses to rating scales until around eight years of age, a finding substantially confirmed by Maltz (1963). However, the possible limitations of the Osgood scales for person construing as enumerated by Cook (1971) should be noted.

4. Further individual differences in person construing.

The studies so far considered in this chapter have been appraised within a developmental framework. In effect, constructs of persons have been equated with interpersonal schemes of knowing, contingent on the general laws of cognitive development and which undergo a series of changes dependent on these laws. The discussion will now be broadened to take into account more general differences in person construing.

Secord and Beckman (1964) make a number of useful distinctions in modes of person perception derived from interview data in which 120 young college students were asked to describe 12 people whom they knew well. First, they report, the level of complexity at which persons are perceived varied from one perceiver to another. Secondly, each perceiver had certain
central traits or characteristics that he emphasises in describing others. Thirdly, there was a strong tendency on the part of some to describe people in terms of a cluster of congruous traits; in other instances a variety of traits was used.

Secord and Backman raise two main issues which merit further consideration, which are:
(a) cognitive complexity and person perception,
(b) inter-relations between constructs used in person construing.

(a) **Cognitive complexity and person perception.**

Cognitive complexity is a term commonly used to indicate the number of different constructs of persons individuals characteristically use. Elsewhere in this chapter it has been shown that children progress from relatively simple to more elaborate patterns of construing. But even in adulthood wide differences exist between people in respect to the relative complexity of their impressions of people. Messick and Kogan's (1966) study in this area is quite typical and their findings are in accord with established trends. They asked about 150 adults to judge similarities and differences between people well-known to them and they write: "Different people organise their personal constructs in different ways, varying from a few, simple discrete categories or pigeon holes to numerous constructs arranged in hierarchical structures".

The next three studies to be mentioned delve a little further and enquire into the generality of the cognitive complexity-simplicity dimension. Doise and Zavallon (1970), two French psychologists, compared the constructs of 50 undergraduates pertaining to three different stimuli - familiar persons, famous people and nations. The findings suggested that the subjects tended to react "rather consistently" to the different subject matter but Signell (1966) in a study where children’s constructs of people and nations were compared found these two dimensions to be relatively independent. Vannoy (1965) is also doubtful of the existence of a general cognitive complexity-simplicity trait. Not only did his 138 adult subjects rate several different concepts, but they did so by using different techniques which included a Repertory Grid test, a sentence completion test and a social distance questionnaire. The findings indicated that no single principle could be applied across a range of stimuli, and in the words of the author "the results suggest that cognitive complexity may consist of a number of distinct possibly independent tendencies not all of which are educed by any of the present measurement instruments".
Taking the matter a little further, it is also evident that the same person may, on different occasions, construe in either a complex or a simple manner. Obviously when information about a stimulus person is minimal then the chances are that the construing will be relatively crude. Then again, Bannister (1971) introduces a further element into the discussion, namely anxiety. According to Kelly, a person sets up a rapid succession of choices when he is anxious. Thus to some people relationships with peers or superiors may be more anxiety inducing than family situations so that the former set of constructs is elaborated and becomes complex, in contrast to the latter which remains at a simple level. It is thus apparent that the personality of the individual construing is a factor relevant to the cognitive complexity issue; and so is the situation in which the construing occurs.

The implications of the ability to construe persons in complex fashion are spelt out by Adams-Webber (1969) who writes in terms of Kelly's Personal Construct theory. He quotes a review article by Crockett (1965) in which it was concluded that in contrast to those who construe simply, subjects high in complexity:

a. distinguish more clearly between other individuals in the impressions they form of them,

b. assume that others are less similar to themselves.

Adams-Webber goes on to point out that from a Person Construct theory viewpoint the fundamental issue of person perception is not whether one individual can predict responses of another in terms of a set of dimensions arbitrarily selected by an experimenter but rather whether he can grasp the other's personal axes of reference as a basis for effective communication and understanding. Adams-Webber hypothesised that the more cognitively complex a construct system an individual possesses, the more readily would he be able to grasp the diverse points of view of others. He put the hypothesis to the test by first determining where each of his subjects stood on the cognitive complexity continuum. Three weeks later the same group discussed in pairs a holiday they would like to go on, and after the discussion they were given a list of 40 constructs, 22 of which had been elicited from their partner. The final task was to identify the 22 constructs previously obtained from their partner. The findings confirmed Adam-Webber's hypothesis that "relatively cognitive complex persons will exhibit more skill than relatively cognitively simple persons.
In general, there is agreement in the literature that individuals differ in the degree of cognitive complexity they bring to bear in person construing. The balance of evidence is also in favour of the view that this characteristic varies according to the stimulus person being appraised and according to the social situation in which the appraisal occurs. (Signell, 1966; Vannoy, 1965; Bannister, 1971). Finally, it has been shown that the more cognitively complex an individual is in personal construing, the more likely he is to be successful in inferring the construct systems of others. (Adams-Webber, 1969).

(b) Inter-relationships between constructs used in person construing.

There is a long tradition in social psychology which seeks to explore the pattern of relationship which exists between personality dimensions used in categorising people. Extensive reviews of the literature are available in Tagiuri (1968) and Ward and Knapper (1968), both of which give considerable space to the classic work of Asch (1946). Asch, in a series of laboratory experiments, discovered that some dimensions of personality like "cold" and "warm" were central to the process of impression formation while others served only a minimal function. Although the centrality of a trait has been subsequently shown to depend in part on the composition of the list of adjectives in which it is included, Asch's findings have been substantially confirmed by later research workers.

The literature suggests then that people bring to bear what have come to be known as implicit personality theories in judging others in which certain traits are fundamental to the judgements they make. These findings, which come from many sources, can be examined within the perspective of Kelly's Personal Construct theory. As its title indicates, the notion of personal constructs is basic to the theory, and Kelly sought to classify them and to differentiate between them according to the function they served. He acknowledges that all constructs in a system are not of equal importance by his designations "superordinate" and "subordinate". By a superordinate construct is meant one which includes another as one of its components; and a subordinate construct is one of such components so included. In other words a hierarchy of constructs is recognised in the theory, clear empirical support for which has been provided by Hinkle (1965). What he did was to present his subjects with pairs of constructs previously elicited from them, and he asked them which one they would prefer to remain if they were forced
Constructs which were most resistant to change were adjudged more likely to be superordinate within the subject's hierarchies. In addition to commenting on the centrality of some traits, Asch (1946) also drew attention to the tendency of certain traits to cluster, which again points to the existence of an implicit personality theory individuals hold in assessing others. However, the cue-trait list of adjectives Asch provided gave sparse information on which to make judgements and the possibility exists that he was, in fact, eliciting stereotypes from his subjects which may have limited application in everyday social settings. Koltuv (1962), in her investigation of this possibility, was able to show that correlations between personality traits were significantly higher when unfamiliar people were rated than when familiar people were being assessed. Care was taken to select personality traits for ratings known to be relevant to each of the subjects assessing—all 20 of whom were college educated adults. It is important to note that some inter-relationships were found between traits in the case of each subject and irrespective of whether the stimulus person was familiar or unfamiliar to him. The difference between clustering of attributes for familiar and unknown persons was a matter of degree and was not absolute as a closer inspection of part of Koltuv's data reveals. In the table below correlations between traits used by five of the 20 subjects are given for illustrative purposes.

Table 1.3 - Correlations between personality traits.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Familiar people</th>
<th>Unfamiliar people</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>C</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>D</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>E</td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>

The data convincingly illustrate the differences in person construing patterns found in this sample. While generally more clustering of attributes was noted in the assessment of unfamiliar people, the trend was reversed in the case of subject E. In addition, it will be noted, the number of correlations varied very much from individual to individual.

Koltuv's findings are much in line with those reported by Secord and Beckman (1964) whose work was referred to earlier. It thus seems
that some individuals describe people in terms of a cluster of traits while others use a variety of independent traits.

In the next chapter, a series of studies will be referred to in which children's and teachers' ratings of pupils in the classroom on provided scales are examined. The consensus of findings there is that individual traits are not isolated but tend to be grouped around major factors. Hallworth's (1961) study is representative of this approach. He reduced a large number of individual ratings which teachers made of children to basically two dimensions. Essentially, according to the findings, when teachers assess a child they are asking two questions:

1. How does he get on with me?
2. How does he get on with other children?

The comparison of individual grid matrices where constructs have been elicited is a formidable task and although Brierley (1967) among others has given useful lists of constructs commonly used by children, the relationships among them for purposes of obtaining group data have yet to be determined. However, other investigators whose work is described by Bannister and Fair (1968) have explored the principal bases of individual construct systems by using factor analyses and other techniques. To give one example, Ravenette (1970) obtained data from a clinical interview with a nine-year-old which indicated that for her, constructs of "makes up stories to avoid trouble", "parents who row", and "like self" were strongly linked, and further factor analyses using three methods were able to demonstrate not only how this girl's constructs were related, but how they stood in hierarchical order.

Construct theory recognizes the possibility of interdependence of constructs in many ways but notably in respect to what Kelly calls constellatory constructs. Formally defined, a constellatory construct is one which fixes the other realm membership of its elements. It is a form of thinking most evident in stereotyping where it is assumed that if, for example, a person is a member of a given race then he necessarily possesses certain associated personality characteristics. Construct theory does not suggest that all constructs are inter-related for much depends on the individual and on the circumstances in which construing occurs. It does recognize, however, that in many instances constructs do tend to cluster and therefore provision is made in its theory and methodology to take this phenomenon into account.
In summing up this section it can be said that there are differences in importance between constructs of persons individuals characteristically use (Kelly, 1955). Asch (1945) drew attention to the tendency of certain traits to cluster, a finding often reported in the general social psychological literature. There is, however, a suggestion by Koltuv (1962) that more clustering is evident when the stimulus person is unfamiliar to the rater while studies represented by Hallworth (1961) using provided constructs and grouped data point to a tendency for traits to be subsumed under just a few main features.

Studies conducted by Secord and Backman (1964) and Koltuv (1962) suggest that some people describe individuals in terms of a cluster of traits while others use a variety of independent traits. Common constructs used by children have been elicited by Brierley (1967) but relationships among them in respect to groups of children do not appear to have been explored.
SUMMARY OF CHAPTER

1. That no essential difference exists between the construing of people and the construing of objects and that therefore the developmental processes of person construing are a reflection of cognitive growth in general.

2. That in accordance with the developmental sequence posited, studies in which provided and elicited constructs were used (subject to certain qualifications) suggest that there is a progressively refined and more precise use of adjectives describing personality characteristics observable as children's age increases.

3. That individual differences in person construing exist in respect to the degree of cognitive complexity which construct systems reveal.

4. That under certain conditions, patterns of relationships between constructs used in describing people can be discerned.
CHAPTER 2

Interpersonal constructs in the school situation

The subject matter of the last chapter provides a theoretical and empirical background against which interpersonal construing in school environments can be examined. Again it is necessary to be selective and observations will therefore be confined to three main themes, namely, children's constructs of peers in the school situation; teachers' constructs of pupils in their classes; and a comparison of children's and teachers' constructs of pupils in school settings.

1. Children's constructs of peers in the school situation.

Children's constructs of peers in general will be discussed first and this will be followed by an examination of children's constructs of peers of differing intelligence levels.

(i) Children's constructs of peers in general.

The complexities attendant on establishing main trends in the development of children's interpersonal constructs were referred to in the last chapter. It seems that categorisations made on the basis of physical appearance and simple classifications of role and overt behaviour persist into later adolescence, but in the absence of attempts to order constructs hierarchically, it is difficult to determine the importance of such relatively elementary classifications as compared with constructs which centre on covert personality characteristics. However, Watts (1944) whose work was referred to in the last chapter, seems to get near to the heart of the matter when he relates the use of personality adjectives directly to a fundamental division of people into two classes which he believes children make - those who please them, and those who don't. In study after study where children have produced descriptions of peers in their own words, the adjectives "nice" and "kind" together with their opposites appear with great frequency. These simple personality descriptions give way to increasingly refined and more clearly articulated ones as children's experience widens and their linguistic ability develops; but at whatever level they are made, they all relate in some measure to Watts's primary "like-dislike" dimension. It could be that his simple division is fundamental to person construing
and forms the substance of one of the earliest superordinate constructs which persists in changing form into adulthood.

Sociometric studies where the basic technique is to ask children to name those whom they would like to associate with in certain social situations are relevant to this issue. Gronlund (1959) and Hartup (1970) both of whom review the literature relating to determinants and concomitants of sociometric choice, leave no doubt that peer acceptance is characteristically associated with such traits as friendliness, sociability and outgoingness. Austin and Thompson's (1948) study is typical. They found that some 70% of the reasons given by the 11 year old subjects for choosing friends could be grouped under the general sociability heading. Conversely, Gronlund and Anderson (1957) itemise such characteristics as not good-looking, not likeable, restless, talkative and untidy as being commonly associated with socially neglected high school pupils. The construct pattern disclosed is similar to that observed by Ravenette (1964) who collected a number of constructs from children in a wide range of secondary school classes and of different ages. His analysis showed that there was a high degree of commonality among the constructs that his working class sample produced, the most frequently used of which were "shares things", "helps others when in trouble", "good sense of humour", "good to do things with", "understanding", "moody", "sensible" and "thinks they are different". Further confirmation comes from Brierley (1967) whose 13 year old subjects' peer descriptions included "friendly", "sympathetic", "understanding" and "someone you can lean on".

In Brierley's list, the constructs "hard-working" and "lazy" also appear, and others of a similar kind suggest the possibility that children's construct systems widen to include evaluations relating more definitely to academic ability and behaviour in class. Hallworth and Morrison (1964) provide further information on this matter from a factor analysis of peer ratings of 200 mixed secondary modern school pupils. When the ratings were analysed two factors emerged. Factor I was called "Extraversion" (sociability, popularity, friendliness and cheerfulness) and Factor II was named the "good pupil" and included under this heading were such traits as emotional stability, trustworthiness, persistence and co-operation with teachers. In a later research, Morrison and
Hallworth (1964) — this time using 220 co-educational grammar school children as subjects — produced substantially similar results except that a further factor was identified which was concerned with leadership qualities and games ability.

There are grounds therefore for submitting that personality characteristics associated with liking or disliking are important criteria in children's assessments of peers. In addition, an inspection of children's personal constructs suggests that as children develop, qualities thought to be associated with the "good pupil" in school appear more prominently.

(ii) Children's constructs of peers of differing intelligence levels.

Criteria basic to children's assessments of peers have been indicated and the section continues by commenting on research in which children's constructs of peers of differing intelligence levels is examined. The first source of data comes from sociometric studies, the second from studies of peer descriptions.

Attempts to relate social acceptability to intellectual functioning date back at least to Segoe (1933) and this is still a popular area of enquiry, mainly in the United States and in connection with the provision of special classes for educationally retarded children. In their review, Dentler and Hackler (1962) unequivocally support the generalisation that mental ability is positively and significantly associated with sociometric status although the association is uniformly limited to the .25 and .50 range. The possibility occurred to Hartup (1970) that the established relationship between intelligence and socio-economic status might be confusing the issue and that in fact, social class level was the major determinant of sociometric status. However, in two researches which he was able to locate where the relationship between mental ability and social acceptance was studied within social class groups, the relationship was found still to stand.

The low but positive correlations reported between sociometric and intelligence scores suggest that the relationship is not particularly strong. However, Heber (1956) argues that the relationship between the two measures is curvilinear in nature and is not likely to be detected by correlation methods where a rectilinear relationship is assumed. In his experimental situation, Heber divided his intelligence rank order list into thirds and then compared the mean sociometric score of
children in each group. When this procedure was adopted, differences in the average I.Q. of children high and low in sociometric status were shown to be marked. Results produced by Bonney (1944), Shaw (1954) and many others also lend strong support to the generalisation that children high in sociometric status tend to be superior in mental ability to children low in sociometric status.

In research which concentrates on the social position of retarded children, much the same trend is evident. Rucker et al (1969) inquired into the sociometric status of 23 educable mentally retarded children who were being educated in regular classrooms alongside non-retarded pupils. The retarded children were found to be significantly less accepted than non-retarded children even in what were called non-academic classes where the investigators thought that mental ability was not likely to be so noticeable. A similar sociometric structure was apparent in Baldwin's (1958) study of the social position of educable mentally retarded children who were taught in regular 4th. to 6th. grade classrooms.

Elkins's (1958) data support the general trend but draw attention to the fact that sociometric status is not conditional on intelligence alone. She found that some of her most intelligent subjects were placed in the least chosen sociometric category while 7% of the least intelligent children achieved high sociometric rank. Gallagher and Crowder (1957) and Bonney (1944) report a similar overlap and demonstrate quite clearly that intelligence is not the sole determinant of social acceptability.

There is some evidence that intelligence enters into mutual relationships among children but again exceptions to the trend have been revealed. Barbe's (1956) study is perhaps the most thorough of those inquiring into the intelligence level of children making the sociometric nominations and he noted a general tendency for his subjects to choose those of the same or higher intelligence level as themselves. Despite this trend, though, approximately 62% of the slow learning children chose friends from the below average group and not one of them gave a choice to children over 120 I.Q. In contrast, about 20% of the bright children's choices went to those with I.Q.'s of 100 and below.

One further qualification needs to be made. Early in this chapter it was pointed out that low sociometric status was often associated with
possession of "undesirable" personality traits. However, in the absence of negative choices, it cannot be assumed that all children low in sociometric position are seen in those terms by their classmates for it does not follow that unwillingness to choose a peer in a given social situation implies outright social rejection of him.

Despite a number of qualifications which have been made, sociometric findings point to an association between mental ability and social acceptance which is most pronounced in the extreme positions. This finding, taken in association with results from research into personality concomitants of sociometric status, leads to the conclusion that children high in intelligence are likely to be construed more favourably than their counterparts low in intelligence.

Other investigators have sought directly to compare children's constructs of their peers of differing mental ability levels, and it is their work which is next to be considered.

According to Piédestick (1963), gifted children are readily identified by their classmates as such. He devised a "Guess-who?" test which he administered to 4th. and 5th. grade children scores and which successfully discriminated between:

a. high superior children of I.Q. 140 and above,

b. low superior children of I.Q. 130 to 140 and

c. children of I.Q. 129 and below.

Gifted children were identified by their fellow pupils as exhibiting traits typical of the gifted such as "knows more about things studied in school", "likes school" and "likes subjects which need a lot of thinking about". High superiors were seen as being different but were regarded favourably by their classmates. Low superiors were not selected with such frequency as being different but they appeared also to be seen as possessing favourable characteristics.

Baldwin (1958) whose interest was in 31 educable mentally retarded children taught in regular grades, informally interviewed a whole fifth grade class about their views of retarded children. Constructs like "he bothers us", "talks too much", "lazy", "fights too much", "can't do anything" and "can't play" were frequently mentioned and it would seem that the apparent anti-social behaviour of the retarded group
was strongly resented. Strauch's (1970) findings are in keeping with the general trend. He asked adolescent subjects to rate the concepts "Me", "the mentally retarded", "regular class pupils" and "normal pupils" on a semantic differential rating scale. Without exception, the subjects rated "mentally retarded" the lowest, followed by "special class pupils".

The paper by Renz and Simenson (1969) is noteworthy because it reports a refreshing reversal of the common conclusion that retarded children are automatically seen in unfavourable terms by their peers. Photographs of 14 children of low intelligence and 14 pupils selected at random were presented to 57 seventh grade pupils who were asked to select the one they knew best and to describe them in a free association situation. "Normal" adolescents did not perceive and describe the other criteria group only in terms of their intellectual limitations and special class placement. They did, in practice, use the same criteria in describing the retardates that they used for the class as a whole. In fact, the slow learning group was not rejected with greater frequency than the "normal group", despite the fact that it was academically segregated.

A rather similar technique was used by Clark (1964a) who showed photographs of 13 special class pupils who were not identified as such and he asked his sample of 212 fourth to sixth grade children to select the child they knew best and to talk about him or her. Free descriptions of this kind are difficult to analyse and it was not surprising to read that the responses which resulted were "variegated and discrepant". First, it seems, a significantly greater number of descriptions related to the retarded children's appearance and athletic ability than to their intelligence and/or academic ability. Secondly, although a significantly greater number of subjects unfavourably evaluated the group's behaviour than evaluated it favourably, a significantly greater number of global judgements were favourable rather than unfavourable. Thirdly, no significant difference was observed between the I.Q. means of accepting, indifferent and rejecting groups of subjects; and in any event only a negligible number specifically rejected the retarded as associates.

In a second study, Clark (1964b) used an interview technique to obtain descriptions of a special class for the retarded from 163
children in grades 4 and 5. Only 6% of the responses were derogatory while 27% consisted of straightforward designations like "it's a special class". Academic limitations of the pupils were mentioned most often; then came descriptions of pupils as being mentally ill; and lastly came descriptions of their behaviour. The responses varied very much in complexity - and some of them - like the following, showed sensitivity and understanding:

"I guess it's for the retarded. They are children - their minds stay at a certain age and it's harder for them to grasp things".

Clark's study, it will be noted, centres on the special class itself and does not ask outright for constructs of slow learners. It serves as a bridge to an examination of research which has been directed towards determining the attitudes of others to retarded children who are educated in normal and special classes. This is part of the more general question of the social effects of ability grouping which has received some attention both in this country and the United States. Clark's (1964b) conclusions did not support the view that special classes are "objects of derogation" by "normal" children but, in an earlier study, Luchins and Luchins (1948) found the reverse to obtain. One of the questions they asked in their investigation of children's attitudes towards homogenous grouping was "Would you frequently play with children from the other class?". When the reasons for the replies were examined, a definite class preference was apparent, and its extent varied according to the intelligence level of the children concerned. For example, 91% of bright children preferred to play with their intellectual equals and seemed to be afraid that the "dumb" label would be transferred to them if they associated with lower grade pupils. Dull children were regarded by them as being "bossy", "lacking in sportsmanship" and "liable to get one into trouble". The small number of average and dull children who preferred to play with the top class children, gave as a reason "if you play with smart people, you become smart". Those who would not play with top class pupils characterized them as being "stuck up", "conceited" and "not given to playing anyway". Again exceptions to the trend appeared in the data, however, notably among average and below average groups, 58% and 88% of whom respectively showed no in-class preference. These children, and a small number of
bright ones as well, indicated that they would choose play companions from the other class giving such reasons as "they are as human as I am". In summarising their findings, Luchins and Luchins conclude:

a. that many of the dull children were seen as being inferior and were ostracized accordingly,

b. that the brighter children were, on the whole, snobbish in their attitudes towards lower grade children.

Ability grouping, more often referred to as streaming, is a common organisational practice in British secondary schools and its effects on the informal structure of the school community were studied by Hargreaves (1968). The method of research was participant observation where Hargreaves taught some of the classes and joined in out-of-school activities in order to get as complete an impression of the school as possible. In addition, he held informal discussions with his sample of 14 and 15 year old boys and he also administered questionnaires and conducted more formal interviews. Distinct differences between the values obtaining in the various streams were revealed which were reflected in the differing constructs of children allocated to each stream. The boys in 4A and the boys in 4D perceived each other in markedly negative and stereotyped terms. To the boys in 4A, the 4D boys were "scruffy", "thick", "lazy" and "bullies", whereas to the boys in 4D, the 4A boys appeared to be "posh", "teachers' pets" and "bigheads". There was a distinct sociometric cleavage noticed between the A and D streams in Hargreaves's sample, and it could be that the extreme reactions of some of the subjects could be attributed to absence of effective personal contact with the peers described. However, the absence of a control group in the experimental design should be noted.

In summary, evidence drawn from studies of peer descriptions (Watts 1944; Ravenette 1964; Brierley 1967; Morrison and Hallworth 1964) and from sociometric investigations represented by Austin and Thompson (1948) leads to the conclusion that peer acceptance is commonly associated with such traits as sociability, popularity, friendliness and cheerfulness. The evidence further suggests (Brierley 1967; Morrison and Hallworth 1964) that children's construct systems later widen to include evaluations concerned with academic ability and behaviour in class.
Studies of peer descriptions of children of varying mental
ability levels are few and inferences must therefore be made from
sociometric data. Hartup (1970), Gronlund (1959) and Dantler and
Rackler (1962) in their reviews write that a firm relationship
between mental ability and sociometric status has been consistently
reported in the literature although the correlations tend to be
of a low order. However, an inspection of the data indicates that
children high in sociometric status tend to be superior in
intelligence to those low in sociometric status. (Heber 1956;
Bonney 1944; Shaw 1954; Rucker et al, 1969; Baldwin 1958). Nevertheless
the repeated finding that sociometric groups usually overlap in terms
of ability levels confirms the view that intelligence is not the sole
determinant of social acceptability and it should be noted that low
sociometric status does not necessarily imply rejection. (Elkins 1958;
Gallagher and Crowder 1957; Bonney 1944). However, since these same
reviewers report that favourable constructs are frequently associated
with high sociometric status groups and unfavourable constructs with
low groups, then it follows that children high in intelligence are
likely to be regarded more favourably than their counterparts at the
other extreme end of the intelligence level scale. There was also a
suggestion, noted by Barbe (1956) and others, that intelligence is a
factor entering into mutual sociometric relationships among children.

Data from studies concentrating on peer descriptions of retarded
children are inconclusive. Baldwin (1958) and Strauch (1970) note
unfavourable reactions of classmates towards their retarded peers, but
other research workers (Renz and Simenson 1969, and Clark 1964a, 1964b)
found this trend to be much less marked. It may well be that the
discrepant findings reflect differences in value systems obtaining in
the schools and community at large from which the samples were drawn.
Pielstick (1963) reported generally favourable perceptions of gifted
pupils.

The influence of streaming was also considered and it was
concluded that it may encourage unfavourable stereotyping among children
educated in the differing ability groups. (Luchins and Luchins 1948,
and Hargreaves 1968).

In essence, but subject to many qualifications, there is a
substantial body of evidence which supports the generalisation that
children of high intelligence are likely to be construed more favourably than their classmates of low intelligence.

2. **Teachers' constructs of the pupils in their classes.**

Although teachers continually make assessments of their pupils for school record card purposes, in reports to parents, and in casual staffroom conversations, it is only in comparatively recent years that serious attention has been given to the criteria teachers use in categorising their pupils. Studies which centre on the style of rating rather than on the pupils being rated are therefore few, but in the account which follows some tentative conclusions can be drawn concerning teachers' construct systems.

This part of the chapter will be divided into two sections:

(i) Teachers' constructs of their pupils in general.

(ii) Teachers' constructs of pupils of differing intelligence levels.

(i) **Teachers' constructs of their pupils in general.**

Studies of constructs elicited from teachers do not feature prominently in the literature but there are two sociometric studies which will be commented on in the last part of this chapter which have some bearing on the matter. In the first, Olson (1949) obtained free descriptions of 6th grade children from their teachers and among the favourable adjectives used were found "good-natured", "friendly", "well-adjusted" and "dependable" while unfavourable adjectives listed were "sulky", "a behaviour problem" and "bossy". In the second study by Jennings (1950), the reported descriptions of delinquent girls given by their housemistresses give a similar impression. Favourable constructs mentioned were "co-operative", "having an even disposition" and "displaying initiative". Included in the unfavourable constructs were "quarrelsome", "complaining", "aggressive" and "attention seeking". No attempt at classification was made by Jennings but in Hargreaves's (1972) view, teachers' constructs of children can be graded as positive or negative and under the four headings given in the table below.

<table>
<thead>
<tr>
<th>Constructs of pupils considered to be used regularly by teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Positive | Negative
---|---
Promising | Fool
Nice | Trouble-maker
Making Progress | Going to the dogs

Instructional
Hard worker | Idler
Bright | Thickhead
Neat | Untidy

Disciplinary
Quiet | Chatterbox
Polite | Cheeky

Peer
Leader | Ring-leader
Friendly | Bully
Popular | Lone-wolf

No experimental data is given in support of the categorization which must remain essentially speculative.

Attention now turns to studies where constructs have been supplied and where the importance teachers attach to them and the inter-relationships between them have been sought.

There is growing evidence, much of which comes from the work of Hallworth (1961) and his associates, that two main dimensions are consistently found in teachers' assessments of their pupils; the first has been named "extraversion" (sociability), the second "the good pupil" (reliability and conscientiousness). Put in another way, Hallworth suggests that teachers ask themselves two central questions about their pupils:

(i) How dynamic is this pupil in the social life of the school? (i.e. how humorous, sociable, cheerful, spontaneous and self-confident is he?)

(ii) How do I evaluate him as a pupil? (i.e. how co-operative, trustworthy, persistent and stable is he?).

The work of Hallworth (1964) and Hallworth and Morrison (1964) in particular also suggests a close relationship between the two dimensions identified and academic attainment.

Morrison and McIntyre's (1969) investigation, although not so refined as those just mentioned, also serves to underline the importance teachers attach to academic ability in their evaluations of the children.
in their classes. They sought to establish the order of teacher interest in various personality traits and 56 primary school teachers were asked to rank several characteristics according to the number of occasions on which they found themselves discussing particular aspects of pupils. The results are given below:

Table 2.2
Teachers' rankings of pupil characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ranking by frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>General ability</td>
<td>1</td>
</tr>
<tr>
<td>Carelessness</td>
<td>2</td>
</tr>
<tr>
<td>Laziness</td>
<td>3</td>
</tr>
<tr>
<td>Talkativeness</td>
<td>4</td>
</tr>
<tr>
<td>Co-operativeness</td>
<td>5</td>
</tr>
<tr>
<td>Persistence</td>
<td>6</td>
</tr>
<tr>
<td>Courtesy</td>
<td>7</td>
</tr>
<tr>
<td>Ability to use language</td>
<td>8</td>
</tr>
<tr>
<td>Originality</td>
<td>9</td>
</tr>
</tbody>
</table>

The writers go on to state that if the ratings are continued then it is found that such social traits as confidence, sociability and popularity come very near the bottom of the list. A preoccupation with academic ability and characteristics associated with academic ability is the main impression given by this table.

Cohen and Cohen (1970) probed a little further in an endeavour to identify characteristics teachers felt were associated with success in school. Apparently the 186 primary school teachers taking part in their experiment were permitted to interpret the term "success" quite freely and of the fifteen supplied attributes three were found to be commonly judged as contributing to success in school. They were "co-operativeness", "hard-working" and "truthfulness" which again seem to indicate teachers' concern with academic attainment and good behaviour in school. Interesting differences between departments in primary schools were also revealed. In the infant group the lowest consensus centred around the "independent", "friendly", "questioning" constructs; in the junior group the lowest level of agreement related to the "independent", "friendly", and "bright" dimensions. The findings could be interpreted as underlining the considerable weight given to conforming behaviour by the teachers concerned.
Other group differences in teachers' construing patterns have been observed. Although the two major factors previously described form the basis of teachers' classifications of pupils, the relative emphasis placed on each of the factors varies in accordance with the construct system and school settings of the teachers making the assessments. It also seems that such factors as the sex and social class of the children being rated influence teachers' construing processes. For instance, McIntyre, Morrison and Sutherland (1966) reported that assessments by older and more experienced teachers of their primary school pupils emphasised attainment and attitude to work in contrast to younger teachers whose focus was on the children's behaviour. In this same research, while girls were rated more or less uniformly in accordance with the two basic dimensions identified, quite considerable social class differences were noted in the case of boys. Teachers in middle class and mixed social class groups laid stress on traits descriptive of the pleasant and trustworthy boy, while those teaching in working class schools gave particular emphasis to the pupils' attainments and attitudes towards school. The writers imply that in middle class schools children are expected to perform reasonably well academically as a matter of course and they are therefore differentiated more easily on the "pleasant-trustworthy" dimension. In the same way "reasonable" attainment is not so commonly encountered among the working class population and it is this construct which therefore features more prominently in the evaluations of teachers working in that type of school.

(ii) Teachers' constructs of pupils of differing intelligence levels.

Next to be considered are the constructs teachers have of children of differing intelligence levels. Here, too, research is more limited than might be expected in view of the importance of the problem, but enough evidence exists to indicate that teachers tend to regard highly intelligent children more favourably than those of low intelligence. Morrison and McIntyre's (1969) work referred to in the previous subsection emphasises the dominant role of children's academic attainment in teachers' constructs of them and it is not surprising that teachers should also value the qualities they see as being conducive to academic success.
In Hallworth and Morrison's (1964) ratings obtained from secondary modern school teachers, a close relationship between intelligence and the "good pupil" factor was observed and in the Hallworth (1964) enquiry into comprehensive school teachers' ratings of their pupils the two main dimensions of "extraversion" and "the good pupil" were found to be not only related to each other but to the factors of intelligence and attainment as well. In consequence Hallworth writes: "the implication is that there was some degree of halo effect in the ratings, the pupil with highest intelligence and attainment being attributed with other desirable personality traits".

Apparently some of the secondary modern school teachers in Hargreaves's (1967) sample not only saw boys in the higher streams as being superior, they also encouraged the boys to think of themselves as being different and superior. Elsewhere, Hargreaves (1972) cites Bush (1954) who found that teacher liking was related to every single characteristic on which he asked the teachers to rate the pupils - intelligence, attainment, class conduct, quality of thinking, emotional balance and probable college success.

Another indirect source of evidence comes from sociometric studies which are mentioned elsewhere in this chapter, principally in the next section. These findings are presented which indicate that teachers' attitudes to children high in sociometric status are more favourable than towards those low in social acceptability. In view of the known relationship between intelligence and social acceptance, these data lend further support to the general conclusion that teachers attribute more favourable characteristics towards those high in sociometric status and vice versa. Of course, the relationship is by no means an absolute one and a general trend only is reported.

In summarising the sparse literature devoted to teachers' constructs of pupils in school environments, reference is again made to more complex aspects of person construing which were considered in Section 4 of Chapter 1. In part of that discussion it was concluded that patterns of relationship between personality dimensions are frequently found; and that personality dimensions are ordered hierarchically. These phenomena are observed in teachers' evaluations of their pupils.
The evidence outlined here - principally derived from Hallworth (1961) and his co-workers - strongly suggests that teachers appraise their pupils along two major personality continua labelled "extraversion" and "the good pupil" both of which are associated with academic attainment. Hallworth (1964) makes the point that teachers tend to attribute to the pupil with the highest intelligence other desirable personality traits and Hargreaves (1972) is quite confident that the reverse trend applies to slow learning children. It was mentioned before that Kelly identified a category of constructs which he called "constellatory" where possession of one characteristic implies the possession of certain others. It could be, in some measure at least, that this stereotyping or "halo" effect is operating in teachers' judgements as Hallworth suggests, but further data are needed on this issue. What is clear is that when constructs are given to teachers, they tend to cluster into a small number of divisions.

Although it is reasonably well established that teachers take into account the three basic factors mentioned above in judging children, the importance attached to each factor does not remain constant. This is most effectively illustrated by McIntyre, Morrison and Sutherland (1966) who identified differences in construing between older and younger teachers; between those teaching in middle and working class schools; and as a function of the sex of the children being rated. Using a simple ranking technique, Morrison and McIntyre (1969) observed a pre-occupation with academic attainment among primary school teachers almost to the exclusion of social considerations while Cohen and Cohen's (1970) subjects seemed to value conforming behaviour in their pupils more highly.

Differing assessments made by teachers of pupils varying in academic attainment have been noted by Hallworth and Morrison (1964), Hargreaves (1967) and Bush (1954). Sociometric studies, too, lend support to the view that there is a tendency for teachers to attribute favourable characteristics to intelligent children and unfavourable characteristics to children with learning difficulties. This is a crude generalisation, of course, and a more detailed examination of individual pupil-teacher relationships in a wide range of educational...
institutions would doubtless result in a number of significant qualifications being made.

The present state of research allows only broad comparisons to be made between differing groups of teachers. Little is known yet of the relationship between teachers' attitudes and their modes of construing children; and the possible link between cognitive complexity and personal constructs which was examined in the last chapter is a virtually unexplored area of enquiry in school settings.

In summary, it can be stated that in evaluating school children, teachers place their main emphasis on constructs denoted as "sociability", "reliability and conscientiousness" and "academic attainment". The relative importance given to each of these dimensions varies in accordance with such factors as the sex and social class of the pupils being rated, and in some instances, characteristics such as the age and experience of the teacher. These data serve to stress the point that constructs are the outcome of an interaction of a person with his environment.


A strong impression given by the available evidence is that it gives substance to the broad generalisation that children and teachers apply common criteria in assessing pupils in school situations. In some sociometric studies, for instance, teachers' free descriptions of children have been compared with the children's sociometric position. In Olson's (1949) investigation, 6th-grade children whom teachers considered to be chronically ill, sulky, a behaviour problem, bossy, shy and reserved received noticeably fewer sociometric choices than average. In ascending order of importance, children described as being good-natured, quiet, friendly, well-adjusted and dependable were almost invariably above average in sociometric status.

Although not carried out in a school, Jennings's (1950) classic and penetrating analysis of leadership and isolation merits reference here. Again behaviour descriptions were asked for, this time from house-mothers of the 124 adolescent girls committed to a New York institution for delinquents. The highly chosen girls were described more frequently as being co-operative, having an even disposition,
displaying initiative, and "exhibiting behaviour which contributed to the harmony and effectiveness of group living". In contrast, the under-chosen girls were seen more frequently as being quarrelsome, complaining, nervous, aggressive, domineering and attention seeking.

When conventional teacher ratings are used somewhat similar results are obtained. In Bonney's (1947) research, teachers more frequently noted friendly and co-operative behaviour among highly chosen children as well as greater emotional stability and control. Bonney and Powell (1955), after administering the Winnetka Scale for attitudes and values also found that children high in sociometric position made a much more favourable impression on teachers than those low in sociometric status. Part of Barker-Lunn's (1970) large scale appraisal of streaming in British primary schools was also addressed to this question. Neglectees tended to be perceived by their teachers as less pleasurable to have in the class than average status children (p.~0.001), but there was no difference between pleasurable ratings given to medium status children and stars. On four other ratings — incidence of fighting or bullying, being picked on or teased, social withdrawal and disobedience or insolence — the same pattern was observed.

In each of the investigations just cited, an overlap — sometimes quite considerable — was mentioned between teacher ratings of children in the two extreme criteria groups. Nevertheless, the generalisation still stands that teachers see pupils high in sociometric status more favourably than their classmates low in sociometric position. It would thus appear that teachers and children are in broad agreement in their assessments of children high and low in social position. Where disagreement occurs, this is due to a different definition of the school situation as a whole by teachers and pupils. Just such an instance is given in Croft and Gryger's (1956) investigation of social relations of truants and delinquents in a London secondary modern school. They found that sociometric status (and in particular its negative aspect) was related to behaviour in class as assessed by teachers. Boys regarded by their teachers as behaving badly tended to be rejected by their classmates as well. The tendency was less marked, not unexpectedly,
in backward classes where truants and delinquents were more readily accepted socially than in the rest of the school.

Outside the sociometric literature, Hargreaves (1968) reports a consensus of views between pupils in the A stream but not in the D stream. For example, in respect to pupil acceptance of the teacher's definition of the pupil's instructional role these attitude scale responses were recorded:

<table>
<thead>
<tr>
<th>Pupils' role definitions</th>
<th>% approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>A stream</td>
<td>D stream</td>
</tr>
<tr>
<td>Boys who get on with their work</td>
<td>93%</td>
</tr>
<tr>
<td>Boys who pay attention in class</td>
<td>82%</td>
</tr>
<tr>
<td>Boys who do not copy</td>
<td>77%</td>
</tr>
</tbody>
</table>

More closely connected with person construing was Hallworth and Morrison's (1964) comparative study of teachers' and pupils' constructs of schoolchildren frequently referred to previously. Similarities in ratings were quite marked. Both pupils' and teachers' responses showed that over-riding attention was given to the familiar "extraversion" and "good pupil" dimensions.

In this short section, a tendency was noted in the literature for teachers to perceive children high in sociometric status more favourably than children low in sociometric status although exceptions to the trend were frequently observed. (Olson 1949; Jennings 1950; Bonney 1944; Bonney and Powell 1955; Croft and Gryger 1956 and Barker-Lunn 1970).

A lack of congruence in teachers' and peers' evaluations of D stream children was identified by Croft and Gryger (1956) which can probably be attributed to the non-acceptance of the school's values in such classes noted by Hargreaves (1968).

Finally, Hallworth and Morrison (1964) found that both teachers and peers used the main dimensions of "extraversion" and "the good pupil" in assessing pupils in school.

In brief, it can be stated that where there is a consensus between the value systems of peers and teachers, then the chances are that their assessments of pupils in their classes are also likely to correspond.
Summary of Chapter

The main points which can be discerned from the review of literature relating to interpersonal constructs in school situations are as follows:

1. Personality constructs such as sociability, popularity, friendliness and cheerfulness (and their opposites) are commonly used by children in describing peers. Later, children's construct systems extend to include evaluations connected with academic ability and behaviour in class.

2. Findings relating to peer constructs of children of differing intelligence levels are inconclusive, but on balance, there is support for the generalisation that children high in intelligence are regarded more favourably than their counterparts of low intelligence.

3. Constructs associated with "sociability", "reliability and conscientiousness" and "academic attainment" feature prominently in teacher evaluations of their pupils but the relative importance given to each of these dimensions varies in accordance with certain characteristics of the teacher who is rating, of the pupil who is being rated (such as social class) and of the situation in which the rating occurs.

4. There is a correspondence between the assessments of teachers and peers of pupils in their classes which is most marked when their definition of the school situation is similar.
CHAPTER 3

Constructs of self

Introduction

The notion of self is a pervasive one in psychology but since theories frequently differ amongst themselves in the assumptions they make about the nature of human beings, then it is to be expected that in turn widely differing interpretations of the function of self knowledge in human behaviour and in the importance attached to this dimension are encountered in the literature. Lowe (1961) attempted to classify prevalent theoretical connotations of self and he identified the following six categories:

1. The self that "knows" which represents the "I" of Freud's ego.
2. The motivating self which finds expression in McClelland's (1953) theory of need achievement.
3. The humanistic, semi-religious conception of self as that which experiences itself. This view is represented by the work of Rogers (1961).
4. The self as organiser, in which category is placed Kelly's (1955) theory of Personal Constructs as well as the internal frame of reference approach adopted by Snyggs and Combs (1959).
5. The self as pacifier as represented in the writing of Lewin (1935).
6. The self as the subjective voice of the culture, a sociological orientation favoured, for example, by Mead (1934).

Many of the conceptualisations are mutually exclusive but three generalisations can be made which would probably gain wide acceptance. The first is that the self is regarded as an artifact - not a fact. Constructs of self are sometimes spoken of as if they have real world properties but as Gordon and Gergen (1968) point out there are no facts available for common observation to which a person's conception of self can be directly matched. It therefore follows that self constructs are necessarily artifacts which are based on subjective cognitions and evaluations.
The second generalisation which commands wide support is that constructs of self are learned through social interaction. Indeed, this is perhaps the most consistent thread in the literature at least from the time of Cooley (1902) onwards, but the agreement does not extend of course to the manner in which that learning is acquired.

A third prominent but not quite so common feature of self theories relates to the issue of unity versus inconsistency in self construing. According to some theorists, it seems that there is a general tendency for individuals to strive to view themselves consistently, and in connection with this phenomenon two points of fairly general agreement can be stressed. The first is that the consistency-inconsistency dimension is personal to the individual; in other words, what is consistent to one person may appear to be inconsistent to another. Secondly, the consistency principle is much more in evidence where superordinate constructs are concerned as opposed to those of lesser significance. Thus the salience of a given construct or set of constructs affects the degree to which individuals seek to construe themselves consistently.

Aside from the three broad areas of agreement just set out, one outstanding feature of the research literature in this connection is its over-riding concern with self evaluation which is referred to variously as self-esteem, self-regard, self-satisfaction, self-acceptance and self ideal-self discrepancy. However, as Wylie (1961) has commented, these terms are not synonymous. To illustrate the point, it appears that for some authors self-acceptance means respecting one's self, including one's admitted faults. On the other hand, self ideal-self congruence has been interpreted as being proud of oneself or evaluating oneself highly. Thus conceptual confusions are often encountered in this field and Crown and Stephens (1961) in particular have drawn attention to the absence of clear construct levels of definitions of the variables involved in self construct research which in consequence reduces the value of much of the research findings and renders them incapable of extrapolation to other situations.

In terms of the theoretical framework subscribed to here, the self construct is seen as another instance of a category of knowing, albeit a central one, which derives from interactions between an active organism and its environment. With the Piagetian theory in mind, it is to be expected that notions of self become increasingly complex and
differentiated as children progress through the sequence of stages of thinking on which they are dependent. As for Kelly (1955), the construct of self takes on the characteristics of all other constructs. Thus the self, too, is construed as being like some things but not others. In terms of research, it is the individual studied who generates his own self-descriptions and it is he who signifies the value he attaches to each element which makes up his construct system as a whole. Considered in this way, it follows that the theoretical assumptions associated with Personal Construct Theory apply also to constructs of self.

What now follows is a consideration of:

1. The origins of self constructs.
2. The development of children's constructs of self.
3. The relationship between the self construct and constructs of others and between self construct and sociometric status.

1. Origins of the self construct

As suggested a little earlier, constructs of self are generally thought to derive from interpretations of the reactions of what Mead (1934) called significant others to oneself. Although this "looking glass theory of self" has a long tradition it is only in comparatively recent years that experimental support for the theory has been sought and even now the body of empirical research devoted to this matter is not large. The representative studies selected for appraisal in this section deal in turn with parental, adult and peer influences on constructs of self.

The effect of parents on the self constructs of their children were examined by Jourard and Remy (1955). They devised a body-cathexis scale and a self-cathexis scale which they administered to 99 undergraduates. The subjects were also asked to record the perceived attitudes of their parents on the same scales, and the authors found as expected, that there was a close relationship between self and perceived parental assessments.

Ausubel et al (1953) followed much the same pattern in their experimental design but they worked with younger children. They investigated the constructs of forty 4th. and 5th. grade children with
respect to what they labelled "acceptance-rejection" and "intrinsic-extrinsic" valuation by parents. The instruments used were structured thematic and story materials and ratings scales completed by children of perceived parental attitudes and behaviour. A firm relationship was reported between indices of acceptance and intrinsic valuation and how children thought their parents perceived them. It was also noted that girls saw themselves as being significantly more accepted and more intrinsically valued than did boys.

It will be noted that in both the studies, it was children's perceived parental reactions that were observed, not attitudes as directly expressed by parents. There are strong grounds for so doing because it is the children's and not the parents' interpretation of the relationship which determines the self construct. However, as a matter of interest, Helper (1958) directly took account of parental attitudes and he did so in the following way. First, he obtained scores from 74 eighth and ninth grade children on measures of self favourability and self acceptance. He then compared the results with scores from analogous measures of parental favourability towards and acceptance of their children by 51 of the parents of the pupils studied. The correlations between children's and parents' evaluations were consistently positive but much lower than those reported by Jourard and Remy (1955). It is possible, as Jourard and Remy argue, that the children's reports of their parents' attitudes are distorted (possibly by response set) in such a way as to correspond falsely with the children's self ratings. Secondly, it is also possible that children's reports are actually more valid as measures of parents' constructs than are the ratings actually made by the parents. Be that as it may, the three studies commented on so far do provide some experimental evidence for the expected relationship.

Coopersmith (1967), in a work to be considered in more detail later, extended the area of enquiry by attempting to discover the conditions associated with high self esteem in children. The author sums up his investigation in these words: "The most general statement about the antecedents of self-esteem can be given in terms of three conditions; total or nearly total acceptance of the children by their parents, clearly defined and enforced limits, and the respect and latitude for independent
action that exists within the defined limits". In contrast, he reports, children of low self esteem were commonly found to have been reared under conditions of rejection, uncertainty and disrespect.

Sears (1970), also attempted to establish links between early socialisation and self-constructs in middle childhood. Hers was a longitudinal study in which descriptions of child-rearing practices obtained from mothers seven years earlier were compared with scores on five self concept measures of the 84 girls and 75 boys all around 11 years old making up her sample. The hypothesis that early parental warmth would be associated with high self concept in later childhood gained some measure of support and the findings generally corresponded with those of Coopersmith's.

The trend of the studies so far reviewed point to a positive correlation between parental attitudes and children constructs of self. As far as self esteem is concerned, it would seem that early socialisation experiences are of crucial importance and that firm but accepting child rearing practices are important determinants in the development of self esteem in children.

Outside the family situation, valued adults and particularly those in positions of authority, have also been shown to influence children's constructs of self. In the next chapter research relevant to school settings will be quoted but in this section comments will be restricted to representative studies of general adult influence on children's self evaluations.

In the first group, self assessments in respect to specific and limited learning tasks are the central concern. Under this heading comes a study by Baron et al (1971) who examined the effect of type and frequency of praise on favourability of self construct. The sample consisted of 28 black girl trainees between 18 and 20 years of age who were undergoing a course of instruction at a skills training centre. They were given a number of tasks to complete which involved word recognition, visual perceptiveness and manual dexterity. Two frequencies of praise were given, approximately 75% of the time and 25% of the time respectively the girls were working. The praise bestowed was of two kinds:

a) person oriented (e.g. you are pretty good, you are very fast),
b) task oriented (e.g. that's a good job, that's a fine job).
Briefly, the authors discovered that as a general rule, lower frequencies of praise produced more positive self evaluations than did high frequencies of praise and that person oriented praise was more effective than achievement oriented praise in enhancing self evaluations. What this study demonstrates is that if only for a limited period and in a highly specific setting, self evaluations in respect to a given task can be modified.

The effect of supposed expert opinion on children's evaluation of certain self characteristics was studied in an experimental setting by Videbeck (1960). What he did was to gather together thirty students rated as superior by their teachers of elocution and to invite them to take part in an experiment to determine whether men or women were better in certain forms of oral communication. Six poems were read and a supposed "speech expert" evaluated the performances. Regardless of the standard reached, half the subjects received approving comments and the other half disapproving comments. Self rating responses made supported the hypothesis that a person will rate himself close to his ideal self rating if he receives approval and further away if he receives disapproval. The findings were taken to support the general view that self-conceptions are learned and that the evaluations and reactions of others play an important part in this learning process.

In Ludwig and Maehr's (1967) study, the approval or disapproval of an authority figure was again the independent variable. This time 12 to 14 year old boys performed various physical tasks in the presence of a P.E. expert. Irrespective of the boys' performance the expert made either all approving or all disapproving comments on its execution. An increase in self concept rating and a preference for directly related physical activities followed the approval treatment which in many cases persisted for a three week period. The disapproval treatment tended to produce opposite effects.

In the second group of studies more general influences on self-evaluations are examined. Girona (1972), for example, attempted to bring about changes in intelligence, general adjustment and self-constructs among 21 institutionalised children aged 6 to 9 years. He paired off each child with a university student so that a durable relationship
between the two could be established. They went on a number of
visits together but no direct attempt was made to teach the child.
Significant changes were recorded in respect to intelligence and
general adjustment but although C.A.T. self report scores showed
differences in the expected direction, they did not reach statistical
significance. Only limited support therefore was found for the
hypothesis that changes in constructs of self could be induced as a
result of interaction with a significant adult.

In a similar work, Frankel (1969) investigated the effects of
a programme of advanced study on the self constructs of 158 academically
talented High School students. The course that students attended was
described as "an intensive one which enabled bright eager secondary
school boys to supplement their regular academic training". Tests
administered at the beginning and end of the six week course indicated
changes in various dimensions of self and it was reported that the group
as a whole made significant gains in the areas of self reliance, special
talents and self satisfaction. The precise nature of the experiences
undergone was not detailed and it would be interesting to know what
steps the organisers of the course took to counteract the possible self
denigrating effect of meeting a large number of one's intellectual peers,
probably for the first time.

The last five studies were all designed to test the influence of
adult behaviour on various dimensions of self. That behaviour ranged
from short term reinforcement in the case of Baron et al (1971),
Videbeck (1960) and Ludwig and Maehr (1967) and these investigators also
restricted their attention to specific learning tasks. In the last two
experiments which were discussed (Girona's, 1972 and Frankel's, 1969),
a more intensive relationship was built up between the adult and the
child and more general changes in children's self constructs were looked
for. Other differences between the studies include possible major
differences in importance attached by children to the activities engaged
in and this applies particularly to Ludwig and Maehr's work where
performance in P.E. was selected as the criterion task.

Little evidence was given as to the long term influence of the
various treatments or of their possible transfer effects but the studies
just reviewed do indicate that in particular settings adults can
influence children's constructs of self in varying degrees and in various ways.

Finally, in this section, two studies concerning peer effects and the origins of self constructs are examined. Later in this chapter the relationship between sociometric status and self constructs is considered more closely.

In Sherwood's (1965) study differences were noted in self constructs among 60 adults as the presumed result of participating in a Human Relations programme which consisted primarily of members anticipating their own behaviour and that of others through discussion techniques. A 26 bi-polar adjective rating scale for self and others was administered at the beginning and end of the course and changes in self construct noted were consistent with differences in the evaluations of the individual member made by his group as a whole. However, although the results were generally in accordance with social comparison theory as predicted, the extent of the changes depended on:

a) the differential importance of various peers for the individual,
b) the degree to which peer judgements of him were communicated to the group,
c) the individual's degree of involvement in the group.

Kipnis's (1961) work followed much the same pattern and produced similar results. The purpose of his investigation was to identify changes in self construct which were dependent on changes in constructs of others. Kipnis's sample consisted of 87 male university freshmen who rated themselves and others on a self concept measure based on Cattell's 24 personality traits. They also completed a sociometric test on two occasions with an interval of six weeks between the two administrations. The most important finding which emerged was that subjects who had initially perceived their best friend as either markedly positively different or markedly negatively different from themselves showed the greatest degree of change in self construct in the direction of the best friend's evaluation. Another interesting finding was that subjects perceived smaller differences between themselves and their best friends, than between themselves and least liked peers.

Sherwood's and Kipnis's studies both demonstrate the relationship between appraisal by others and self appraisal. However, the qualifications carefully set out by Sherwood, particularly those
concerning the differential importance of various peers for the individual and his degree of involvement in the group, should be noted.

The general trend of the studies reviewed in this section suggest—following the early formulation of Cooley (1902) and Mead (1934)—that a person's self construct is in large measure determined by his evaluations of others' reactions towards him. The studies of Jourard and Remy (1955), Ausubel et al (1953), Helper (1955), Sears (1970) and Coopersmith (1967) pointed to a positive association between parental attitudes and children's constructs of self. The work of Baron et al (1971), Videbeck (1960) and Ludwig and Maehr (1967) identified adult influences on children's self constructs in relation to specific learning tasks and Girona (1972) and Frankel (1969) provided some evidence to show the association between more intensive adult contact and self constructs in general. Finally, Sherwood (1965) and Kipnis (1961) showed the similar effect of peer evaluations but Sherwood's warning that self constructs are affected by the degree of importance they attach to the peer figure is important and can probably be applied more generally. It is obvious, too, that not all dimensions of self construct are equally important to the individual and that the behaviour of others may have long or short term effects on favourability of self construct.

2. The development of children's constructs of self.

The origins of self constructs have been considered and it is necessary next to examine the processes by which they develop. Kelly (1955) has stated that whenever an individual construes other people, he reveals the construct system which governs his own behaviour. It then follows that the evidence presented in Chapter 1 with reference to construing of persons is of direct relevance to self-construing. There it was pointed out that no essential differences exist between the construing of people and the construing of objects and that in consequence the developmental processes of person construing are a reflection of cognitive growth in general. Since the self is here regarded as a category of construct of persons then developing notions of self can be expected to take on the same general characteristics.
In many of the studies quoted in Chapter 1, (for example, Brierley, 1967; Little 1967) children were asked to compare their own characteristics with those of other children and so the progressively refined and more precise use of adjectives observed there, apply also to self descriptions.

This section will be divided into two parts which are concerned with:

(i) The Piagetian position in relation to notions of self.
(ii) Development of children's self-constructs in general.

(i) The Piagetian position in relation to notions of self.

Piaget (1967) makes it clear that in the early months of life there is no definite differentiation between the self and the external world. As he puts it "impressions that are experienced and perceived are not attached to a personal consciousness sensed as "self" nor to objects conceived as external to self". It would seem that initially all phenomena perceived are centred on the subject's own activity. As intelligence develops, however, objects are realised to have an existence outside the self and self differentiation increases, albeit slowly. Until the concrete operational stage is reached egocentric thought which is unreflective and cannot take into account the responses of others dominates children's intellectual activity. But largely through the course of social interaction, children are increasingly forced to look in at their own thought processes in relation to those of other children and as a consequence egocentricism declines and a more "objective" view of the world is adopted. Constructs of self are scrutinised and adapted in the same way as other constructs and they become increasingly refined and elaborated as cognitive development proceeds. Piaget has little to say directly about the self after the early years of life but when he does refer to it it is usually to show how constructs of self reflect the way children and adolescents interpret their world in general.

Guardo and Boham (1971) recently attempted to use a Piagetian framework in their study which sought to identify developmental stages in children's sense of self-identity. The authors begin by pointing out that the self and the self concept have been differentiated in theory but are often treated synonymously in practice. Wiley (1961) is among those who distinguish between self as subject (the individual as experiencer)
and the self as object (the individual as known to himself). The self as object is commonly treated as a hypothetical construct which is inferred from specified behaviours. In contrast, the self as subject may be conceived of "as that experience of which the self concept is a concept". The essence of this idea seems to lie in the awareness by the individual of his own functioning. Self identity in this sense appears to constitute an awareness of having certain characteristics which are essential to the human individual in that they contribute to his experience of himself as a unique organism.

According to the authors, basic to the conception of self identity are a sense of humanity (possession of distinct human potentialities), sexuality (sense of male/femaleness), individuality (being distinct from all other living creatures) and continuity (being the same person across time). Erikson (1956), incidentally, has argued that it is the capacity to recognise continuity - the fact that separate experiences belong in the same being - that is central to self-definition. An interview schedule was drawn up to test the validity of these ideas among 116 subjects aged 6 to 9 years. Children were not asked direct questions about these matters. In probing for understanding of humanity aspects of self-identity, for example, children were asked if they could assume the identity of a dog; and for the individuality component children were first asked to name a friend and then to say if they could assume his identity. Their responses were first sorted into simple "yes" or "no" categories and then the reasons for giving the answers were analysed.

In summary, the authors claim that the results suggest that a sense of self identity could be explored; and that the developmental sequence observed paralleled Piaget's findings regarding cognitive development with younger and older children's responses showing clear qualitative differences. The following responses are given as examples of children's reasons for asserting that it was impossible for them to take on the identity of a dog.

**Subject aged 5 years 5 months.** He's brown and black and white. He has brown eyes. 'Cause he walks like a dog.

**Subject aged 7 years 6 months.** He's an animal and I'm not. I'm a human being. A human being can talk and has arms and legs and they can learn more things than dogs.
In other parts of the study the tendency for younger pre-operational children to differentiate between themselves and others on the basis of observable behaviour and characteristics was in evidence. Then again among older children it was found that the notion of probability was incomplete although some were beginning to take various possibilities into account. This advance was illustrated by a boy aged 8 years 10 months who argued that he could take on the identity of another given the improbable condition that a machine might effect the identity switch.

Guardo and Bohan claim that the children in their sample could distinguish between themselves as subjects and themselves as objects. Whether the distinction is a clear-cut one is open to discussion because in the questions posed it was necessary for children first to consider themselves as objects against which other criteria like animals and friends were compared. Perhaps the outstanding feature of the judgements children made was the lack of an evaluative component which is perhaps an implicit feature of constructs of self as objects. Difficult though it is to determine precisely what aspect of self the investigators were measuring the responses obtained closely corresponded to the developmental sequence proposed by Piaget.

(ii) Development of children's self-constructs in general.

In the literature in general, little systematic study seems to have been made of the development of self constructs in the early years. Ames (1954) attempted to describe changes in the sense of self as inferred from the speech behaviour of 18 month to 4 year old children but her measures were inadequately described and no data were given on their reliability or validity.

Most of the investigations examined used children not younger than about 8 or 9 years old as subjects presumably because they were by that age capable of completing pencil and paper tests. An exception is Long et al's (1967) research in which 373 children from 6 to 13 years of age were individually interviewed. The authors used a technique which they claimed enabled the subjects to represent their "self-social schemata" symbolically. In their view social stimuli are interpreted and given personal meaning on the basis of a set of topological schemata, possibly sub-verbal consisting of the self-other configurations.
The self-construction is thus seen as one of a constellation of constructs with which it has a relationship. The tests they constructed assumed that physical distance can be equated with psychological distance. In one of them a large circular area was drawn which contained a number of randomly placed smaller circles representing children, one of which was shaded. The subject was asked to select one or two circles appearing at the bottom of the page to represent himself. The selection of a circle different from those representing peers (i.e., a shaded one) was interpreted as indicating a higher degree of individuation. A variation of the technique was also used to measure self-esteem. Eight circles side by side were shown which stood for eight children. A circle towards the left of the line was assumed to indicate high self-esteem, a circle towards the right, low self-esteem. Again no details were given of the reliability and validity of the instruments. However, the investigators report that representation of self as being different from others increased with age, a difference which reached the .001 level of significance. With respect to self-esteem, the highest score was found in the 1st grade, but this was followed by a sharp drop in the 2nd grade where the lowest score was found. Scores rose in the 3rd and 4th grades, and then declined somewhat in the 5th and 6th. The considerable fluctuations in score deriving from this index of self-esteem were unexplained and must cast considerable doubt of the efficiency of the instrument.

In the second investigation, Long et al (1968) continued their enquiries, this time using 420 subjects in the 6 to 12 age group. As in the previous study the measures used assumed that physical distance was equated with psychological distance. Their main findings can be summarised as follows:

a) self-esteem generally increased with age,

b) dependency increased during early adolescence which was followed by a decrease in later adolescence;

c) there was an increased tendency with age to place fathers in a higher position and teachers in a more egalitarian position.

The first two findings concerning self-esteem and dependency were interpreted as exemplifying the increased status and concomitant rise in confidence associated with later adolescence.
In the representative studies to be considered next quite what
determined the choice of dimension of self presented to children for
evaluation is not made clear and the measures used are notable for
their wide range of content. Perkins (1957) compared the responses
of 250 fourth and sixth grade children on a scale which contained
fifty self referent statements. Irrespective of age and sex children
most frequently endorsed the statement "I like my parents" and least
frequently endorsed the following statements: "I do not like animals",
"I have a brother and sister that I don't like", "I have poor health",
"I am mean" and "I am unpopular". Children in the 4th. grade tended to
see themselves most frequently as being good runners and as being good
at school work. Self-constructs of sixth grade children, especially
the boys, revealed them to be confident in their own ability, happy
and optimistic. Some sex differences were also observed. In a later
paper concerned with the same children Perkins (1958) wrote that as
children mature their self constructs become more stable and certain
and their actual and ideal constructs of self become more congruent.

A strong criticism of Perkins's work is that insufficient attention was
given to the relevance of the items to the children concerned and the
failure to test for internal consistency indicates another major fault
in the test instrument itself.

Walker's (1967) scale contained 96 items which although divided
into six sub-scales was found by factor analysis to contain only two
main dimensions centred around what was loosely described as control
and activity. Correlations of self ratings made by the subjects with
ratings made of them by peers and teachers produced coefficients
ranging from .15 to .40 and provided some evidence of the construct
validity of the instrument. Walker's findings which came from self-
rating responses of 450 3rd. to 6th. grade children revealed that with
increasing age both boys and girls gave more responses indicating
aggressiveness, urgency (cheerfulness, happiness), and high energy
and fewer indicating fearfulness.

Perhaps a more systematic approach to item relevance is to be
found in Piers and Harris's (1964) scale which used a pool of items
taken from children's essays. Ten factors accounted for 42% of the
variance, the most important of which were behaviour, general and academic status, physical appearance and attributes, anxiety, popularity and a happiness and satisfaction component. Internal consistency and test retest reliability coefficients were judged to be satisfactory enough to administer the measures to groups of children in grades 3, 6 and 10, and significant differences in the means and standard deviations of scores were noted when age was taken as the independent variable. In summary, the view of self on the dimensions identified decreased from the 3rd. to the 6th. grade and changed towards a more positive regard for self in the 10th. grade.

Few longitudinal studies have been conducted in this area but Carlson (1965) attempted to determine change in the self-constructs of students who were tested first at age 11 and then at 17 years of age. A modified form of Kelly’s R.R.G.T. was used to provide self and ideal-self descriptions in which twelve triads were selected for comparison. The constructs thus elicited were categorised under two headings - interpersonal (friendly, thoughtful, push people around) and egocentric (selfish, mean) - and these were adopted as the self-evaluation dimensions. Over the six year period, girls showed an increase in social orientation while boys increased in personal orientation. This result was as predicted by the authors but the grounds for this prediction were not stated.

In a second longitudinal study, Engel (1959) who used a Q forced choice technique, was concerned mainly with assessing the stability of self concepts among his 68 eighth grade subjects who were re-tested two years later. An overall item by item correlation coefficient of .53 between Q sorts obtained in 1954 and 1956 was determined which pointed to the relative stability of the self construct over the two year period. Engels also reported that positive self concept scores increased significantly over the period and that subjects whose self concepts were negative on the first testing were significantly less stable in self concept than subjects whose self concept was positive.

A major enquiry by Yeatts (1967), although not a longitudinal one, was concerned with developmental changes in self concept of 8,979 children of both sexes, coloured and white, between the third and twelfth
grades. The test used in this study consisted of 40 items in the elementary school form and 42 items in the secondary school form. The reliability and validity data were not reported. The changes noted were clearly not as great as Yeatts had anticipated. She contended that the self-concept is composed of many dimensions and she writes "Grade-sex groups are characterised by some differences in factors emerging, however the commonality among groups are such as to suggest that common consensus made up the responses to the self-concept instrument used in this investigation". The hypothesis that the factors emerging in the self-concept would vary with sex and grade were only partially supported. Seven of the twelve factors identified crossed sex and grade lines. The "Teacher-school" factor emerged in all groups. The factors of "Academic adequacy", "Physical Appearance", "Interpersonal adequacy", and "Autonomy" emerged for all grade groupings, but not for each sex group within the grade group. Yeatts had also hypothesised that children's self constructs would become increasingly differentiated as their age increased, but age group comparisons made did not reveal any major differences. Thus Yeatts's expectation that children would make less global self-evaluations as they grew older was not realised. Certainly the findings relating to constructs of persons generally detailed in Chapter 1 give support to Yeatts's supposition and it is possible that the instrument she used which contained provided constructs was too gross to detect the expected changes.

Mullener and Laird (1971), too, used a conventional self report technique but they were more successful in identifying changes in the organisation of self-evaluations, perhaps because their subjects encompassed a wider age range. Their sample consisted of 24 subjects in each of the 12 plus, 17 plus and 28 plus age groups. A self construct measure covering achievement traits, intellectual skills, interpersonal skills, physical skills and social responsibility was administered and a significant trend associated with age towards greater differentiation was observed. It was also found that across age groups individuals who gave less differentiated evaluations also rated themselves more highly in the five areas described than those giving more differentiated
evaluations. Over this wide age range at least a progression from
global to more differentiated constructs of self was discerned.

Yet another group of studies takes as its central concern the
development of the ideal self in childhood and adolescence. Typical
of these was an early impressionistic attempt to gather data on this
matter by Havighurst et al (1946) who analysed essays of 539 boys and
608 girls aged 10 to 17 on the subject of the person they would like
to be. The ideal self first centred on a parental figure; it then
moved during middle childhood and early adolescence through a stage
of romanticism and glamour and it culminated in late adolescence as a
composite of desirable characteristics symbolised by an attractive
young adult. Using exactly the same procedures, Wheeler (1961) studied
the ideal self of 353 Western Australian children in the 13, 15 and 17
year old groups. His two major findings were that with increasing age
there is a decrease in the number of glamorous persons described and
that with increasing age there is an increase in the number of composite
or imaginary figures featured in the essay. Most of the latter were
characterised as being fond of sport, popular, able to mix well with
other people and capable of making friends easily.

Before attempting to summarise the findings on the development of
self-constructs presented in this section, attention is first drawn to
the diverse nature of the studies reviewed here. The age spread of the
subjects co-operating in the individual researches varied from two years
to six years. Some concentrated on the lower end of the childhood/
adolescence scale, some on the upper end. Two of the investigations
were longitudinal in design; the remainder were cross-sectional. The
different forms of self-construct index used also adds to the problem
of discerning trends in the findings. They included simple non-verbal
techniques, the reliability and validity of which received no attention
at all, to sophisticated self-report instruments where due regard was
given to measurement principles. But perhaps the greatest difference of
all lies in the diversity of traits thought to be important by each
investigator, few of whom, incidentally, revealed the criteria they used
in the selection of items for self-evaluation.

Only tentative conclusions therefore can be drawn in this section
and some of those in turn are subject to considerable qualification.
However, the main points which emerge appear to be these:

a) There is a gradual differentiation made between the self and others as a function of developmental stage of thought. Piaget (1967), Guardo and Bohan (1971) and Long et al (1967).

b) A significant trend towards greater differentiation in constructs of self was noted by Pullener and Laird (1971) but not by Yeatts (1967).

c) Self esteem was shown to increase with age by Long et al (1968), who however, also reported elsewhere unexplained fluctuations in self esteem over a period of time. (Long et al 1967). Piers and Harris (1964) also report fluctuations in self regard but within a different age range.

d) Amongst other changes in constructs of self reported were
   (i) an increase in dependency during early adolescence which was followed by a decrease in later adolescence (Long et al, 1968),
   (ii) an increase in aggression, surgency (cheerfulness) and high energy between the ages of 8 and 11 and a corresponding decrease in forcefulness (Walker, 1967),
   (iii) an increase in social orientation amongst girls and an increase in personal orientation amongst boys between the ages of 11 and 17 (Carlson, 1965).

e) The relative stability of the self construct over a period of time was reported by Engel (1959) and Perkins (1958) although exceptions to the trend were noted.

f) Ideal self constructs showed a decrease in identification with parents, a move in middle childhood and early adolescence to a stage of romanticism and glamour until finally a composite of desirable characteristics associated with a young adult became the model. (Havighurst et al, 1946 and Wheeler, 1961).

The main impression given by even a cursory examination of research directed to studying sequential stages in children's constructs of self is the absence for the most part of a clear theoretical orientation which should govern the selection of items used in self construct measures. The other striking feature is that in only two researches, those of Piers and Harris (1964) and Yeatts (1967), has factor analysis been used
in an attempt to determine the basic dimensions of the tests administered. The resulting factors were of course dependent on the original choice of items made by the investigators which may be difficult to justify, but at least an attempt was made to identify the main components of their tests. A further point concerns the use of pencil and paper tests. Although they are extremely useful in locating changes in inter-relationships among constructs made over a period of time and in identifying differences in positive and negative evaluations, it is doubtful whether all such instruments are sufficiently sensitive to enable them to reveal the increasingly differentiated and refined constructs of self which emerge as a function of developmental stages in cognitive growth. Although the work on constructs of persons such as that by Brierley (1967) and Little (1967) is applicable to self constructs, little firm evidence has been cited in this section to indicate that self-construing is a reflection of sequential changes in mental development generally. The failure to do so may be attributed, in part, to the use of test instruments inadequate to the task.

3. The relationship between the self construct and constructs of others and between the self construct and sociometric status.

Two matters of direct concern to the present investigation are now examined; first, the relationship between self constructs and sociometric status; and secondly, the relationship between the self construct and acceptance of others.

(i) Self construct and sociometric status.

In Chapter II, Section 1(i), it was shown that peer acceptance is characteristically associated with such traits as friendliness, sociability and outgoingness. In accordance with the theory of social comparison and related theoretical standpoints, there are grounds for expecting that a relationship exists between self constructs and sociometric position. A small number of investigators have enquired into this matter and in general the hypothesis receives support. For instance, Bretsch (1952) found that high sociometric status pupils are more confident of their ability to cope with interpersonal relationships than those who are low in sociometric status. He asked
696 children aged seven to eleven years to rate themselves on eight different social skills and in each case the sociometrically high children rated themselves higher than did the low status group. Guardo (1969), too, found that at least for his sample of 6th. grade girls, significant relationships existed between scores obtained on the Pierr-Harris self concept scale and level of social acceptance, with coefficients ranging from -.23 to .57.

Limited support for Bretsch's findings comes from Horowitz's (1962) work in which 111 fourth, fifth and sixth grade children completed a self construct scale and a ranking sociometric test where scores were arrived at by averaging all the ranks given to each subject by the other children of his own sex. Correlations between the two measures were positive and ranged from .09 to .59, but of the six coefficients determined, only one reached significance at the .05 level.

Coopersmith (1967), who was particularly concerned with self-esteem, used a near sociometric test in his study where subjects named three children they would most like to have as their friends. What he did was to divide his 1,748 subjects into five groups on the basis of their self construct ratings (called the subjective assessment) and on the basis of teacher ratings (called the objective assessment). The self and teacher ratings corresponded in the High-High, Medium-Medium, and Low-Low groups respectively. The High-Lows maintained a favourable self regard despite low ratings by teachers, and the Low-Highs were identified by their very low self-evaluation in the face of high teacher rating. The mean sociometric score of each group is given in the table below:

<table>
<thead>
<tr>
<th>Type of self-esteem</th>
<th>Low</th>
<th>High</th>
<th>Medium</th>
<th>High</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>Mean</td>
<td>1.47</td>
<td>3.47</td>
<td>3.35</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>S.D.</td>
<td>1.58</td>
<td>2.15</td>
<td>2.72</td>
<td>1.75</td>
</tr>
</tbody>
</table>

The results just reported came as a surprise to Coopersmith who had argued that popularity would be associated with the subjective experience of esteem. This trend was not observed in the study. Children in the Low-High and High-High groups received much about the same average sociometric score which was not in any case much different from that
received by the Medium-Medium group. The author argues that popularity with one's peers is more likely to be associated with a poised, confident and forthright exterior than it is with self attitudes. It ought to be pointed out, too, that bias may have affected some of the teacher assessments and they may not have been as objective as Coopersmith assumes. This adds to the difficulty in interpreting the findings.

Reese's (1961) study made a useful contribution to the field by suggesting the possible existence of a curvilinear relationship between constructs of self and sociometric scores. Like Coopersmith, he divided his sample of 507 fourth, sixth and eighth grade children into high, medium and low self construct groups but his sociometric index was based on ratings on a five point scale made by each subject of each same sex subject in his class. The mean sociometric ratings (1 is positive; 5 negative) for the low, middle and high groups respectively were 2.30, 2.02 and 2.17. Thus, acceptance by others was curvilinearly related to self construct scores with the highest acceptance in a group associated with a moderate self construct score; and the lowest in social acceptance in a group with a low self construct score.

Turner and Vanderlippe's (1958) study followed the same pattern but only scores of extreme quartile groups were taken into account which precluded testing for a curvilinear relationship. Their group of 175 college students completed a self concept index which involved a Q sort of 100 items. Self-ideal congruence was also established and a comparison of top and bottom congruence quartiles in respect to sociometric status was made. The latter measure consisted of a single criterion which was "Whom would you spend most time with when in a mood to relax?", on which all subjects were ranked and then the extreme quartile groups determined. The authors write: "an examination of the individual items indicated that those in the high group are given preference without exception and eight of the eleven items yielded an acceptance level of significance".

Mayer (1967), did not find evidence of any relationship existing between self construct scores and sociometric status. His subjects were 98 retardates in special classes whose ages ranged between about 12 and 17 years. Lipsitt's self construct scale was administered to
the sample together with the Syracuse Scale of Social Relations where every child is rated by every other child. Mayer noted that every subject was rated high on the list by at least one of his peers and he concludes that retardates like normals see the world in their own image as opposed to how the world sees them. Another possible explanation for the contradictory nature of these findings is that subjects whose W.I.S.C. scores ranged between I.Q's 50 and 75 might have had difficulty in completing group tests of the kind administered.

In summarising this branch of the self construct literature, it is necessary to point out here as elsewhere in this study, that in the investigations just referred to a variety of self construct indices were used which may or may not have been measuring similar aspects of self-construing. Similarly, although all sociometric criteria selected appeared to be concerned with affective social relationships, differing methods of determining sociometric status were also used. In some studies children simply nominated a set number of their peers while in others every child was ranked on a like-dislike continuum by every other same sex member of the class. Again, a relationship may or may not exist between these two forms of arriving at a child's sociometric position.

For the reasons just given, firm conclusions on the relationship between sociometric status and constructs of self cannot be drawn, but the following comments indicate some general trends discernible in this literature:

1. A positive relationship between self construct and sociometric status was reported by Bretsch (1952), Guardo (1969), (the latter significant in the case of girls only), and Horowitz (1962), although in Horowitz's study only one of the six correlation coefficients reported reached statistical significance.

2. Extreme quartile self construct groups were found to differ in terms of sociometric score in the expected direction by Turner and Vanderlippe (1958) while Reese (1961) claimed to have identified a curvilinear effect where children with the highest social acceptance in a group rated themselves only moderately, while the lowest in social acceptance tended to have a low self construct score.
Coopersmith's (1967) investigation cannot be directly compared with Reese's because of differences in classification of groups but he reported no relationship between the two variables. This was in agreement with Mayer's (1967) investigation among secondary school retardates.

The most that can be said is that the majority of studies reported here support the contention that a relationship exists between self construct and sociometric status. The strength of the relationship varies from group to group, and this may be attributed in part to the different test instruments used. In only two studies were negative findings reported and in one of these the subjects were mental retardates and doubts can be expressed concerning the advisability of using group tests with a sample of this kind.

(ii) Self-construct and acceptance of others.

A very few studies have been directed to the question of the relationships between constructs of self and acceptance of others and they will be considered now.

The first, by Fey (1955) is quite typical in that it employed university students who were asked to rate both self and a generalised other on a number of dimensions. Among this sample of 58 medical students, individuals with high self-acceptance scores tended to accept others more readily than did those in other self-acceptance groups. To put the matter in another way, the young people with high acceptance of other scores tended in turn to feel accepted by others and tended to be accepted by them.

Endorsement of this finding comes from Phillips (1951) where a multiple questionnaire was chosen as the self construct instrument. His findings are conveniently given in the table presented below:

<table>
<thead>
<tr>
<th>N</th>
<th>Description of sub-sample</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>Older psychology students</td>
<td>.74</td>
</tr>
<tr>
<td>77</td>
<td>General psychology freshmen</td>
<td>.54</td>
</tr>
<tr>
<td>45</td>
<td>Students of mean age 15.84 years</td>
<td>.67</td>
</tr>
<tr>
<td>44</td>
<td>Students of mean age 18.66 years</td>
<td>.58</td>
</tr>
</tbody>
</table>

As the author writes "it is apparent from these results that the self-other attitudes as measured in terms of an objective multiple-choice
questionnaire show substantial relations far above that expected by chance.

Berger's (1951) findings were also in broad agreement with the trend reported so far. Among the variety of adult groups he was concerned with, a positive and significant relationship between acceptance of self and acceptance of others was established.

A slight variation in experimental design was featured in Crandall and Bellugi's (1954) study where 30 college girls were asked to observe an interview between a girl previously unknown to them and a college officer. When they subsequently rated this person, the subjects with "undesirable" self constructs were found to have developed less favourable perceptions of her than had subjects with favourable self constructs. The attempts to introduce an actual social situation into the experimental design is commendable but how far the novel person is representative of others generally is open to question. That point notwithstanding, a positive but non-significant relationship was found between self construct ratings and peer perceptions.

Reese (1961) whose study was mentioned in the last section also included acceptance of others ratings as a variable. The 507 fourth to eighth grade children in his sample ranked each same sex member of their class on the following five point scale:

1. Best friend
2. Friend
3. Don't know or indifferent to
4. Disliked more than liked.
5. Disliked.

The mean acceptance of others' scores for each self construct group were as follows:

Low - 2.33; Middle - 2.10; High - 2.16.

It seems from these data that a curvilinear relation exists between the two variables where the middle groups show the most favourable acceptance of others, the high group next - while the lowest self construct group is the least accepting of others of all.

Only one investigator, Zelen (1954ab) cited by Wylie (1961) reports completely negative results in this area. The two self construct measures administered were a "Who are you?" test and the California Test of Personality and in neither case did the obtained scores correlate with acceptance of others. Why this study should be an exception to the trend is not clear.
Unusually, apart from the last study referred to, there seems to be consistent support in the studies referred to for the view that a positive relationship exists between constructs of self and constructs of others. Fey (1955), Berger (1951) and Crandall and Bellugi (1954) all report a positive but not always significant relationship between the two variables while Reese's (1961) findings suggested that the relationship between constructs of self and constructs of others was a curvilinear one.
SUMMARY OF CHAPTER

In summarising this chapter, it is necessary to point out once again that the differences in experimental design and choice of sample among the studies reviewed allows only tentative conclusions to be drawn. However, the main trends observed in the literature relating to constructs of self which are relevant to this study are:

1. A person's self construct is apparently determined by his evaluations of the reactions of others towards him.

2. The strength of the influence on others on self-evaluations is determined by the degree of importance the individual attaches to the person making the evaluation and on the prominence of the dimension being evaluated in the individual's construct system.

3. Some evidence was presented which suggests that there is a gradual differentiation made between the self and others as a function of cognitive growth generally. A similar trend was noted in respect to the increasing refinement of constructs used in the evaluation of self, in some studies but not in others.

4. A relationship between self constructs and sociometric status was reported frequently but the strength of the relationship varied quite considerably from study to study.

5. A positive relationship was generally reported between constructs of self and constructs of others.
CHAPTER 4

Children's self constructs in the school situation

Literature relating to children's self constructs in the school situation will now be examined and to this end, the chapter will be divided into four sections where consideration is given to:

1. Children's awareness of their own intellectual ability.
2. The formation of children's academic self constructs.
3. The relationship between children's general self constructs and their level of intellectual ability.
4. The possible effects of grouping procedures in school on children's self constructs.

1. Children's awareness of their own intellectual ability.

An important dimension of self which is featuring more extensively in educational literature is that which has come to be known as the academic self construct. This growing interest stems from the suggestion that how children regard themselves academically may have important consequences not only in relation to their educational performance but also in terms of how they perceive themselves in general.

The major focus of interest in this section is on the extent to which children are aware of the level of their own academic ability as reflected in school achievement, and it begins by referring to an interesting but small scale study by Wooster (1970) which bears directly on this question. He hypothesised that ability to discriminate an area of self which he labelled "self as a reader" would be present in older but not younger children. In his experimental situation Wooster used boys from first and third year classes of a junior school situated in a working class area in the north of England. First he administered a standardised reading test to the whole sample and on the basis of the discrepancy between Reading Ages and Mental Ages he identified two groups of children at each age level, one of "poor" readers and the other of "good" readers. Thus 18 children were classed as "poor" readers and 14 as "good" readers at the first year level; 16 "poor" and 13 "good" readers at the third year level. Two forms of self construct measure
were administered; namely a modification of the Kelly Role Repertory Grid technique (RRGT) and a simple sorting test exploring attitudes to school life in general and in which were included the following three items concerned with reading: "I am a good reader", "I am a poor reader" and "I like reading".

Briefly, the results from the RRGT indicated that the majority of "good" readers did not in fact rate themselves as such. This led the investigator to conclude that the children had difficulty in understanding the function of a bi-polar construct which is an essential feature of the test. However, the findings from the cruder sorting test described above are of greater interest. Here it was found that first year boys were unable to distinguish themselves as either good or bad readers. In contrast, the "good" readers among the third year boys had an accurate picture of themselves and the sorting test made it equally clear that the "poor" group were aware of their reading level, too, or at least aware that they were not classed as "good" readers.

There are a number of obvious comments which could be made on this study concerning the size and social class composition of the sample, as well as the test instruments used, but it is interesting to note that when children are asked plainly and bluntly whether they are "good" or "poor" readers, seven year old children are unable to make accurate responses, accurate that is as judged by objective standards. This may reflect the supportive learning climate obtaining in younger classes of primary schools where comparisons between children's abilities might be avoided; on the other hand it may indicate lack of parental concern in the population studied. Nevertheless it may be thought surprising in view of the importance attached to reading in our culture, that this aspect of school achievement does not figure more prominently as a self evaluative dimension at this age level.

In summary, the Wooster study showed that 9 and 10 year old boys had acquired a more accurate notion of their own reading ability than had 7 year old boys. Support for this finding comes from a well known investigation conducted by Brookover et al (1964) in which the relationship between the self concept of ability of over a thousand 12 year old children and their school achievement was studied. Their conclusions left little doubt that by this age a positive and significant correlation
exists between the self concept of ability and performance in separate school subjects. These findings are in accord with those reported in a developmental study by Phillips (1963) who was interested in changes which might take place in self perceptions among 9 year old and 11 year old children. He reported that levels of aspiration (relating to a psycho-motor task) of the 11 year olds were much more realistic than the younger age group's. In addition, a tendency for older children to lower their self estimates in comparison with those previously made was also discovered, a phenomenon thought to be associated with the onset of adolescence.

Up to this point in the discussion, attention has been concentrated mainly on the age variable in relation to children's perceptions of their own academic ability. Consideration will now be given to the academic level of the perceiver, using data first from a study by Ringness (1969). Here age was held constant, the sample consisting of 20 boys and 20 girls all 9 years of age in each of the following U.I.S.C. I.Q. quartile ranges - 50 - 80; 90 - 110; and 120 plus. It was thus possible to determine the relationship between a child's intelligence level and his ability to assess his own academic performance. In this sample, it should be noted that bright and average children were taught in regular classrooms and that the retarded children were segregated.

In summary, the findings showed that the bright children rated themselves most highly, the below average group next highest, and the average group lowest of all. It would thus seem that a certain minimum level of mental ability must be reached before children can make realistic assessments of their own competence. Another factor that could be of particular importance was that the less able children were taught in segregated classes, and it may therefore be argued that lack of knowledge of the success of other children necessarily deprives them of the information necessary to assess their own performance. This point will be considered in more detail later in this chapter when organisational procedures and their possible influence on self constructs will be considered.

Also to be considered in that section are two other studies concerned with ability level and accuracy in assessing one's own performance which are also worthy of mention here. In Barker-Lunn's (1970) large scale study of streaming in British primary schools, one aspect was
concerned with the self image in terms of school work of 10 to 11 year old children. It is necessary only to comment at this stage that it was found as might be expected, that bright children strongly tended to have a "better" academic self image than duller ones. This finding was endorsed by Dyson (1967) in another large scale study of ability grouping.

The investigations referred to so far have all been conducted within the framework of theories of self, or at least with the notion of self construct prominently under consideration. There is another fast growing body of literature which concentrates more empirically on the ability of students to predict their own future academic performance. In other words, the emphasis is on the prognosis of ability, not on self as a personality dimension. However, findings from research in this field are of interest in the present discussion and will now be referred to.

First to be examined is a useful bridge study between the self construct and prediction of achievement areas of enquiry which was conducted by Baird (1969) and which was entitled "Prediction of accomplishment in college; a study of achievement". Here a large number of tests were administered to 12,432 college freshmen amongst which was included a self rating measure. In this instrument, subjects were required to rate themselves on various personality traits and abilities on a four point scale; which made it in effect a simple measure of self construct. Students who later achieved successfully in a given academic area in college initially perceived themselves in having ability in that area, and stated that achievement in that area was one of their most important goals in life. Simple though it was, this self rating scale was amongst the best predictors of performance in a number of the academic activities in which students engaged in college.

In a similar investigation Jones and Griensers (1970) obtained ratings of self concept of ability as learner as measured by a multiple choice Guttman type questionnaire from some nine hundred sophomores. These ratings too, positively correlated with eventual achievement and were shown to be more effective as predictors than gradings obtained from a Scholastic Aptitude test. Confirmation of these findings is reported by Kubiniec (1970) and Biggs and Tinsley (1970). The latter investigators stressed the necessity of taking into account students' perceptions of their past performance in attempting to devise prognostic instruments of this kind.
An even simpler rating was asked for by Keefer (1969). At the beginning of an academic year, he asked 154 undergraduates to predict the grades they thought they would receive at the end of the session. These initial estimates correlated surprisingly well with the actual grades obtained and were superior in predictive power to scores derived from the American College test and from a widely used index of achievement in the United States known as the High School grade point average.

More recently, Birnbaum (1972) introduced an important new factor into the discussion. He asked 7,839 high school juniors simply to indicate their approximate academic average in high school, and while it was found that students of relatively high ability could report their grade accurately, only 27.3% of those with grades below 80% were able to do so. As might be expected, students with low grades were the most likely to overestimate and this finding prompted Birnbaum to warn that while self-reported averages are sufficiently accurate to justify their use for students with relatively high grades, this is not so for students in the average and lower grades. Wylie and Hutchins (1967) report a similar tendency to overestimate performance in a study of the relationship between social class and ability to assess academic level among 12 to 17 year old subjects.

It may not be without significance that the last two studies cited were concerned with adolescents across the whole ability range while the others reviewed in this sub-section used university students as subjects. It could be that a direct request to assess academic competence is an inappropriate technique for use with younger and more heterogeneous samples and that this may be the reason why Birnbaum's and Wylie and Hutchins's findings are not in accord with those summarised elsewhere in this chapter where investigators used conventional questionnaire methods in trying to determine children's academic self-constructs.

In this section, the awareness and accuracy of students' knowledge of their own academic ability has been considered. Studies bearing on this issue are relatively few and are suggestive of broad generalisations only but what seems to have emerged from the foregoing review of literature is this:

First, that among school children a positive relationship between academic self-constructs and actual ability has been shown to exist by

Secondly, that the ability to form a "realistic" academic self construct is in part dependent on the age of the subjects (Wooster, 1970; Phillips, 1963) and on their level of intelligence (Ringness, 1969).

Thirdly, that among university populations student estimates of the grades they are likely to achieve have been shown to be remarkably accurate predictors of actual grades obtained as indicated in studies by Baird (1969), Jones and Grieneers (1970), Kubiniec (1970), Biggs and Tinsley (1970) and Keefer (1969). This did not apply to younger students of average and below average ability (Birnbaum, 1972) among whom Wylie and Hutchins (1967) also reported a considerable over-estimation of academic ability.

Subject to the qualification set out above, there is some evidence to support the view succinctly expressed by Caplin (1969) that "those with high achievement know it, and those with low achievement know it too" and there is also some support for the suggestion that there is a steady progression in the ability accurately to assess one's own academic competence.


In a previous chapter it was pointed out that in all probability the development of self constructs follows much the same pattern as that observed in cognitive areas generally. At the same time it was suggested that self constructs are formed as a function of social interaction; that in fact, they are social in origin.

This section is concerned with the formation of children's academic self-constructs, where it is believed, the same developmental pattern obtains. Children acquire knowledge of their academic standing from "significant others" and in particular from their contact with teachers. Although empirical support for this contention is slight, there is one important study by Staines (1958) entitled "The self picture as a factor in the classroom" which will now be described and which refers to both general and academic self-constructs.

Staines observed that teachers in the course of the day made a number of remarks about children's physique, academic performance and so on, like: "You come to the front Mary because you are tall" and
"You're better at sums than you are at spelling" which might influence children's notions of themselves. This led him to formulate the hypothesis "that teachers may be reliably distinguished by the frequency of their use of words and kind of situational management which, in the opinion of competent judges, are likely to mould the self".

He put the hypothesis to the test by observing two pairs of teachers, one in an infants school and the other pair in a junior school. Their behaviour was classified in terms of its possible positive, negative, neutral or ambivalent effect on the children. The data were also categorised in terms of comments on children's physique: "You won't do for the queen, you're not tall enough"; performance - "You are good at reading". As the same comments are likely also to enhance children's standing or not in the eyes of the class they were also classified in terms of status.

The following table gives part of Staines' results in which teacher comments were analysed in terms of their possible positive or negative influence on children's self constructs.

<table>
<thead>
<tr>
<th>Category</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td>Skill (positive)</td>
<td>107</td>
</tr>
<tr>
<td>Skill (negative)</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>141</td>
</tr>
<tr>
<td>Status</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>70</td>
</tr>
<tr>
<td>Negative</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>84</td>
</tr>
</tbody>
</table>

From these and other findings a profile was drawn up in which the similarities and differences between the teachers were described. For example, with regard to teacher A, Staines says: "The pattern is clear. Teacher A is particularly strong in positive emphasis on skills and makes few negative comments. The status category shows the same pattern."
He is outstanding in the opportunity he offers children for self-determination and he puts more stress on values. He helps children to see their strengths and weaknesses more accurately and in greater detail*. In contrast, with respect to teacher B, he reports: "The pattern here is also clear but very different. In the performance category, teacher B makes fewer positive and many more negative comments than A. In the status category, although the totals are approximately the same, teacher B makes fewer positive comments and more negative comments than teacher A".

It was established, then, that teachers differ in the kinds of comments they make to children as well as the extent to which they make them. No mention was made of their possible influence on children's self constructs. This in fact was the substance of Staines's second hypothesis: "That teachers who differ in the frequency of their self-referential comments would produce significantly different self pictures".

Using the same two junior school teachers as before, an experiment was set up with teacher A acting as the experimental group and teacher B as the control. Children were tested for self construct before the experiment began and at its conclusion. Teacher A was made aware of the children's pre-test self construct rating and he planned his methods so that situations could be arranged in which the child would be led by the teaching methods to see himself in various ways.

Very broadly speaking, teacher A was shown to be able to bring about certain changes in self picture particularly in relation to fair play, being good at games, willingness to admit cheating and in giving less black and white judgements. But it is the overall contrast between the two groups which is most interesting. Teacher A who used freer methods was able to make his pupils more sure of what they were like and more accepting of what they are, more able to differentiate themselves and to see themselves with moderation as well as with relative certainty. Teacher B who used traditional teaching methods with their emphasis on correctness and on the serious consequences of failure, was more likely to induce in children greater feelings of insecurity. Thus it would seem that children's general and academic self-constructs are shaped in all kinds of obvious and not so obvious ways within the school situation.
In a little reported replication study by Chadwick (1967) involving three teachers of 12-13 year old secondary modern school classes, Staines's findings were not confirmed. Chadwick seemed to be successful in bringing about teacher behaviour "appropriate to the healthy development of their pupils' self-concepts" but this appeared to have little effect on the children's self-ratings over a period of time. No explanation for the discrepant findings can be offered.

Davidson and Lang (1960) were also interested in children's perceptions of their teachers' feelings towards them. Some 89 boys and 114 girls attending the fourth, fifth and sixth grades of a New York City public school were presented twice with the same "Check list of trait names" to complete. On the first administration children were instructed to respond to the thirty-five adjectives comprising the list in terms of "My teacher thinks I am.....", and at the second testing in terms of "I think I am". Unfortunately no clear distinction was made in the list between general self-construct and academic self-construct but among the adjectives supplied were included the following which could be construed as relating to academic performance: "not eager to study", "not eager to learn", "clever" and "smart". A comparison of scores obtained on the two administrations led to the conclusion that children's perceptions of their teachers' feelings towards them correlated positively and significantly with their self-perceptions. The child with the most favourable self-image was the one who more likely than not perceived his teachers' feelings towards himself more favourably. It is interesting to note too, that the more positive the children's perceptions of their teachers' feelings were, the better was their academic achievement and the more desirable was their classroom behaviour as rated by teachers.

Kleinfeld (1972) mounted a similar experiment where he administered an academic self construct measure (unfortunately not fully described) to a sample of 165 white tenth grade students, 160 negro eleventh and twelfth grade pupils and 133 negro students from the ninth grade. The subjects were also asked to give perceived teacher evaluations of their academic standing (using the same instrument) and the results were compared with teacher estimates of the students' school grades and their likelihood of proceeding to college and graduating. In all instances a
positive relationship was established between the teachers' and pupils' ratings but it was found to be more marked in the case of coloured students.

Brookover et al (1964) in a study to be referred to a little later in this section reported a coefficient of .55 between the students' academic self-constructs and the impressions they had of their teachers' assessments of their own academic performance.

One other series of studies has a bearing on this subject and that relates to teacher expectations of pupil performance. The argument runs like this. If teacher expectations of academic attainment are in some way conveyed to the children, then they are likely to influence the students' academic self-construct upon which actual performance may be contingent.

The work of Rosenthal and Jacobson (1968) is almost invariably the starting point of a discussion of research in this area and it is necessary to describe briefly the experiment they set up. Essentially, what they did was to inform teachers that the "Harvard Test of Inflected Acquisition" would single out those children who were likely to make exceptional academic progress. The test was in fact a conventional measure of intelligence but on the basis of the supposed results 20% of the children were selected at random and their teachers were told that they were potentially fast developers. After one year the group so nominated, did it was claimed, make considerable gains in intelligence test scores and thus support was given to the self-fulfilling prophecy hypothesis put forward by the investigators.

It must be reported at once that Rosenthal and Jacobson's experimental design, their statistical analyses and their conclusions have been heavily criticised. Thorndike's (1968) review is particularly blunt. He writes: "Alas it is so deficient technically that one can regret that it ever got beyond the eyes of the original investigators". And Snow (1969) writes: "the book has performed a profound disservice to teachers and schools......and perhaps most of all to parents and children whose newly found expectations may not prove quite so self-fulfilling".

Pigeon (1970) draws attention to a central difficulty in conducting enquiries of this kind which lies in the fact that if
comparisons are to be made within classrooms the number of experimental children involved must necessarily be very small so that a research design is not easy to set up. Nevertheless a number of replications have been attempted but only one conducted by Beez (1970) appears to confirm Rosenthal and Jacobson's findings. What Beez did was to randomly assign his five to six year old subjects to a "low ability" or a "high ability" group. This false information together with faked reports was given to the graduate students responsible for teaching the children in a summer Head Start programme. At the end of the period of study, significant gains in academic progress in the expected direction were reported. However, this study may not be directly comparable with those conducted in school settings because of the relative inexperience of the instructors; the fact that unlike teachers they had had no previous knowledge of the children concerned, and the relatively short duration of the experiment.

A more typical result is that of Claiburn's (1969). He gave teachers falsified I.Q. scores indicating high potential which were randomly assigned to 20% of the pupils. After two months, no relative gains were reported for the children who were the objects of the expectations, and no significant changes in pupil-teacher interaction were observed either.

Much the same procedure was adopted by Jose and Cody (1971) with much the same result. Four students were selected by chance from each of 18 first and second grade classes as having exceptionally good academic potential, but the predicted I.Q. gain did not occur. It was also found that teacher expectancy had frequently not been modified and in those four cases in which the teacher stated she had expected an improvement there was little advantage noticed in terms of academic gain for the children concerned.

Another recent and large scale research by Fleming and Antonnan (1971) also reports no gains in attainment as a result of contrived teacher expectancy. Children from 39 classes were randomly assigned to one of the following four teacher-treatment condition groups:

1. Kuhlman-Anderson I.Q. scores reported to teachers as tested.
2. Kuhlman-Anderson I.Q. scores reported to teachers inflated by 16 points.
3. Primary Mental Abilities test scores reported to teachers as tested.
4. No information given to teachers at all.

Several achievement measures were administered over periods of several months but no differences of any note between the four groups were recorded. Neither were the children's self-constructs as measured by an Osgood Semantic Differential test significantly affected by the experiment.

Fleming and Antonnen make it very plain that teachers do, in fact, exercise great influence on the learning potential of children. A close examination of the intelligences scores of the individual classes revealed differences every bit as dramatic as those reported by Rosenthal and Jacobson. One class registered a loss of 6 I.Q. points as opposed to an average gain of 7 I.Q. points over the entire sample. At the other extreme, was a teacher whose class gained 20 points in I.Q. by the end of the school year.

One interesting clue as to how these differences came about is provided in another section of the same research. The importance teachers attached to intelligence testing was found to have a significant effect on pupil attainment. "High opinion" teachers tended to bring about higher academic performance than their "low opinion" colleagues with the effect most marked in the middle socio-economic status range. The authors speculate that teachers favourable to testing may structure their teaching strategies accordingly and thus communicate their high academic expectations to their pupils. In other words they teach towards the end of testing.

Palardy (1969) was also interested in teachers' attitudes, the most important of which determine their classroom behaviour. When first grade teachers indicated that they believed boys to be far less successful than girls in learning to read, the boy pupils of these teachers did achieve less well on a standardised reading test than a comparable group of boys whose teachers believed that boys are in fact just as successful as girls in learning to read.

Pigeon (1970) has expressed the view that streaming is likely to widen the performance gap between brighter and duller children because streams teachers will expect more and obtain more from their pupils
just as the expectancy of C stream teachers for relatively low attainment would help to produce that result. Some supporting evidence for this suggestion comes from Barker-Lunn's (1970) study of streaming where the dispersion of test scores in streamed classes was found to be greater than that obtained in non-streamed schools. Additionally, using data from a cross-cultural study of mathematical attainment, Pigeon was able to show that the standard deviation of British children's scores was greater than that found in all the other 12 countries surveyed except one. The evidence is not conclusive but it gives a strong hint as to how teacher expectations could account for the wide discrepancy in performance of the most and least able pupils in British streamed schools.

In a related study, Brophy and Good (1970) investigated the processes by which teachers communicate their expectations of pupil performance by observing teachers at work in the classroom. Four teachers were asked to rank their classes in order of achievement and then their relationships with the six children ranked highest and six children ranked lowest was observed. Some of the differences recorded were due to what were described as objective differences between the two groups. However, as a general rule, the teachers demanded better performances from those children for whom they had higher expectations and they were more likely to praise the good performances when they appeared. In contrast, those same teachers more readily accepted poor performances from those children they had previously rated as being inferior and "they were less likely to perceive good performances from these students when it occurred - even though it occurred less frequently". It was also noticeable that teachers who showed least discrimination between high and low groups did not group their children by ability in the seating arrangements of their classrooms. Elsewhere, Good (1970) reported that teachers consistently gave high achievers more chance to speak in the classroom than low achievers.

A laboratory approach to the same problem was adopted by Williams, Whitehead and Miller (1972) who asked teachers to listen to videotaped samples of black, Mexican-American and Caucasian children's speech and to rate them on "confidence-eagerness", "ethnicity-non standardness" and academic ability scales. In the main teachers tended
to make global assessments of the children's language. The more extreme the social dialect of a child was, the more likely was inferior academic performance to be predicted. What seem to be examined here are stereotypes, a valuable exercise in itself, but it cannot be inferred from this study that in the practical situation teachers will fail to respond to intelligent behaviour on the part of children simply as a result of the children's poor linguistic ability alone.

Another factor which might influence teacher expectations is the age of children he is teaching. In a small scale study, Pigeon (1970) describes a primary school where children were grouped by age within a year group, with each class having about a four months age spread. The average score expected from the age norms of a reading test administered to the subjects was calculated for each class. It was found that the children in the oldest class in the year group exceeded their expected score while those in the youngest did not. Again the results could be attributed, in part, to differential teacher expectations.

Looked at as a whole, the available evidence does not support the self-fulfilling prophecy as described by Rosenthal and Jacobson. In fact it appears that teachers will reject information from outside sources about children's ability if it is not in agreement with their own impressions of them. The evidence does suggest, however, that teachers do influence pupil behaviour - often quite radically - but in ways more subtle and complex than has sometimes been assumed.

The attitudes of teachers towards intelligence tests, their ideas on sex differences in learning to read, their constructs of children of differing ages as well as in differing streams all appear to exert an influence on teachers' expectations of academic performance in children. In addition, once such discriminations have been made, they are reflected in teacher behaviour towards the different criteria groups. Further evidence on the importance of teacher attitudes on children's academic self constructs is given in the final section of this chapter which is concerned with grouping practices in schools.
Apart from teachers, parents are a further obvious source of academic self-knowledge. Earlier in this section, the work of Kleinfeld (1972) was referred to in which the importance of teacher influence in the formation of academic self constructs was examined. He also enquired into possible parental influence in this respect and he found that a positive relationship existed between the perceived parental evaluation of academic ability and the academic self construct of his 464 white and negro adolescent subjects. He further reported that for white students, parents' perceived evaluation was found to be slightly more strongly related to students' academic self concept than teachers' perceived evaluation.

Also referred to earlier was the work of Brookover et al (1964) who put forward the hypothesis that "self concept of ability is significantly correlated with the images that children perceive significant others have of their ability". Separate indices of perceived evaluations of mother, father, teacher and peer were obtained from the 110 under and over achievers in the seventh grade who made up the sample. The main results are given in the table below.

<table>
<thead>
<tr>
<th>Students' perception of:</th>
<th>Correlation with academic self concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's image</td>
<td>.50</td>
</tr>
<tr>
<td>Father's image</td>
<td>.52</td>
</tr>
<tr>
<td>Teacher's image</td>
<td>.55</td>
</tr>
<tr>
<td>Peer's image</td>
<td>.47</td>
</tr>
<tr>
<td>Combined images of all four significant others</td>
<td>.58</td>
</tr>
</tbody>
</table>

All correlations reported are moderately high and roughly comparable and lend support to the hypothesis. However, it is difficult to assess from these data the degree to which particular significant others contribute to the formation and development of academic self constructs.
Considered as a whole, the evidence presented in this section supports the contention that children's academic self constructs are influenced by prominent figures in their lives, notably teachers and parents. More specifically, the main features of the literature just reviewed are as follows:

1. Staines (1958) concluded that teachers' classroom behaviour influences children's academic and general self-constructs but this finding was not supported by Chadwick (1967).

2. A relationship between students' academic self-construct and the impression they had formed of teacher estimates of their academic ability was reported by Davidson and Long (1960), Kleinfeld (1972) and Brookover et al (1964).

3. The self-fulfilling prophecy described by Rosenthal and Jacobson (1968) was not observed in studies by Claiborn (1969), Jose and Cody (1971) and Fleming and Antonnen (1971). Partial support only was provided in Beetz's (1970) investigation but this was not directly comparable with experiments conducted in school settings.

4. Teachers' expectations of academic performance in children seem to be influenced by their views on intelligence testing (Fleming and Antonnen, 1971), their attitudes towards sex differences in learning to read (Palsrdy, 1969), their constructs of children in different ages (Pigeon, 1970) and in different streams (Barker-Lunn, 1970; Pigeon, 1970).

5. It was demonstrated by Brophy and Good (1970) that teachers expect more of pupils they rate highly academically and less of those they do not; and further, that the favoured group receives more encouragement and attention from teachers (Good, 1970).

6. A relationship between parental evaluations of their children's academic competence and children's academic self construct was reported by Kleinfeld (1972) and Brookover et al (1964). A similar relationship concerning peers' perceived evaluations was also found by Brookover et al (1964).
The relationship between children's general self-constructs and their level of intellectual ability.

So far in this chapter evidence has been presented which leads to the tentative suggestion that in the course of time, and in part as a function of their school experience, most children might reasonably be expected to be able to assess the level of their own academic performance. This in itself tells little. It is necessary now to ask a further crucial question, namely, what relationship might exist, if any, between academic self knowledge and children's self constructs generally? To put the question in another way, is it possible to identify self constructs commonly associated with children in various ranges of intellectual ability? And in particular do children of low mental ability (who in the current term may well be "disadvantaged" in other ways) have positive and accepting or negative and rejecting perceptions of themselves?

Initially, an oblique approach will be made to this problem by considering two investigations which centred on the relationship between self esteem and academic achievement. The first study to be quoted is a longitudinal one carried out by Wattenburg and Clifford (1964). Their experimental design was unusual in that it set out first to discover the self constructs of 128 kindergarten children before they had actually begun to learn to read. The self concept measures constructed consisted of first, an analysis of tape-recordings made of children's spontaneous references to self while they were painting a picture; and secondly, an orally administered sentence completion test. Two and a half years later these indices of self construct were compared with the progress these same children had made in reading, and in the main those who were considered to have more positive self concepts were generally found to have made greater advances in reading ability. The implication of this study therefore is that high self regard may facilitate progress in learning to read.

Gzehosky and Clark (1970) extended the experimental design by including teacher ratings of what they thought the children's self constructs might be. On the basis of such teacher impressions a high
and a low self perception group (each containing 25 kindergarten children) were selected for further study. Two non-verbal self-construct instruments were then administered but in neither case did they discriminate between the criteria groups in question. However, the teacher judgements of self construct were found to be highly predictive of kindergarten achievement for differences between the two groups in respect to reading and "Grade point average" reached the .01 level of significance. Nevertheless the legitimacy of using teacher impressions as a valid index of self-construct is open to question.

One of the most well known writers on self esteem of children is Coopersmith (1969), but unfortunately academic achievement has only been a minor variable in his researches. However, he does report that his high esteem group of 10 year old boys were "active and expressive and successful both academically and socially". Elsewhere, Coopersmith, (1967) reports a correlation of .28 (p=.05) between self esteem and intelligence and a correlation of .30 (p=.05) between self esteem and academic achievement. Thus, he argues, while we can say that ability and academic performance are significantly associated with feelings of personal worth we cannot say that these conditions are the major and overwhelming influence in developing self esteem. However, since as mentioned previously, his high esteem group were successful academically, then his findings give some support to those reported by Wattenburg and Clifford which suggested that favourable self regard may be a determinant or concomitant of successful performance in reading.

In the two studies referred to immediately above, self esteem criteria groups formed the main basis of comparisons made. A more direct form of investigation is to examine self constructs of children at varying levels of achievement in schools. Here the focus of attention is on the possible influence of academic ability on self constructs rather than of the possible influence of self esteem on academic ability, although of course the two types of study overlap.

Andrews (1971) directly compared the self constructs of good and poor readers. His sample consisted of 389 boys and girls in grades 5 to 7 and the self construct instrument he used contained seven scales.
The results indicated that good readers had higher self constructs in respect to non-conformity than poor readers and they also tended to see themselves as striving for success, sufficient and confident. On the other hand, they did not rate themselves as being hostile or aggressive. In contrast poor readers had higher self constructs of hostility and aggression than good readers and this applied particularly to the school situation. They also tended to see themselves as being inadequate socially and lacking in confidence.

A similar study in intent, although using subjects of differing intelligence levels who were mainly around 10 years of age was carried out by Anastasiou (1967). Here various comparisons were made between what were described as very bright and less able elementary school students. Among less able boys, lower self construct scores were found for mental abilities and school subjects. Among less able girls, however, lower self-evaluations occurred in the areas of school subjects, mental abilities, happy qualities, physical appearance, social relationships and social values. In addition, less able girls rated themselves significantly lower than less able boys in the areas of mental ability, physical ability, physical appearance and what were perhaps unfortunately described as happy qualities. The strong suggestion is made that for girls self-deprecating attitudes tend to cluster, but not for boys. Further research is needed to determine how generally applicable these findings relating to sex differences might be.

In Henderson et al's (1965) study, self social constructs of 48 children in the seven to fourteen age range who were attending remedial reading classes were compared with those of a control group of similar intelligence who were successful readers. The self construct instrument devised for this purpose was unusual and merits describing in a little detail. Subjects were given a paper on which was drawn a horizontal line. They were then given in random order, six circles with pictures representing "self", "friend", and a "smart", "dumb", "funny", and "bad" classmate. The children were asked to place the circles in a row along the line. The placing of the "self" circle to the left of the line was interpreted as denoting high self esteem; a position to the right low self esteem, and so on through the intermediate points. Although in general achievers and non-achievers did not differ markedly in their
placement of self on the horizontal line, some other differences did occur. The distances between the "self" and "dumb" circles and the "self" and "funny" circles were significantly greater for the non-achievers than for the achievers (p. 05). The authors interpret these findings as "a defensive reaction in which the retarded reader is seeking to remove himself from these negative conditions". No validation data were given for the self construct measure and as the level of significance obtained between the observed differences was a moderate one, these findings must be regarded with caution.

It will be noted that Anastasiow and to a lesser extent Henderson et al implicitly drew a distinction between two dimensions of self referred to in the last section of this chapter, one of a specific nature relating to academic self-evaluation only, and the other much broader in scope which related to more general perceptions of self. It is necessary at this point in the discussion to make the distinction more explicit and in particular not to make the assumption that two aspects of self are necessarily related. Children may realistically assess themselves as being less able academically but such an evaluation may have little influence on their self perceptions or self esteem generally. We have already observed that this was apparently so amongst the boys in Anastasiow's sample, although not the girls.

A further group of sources which bear on the matter of the relationship between self constructs of children in differing academic criteria groups but are more specifically concerned with school grouping procedures will be examined in the next section of this chapter. All that is necessary to point out at this stage is that Dyson (1967) found no differences at all between the general self constructs of high and low achievers.

Also to be considered in the next section are studies comparing self concepts of mentally retarded children who were educated in segregated and normal classrooms respectively. Again contradictory findings emerged and all that can be reported with confidence is that under some grouping conditions some retarded children revealed lower general self constructs but that no general pattern could be discerned.

Another sub-division of the literature is that which deals with self concepts of disadvantaged children and those in minority ethnic groups. It has a bearing on the matter under discussion because
disadvantaged children are frequently academically retarded as well. Fortunately there is available a recent excellent review article by Zirkel (1971) in which the difficulties encountered in assessing the diverse studies carried out are clearly indicated. Zirkel's final summing up, which is understandably guarded and cautious, is worth quoting as it well illustrates what little firm evidence is available in this area of enquiry. He writes: "Although findings concerning the relationship of self concept to ethnic group membership and mixture may seem equivocal and inconclusive, it is safe to say at least that ethnic group membership and mixture may either enhance or depress the self concept of the disadvantaged child".

Amongst the studies which Zirkel cites is one by Soares and Soares (1969) which, with the correspondence it stimulated, illustrates clearly the complex nature of the findings which have emerged in this field. What they attempted to do was to compare self perceptions of 229 elementary school children in a disadvantaged area with 285 subjects drawn from an advantaged area; all children were attending grades four to eight. They were presented with twenty pairs of bi-polar items which they were asked to grade on a four point scale. Thus: "I am a happy person - I am not a happy person". Ideal and various other reflected self perceptions were also asked for. Against expectation, not only did the disadvantaged group indicate positive self-perceptions, it also had higher self-perceptions than the advantaged group. The investigators were careful to point out that both groups attended relatively homogeneous neighbourhood schools which meant that the disadvantaged children were only exposed to other disadvantaged children both at home and at school with whom they could make comparison with themselves.

The Soares and Soares (1969) study prompted a sharp comment from Long (1969) who referred to studies with opposite findings from Soares and Soares's and which had been ignored in their review of the literature. Some doubt was also expressed about the susceptibility of the test instrument to response set.

Greenberg (1970) in turn took issue both with Long (1970) and with Soares and Soares. Without entering into unnecessary detail, it is enough to comment that Greenberg pointed out that a study in which she participated and which was cited by Long in support of her criticisms
was not directly comparable with the Soares and Soares research because of a marked difference in samples used. However, Greenberg went on to take Soares and Soares to task for their apparent willingness to take children's ratings at their face value too readily and to accept the higher self-ratings of the disadvantaged group without evaluating the possible underlying dynamics which may be at work. What she was suggesting is that the high ratings of the poor achievers might stem from "their greater defensive needs, especially in the academic area which might be highly anxiety-provoking and threatening to them. Good achievers, on the other hand, seem capable of more realistic and even critical appraisals".

Brief though this discussion of the controversy surrounding the Soares and Soares research is, it serves to emphasise three important problems in appraising studies of self constructs of socially disadvantaged children. The first is that experimental designs as well as sample populations differ so that many investigations are not directly comparable. Secondly, some doubt has been cast on the efficiency of some self construct measures. Thirdly, in some instances, insufficient differentiation has been made between academic self construct and more general perceptions of self.

The preceding paragraph stands as a reminder of the inconclusive nature of self construct studies generally. With regard to the relationship between self construct and academic achievement, the evidence reviewed in this section suggests:

1. That in studies which centred on the relationship between self esteem and academic achievement a positive association between the two variables was generally reported. (Wittenburg and Clifford, 1964; Ozehosky and Clark, 1970; Coopersmith, 1969).

2. That in studies where the self concept scores of children of varying levels were compared differences in favour of high achievers were reported by Andrews (1971) and Anastasiow (1970), but in respect to certain dimensions of self only. Dyson (1967) reported no relationship at all between the two variables and Henderson et al (1965) to a limited extent only. Further, Anastasiow (1970) suggests that a sex difference may be operating where lower ability boys generally report more favourable self impressions than lower ability girls.


Next to be considered is the possible association between grouping practices adopted in schools and children's self-constructs.

Attention is drawn again to the Barker-Lunn (1970) study of streaming in English primary schools. Part of this study was concerned with children's academic self constructs - not, it must be emphasised, children's general self constructs or self esteem - simply with how children perceive themselves academically.

In the Barker-Lunn study characteristics of children taught under three different conditions were examined:

(i) Streaming.

(ii) Non streaming; taught by Type I attitude teachers, i.e. those who were child-centred.

(iii) Non-streaming; taught by Type II attitude teachers, i.e. those who were traditional.

The first division, that of streaming, is self explanatory. The two non-streaming sub-categories however, need further detailed examination. The research team administered a questionnaire covering various areas of school life to determine attitudes of the teacher in the schools they were using; and of particular interest to them were the attitudes of teachers working in unstreamed schools. As a result two crude and broad categories of teacher attitudes were identified; a Type I teacher who was described as child-centred, who was opposed to the eleven-plus examination and who held related attitudes; and a Type II teacher who was more likely to be knowledge-centred, traditional in teaching method and in favour of streaming and the eleven-plus examination. According to this study about half the staff only could be called "non-streamers" in attitudes (Teacher Type I). The remainder (Type II teachers) held attitudes more commonly associated with teachers in streamed schools, and furthermore, in their classroom practice, they
tended to be traditional in approach even in the more flexible unstreamed environment. It is therefore clearly necessary to take teacher attitudes into consideration. However, it should be pointed out in parenthesis that many of the schools participating in the enquiry were still in a transitional stage from streaming to non-streaming and although no direct data are available, it is doubtful whether such a large proportion of teachers in mixed ability classes now hold Type II attitudes as unstreaming with all its associated practices has become more widely adopted.

But to return to the point at issue. We are now in a position to examine variations in children's self constructs in relation to the three teaching conditions described above. First, the findings indicated no differences at all at the above average ability level; all these children had a high academic self-image. This was not found at any other ability either for boys or for girls.

Secondly, girls of average ability taught by Type I teachers tend to have a better academic self-image than comparable girls in streamed schools (p. .05), and those taught by Type II teachers in non-streamed schools (p. 01). The trend amongst boys of average ability was similar although not so marked.

Thirdly, and in contrast, boys of below average ability tended to have a poorer academic self-image in non-streamed schools whatever the teacher type. (p. 001). Further, there were no differences between girls of below average ability taught by Type II teachers and their ability peers in streamed schools; but fewer girls of below average ability taught by Type I teachers in non-streamed schools had a good self-image. It is interesting to note that approximately half of the girls in this ability had a poor academic self-image.

The Barker-Lunn investigation then, suggests that the form of grouping adopted in schools appears under some circumstances to influence the manner in which children assess themselves academically. The implication is that at least for children of average ability, a non-streamed class taught by a teacher with what have been described as "child-centred" methods tends to result in a more favourable academic self-image. However, the greater recognition of their inferior intellectual standing by boys and girls of below average ability in
non-streamed schools should be particularly emphasised as well as the finding that roughly half the girls in all three situations had a poor academic self-image. The major implication of this research is that non-streaming in itself is insufficient to promote positive academic self constructs. The attitudes of the teacher and the values of the school and of society at large are powerful agents in facilitating or hindering the acquisition of a positive and realistic academic self-image.

It was pointed out earlier that the Barker-Lunn investigation was concerned with children's academic self constructs only. This is, of course, but a single dimension of self and one which may or may not be of importance to individual children, and one which may or may not influence self esteem in regard to other areas of children's lives. In a research by Dyson (1967) two indices were used in studying the influence of ability grouping on seventh grade children; one was an index of general self acceptance, the other of academic self construct. In summary, it was found that regardless of grouping procedures favoured, high achievers reported significantly more positive academic self constructs \( p < 0.01 \) while those concepts for low achievers were significantly less positive. No other differences were found. It was concluded therefore, that in the situations studied, ability grouping did not affect either dimension of the self concept and that success in school significantly influences children's academic self concept regardless of grouping procedures in operation.

One finding is common to the Barker-Lunn and Dyson studies, namely that children of above average academic ability have superior academic self constructs irrespective of grouping procedures adopted. No other differences were found by Dyson but unlike Barker-Lunn he did not go beyond a consideration of grouping practices and thus he ignored other factors which might have been operating in the situation. In contrast, Barker-Lunn did extend the field of enquiry to a limited degree by examining teacher attitudes and as indicated previously, certain differences in academic self construct were found between children of below average and average ability and in streamed and unstreamed classes which might be attributed to this variable. It will be remembered that
the more child-centred teachers tended to have greater success in bringing about positive academic self constructs among children of average ability.

Another important difference in variables considered by the two investigators is this. Barker-Lunn obtained ratings of academic self construct only and no indication was given by her of the possible effects of ability grouping on children's self-esteem generally as was attempted by Dyson. No study appears to have been conducted which takes into account both general self construct and teacher attitudes in relation to streaming but a research by Purkey et al (1970) is worthy of mention in this connection. No direct reference was made to grouping procedures but the object of this study was to explore the impact of what was described as "an innovative team-teaching completely ungraded elementary school programme" on the self-esteem of children. The stated educational objectives correspond roughly with the Type I (child-centred) cluster of attitudes identified by Barker-Lunn. Purkey administered the Coopersmith Self-Esteem Inventory to grades three to six in the ungraded elementary school described above and to a similar sample of children attending an elementary school which was working on traditional lines. The findings are most conveniently expressed in tabulated form as follows:

Table 4.2
Comparison of Coopersmith Self-Esteem Inventory mean scores of children in grades 3 to 6 attending a progressive and a traditional elementary school respectively.

<table>
<thead>
<tr>
<th>School</th>
<th>Grades</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Total</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progressive</td>
<td>15.36</td>
<td>15.03</td>
<td>15.01</td>
<td>16.58</td>
<td>15.49</td>
<td>414</td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>15.70</td>
<td>14.59</td>
<td>13.94</td>
<td>13.95</td>
<td>14.54</td>
<td>525</td>
<td></td>
</tr>
</tbody>
</table>

(Differences between totals statistically significant at the .001 level).

It will be seen that as the grade level increased the difference between the self-esteem scores of the two groups also increased.

The differences between Dyson's findings and those of Purkey et al's cited immediately above may in part be attributed to dissimilar teacher attitudes. In the latter instance there might possibly have been greater enthusiasm for heterogeneous grouping and a stronger desire for
it to succeed, but such a view is of course largely supposition, for yet again the studies under review are not directly comparable.

The major investigations dealing with streaming suggest that the type of organisation per se is insufficient to promote positive academic self constructs and that in any case, streaming may have little influence on children's self-esteem generally. Before commenting finally, however, four relatively small studies concerned with the class placement of mentally retarded children will be briefly referred to.

Carroll (1967) investigated the effects of segregated and partially segregated school programmes on the self concept of 38 educable mentally retarded children aged approximately 8 years old. The self construct measure administered with the "Illinois Index of Self-derogation", a self-explanatory if unpleasing title. At the beginning of the school year this test was administered to two groups of retarded children, one of which remained in the regular classroom for half a day while the other group was wholly segregated. Near the end of the school session the test was re-administered and this showed that the partially segregated group decreased in self-derogation during this time, while the completely segregated group was shown to be more denigrating of themselves in the post-test. Thus it would seem that a degree of interaction with their contemporaries is less damaging to the self-esteem of children than complete removal from them.

Some confirmation of Carroll's findings comes from Mayerowitz (1962) who indicated that although fewer positive self concepts were found among retarded children in the first grade than in children of other ability levels, a still greater number of self-derogations were recorded for retarded children who were placed in a special class. However, Mayer (1966) whose sample consisted of twelve to sixteen year old retarded children found that his subjects had developed self constructs which compared favourably with those of normal children, although they were attending full time special classes.

Ringness (1961), too, whose subjects were segregated fourth grade mentally retarded children found that these children were more likely to over-estimate their success as compared with average or bright children, and all the indications were that they were reasonably happy and accepting of themselves and others. It could be argued that this group
lacked knowledge of the success of their contemporaries and that the children were not in a position to assess themselves realistically. It must be said that findings from the four studies just referred to cannot easily be reconciled and that no firm conclusions can be drawn from them. Two points of importance in relation to them should be particularly considered and these are:

First, the doubtful practice of administering pencil and paper tests to young and/or mentally retarded children.

And secondly, the apparently almost exclusive concentration on the class placement issue and the consequent ignoring of other issues which may be of importance.

A very brief reference will now be made to studies centering on the effect of de-segregation in American schools. The main question here is: "Does the de-segregation of schools result in more favourable self-evaluations among Negro children?". One representative research only will be mentioned, that conducted by Caplin (1969) who found that Negro children in a newly de-segregated school showed higher positive self-concepts than those in a school system which had been de-segregated for a long time. One explanation of this result put forward by Caplin was that some form of Hawthorne effect may have been influencing both staff and children immediately following the introduction of de-segregation. Another possibility is that Negro children's school related self-image goes up initially upon de-segregation but that in time their inadequacies become more apparent as a consequence of associating with high achievers who are more commonly found in mixed classes. Perhaps it is as well to quote again in this context Zirkel's (1971) comment on the inconclusive nature of research into self-constructs of socially disadvantaged children which he reviewed. He wrote: "It is safe, at least to say that ethnic group membership and mixture may either enhance or depress the self concept of a disadvantaged child. Whether the self concept is significantly affected depends to a large extent on the efforts that society expends on de-segregation and the disadvantaged".
In summing up this section, it seems that no simple conclusion can be reached concerning the association between grouping practices and children's constructs of self. Perhaps this is because grouping procedures are just one feature of educational institutions and it would seem that wherever possible account also needs to be taken of the values obtaining in the school generally which are exemplified in the school curricula, teaching methods and pupil-teacher relationships, as well as in the form of grouping adopted. However, the main points which emerge from the review of relevant literature in this section are as follows:

1. That in both streamed and unstreamed schools children of above average intelligence tend to have more positive academic self-constructs than their counterparts in other ability levels. (Barker-Lunn, 1970; Dyson, 1967). However, Barker-Lunn also indicated that children's academic self-image in other ability ranges was affected in part by the form of grouping favoured, and in part by teacher attitudes.

2. In respect to general constructs of self, Dyson (1967) reported no differences between children in streamed and unstreamed situations.

3. The possible effect of "child-centred" teaching methods on children's general self-construct was demonstrated by Purkey et al (1970).

4. Carroll (1967) and Meyerowitz (1962) found that retarded children's tendencies towards self-derogation were increased as a result of special educational provision but their findings were not confirmed by Mayer (1966) and Ringness (1961).

5. Studies concerned with the effect of de-segregation on Negro children's self constructs were inconclusive. (Zirkel, 1971; Caplin, 1969).
SUMMARY OF CHAPTER

1. A positive relationship was indicated between children's academic self-construct and their level of achievement.

2. The ability to assess one's own academic standard was shown to depend in part on the age of the children, their intellectual level, and in some instances the grouping procedures practised in school.

3. Evidence was presented which suggested that academic self-constructs are formed in part from perceived evaluations made by teachers, parents and peers.

4. The relationship between teacher expectations and pupil performance described by Rosenthal and Jacobson did not receive empirical support but certain teacher attitudes were found to be highly influential in terms of pupil achievement.

5. A positive association was shown to exist between self-esteem and academic achievement.

6. In respect to the association between intelligence and general self-constructs some differences in favour of high achievers were reported but in relation to certain aspects of self only. In one study sex differences emerged where low achieving boys were found to be less self-derogating than low achieving girls.

7. Findings concerning the general self-constructs of disadvantaged children were inconclusive.

8. Evidence relating to the influence of grouping practices on constructs of self was also inconclusive. In both streamed and unstreamed schools children of higher intelligence level possessed more positive academic self-constructs but in the other ability ranges academic self-constructs were influenced in part by the form of grouping adopted and in part by teacher attitudes. As far as general self-constructs were concerned, no differences were found between children in the two criteria groups.

9. Studies concerned with the effect of special educational provision and de-segregation on children's constructs of self were inconclusive.
CHAPTER 5

Children's school related attitudes

One more form of construct remains to be considered and that refers to children's attitudes in the school situation.

The most commonly quoted and perhaps the most generally accepted definition of an attitude is Allport's (1935) which reads: "An attitude can be defined as a mental and neural state of readiness organised through experience, exerting a directive or dynamic influence upon the individual's responses to all objects and situations with which it is associated.

There also seems to be a large measure of agreement in the social psychological literature on the following points:

1. that attitudes are learned through the process of socialisation, and that in certain circumstances, they can be changed;
2. that attitudes have cognitive, affective and behavioural components;
3. that the relative strength of each of the components just described can vary from attitude to attitude;
4. that attitudes tend to cluster;
5. that attitudes tend to be an enduring state of mind which predisposes an individual to act in a certain way.

There are clear similarities between attitudes and the Piagetian notion of scheme but very little attention seems to have been given to the manner in which children's attitudes change over a period of time, outside the field of moral development.

In some respects, too, the similarity between the concept of attitudes and Kelly's interpretation of constructs previously elaborated is striking. Both attitudes and constructs are seen as learned acts which help the individual to make sense of his world and in both conceptions their power to influence behaviour is recognised.

However, attitudinal research has been conducted within a number of differing and sometimes conflicting theoretical positions and
agreement would certainly not extend to the manner in which attitudes are thought to be acquired or to the precise ways in which attitudes are considered to influence an individual's view of the world and to govern his behaviour. It therefore follows that while attitudes can be legitimately categorised as a form of construct, it is essential to stress that as far as this study is concerned, they take on the characteristics of all other constructs in accordance with the basic assumptions underlying Personal Construct Theory.

No attempt will be made in this chapter to survey the extensive field of attitudinal formation and change which is featured in all standard social psychological texts. Neither, because of the absence of research relevant to the school situation, will developmental aspects be considered separately. The little research that does exist relating to children's changes of attitude over a period of time is more appropriately summarised in Section 2. In this short chapter then, two matters only will receive attention:

1. the relationship between school related attitudes and achievement;
2. the possible influence of school forms of organisation on children's attitudes.

1. The relationship between school related attitudes and achievement.

Although educators have long recognised the importance of the relationship between children's attitudes towards school and their achievement, little attention has been given to this aspect of school life, and the evidence that does exist is not always consistent.

This section begins by referring to a study by Shepps and Shepps (1971) who set out to determine the relationship of study habits and school attitudes to achievement among 16 boys and 10 girls attending elementary schools. The attitude scale, unfortunately, was inadequately described but coefficients of .37 (p=.05) and .29(n.s) were obtained between attitudes and attainment in Reading and Mathematics respectively, among this very small sample of children.

A low but positive correlation of .14(n.s) was also observed by Irwin (1967) between attitudes and academic performance generally. His subjects were 171 first year college students and the attitude test was of the sentence completion type and includes such stems as "School is.....", "I learn best....", "Most teachers...." and "What I dislike about school....".

Inconclusive findings were reported by Malpass (1953) whose subjects
were 92 eighth grade pupils. He used three attitudinal measures:

a. a sentence completion test consisting of five components—
school in general, teachers, classmates, discipline and
achievement;
b. a projective picture test covering the same five areas;
c. a structured autobiographical essay also concerned with the
same five aspects of school life.

It was found that little or no relationship existed between scores
obtained from the attitude scales and standardised achievement test
scores, but significant relationships did exist between attitudes and
school grades and coefficients of between .31 and .37 were observed.

Barker-Lunn (1969), whose attitude scales are described in the next
section of this chapter, determined the correlation coefficients between
her 10 measures and various indices of academic ability which included
standardised verbal and non-verbal reasoning tests, achievement tests
and teacher and parent ratings of children's ability. Among this sample
of 2,087 nine to eleven year old children, the coefficients established
were in the order of .15 to .20 and they were uniformly positive and
significant at the .01 level or higher. A replication of the attitude
component of this study was carried out in the United States by Berk et al
(1970) in which they used the attitude scales which Barker-Lunn had
constructed, and which will be briefly described in the next section.
Berk et al administered the tests to a sample of 787 nine to ten year
old children and they reported that there were almost no differences in
the way children of varying abilities felt about school. In only three
of the ten attitude scales were significant differences between the
criteria groups observed. High ability children were found to have a
more positive academic self image (p=.001), they were less anxious
(p=.01), and they had more positive attitudes towards school (p=.05).

Berk et al's findings are largely in accord with the studies so
far cited in this section where in each case a correlation coefficient
was used to determine the relationship between the two variables.
Where, however, the sample is divided into a number of ability
groups, a comparison of scores suggests that there is a firmer
relationship between attitudes and ability than that indicated so far.

This is confirmed by Mitchell and Shepherd (1967) who also divided their sample into three ability groups. They adopted the unusual course of sending a questionnaire to the parents of over 6,000 children between the ages of 5 and 15 asking them to rate their children on the following scale:

- a. Likes school very much;
- b. Likes school about as much as most children;
- c. Dislikes going to school.

They then asked teachers to grade their classes in terms of academic ability and the relationship between the two measures was as follows:

<table>
<thead>
<tr>
<th></th>
<th>Likes school very much</th>
<th>Likes school as much as most</th>
<th>Dislikes school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>Above average</td>
<td>30%</td>
<td>32%</td>
<td>15%</td>
</tr>
<tr>
<td>Average</td>
<td>47%</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Below average</td>
<td>23%</td>
<td>16%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Although this study is open to methodological criticism, the results do broadly indicate that reaction to school is associated with academic attainment.

The large-scale American study by Goldberg et al (1966) referred to in Chapter 2 and in the next section, was concerned with differences in attitude among children of differing intellectual ability levels. A "What I like to do" scale was administered to the eighty-six fifth grade classes making up the sample and it consisted of twenty-eight triads of items with one item of each triad describing a school related activity. For example, one group consisted of the following items:

- a. Take music lessons at home.
- b. Wash my hair.
- c. Study something in Arithmetic (School related item).

Subjects were asked to indicate which of the three activities they would most like to engage in and which of the activities they would least like to engage in. The form of the test is an unusual one. It is essentially a ranking device and it permits no expression of the relative value children placed on each activity. Neither does it give
any indication of the relevance of the items to the children concerned. However, a split-half reliability coefficient (corrected for attenuation) of .72 was reported which was accepted by the authors as indicating a highly acceptable level of stability.

The sample was divided into five ability groups, designated A to E, and a comparison of their scores on the "What I like to do" scale revealed marked differences between some of the criteria groups. The "like most" means varied directly with the level of academic ability, ranging from a high of 11.63 for the A level to a low of 9.55 for the E level. When the five ability levels were compared with one another, the E's and D's scored lower on the scale than did the C's, B's and A's, but the E's and D's did not differ from each other. The A's exceeded the C's but did not differ from the B's; the B's in turn did not differ from the C's.

Brodie (1964) used a different but even more sensitive method by comparing the attainment of forty-five eleventh grade children who were identified as being very satisfied and very dissatisfied with school respectively. A 60 item student poll test was initially administered to 500 children from whom the 45 children in each extreme criterion group were selected. It was reported that satisfied students generally performed better than dissatisfied students and at a statistically significant level. The advantage of the satisfied students tended to be greater on tests where academic skills were involved rather than on tests of general background information.

Williams (1970) followed an almost identical approach except that attitude scores constituted the independent variable. A 60 item scale concerned with academic morale and interest in school was administered to students in three public high schools. The 56 students who scored at least 1.3 S.D.'s above the national mean constituted the positive attitude group and 65 students who scored at least 1.3 S.D.'s below the national mean made up the negative attitude group. The differences between the two groups in respect to I.Q. scores, Reading and Mathematics reached the .001 level of statistical significance in each case.

Greenberg et al (1965) were interested in the school related attitudes of 115 fourth grade Negro children who were categorised as
good, average or poor readers. Thirteen concepts were rated on an Osgood type semantic differential scale among which were included "teacher", "school", "reading", "homework", "Arithmetic" and "dumb child". Here a puzzling reverse trend was observed. In most instances the poor achievers gave more positive ratings than the better achievers but with one notable exception. The only unfavourable concept, "the dumb child", evoked chiefly negative concepts and on the potency scale there was a significant achievement difference with the good achiever assigning the most strongly negative ratings. The authors suggested that the relatively high favourable ratings of the poor achievers might be an indication of their "greater defensive needs". They also argued that good achievers seemed to demonstrate greater critical ability, self-confidence and reality orientation which may be related to their success in school. Another possibility is that nine year old children, particularly the less intelligent among them, may have had difficulty in completing an Osgood type test and it would be instructive to learn the test-retest coefficients of this test administered to a sample of children of the same age group.

Finally, two more studies have an indirect bearing on this matter. In the first, conducted by Neale et al (1970), the focus of enquiry was a narrow one which sought to explore the relationship between attitudes to specific school subjects and children's achievements in those subjects. The sample consisted of 105 boys and 110 girls around eleven years of age whose ratings of "Social Studies", "Arithmetic", "Science" and "Reading" on an Osgood scale were compared with children's scores on the corresponding sub-tests of an achievement battery. Significant, positive correlations at the .01 level were observed for boys in Social Studies, Arithmetic and Reading; and for girls in Reading only. Again the results are inconclusive. No relationship appeared to exist between attitudes and achievement in Science but in the remaining three curriculum areas a strong relationship existed between the two variables for boys but not for girls.

A more general study designed by Sumner and Warburton (1972) examined the attitudes of 805 children, half of whom were regarded as being the most industrious and the other half the least industrious.
of pupils in the 13 - 16 age band in 20 secondary schools. Although there was an overlap, significant differences in ability were found between the two groups, hence its inclusion in this review. A Likert type school opinions scale, a multiple choice "Aspects of school life" measure and a 53 item sentence completion test were administered to the sample. The authors write: "the most extreme of the children considered to be allergic to school by their teachers often thought that school work was beyond their capabilities and they showed little genuine inclination to improve or to find pride in doing their work well. Compared with industrious pupils, they think that fewer lessons are interesting and they are less impressed by school reports and prizes". In contrast, it appeared that the industrious children looked upon the school in a far more favourable way. They saw it as leading to opportunities to mix in society, to satisfy their self-regard and to improve their personal standards.

The literature on the relationship between attitudes and school achievement can be summarised as follows:

1. Where an overall relationship is sought between general attitudes towards school and children's achievement, a positive correlation between the two variables is usually reported. (Shepps and Shepps, 1970; Irwin, 1967; Halsey, 1953; Barker-Lunn, 1969 and Berk et al, 1970). However, only a relatively small proportion of these coefficients reached statistical significance.

2. When the finer method of dividing the sample into three or five ability levels is used, differences in attitude scores between the groups have been reported by Barker-Lunn (1970), Ferri (1971), Mitchell and Shepherd (1967) and Goldberg et al (1966). In only one instance, the Greenberg et al (1965) study, was the trend reversed and here the possible confusing nature of the test instrument when used with young subjects might explain the result.

3. Brodie (1964) and Williams (1970) reported a marked difference in the academic achievement of children in extreme attitude criteria groups.

4. Sumner and Warburton's (1972) investigation where industrious and non-industrious children were compared is not strictly
comparable with the other researches reviewed in this section but they provided indirect support for the view that children of higher attainment tend to have more favourable attitudes towards school than their peers of lower ability.

5. Neale et al (1970) were concerned only with the relationship between attitudes towards specific school subjects and ability in these subjects. Significant, positive relationships were reported between the two measures for boys - and for girls but to a much lesser extent.

In evaluating the research outlined in this section, it is again necessary to point out the differences in the range of attitudes covered, not all of which may have relevance to the concerns of the pupils tested; and the differences in the size, social class and age composition of the samples used. As a general rule, however, it seems that when the more sensitive method of examining attitudes of children in differing ability groups is adopted, the evidence points to a positive and usually significant relationship between favourability of attitudes towards school and school achievement. Nevertheless it would appear that the association between these two factors is not as strong as is sometimes assumed.

2. The possible influence of forms of organisation in school on children's attitudes.

Research evidence concerned with the association between children's attitudes and school organisational procedures is very limited and indeed, it is only within comparatively recent years that the matter has received any attention at all in this country. However, in Barker-Lunn's (1970) study of streaming, considerable attention was given to the question of children's attitudes and this part of her work will now be discussed.

Barker-Lunn constructed ten attitude scales which were concerned with academic self-image, anxiety, social adjustment, relationship with teacher, importance of doing well, attitude to school, interest in school work, conforming versus non-conforming pupil, attitude to class and others' image of class. The scales were positively correlated and 36 of the observed correlation coefficients were significant at the p.05 level or
beyond. The correlations fell into two distinct clusters, the first five scales listed above which dealt with personality and characteristics of social relationships; and the last named five scales which were concerned with attitudes towards aspects of school and school work.

The tests were administered to over 1,000 children in 28 schools, half of which were streamed, and half unstreamed. The children were tested first when they were nine years old and again a year later so that attitudinal changes could be detected. As a consequence of this emphasis, details of initial and final scores are not given, and only changes in scores and their direction are recorded. However, the following is a brief summary of the main findings reported by Barker-Lunn:

(i) Pupils above average in ability tended to have more favourable attitudes whether they were educated in streamed or unstreamed schools.

(ii) Children of average and below average ability became more motivated to do well in school and were more satisfied with their class and its "other" image in non-streamed schools.

(iii) In respect to attitude change, there was a tendency for those of above average ability to improve and those of average and below average ability to deteriorate in their attitude scores in streamed schools. No such negative trend was noted among pupils of average and below average ability in unstreamed schools.

Not surprisingly, the scales which discriminated most between pupils in the two types of school were those concerned with school class membership - that is to say, the pupils' degree of satisfaction with his own class and the way he felt others perceived it. It seems that children of above average ability in streamed schools believed that others perceived their stream as superior; those of below average ability were more likely to believe that others thought their class was low in status. As a result children of lower ability in streamed schools - unlike their counterparts in unstreamed schools - became increasingly dissatisfied with school in general.

In a follow-up study of the same children who completed the Barker-Lunn scales for a third time, Ferri (1971) reported on their changes of attitude at twelve years of age when they were attending secondary schools. She reports that attitudes were still related to ability with brighter children having more favourable scores on all
school-related scales. More specifically, on the attitude to class scale, pupils from both streamed and unstreamed junior schools recorded lower scores at 12 plus. The poorer attitudes amongst pupils from unstreamed schools were concentrated at the average and below average levels whilst it was the above average pupils from streamed schools who had become disenchanted with their class at school. The change of score between 10 plus and 12 plus of pupils in top, middle and bottom streams was examined and while a downward trend was noted in each case, it reached statistical significance only in the case of pupils in middle and bottom streams. With respect to the "other" image of class scale, pupils in the top streams had improved their attitude over the two-year period while those of pupils in the bottom streams had deteriorated.

Another recent N.F.E.R. project also enquired into children's school related attitudes. It was conducted by Ross et al (1972), and it was concerned with appraising trends in comprehensive schools. A "Perceptions of School Scale" (covering perceptions of staff and aims of school), was administered to 2,270 pupils in the fourth year of twelve secondary schools. When the scores of children in streamed and unstreamed schools were compared, it was found that children in streamed schools had less favourable attitudes towards school, a difference which was significant at the .001 level. Within streamed schools, differences between upper and lower streams were also noted. In one school, 10 points separated the first and sixth stream levels, and even in ability grouped schools where pupils as a whole had favourable attitudes towards school, the same trend was observed.

The large scale American work by Goldberg et al (1966) referred to in the previous section was specifically concerned with the effects of streaming. As there reported, one of the attitude scales administered to the 66 fifth grade classes successfully discriminated between children of differing intelligence levels, but no differences which could be attributed to grouping practices were discerned. The authors suggest that in general, grouping elementary pupils by ability seemed to have no consistent, predictable effects on their attitudes towards school. No one range, position or combination of levels appeared to be more effective than any other in improving attitudes towards school.

In contrast, Borg (1964) whose large scale investigation involved
over 4,000 elementary school children as subjects reported more favourable attitudes towards school of children who were heterogeneously grouped. In summary, his results are given below.

**TABLE 5.1**

The relationship between attitudes and ability level

<table>
<thead>
<tr>
<th>Ability level</th>
<th>Superior</th>
<th>Average</th>
<th>Below average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude to teachers</td>
<td>More favourable in unstreamed classes</td>
<td>No difference</td>
<td>More favourable in unstreamed classes</td>
</tr>
<tr>
<td>Attitude to school</td>
<td>No difference</td>
<td>No difference</td>
<td>More favourable in unstreamed classes</td>
</tr>
</tbody>
</table>

As only secondary sources describing this study were available, no detailed comparisons can be made with Goldberg et al's (1966) work where an opposite trend was reported.

Three small scale studies were devoted to the matter of pupils' perceptions of the status of their own class within streamed schools, an aspect of ability grouping in which Barker-Lunn was also interested.

Ogletree (1970) administered a simple questionnaire to 172 children in the fifth and sixth grades, 90% of whom were lower S.E.S. negroes. The items, together with the responses analysed according to class placement, are given below.

**TABLE 5.2**

Perceptions of stream placement

<table>
<thead>
<tr>
<th>% of affirmative responses</th>
<th>A stream</th>
<th>B stream</th>
<th>C stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you like being in this group?</td>
<td>76</td>
<td>45</td>
<td>26</td>
</tr>
<tr>
<td>Are you proud of this group?</td>
<td>53</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Do you think this is a smart group?</td>
<td>48</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Do you think this is a dumb group?</td>
<td>1</td>
<td>24</td>
<td>21</td>
</tr>
</tbody>
</table>

Some responses to the open-ended question "How do you feel about being placed in this group?" were:

**A class children:** This is a smart group. I like it here. I don't want to be with stupid kids.
B class children: Give me the A group every time. I'm glad
I'm not in the dumb group.

C class children: I'm dumb. This class is bad. I don't like it.

Ogletree's findings certainly endorse those of a much earlier
study by Luchins and Luchins (1948) which is described in Chapter 2.
The 196 fourth to sixth grade subjects were asked to indicate which
stream they would prefer to be in if they were transferred to another
school. Their replies, categorised in terms of the ability level of
the children choosing each class are given below:

<table>
<thead>
<tr>
<th>Ability level</th>
<th>Prefer A class</th>
<th>Prefer B class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above average</td>
<td>96%</td>
<td>4%</td>
</tr>
<tr>
<td>Average</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>Below average</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Follow-up interviews revealed that bright children who chose the
A class considered it an honour to be in that class and that they felt
they "naturally" belonged there. They also thought it possible to
learn more and to avoid wasting time in the A class. In addition, these
children considered the B stream to be boring and they indicated that
they had no desire to mix with "dumb-bells". Average children's
responses were much the same but they also suggested more frequently
that their parents would be proud of them if they managed to remove to
the A class. Those bright and average children who chose the B class
did so because they thought it would give them a chance to be outstanding,
to get better grades, and to take it easy. Those in the B class who
indicated a preference for that class said that it was best for them and
that in any case they wouldn't be allowed in the A class.

Clark's (1964b) work was principally with children's attitudes
towards a special class for the retarded and it has already been
summarised in Chapter 2. Briefly, 163 children in grades four and five
were questioned on this point and only 6% of the responses reported were
derogatory in nature whilst 27% of them consisted of straightforward
designations such as "it's a special class". The academic limitations of the pupils were mentioned most often; next came descriptions of pupils as being mentally ill; and finally came simple descriptions of their behaviour.

Research relating to the association between children's attitudes and grouping procedures in school is limited and inconclusive. In summary:

1. Children in unstreamed schools held more favourable attitudes than did their peers in streamed schools in respect to motivation to do well in school, satisfaction with class, and the view of the class as seen by others. (Barker-Lunn, 1970). Ross et al (1972) too, found that children in streamed schools had less favourable attitudes towards school than those in non-streamed schools. This trend was confirmed by Borg (1964) in respect to certain attitudinal areas among certain ability groups, but not by Goldberg et al (1966) who found no differences between attitudes of children in the two types of school.

2. When attitudinal change is considered, Barker-Lunn (1970) reported that pupils in A classes tended to improve, and that pupils in lower streams tended to deteriorate, in attitude scores. Ferri (1971) also reported a downward trend for each of the three ability levels in respect to attitude to school but it was more pronounced among middle and bottom stream children. These pupils also obtained lower "other" image of class scale scores but those of bright children increased.

3. Within streamed schools a marked difference was noted between attitudes of children in the highest and lowest streams of secondary schools by Ross et al (1972). Ogletree (1970) and Luchins and Luchins (1948) demonstrated that attitudes towards A classes was generally much more favourable than attitudes towards B classes. However, Clark (1964b) in a study concerned specifically with special classes for slow learners reported few derogatory statements made by children attending the usual grade classes.

The findings outlined in this section are again inconclusive but the evidence suggests that ability grouping does have an adverse effect
on attitudes of certain groups of children (usually of average and below average ability level) but in respect to certain aspects of the school situation only, notably class membership. However, these effects have not always been found and one can only assume that the values obtaining in the school may counteract the negative influences of ability grouping.
SUMMARY OF CHAPTER

The main trends which can be discerned in the research relating to the association between children's attitudes and their achievement and the possible influences of grouping practices on children's attitudes are as follows:

1. In general, correlation coefficients between children's attitudes and their achievement are of a positive but low order.

2. Where the sample is divided into a number of ability groups, differences between them in respect to attitude scores are commonly but not invariably reported in favour of the higher groups.

3. Where the sensitive method of comparing scores of children in extreme criteria groups was used, a marked relationship between achievement and attitudes was noted.

4. There was a tendency observed for children in unstreamed schools to have more favourable attitudes than children in streamed schools. This trend was not always reported and it frequently applied to particular ability groups and for particular attitudinal areas only.

5. Within streamed schools there was a tendency noted for the attitude scores of children to decline over a period of time. This applied particularly to average and below average ability levels.

6. Generally, A classes were held in higher esteem than B classes.
The effects of ability grouping

This study has as a main focus of attention the possible non-cognitive effects of the practice of "setting" in middle schools. By setting is meant the grouping of children according to their level of achievement in certain curriculum subjects only, thus allowing pupils to be taught in mixed ability classes for the remaining subjects. French and Mathematics are curriculum areas which are commonly "set" but schools vary very considerably in the range of subjects where setting is introduced. In contrast to streaming where children remain permanently in one ability group, setting permits children to be grouped according to their ability in each subject set or for groups of subjects which are thought to have a common element like French and English.

In this chapter the practice of setting is considered against the wider context of organisational procedures adopted in schools generally and some attention is given to the changes in methods of allocating children to classes which have been effected over the years. The influence of ability grouping on children's academic attainment will be referred to briefly but major emphasis is given to the certain non-cognitive effects of ability grouping.

The chapter will be divided into the following three sections:

2. The influence of ability grouping on children's attainment.
3. A consideration of some non-cognitive effects of ability grouping.


For a long time after the introduction of a state system of education in this country, no recognition was given to the existence of individual differences in mental ability among children. Under the "Payment by Results" system, which was introduced in 1862, schools received a monetary grant for each child who reached a prescribed ability level in Reading, Writing and Arithmetic in each of the six age standards.
defined by the Code. As Lowe, the originator of the system is reported to have said, "we pay for instruction; if the child has been properly instructed he will know the things we require; if he does not know them the work has not been properly done, and no-one has a right to be paid for unfinished work". (Holman, 1898).

As children did not move to a higher class (then called a standard) until they had passed the Board's annual examination, the Code indirectly encouraged a primitive form of ability grouping. However, dull children and those who failed the examination through other causes, remained in the over-crowded lower standards where they were taught together with younger brighter children. From Standard II onwards, each class contained a fairly narrow range of ability but such was the severity of the examination that few children passed on to the upper forms.

In 1905 the Code was replaced by a "Handbook of Suggestions for Teachers" which gave headmasters a remarkable degree of autonomy in determining policy; but its effects on methods of grouping children was negligible. Even as late as 1910, Ballard (1923) reported that although there was a more even distribution of pupils throughout the school, there was still inordinate crowding in the lower standards. Promotion still, in fact, depended on an annual examination but it was now unofficially set by head-teachers instead of by the Board of Education. As Holmes (1911) bitterly commented, "the routine imposed by the Code retained its hold and the older teachers in particular were helpless and hopeless in using their recently granted independence".

Some of the ways in which schools attempted to provide appropriate teaching for children of differing ability levels in the 1920's are described by Christian (1919), Sleight (1920) and the "Handbook of Suggestions for Teachers" (1927). For example, annual promotion was no longer rigidly practised and it was now possible for a bright child to be accelerated, that is to say, to spend just six months in each class. Remove classes also began to make an appearance around this time and their purpose was to provide a more practical and less academic curriculum more suited to the needs of slow learning pupils. It is interesting to note that Christian (1919) recognised the possible adverse social consequences of being in a remove class when he advised naming it
in such a way as to "preclude reproach or unpleasant gibes at the expense of its members".

Group teaching, too, known at the time as sectional teaching was just beginning to appear around this period. Under this system, the class was divided into two or more groups for differential instruction in the basic subjects. Every teacher was thought capable of teaching simultaneously at least two groups always providing that the lesson had been adequately prepared and that the teacher's discipline could stand up to the test. The first reference to setting appears around this time as well. Differential classification based on attainment in certain subjects - usually Arithmetic and Reading - was sometimes to be found whereby children of the same ability in the curriculum areas concerned were brought together irrespective of age.

In the second and third decades of this century the idea of grouping children on the basis of intelligence results was attractive to at least two prominent educationists, Ballard (1923) and Isaacs (1932), and Burt, in an appendix to the Primary School Report (1931), wrote strongly in support of streaming. Its adoption was facilitated by a recommendation of the Hadow Consultative Committee (1923) to set up separate junior and senior schools to replace the old all-age elementary schools. This had the effect of bringing together large concentrations of children of the same age, and for the first time streaming by academic attainment became a practical proposition. As far as can be estimated in the absence of statistical records, streaming became widespread in urban areas and was accepted generally to represent an advance in educational practice.

During the Second World War and in the decade following, ability grouping was more critically examined by, for instance, Simon (1953) who strongly opposed its adoption in junior schools on both social and academic grounds. About this time, a useful survey was conducted by Brown (1955) among London head teachers which provides valuable information concerning the extent to which streaming was practised and how it was regarded by head teachers. Replies to the question: "Is your school fully streamed?" analysed in terms of type of school in which the head teacher was employed are given on the following page.
TABLE 6.1

<table>
<thead>
<tr>
<th>Grouping practices in Primary Schools</th>
<th>Fully Streamed</th>
<th>Partly Streamed</th>
<th>Not Streamed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Mixed</td>
<td>23</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Junior Mixed and Infant</td>
<td>3</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Junior Boys</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Junior Girls</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Some caution is needed in interpreting these bald statistics for although 39% of the schools involved were fully streamed, some head teachers of small schools stated that streaming would have been introduced had numbers permitted. Furthermore, in many schools mixed ability grouping was practised only in the first year of the four year junior school course, so that in effect, some 75% of the classes there were graded according to ability. In response to a later question, approximately 75% of the head teachers responding indicated that they approved of streaming as an educational policy and if this is a representative sample it would suggest that streaming was then generally supported.

However, the opposition to ability grouping steadily grew. At first it was confined to primary schools and the controversy was extended to include middle and secondary schools. It is not easy to identify precisely the forces which brought about the change in attitude, but one main objection to streaming was that it differentiated between children at too early an age, earlier even than the selective secondary examination which itself provoked considerable criticism. It was also argued that streaming favoured middle class children, a disproportionate number of whom were allocated to A streams; and that the introduction of mixed ability grouping would bring about greater equality of educational opportunity for all.

Certainly the difficulties of accurately dividing children into streams was well documented by such writers as Jackson (1964) who together with others also pointed to the problems involved in transferring children from one stream to another. Then again it was frequently found by teachers that younger children (who had attended
infants schools for a much shorter time than their older counterparts) were often placed in the lower streams on admission to junior schools, an initial disadvantage which was often difficult for them to overcome. Another source of disquiet was the supposed "labelling" effect of streaming which was thought to contribute to the deterioration of morale even of children in the C streams of selective grammar schools. Then, too, Stott (1958) was able to show that in non-selective schools the incidence of maladjustment was much greater in the lower streams than in the higher ones.

The research to be outlined later in the chapter on the social and academic effects of streaming may also have played some part in causing teachers to revise their views on streaming, but whatever the reasons, the number of completely unstreamed junior schools has steadily increased in the last decade. In fact, although no supporting statistics are available, it seems likely that only a very few completely streamed junior schools now remain.

The position in middle and secondary schools with regard to patterns of organisation is generally unclear as again no systematic attempt has been made to collect data of this kind. However, some indications of current trends are given in a few recent works all of which have been concerned with developments in comprehensive schools. Halsall (1970) who edited a number of case histories of comprehensive schools is of the opinion that schools that became comprehensive relatively early decided to stream whereas schools which did so late opted either for coarse streaming into bands of ability or for non-streaming. (By banding is meant the formation of classes into three broad ability groups - above average, average and below average - with each group consisting of a number of classes of like ability). Halsall goes on to suggest that a factor in the move towards non-streaming has been the existence of a number of small fourth and fifth year option groups consisting of pupils covering a wide range of ability. As fine streaming could not be achieved in many subjects in the upper school, and as teachers adapted to the situation, then it became apparent that the whole question of streaming in the lower school needed re-appraisal. The extent to which such a situation has arisen in schools generally is a matter for speculation, but what seems clear from the limited evidence
available is that streaming, banding and setting are still widely practised in secondary schools. For instance, Benn and Simon (1970) report that in 1968, 76% of all comprehensive schools in their survey were still streamed, and that in a further 12%, remedial pupils were segregated into special classes. Monks (1970), too, found that 83% of the 331 comprehensive schools participating in his enquiry grouped children by ability to some degree.

Some idea of the variations possible in organising comprehensive schools is given by Moore (1970) in his assessment of guidance in the comprehensive school. His description of the pattern of organisation in the five schools he studied is given below.

**School A.** Pupils are allocated to one of three broad bands or to a remedial group during the first three years. In addition there is setting within bands for English and Mathematics for the first three years of the course, and setting thereafter in most subjects.

**School B.** Mixed ability groups operate in the first year. For the next three years children are allocated to one of four bands and from the third year onwards there is setting in French and Mathematics within the bands.

**School C.** All pupils, except slow learners, follow the same general course during the first three years. Within particular subjects, some setting is introduced.

**School D.** Mixed ability grouping operates in the first two years although there is setting in French and Mathematics. Setting increases in the third year and is extended to most academic subjects thereafter.

**School E.** Setting is introduced in the first year for French, in the second year for Mathematics, and to some extent in other academic subjects thereafter.

More recently, Ross et al (1972) gave details of the variation in organisational pattern among the eleven comprehensive schools they were studying. From their data the table on the following page was drawn up.
TABLE 6.2

Patterns of organisation in Comprehensive Schools

<table>
<thead>
<tr>
<th>Pattern of organisation</th>
<th>1st Year</th>
<th>2nd Year</th>
<th>3rd Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streamed</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Banded</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Banded and streamed</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Setting in basically mixed ability pattern</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Setting in basically streamed or banded pattern</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Mixed ability</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

It will be noted that only two of the schools favoured rigid streaming and that broader ability band classes have been introduced in most schools in this sample. In general, schools maintained the same pattern of organisation over the three year period but two basically mixed ability schools gradually introduced more setting while two streamed/banded schools also introduced setting in the third year.

No information is yet available concerning grouping procedures in middle schools. These schools are a relatively new feature of the educational system of this country and they provide mainly for children between the ages of 8 to 12 or 9 to 13, although some authorities have preferred to group together children in the 10 to 13, 10 to 14 and 11 to 14 age ranges. The Central Advisory Council for Education (1967) in what has become known as the Plowden Report expressed the hope that middle schools would adopt a mainly primary school approach to learning with the implication that streaming and setting (not often found in the primary sector) would not be introduced into middle schools. However, the impression gained by the present writer is that setting is practised to a greater or lesser extent in many middle schools. Setting could apply to just one subject or to a range of subjects and although mixed ability grouping largely operates in the lower forms, setting is increased as children pass through the school. However, no published information is
yet available on the matter. The recent Schools Council working paper (1972) on "Education in the Middle Years" sets out the forms of grouping possible but no attempt is made to indicate current trends in this direction, although they do report that "on the question of streaming there is conflict of opinion" among the 1,350 teachers whose views were canvassed.

In concluding this section it is again necessary to draw attention to the absence of a systematic attempt to gather information on the differing patterns of organisation favoured in the middle and secondary schools of this country. However, the limited evidence available suggests that there is a trend away from rigid streaming in comprehensive schools and towards the formation of classes covering wider bands of ability. Mixed ability grouping is practised in some schools in the first year, and thereafter, setting is gradually introduced. As far as middle schools are concerned no direct source bearing on the question is available but the impression has been gained that setting is practised to a greater or lesser extent in many middle schools.

2. **The influence of ability grouping on children's academic attainment.**

The reasons for the growing opposition to streaming have already been sketched - its influence on the morale of lower stream children, its generally divisive social effects, difficulties encountered in the initial classification of children into streams and its adverse effect on the position of younger children. In addition, the steadily increasing body of research evidence on ability grouping may have influenced educational opinion, the main findings from which will now be summarised.

Although not directly relevant to this study a brief reference to research on the effects of streaming on academic attainment is included in order to give a more rounded account of the matter. An early American review by Miller and Otto (1930) stated that no conclusive evidence was found to suggest that homogeneous grouping was either advantageous or disadvantageous to academic progress and in a similar review Cornell (1935) commented that in the main the then existing research raised more issues than it settled. Later summaries by Ekstrom (1959) and Franseth (1963)
also report generally inconclusive findings with some studies showing gains favouring streaming, others favouring non streaming, and still others showing no difference in the academic performance of children in the two criteria groups. Goldberg et al (1966) suggest a number of reasons why general trends are not discernible, prominent among which are the following:

1. Studies vary in scope and aim and purpose. Some cover just a single grade level, and some the entire school. Similarly the range of curriculum area studied varies from a single subject to all subjects.

2. Studies differed in the number of students, the number of groups and the size of classes involved.

3. Studies differed in duration ranging from a term or less to a year or more.

4. Studies differed in the adequacy of the selection bases and the means of matching experimental and control groups.


6. Studies also differed in the instruments and techniques used in evaluating changes in students.

Goldberg et al make another telling point when they comment that few studies have dealt with the possible consequences of grouping on pupils' growth in the ability to think.

Three fairly recent large scale studies by Borg (1964), Goldberg et al (1966) and Barker-Lunn (1970) will next be considered. Borg (1964) studied some 4,000 pupils in grades 4 to 9 over a four year period. As far as attainment was concerned, results for superior, average and below average children in the two conditions gave no clear support for either form of grouping and Borg concluded that the decision to employ ability or random grouping must be based upon considerations other than achievement.

Goldberg et al's (1966) design was more complicated. Their sample of 86 fifth grade classes was divided into five ability groups, labelled A to E and classes were then organised into fifteen patterns which represented all possible combinations of the five ability levels. The effect of this device was to isolate the effects of the gifted or slow
pupils on the rest of the class and the effects of various ability ranges. In other words, some classes contained a narrow spread of ability, some a medium range, and some consisted of children covering a broad band of ability.

Again no major differences were found between the attainments of children grouped in the various ways. The greatest gains were usually associated with the broad ability range groups but the gains were small and not consistent across the range of subjects considered. Yet again, the form of organisation adopted seemed to make little difference to the academic progress of the children.

Barker-Lunn's (1970) extensive study of 5,500 children in streamed and unstreamed schools endorses the findings of the two studies previously cited. She writes: "Comparisons made between the achievement gains of pupils of comparable ability in thirty-six streamed and thirty-six unstreamed schools revealed no pattern favouring either type of school".

The nearest equivalent to setting referred to in the literature is the provision of special classes which retarded children or gifted children attend for part of the day only while the remainder of the time is spent in mixed ability classes. However, the two grouping practices are not directly comparable because setting covers the entire ability range while special educational provision is confined to extreme ability groups. Again, in this area, no clear academic advantages can be claimed.

Smith and Kennedy (1967) randomly assigned 96 children in the 50 to 80 I.Q. range to one of the following three conditions:

a. 45 minutes a day attending special classes,
b. 45 minutes a day being taught in small activity groups,
c. attending a regular classroom.

No differences in respect to academic ability between the three groups was reported and this finding appears to be quite typical of research on this matter. Beckman and Heinz (1966) in their review article comment on the inconclusive nature of the results generally, while Dunn (1968) also in a review article, states the case against special provision for the retarded in much more forthright terms. He writes:
"findings of studies on the efficiency of special classes suggest consistently that retarded pupils make as much or more progress in the regular grades as they do in special education."

Little work seems to have concerned with the effects of special educational provision for the gifted whereby they are withdrawn from the regular class for part of the school week for more advanced work. A brief reference to the matter appears in a review article by Gallagher (1963) who suggested that it had little measurable effect on children's attainment, a finding endorsed by Enzmann (1963) who used 203 eighth grade subjects whose I.Q's were 118 or more.

It should be pointed out, however, that both in the case of the retarded and gifted children, scores on standardised achievement tests may not register all the possible effects which might result from special educational provision.

No research appears to have been carried out which deals directly with setting, but it would seem from the evidence reviewed in this section that setting is unlikely to influence children's academic attainment to any marked degree.

In conclusion, the research reviewed by Otto and Miller (1934), Cornell (1935), Ekstrom (1959) and Franseth (1963) together with findings from recent large scale investigations carried out by Borg (1964), Goldberg et al (1966), and Barker-Lunn (1970) point clearly to the conclusion that grouping practices do not greatly influence pupils' academic attainment, and in many instances not at all. The same general conclusions were reached in regard to special educational provision for extreme ability groups by Smith and Kennedy (1967), Backman and Heinz (1966), Dunn (1968), Gallagher (1963) and Enzmann (1963). The belief then that ability grouping necessarily facilitates children's academic progress is largely unfounded and therefore the justification for grouping children by ability must be made on other grounds.

3. A consideration of some non-cognitive effects of ability grouping.

Attention now turns to the main non-cognitive effects of ability grouping. Here, some of the evidence presented in previous chapters will be brought together and considered as a whole; and in addition,
further data more appropriately included in this chapter will be examined. Findings are drawn from studies of streaming where children are permanently allocated to ability groups, and from studies of special educational provision where children are removed from mixed ability groups for part of the school day only.

In Chapter 2, two studies which investigated directly children's constructs of peers in streamed situations were referred to. In the first, Luchins and Luchins (1948) reported that A stream children were more favourably regarded than B class children although exceptions to the trend were noted mainly amongst average and below average children who were quite prepared to associate with B class children. The second study on this matter which was discussed in Chapter 2 was conducted by Hargreaves (1967). He identified distinct differences in the interpersonal constructs of the A and C class fourth form boys he studied and he concluded that the two classes saw themselves in mutually negative and stereotyped terms. It will be noted that neither Luchins and Luchins nor Hargreaves included a control group in their experimental design and it is therefore impossible to say whether streaming exacerbated the commonly reported situation where in any case bright children are construed more favourably by their peers than dull children.

Direct descriptions of retarded children for whom special educational provision was made were also summarised in Chapter 2. There it was reported that Clark (1964ab) found that, in the main, children's constructs of those attending full-time special classes tended to be quite favourable, but in his design, too, no control group of retarded children was included. In a second study, Clark (1964b) obtained pupils' descriptions of a special class for the retarded and only about 6% of them were considered to be derogatory in nature. Academic limitations of the pupils were mentioned most often; then came descriptions of pupils as being mentally ill; and lastly came descriptions of their behaviour.

Renz and Simenson (1969), whose work was also reported earlier, were able to show that retarded children were not automatically regarded in negative terms by their peers. The authors indicated that the slow learning group was not rejected with greater frequency than the "normal" group despite the fact that they were academically segregated.
In Chapter 2, a number of sociometric studies were cited which suggested that a positive relationship exists between mental ability and sociometric status. The possible influence of grouping practices on this phenomenon will now be examined. Hargreaves (1968) identified a sociometric cleavage between the streams in the secondary school he studied, but the possibility exists that a similar division on the basis of academic achievement might obtain in unstreamed schools. It would seem necessary to take into account the direction of sociometric choice in relation to ability among children in both grouping conditions and this was attempted by Willig (1963) in his study of 200 ten year old children attending streamed and unstreamed schools. It was found that girls in both conditions tended to choose those of similar intelligence to themselves and it was concluded therefore that mixed ability grouping only marginally facilitates interaction among girls of differing intelligence levels. However, among one boy's unstreamed group, intelligence did not appear to be associated with friendship formation while in another similar group, an in-group preference was observed only among extreme I.Q. quartile boys. This finding is especially important in regard to boys of average intelligence who could and did choose boys in both extreme ability groups as well as from among their intellectual peers. This situation did not obtain in the streamed schools where there was a sociometric cleavage between the two streams. Thus, in this small-scale study, it seemed that streaming inhibited social contact between children of differing intelligence levels and perhaps prevented the formation of more mutually favourable constructs between them.

The N.F.E.R. research project group formed to appraise comprehensive schools have so far published two major reports, Honks (1968) and Ross et al (1972). As part of the project, a closed sociometric test containing positive and negative sociometric questions was administered to pupils in eight comprehensive schools which were largely dissimilar from each other. As the research progressed considerable differences in inward direction of friendship choice in relation to ability were found both within and between schools. The differences could not be accounted for but they did not seem to be related, at least directly,
to the degree of streaming favoured. However, all schools employed some setting or streaming and so again, no control group was available for purposes of comparison.

Barker-Umn (1970) also used sociometric techniques in her study but the emphasis was different. She determined the proportions of neglectees, medium status children and stars in streamed and unstreamed schools and found them to be roughly the same. In both conditions, neglectees tended to have low general ability and to receive more unfavourable ratings from their teachers than children in other sociometric criteria groups.

In Borg's (1964) study of some 4,000 pupils, children superior in intelligence were found to have higher sociometric status in randomly grouped classes, while average and slow pupils reached higher status positions in ability grouped classes. This suggests that children of above average ability stand out more in unstreamed classes and that - bearing in mind the frequently found association between intelligence and social acceptance - they are construed more favourably by their peers.

Sociometric studies have also been used to determine the social effects of special class placement. For instance, Smith and Kennedy (1967) examined the sociometric status of 96 retarded children who were randomly assigned to a special class, a special group within the regular class or simply to a regular grade. No differences were found between the three groups but the relatively short time of 45 minutes each day spent in the special class or group may have some bearing on this finding.

Goldsworth (1959) examined the friendship pattern of 130 children all of whom had I.Q.'s of 130 or more and who were drawn from 63 first to eighth grade classrooms. This gifted group spent three hours each week for five months pursuing studies at a higher level. The children acted as their own control and sociometric results indicated that their sociometric relations during the period remained relatively stable and that the special provision made for them had no effect on their selection of friends, on group cohesion, or on in-group preference.

In Hann's (1956) study, his highly intelligent subjects spent 50% of the day on which were described as "enrichment" activities while the remainder of their time was spent in mixed ability classes. Sociometric results obtained from these kindergarten to sixth grade pupils indicated
that as a group, the gifted children tended to accept and reject more gifted children than typical pupils; and that similarly, typical children as a group, tended to accept and reject more typical pupils than gifted pupils. Unlike Goldsworth's investigation, this was not a longitudinal study and the social cleavage between the two groups may not be a consequence of special class placement.

To sum up the research on the possible influence of ability grouping on children's constructs of others, it would seem that there was a tendency for pupils in different streams to construe each other in negative and stereotyped terms, (Luchins and Luchins, 1948; Hargreaves, 1966). In contrast, retarded children attending full time special classes were viewed comparatively favourably by their normal peers. (Clark, 1964ab; Renz and Simenson, 1969). All these studies except that of Renz and Simenson failed to incorporate a control group and their findings, therefore, are of somewhat limited value.

Sociometric findings were also considered to be relevant to this discussion, as sociometric status can in some respects, be regarded as an index of favourability of constructs of others. Hargreaves (1968) reported a social cleavage between streamed classes but because of the frequently found relationship between sociometric status and intelligence it could not be assumed that this situation was a direct result of streaming. However, Willig (1963) was able to show that non streaming did facilitate social interaction among boys of differing intelligence levels but not girls. Monks (1968) and Ross et al (1972) also examined sociometric choice in relation to ability level but the variation of in-group preference patterns did not seem to depend on the degree of ability grouping involved. Barker-Lunn (1970) found no differences in the proportions of children in each sociometric status group in streamed and unstreamed schools. In contrast, Borg (1964) reported that above average ability children were more likely to be favoured socially in mixed ability group classes and that streaming seemed to be to the social advantage of average and below average ability children.

Where special educational provision was concerned, the evidence was conflicting. Goldsworth (1959) reported no difference in the friendship pattern of gifted children as a result of their attending
enrichment classes for a short period each week. On the other hand, Mann (1956) whose bright group attended advanced classes for about half the school week showed a marked in-group pattern in their social relationships. The two studies are not directly comparable and although the longer period of time Mann's subjects spent together may be an important factor, it cannot be assumed that this is so because his study was not longitudinal in design. With respect to special classes for retarded children, Smith and Kennedy (1967) could find no difference in the sociometric status of the children which could be attributed to grouping practices.

Research on the effects of grouping practices on children's constructs of others is inconclusive partly because many investigators have failed to take into account a matter of some importance, namely that a positive relationship has been found between intelligence and favourability of construct in some randomly grouped classes. In many of the studies reported, grouping practices seem to have made little or no difference to the degree to which bright or below average children are accepted but the opportunities for children of differing ability levels to mix socially do seem to be influenced by the way in which they are grouped. Before social relationships can be initiated opportunities for contact must obviously be provided — what Secord and Backman (1964) call the propinquity factor and which they consider to be an important determinant of friendship formation. Although under any grouping condition interaction between children in extreme ability groups is likely to be limited, there is some evidence to suggest that friendship formation between children in other ability levels is more able to occur under random grouped conditions.

Much the same problems are encountered in relation to teacher constructs of children of differing academic ability levels in streamed and unstreamed classes. Hargreaves (1967) reports that the teachers in the school he studied saw higher stream children in much more favourable terms than lower stream pupils but the work of Hallworth (1964) and Bush (1954) strongly suggests that in general teachers construed highly intelligent children as possessing more desirable personality characteristics than children in the other extreme intelligence group.
In Chapter 4, data concerned with possible influence of ability grouping on children’s constructs of self was presented. As far as academic self construct was concerned, intellectually superior children tended to have more positive academic self-images in both streamed and unstreamed classes. (Barker-Lunn, 1970; Dyson, 1967). No other differences were found by Dyson but Barker-Lunn reports that the teachers who were more “child-centred” in their attitudes and who were working in unstreamed schools tended to have greater success in bringing about more favourable academic self-images in their pupils than were traditional teachers in unstreamed schools and those teaching in streamed schools.

Dyson (1967) also included a measure of self-esteem in his test situation but no differences were found in this respect between children attending streamed and unstreamed classes.

Studies concerned with the general constructs of self of children for whom special educational provision was made have produced conflicting results. Frankel (1969) reported significant gains in self-reliance and self-satisfaction for academically talented children who had attended an advanced course of training. With respect to the retarded, Carroll (1967) suggests that complete segregation of these children was associated with a low general self-construct, a finding which was endorsed by Mayerowitz (1962). In contrast, Mayer (1966) and Ringness (1962) were able to show that their subjects who were attending special classes tended to have favourable self-constructs as compared with a normal group. In Chapter 4 a number of reasons for these discrepant findings were advanced. Not only did the ages of the subjects differ but so did the experimental designs. In addition, other factors, like teachers’ attitudes, could not always be taken into account and in consequence few definite conclusions could be arrived at concerning the literature in this area.

Finally, the influence of forms of organisation on children’s schools related attitudes was considered. In Chapter 5, the Barker-Lunn (1970) and Ross et al (1972) studies were reviewed and it was suggested that children in unstreamed schools held more favourable attitudes in some respects than did their counterparts in streamed schools. The same trend was noted by Borg (1964) in respect to some attitudinal areas among certain ability groups, but not by Goldberg et al (1966) who found
no differences between attitudes of children in the two conditions. Within streamed schools, the findings on attitudinal change reported by Barker-Lunn (1970) suggested that pupils in A stream classes tended to improve and that pupils in lower streams tended to deteriorate in scores over a period of time. Ferri (1971) reported a downward trend for each of the three ability groups but it was more pronounced among middle and bottom stream children. Also within streamed schools, the evidence on balance indicated the existence of marked differences in attitudes between children in the highest and lowest forms (Ross et al., 1972). Ogletree (1970) and Luchins and Luchins (1946) demonstrated that attitudes towards A class placement were generally more favourable than attitudes towards B classes but Clark (1964b) found that the special class for retarded children he studied was not derogated by "normal" children.
SUMMARY OF CHAPTER

1. Trends in grouping procedures in schools were outlined and from the limited information available it appears that in comprehensive schools there is a trend away from rigid ability grouping; that mixed ability grouping is generally practised in the first year; and that setting is gradually introduced thereafter. In middle schools it appears that mixed ability grouping is favoured in the lower forms and that setting is introduced to a greater or lesser degree in the upper forms.

2. In respect to the effects of ability grouping on children's academic attainment, the general conclusion reached was that grouping practices do not greatly influence pupils' academic attainment, and in many instances not at all.

3. The non-cognitive effects of ability grouping were difficult to assess. First, there was a tendency noted for pupils in different streams to construe each other in negative and stereotyped terms but several instances were recorded of retarded children attending special classes having been favourably regarded by their normal peers. Secondly, in general a positive relationship between intelligence and sociometric status was observed in both streamed and unstreamed schools but there was a suggestion that above average ability children were more likely to be favoured socially in mixed ability group classes and that streamed situations seemed to be to the social advantage of average and below average in ability children. Thirdly, the variation of in-group preference in relation to ability level did not seem to depend on the degree of ability grouping involved but in completely randomly grouped classes more interaction between boys of differing intelligence levels (but not girls) has been observed as compared with streamed classes. Finally, findings from studies concerned with the effect of special educational provision on sociometric patterns of choice were inconclusive.
4. Teachers' constructs of children of higher intelligence tend to be more favourable than those for children of lower intelligence levels but there was no evidence to show that streaming strengthened this tendency.

5. Intellectually superior children tended to have more positive academic self-images than did those in other ability levels in both streamed and unstreamed conditions. It was also shown that teachers who were more child-centred in their attitudes and who were working in unstreamed schools tended to have greater success in bringing about more favourable academic self-images in their pupils than were traditional teachers in unstreamed schools. In respect to self-esteem, no differences were found between children attending streamed and unstreamed classes but studies on the influences of special class provision in this respect produced inconclusive findings.

6. There is some evidence to suggest that children in unstreamed schools hold more favourable attitudes in some areas than did their counterparts in streamed schools but no differences between attitudes of the children in the two conditions have also been reported. Within streamed schools, the general trend was towards a greater deterioration in attitude scores among lower stream children, and in any event, marked differences in attitudes between children in higher and lower streams have been reported. Finally, attitudes towards A class placement were generally more favourable than attitudes towards B class placement although one study found that a special class for retarded children was not derogated by "normal" children.
PART II

THE EXPERIMENTAL SITUATION
CHAPTER 7

The Experimental Design

This chapter is divided into the following sections:

1. Statement of the problem.
2. The hypotheses.
3. Description of sample.
4. Description of test instruments used.
5. Procedure for data collection.
6. Design of study and procedure for analysis of data.

1. Statement of the problem.

In the preceding review of relevant literature, it was evident that research concentrating on the differences which might obtain between children of varying academic ability levels in respect to their constructs of self and others and to their school-related attitudes is, in the main, limited and inconclusive. The major purpose of this study, therefore, is to investigate this matter further among a group of pre-adolescent subjects attending middle schools and to examine the inter-relationships which might be predicted on theoretical grounds between the variables under consideration.

Two other secondary purposes of this study are to investigate the following matters which have received little or no attention in the literature.

Firstly, the possible influence of partial grouping by ability (setting) on those children's constructs which are the central concern of this study.

Secondly, the relationship between children's level of academic self construct and their general constructs of self and others and their school-related attitudes.

The relationship between children's level of academic ability and their constructs of self and others and their school-related attitudes.

In this section, attention is directed first to possible influences on children's constructs of self, then to children's constructs of self, and finally to their school-related attitudes. The hypotheses generated in these areas are presented in that sequence.
In Chapter 1 of the review of relevant literature the general principles governing person construing were outlined and it was suggested there that no essential differences exist between the construing of objects and the construing of persons, and that the psychological processes attendant on person construing are a reflection of cognitive development in general.

The principles thus enumerated were then applied in examining research on interpersonal construing in the school situation which formed the substance of Chapter 2 of the review. There, limited support was given to the generalisation that children high in academic attainment were construed more favourably by their peers than their counterparts who were low in academic attainment but it must be emphasised that findings here were inconsistent. Accordingly the first objective of this study is to investigate this phenomenon further and it is intended to do so in two ways. First, by obtaining peer descriptions of children in the two criteria groups; and secondly, by using sociometric scores as an index of favourability of constructs of others. The justifications for using the latter procedure are given in Chapters 1 and 2.

To this end, the following hypotheses were formulated:

"That children's constructs of the attitudes and behaviour in class of peers high in academic ability tend to be more favourable than their constructs in these respects of peers low in academic ability".

"That children's constructs of the peer relationships of peers high in academic ability tend to be more favourable than their constructs in this respect of peers low in academic ability".

In connection with the two hypotheses just set out, the relationship between children's academic ability and their constructs in these respects of peers high and low in academic ability will be examined.

The affective sociometric test hypothesis is next stated.

"That there is a positive relationship between children's level of academic ability and their sociometric status".

An associated hypothesis was formulated which is as follows:

"That on the affective sociometric criterion, children tend to choose as associates those of similar intelligence level to themselves".

A second sociometric question, concerned with children’s ability to recognise the intellectual performance of others, reads thus: "That there is a positive relationship between children's level of academic ability
and their academic sociometric status.

Chapter 2 also included a reference to studies concerned with teachers' constructs of pupils of differing academic attainment and from the limited evidence available, it would seem that teachers, too, tend to attribute more favourable characteristics to children of high intelligence than they do to children of low intelligence. Significant qualifications to this broad generalisation were noted, and in particular, it would seem necessary to investigate more fully the relationship between the major areas of constructs commonly employed by teachers in assessing their pupils. A second objective of this study, therefore, is to examine the relationship between teachers' constructs of children in respect to task orientation, attitudes and behaviour in class and peer relationships and the children's level of academic ability. It is anticipated that greater differences will emerge between children in the various academic criteria groups on the task orientation and attitudes and behaviour in class measures, than on the peer relationships measure. As the literature suggests, this is because the first two components are major concerns of teachers and can be more readily assessed by children's behaviour in the classroom. In regard to peer relationships, teachers appear to attach less importance to this area, and in any case, it by no means necessarily follows that children of lower intelligence experience difficulties in interpersonal relationships, a point which is noted in the relevant literature.

The hypotheses concerned with this objective are as follows:

"That there is a positive relationship between children's level of academic ability and teachers' ratings of the children's task orientation".

"That there is a positive relationship between children's level of academic ability and teachers' ratings of the children's attitudes in class".

"That there is a positive but limited relationship between children's level of academic ability and teachers' ratings of the children's peer relationships".

Chapter 3 of the review concentrated on the formation and development of constructs of self and there it was suggested that an individual's construct of self was in part determined by his evaluations of the reaction of significant others towards him. It can be argued
that if pupils of varying intellectual ability are perceived differently by their peers and teachers, then it follows that the constructs of self of the children in the criteria groups under consideration will also differ accordingly. Some support for this position was outlined in Chapter 4 where evidence was presented which suggested that children are increasingly able to assess their own academic performance realistically, although this trend in the findings was not always confirmed. However, research on the relationship between academic ability and general constructs of self was equivocal and its inconclusive nature might be due to a number of reasons. First, some children of differing intellectual abilities might well have been regarded equally favourably by peers and teachers; secondly, the reaction of significant others in these personality areas may be less easily recognised by young children; thirdly, subjects may have had more difficulty in assessing themselves on these more personal dimensions of behaviour; and fourthly, it is possible that a social desirability set was operating in some instances which prompted children to assess themselves more favourably than was perhaps warranted. Clearly this phenomenon requires further attention, and accordingly, a third objective of this study is to examine the constructs of self of children in the various ability groups in respect to their academic status, their attitudes and behaviour in class and their peer relationships. Again, it is expected that the strongest relationships will be found between intelligence and academic self construct and constructs of attitudes and behaviour in class.

The hypotheses generated concerned with this objective are as follows:

"That there is a positive relationship between children's academic ability and their academic self-construct".

"That there is a positive relationship between children's academic ability and their constructs of self in respect to attitudes and behaviour in class".

"That there is a positive relationship between children's academic ability and their constructs of self in respect to peer relationships".
In the area of academic self constructs, which is a matter of especial interest in this study, it would seem advisable to incorporate a measure of the extent to which children's actual and ideal academic self constructs correspond. To this end, the discrepancy between children's actual and ideal scores on the academic self construct measure will be determined and it is anticipated that a positive relationship between children's academic ability and their discrepancy scores will exist whereby children high in academic ability will have lower discrepancy scores than those of their counterparts of low ability. Stated in hypothesis form, this prediction is as follows:

"That there is a negative relationship between children's academic ability and the discrepancy between their actual and ideal scores on the academic self-construct measure".

In Chapter 6, attention was given to children's school related attitudes and there, a tendency was noted for children of high academic ability to indicate more favourable attitudes towards school than their peers at the other extreme of the ability range. The inconclusive nature of the findings reported, together with the theoretical assumption that success or failure in academic work will affect school-related attitudes provide the grounds for considering this matter further. To that end, the following hypotheses were formulated:

"That there is a positive relationship between children's academic ability and their attitudes towards school".

"That there is a positive relationship between children's academic ability and their interest in school work".

"That there is a positive relationship between children's academic ability and their attitude towards the importance of doing well in school work".

The personal and social effects of setting by ability.

In Chapter 6, a summary of the literature concerned with grouping practices in schools was given from which it was concluded that such procedures did not materially affect children's constructs of self or their attitudes towards school. However, it can be argued on theoretical grounds that even partial grouping by ability does make children's academic standards more explicit and that it might therefore exercise some influence on the constructs of children which are the major concern of this study. Therefore, in spite of the inconclusive findings previously
reported which were drawn largely from research on streaming it was
decided that a subsidiary purpose of the present study would be to
investigate the possible effect of setting by ability on the constructs
of children under consideration. An additional justification is that
although the practice of setting is apparently widespread in middle and
secondary schools, it seems that no empirical study of its possible
personal and social effects has been attempted.

In this part of the investigation the plan is first to compare
scores of children in the various criteria groups in the final years of
middle schools and to note differences which might obtain between pupils
attending schools where setting is practised and those attending schools
where mixed ability grouping is adopted. Secondly, since none of the
schools involved favours setting in the lower years, a comparison of scores
of children in the 10 plus and 12 plus age groups in the two types of school
will be made which will enable possible changes to be identified which
might be attributable to setting.

Expressed in omnibus and general form, the hypothesis concerned
with this part of the investigation is as follows:

"That the relationship between children's academic ability and
their constructs of self and others and their school-related attitudes
becomes more pronounced in schools which are "set" than in schools where
children are randomly grouped".

In Chapter 6, some evidence was also reported which suggested that
streaming inhibited social interaction between children of differing
intelligence levels. Under conditions of setting, children are grouped
with their intellectual peers for part of the school day but for the
remainder of the time it is still possible for them to associate with
children of any ability level should they so wish. It is not anticipated,
therefore, that setting will be as socially divisive as streaming, but
in set schools it is possible that there will be an increasing tendency
for children to associate with those of their own level of intellectual
ability as the influence of the proximity factor becomes more marked.
Accordingly, hypothesis 4 which is concerned with the relationship
between the academic ability level of the chooser on a sociometric test
and children chosen is relevant here.
The relationship between children's level of academic self constructs and their general constructs of self and others and their school-related attitudes.

It has been argued consistently throughout the review of literature that it is the individual's construction of events which should be a main focus of attention, and in this section, it is intended to apply this notion to a deeper examination of children's academic constructs of self. In a previous section, relationships between children's intellectual ability as measured by a standardised test and other variables thought to be important in the school situation are sought. What now remains is to examine the association between academic self constructs and the other variables, irrespective of whether or not, in more "objective" terms, those constructs are realistic. In other words, it is suggested that if children construe their academic status as being high (whether or not this is in fact so), then their constructs in general in the school situation will tend to be favourable too. With respect to children of low academic status, the converse is likely to obtain. The hypothesis concerned with this objective is as follows:

"That there is a positive relationship between children's academic constructs of self and their general constructs of self and others and their school-related attitudes".

The constructs of peers and teachers of children differing in ASC level will also be considered. At this point a general impression of the inter-relationships between the variables considered in the previous two sections will be given by examining the inter-correlation matrices.

2. The hypotheses.

For convenient reference, the hypotheses are numbered and listed below.

1. That children's constructs of the attitudes and behaviour in class of peers high in academic ability tend to be more favourable than their constructs in these respects of peers low in academic ability.

2. That children's constructs of the peer relationships of peers high in academic ability tend to be more favourable than their constructs in this respect of peers low in academic ability.
3. That there is a positive relationship between children's level of academic ability and their affective sociometric status.

4. That on the affective sociometric criterion, children tend to choose as friends those of similar intelligence level to themselves.

5. That there is a positive relationship between children's level of academic ability and their academic sociometric status.

6. That there is a positive relationship between children's level of academic ability and teachers' ratings of the children's task orientation.

7. That there is a positive relationship between children's level of academic ability and teachers' ratings of the children's attitudes in class.

8. That there is a positive but limited relationship between children's level of academic ability and teachers' ratings of the children's peer relationships.

9. That there is a positive relationship between children's academic ability and their academic self-construct.

10. That there is a negative relationship between children's academic ability and the discrepancy between their actual and ideal scores on the academic self-construct measure.

11. That there is a positive relationship between children's academic ability and their constructs of self in respect to attitudes and behaviour in class.

12. That there is a positive relationship between children's academic ability and their constructs of self in respect to peer relationships.

13. That there is a positive relationship between children's academic ability and their attitudes towards school.

14. That there is a positive relationship between children's academic ability and their interest in school work.

15. That there is a positive relationship between children's academic ability and their attitude towards the importance of doing well in school work.
16. That the relationship between children's academic ability and their constructs of self and others and their school-related attitudes becomes more pronounced in schools which are "set" than in schools where children are randomly grouped.

17. That there is a positive relationship between children's academic constructs of self and their general constructs of self and others and their school-related attitudes.

3. Description of sample.

The sample consisted of 201 boys and 356 girls drawn from the 10 plus and 12 plus age groups of three middle schools situated in the Home Counties. The first school, designated NS, did not set at all. The second school, designated ES set extensively, that is to say for about 50% of the time. In this situation, the children were taught in one set for mathematics and in another set for a group of curriculum subjects which had a language bias. The third school, designated LS, employed setting only for mathematics and French which occupied about 20% of the total school day.

No attempt was made to compare directly the three schools in other ways but a general - if superficial - impression was gained that they were roughly comparable in terms of the experience and efficiency of their staffs, and that although they varied on what could loosely be described as the "traditional-progressive" continuum, all three schools were making lively and successful attempts to introduce new curriculum practices, particularly in respect to integrated studies.

The occupation of children's parents was not included in the school records and it was thought inadvisable to ask for this information directly. However, from discussion with teachers and from the school clerks who knew the areas well, the strong impression was gained that although all social class groups were represented, a greater proportion of higher socio-economic status group children were present in all schools participating in the study. Schools NS and ES appeared to be particularly well matched in this respect, and School LS less so. In view of the known association between verbal reasoning test results and social class, this impression is strongly reinforced by the verbal reasoning test scores which are presented in the next paragraph.
In order to provide an index of academic ability, the N.F.E.R. Verbal Tests D and EF were administered to the second year (10 plus) and fourth year (12 plus) groups, respectively. Three matters need to be explained here. First, although the tests were from the same series, the verbal reasoning quotients (V.R.Q's) of the older age groups exceeded that of the younger. As the V.R.Q's were primarily intended to form quartile groups with year groups, this was not a matter of importance. Secondly, the degree of test sophistication of the children in the three schools differed considerably. School NS included achievement testing using N.F.E.R. material as part of its regular assessment procedure; School ES had used standardised tests with its fourth year but not with its second year; School LS had never before administered standardised tests to its pupils. Practice effects might therefore have influenced the results set out below. Thirdly, since all three schools contained a greater proportion of higher social class children than usual, the V.R.Q's tended to be higher than the published norms.

The median V.R.A. test scores for each sex and age group in each school are given below.

<table>
<thead>
<tr>
<th></th>
<th>School NS</th>
<th>School ES</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>99</td>
<td>102</td>
<td>97 (Excluded)</td>
</tr>
<tr>
<td>Boys</td>
<td>95</td>
<td>97</td>
<td>95 (Excluded)</td>
</tr>
<tr>
<td>Girls</td>
<td>106</td>
<td>103</td>
<td>102</td>
</tr>
<tr>
<td>Girls</td>
<td>98</td>
<td>96</td>
<td>96</td>
</tr>
</tbody>
</table>

A median test (Siegel, 1956) was used to determine differences in median test scores among the sex and age groups in the three schools. Unexpectedly, it was discovered that the fourth year boys group in School LS scored much lower than their peers in the other two schools. In order to retain the form of the experimental design which included a comparison between age groups, both boys' year groups in School LS were removed from the sample.

On the basis of the V.R.Q's of the children, rank order lists were drawn up for boys and girls separately in each age group and for each school and the lists were then divided into quartile groups. The means and standard deviations of V.R.Q's for each quartile are shown on the next page.
The means for girls in School NS fourth year first and second quartile groups are higher than those in the corresponding quartiles for the other two schools. Apart from this, the quartile groups appear to correspond reasonably well in terms of verbal reasoning scores.

4. Description of test instruments used.

The tests administered in this investigation are most conveniently described in the following order:

a. The self construct measures.

b. The constructs of others measures.

c. The teachers' constructs of children measures.

d. The sociometric tests.

e. The attitude scales.

f. The position in class scale.

g. The verbal reasoning tests.
a. The self construct measures.

A wide variety of methods has been used in attempting to measure children's constructs of self, some of which have been described and appraised in earlier chapters. They range from simple psycho-spatial techniques to sophisticated self-report indices where due attention has been given to measurement principles; but in general, attempts to measure conceptions of self have been the object of much criticism. Wylie (1961), for instance, considers that many of the scales pay insufficient attention to reliability and validity criteria; that the items comprising the test may not have relevance to the subjects for which they were intended; and more importantly, that the theoretical assumptions underlying test construction have been weak or non-existent. An additional related criticism not often referred to in the literature is that tests frequently cover many different aspects of self and that no attempt is made to distinguish between the various components in the scoring procedure. Thus the single aggregate score obtained does not indicate possible differences in the way subjects construe themselves on the dimensions comprising the test.

There is no doubt that the problems involved in constructing measures of self constructs are formidable; and indeed, there are those like Combs and Soper (1963) who consider that attempts to do so are rarely, if ever, successful. According to these two writers, the degree to which the self-report scale can be relied upon as an accurate indication of self constructs depends on the clarity of the subject's awareness of himself, his command of adequate symbols for its expression, his ignoring of social expectancy and his freedom from threat, and finally, on the subject's degree of co-operation in the enterprise.

It would seem that any measure of self construct can only give an approximation of how an individual construes himself. However, the attempt to obtain evaluations of self continues to be a worthwhile objective for despite their acknowledged limitations, many of the measures used have provided valuable insights into how children make sense of and organise their own behaviour in the school environment, especially when they are used in conjunction with other measures.

In the present study an attempt has been made to fulfill the
following conditions in devising construct of self scales.

First, they should be derived from an appropriate theory of personality.

Secondly, the pool of items from which the scales are constructed should be meaningful and relevant to the subjects concerned.

Thirdly, appropriate differentiation should be made between the various aspects of self pertinent to this investigation.

Fourthly, due regard should be given to test reliability and validity criteria.

These conditions will now be considered in turn.

(i) The theoretical basis of the test.

As indicated throughout this work so far, the major theoretical framework employed has been Kelly's (1955) Theory of Personal Constructs. Within these terms, as outlined in Chapter 3, constructs of self take on the characteristics of all other constructs and therefore aspects of self, too, are construed as being like some objects but not others. In this instance, of course, the objects referred to are other people, and explicit in the theory is the belief that an individual cannot construe his own behaviour without reference to others.

Kelly has described in detail the essential characteristics of constructs as he sees them through the fundamental postulate "that a person's processes are psychologically channelized by the ways in which he anticipates events" together with its eleven corollaries which elaborate that central idea. He also goes on to classify constructs according to the function each one serves and he has shown how they combine to form construct systems of various kinds.

In essence, then, the construct of self scales used in this study are derived from the theoretical and empirical work associated with Kelly's Theory of Personal Constructs.

(ii) The pool of test items.

It was decided to use a group form test first, because it enabled easy and standard comparisons to be made between the relatively large criteria groups involved in this study; and secondly, because the standardisation of scoring that it permits avoids difficulties encountered in categorising individual responses obtained from a large number of subjects. However, it is necessary to justify the use of
provided constructs for this procedure does run counter to Kelly's individuality corollary which states "that persons differ from each other in their construction of events".

The justification for this course of action are given in the theory itself and in some of the empirical investigations generated by it. As indicated in the preface to the review of relevant literature, the commonality corollary clearly recognises that there can be similarities of construction of experience existing among people, and empirical support for this contention comes from Adam-Webber's (1970) review in which he compared studies where elicited constructs had been used with those where constructs had been provided. He concludes: "Although the evidence is still far from complete, the findings here reviewed generally support Kelly's assumption that each individual relies on his own system of personal constructs to structure his environment. On the other hand, the results of some studies suggest that normal subjects at least, exhibit approximately the same degree of differentiation in using carefully selected supplied lists of adjectives as when they employ their own elicited person constructs".

If it is possible to obtain meaningful responses to supplied constructs from adults as Adam-Webber suggests, then it should be just as possible to do so among pre-adolescent subjects whose modes of construing tend to be less complex. This matter will be pursued in the next section where the issue of cognitive complexity is raised.

A further justification in using standard constructs comes from studies reviewed in Chapters 1 and 2 of this work where it was shown that children's constructs concerned with sociability, popularity and friendliness (and their opposites) have wide generality and could therefore legitimately form the basis of a pool of test items. However, in preference to relying on personality dimensions frequently identified in previous investigations, it was decided in the present instance to elicit constructs pertinent to the school situation from a group of children in the same age ranges as the sample of children to be studied. By so doing there would then seem to be reasonable grounds for inferring that the constructs most frequently mentioned are relevant to children of these age groups although, of course, it cannot
be claimed that all constructs are likely to be equally relevant to all children participating in the experiment.

The procedure used to elicit common constructs was as follows. In the first instance, 29 boys and 25 girls in the 10 plus age group and 10 boys and 10 girls in the 12 plus age group were individually interviewed by the present writer. Children were presented with two cards on which were written respectively, "A boy (or girl) you get on very well with" and "A boy (or girl) you don't get on very well with". The children were asked to think of but not name a boy whom they got on very well with and then to think of but not name a boy whom they don't get on very well with. They were then asked why they got on very well with the first boy but not the second and in the vast majority of cases children had no difficulty in answering the question asked. The procedure was repeated for children who get on very well with school work as compared with those who don't and the subjects were next asked to indicate ways in which they considered themselves to be the same as or different from all the children they had previously named.

Children were also invited to say whether they considered each construct to be favourable or unfavourable and the intention here was to ensure that as far as possible, each adjective had a common meaning for the group. (There was, in fact, general agreement on all constructs elicited except "talkative" which was approved of by some, but not by others. This item was therefore eliminated).

Finally, children were asked to state how well or how badly they thought they were progressing with their school work and the responses obtained from this part of the interview schedule were used as the basis for the academic self construct measure.

A further source of constructs was provided by administering a group form of the individual interview where responses were given in written form by children in two classes of 12 year middle school pupils consisting of a total of 24 boys and 28 girls.

One incidental point merits comment. In contrast to similar studies summarised in Chapters 1 and 2, the constructs obtained by the procedures just outlined were predominantly concerned with dimensions
of personality. References to peers as being "nice" or "rough" frequently occurred and a number of constructs relating to behaviour in school like "plays about in class" were firmly indicative of personality characteristics. The explanation for the larger proportion of personality type constructs reported here as compared with previous studies may be perhaps accounted for by the fact that direct questions were asked about other children well known to the subjects and that only two peers were compared at a time.

As a result of the procedures just outlined, a number of constructs in general use by children of 10 plus and 12 plus were identified, which, for the reasons previously given, are likely to have relevance to the subjects participating in this study. Further, again adopting the perspective of Kelly, the descriptions applied to others are considered to apply equally to the self, and therefore the constructs elicited (which are more conveniently detailed in the following pages), formed the basis of the construct of self scales which are next to be described.

(iii) Differentiation between aspects of self.

In Chapter 1, the issue of cognitive complexity and person perception was raised and from the research reviewed it appeared that there is a tendency for many subjects to use a cluster of traits in describing people, although considerable individual differences in modes of construing were also reported. Construct theory recognises the possibility of inter-dependence among constructs in a number of ways but notably in respect to what Kelly (1955) names constellatory constructs. Here an assumption is made by the individual construing, that possession of one characteristic necessarily involves the possession of certain associated characteristics - a phenomenon particularly noted among prejudiced subjects. Construct theory does not suggest, of course, that all constructs are inter-related or that wide variations in construing patterns between individuals do not exist. But it does acknowledge that in many instances, constructs do tend to cluster, and provision is made in the theory and in its methodology to take this characteristic into account.

Additional supporting evidence which points to an inter-relationship between constructs was also cited in Chapter 2. For instance, Hallworth
and Morrison (1964) were able to show that in the school situation, both teachers and adolescents used the main dimensions of "extraversion" and "the good pupil" in judging school children. Their findings are in accord with those of DiVesta (1966) who demonstrated that children's responses on a semantic differential scale become more consistent as a function of age. This implies that the items making up the test are inter-related, and that their inter-relatedness becomes more apparent to children as they grow older and as their intellectual ability increases.

Evidence directly related to patterns of self-construing was presented by Yeatts (1967) and Piers and Harris (1962) whose work was summarised in Chapter 3. There it was shown that while inter-relationships existed between certain constructs, a number of relatively independent dimensions could be identified. In other words, the clustering occurred within construct sub-systems but not throughout an entire construct system, and in the construction of self report measures it would seem essential to take account of this finding.

The evidence summarised immediately above, and which is considered more fully in the relevant literature, warrants the attempt to devise specific constructs of self scales for use in the present investigation. It must be emphasised that the objectives of the scales are limited. They do not aim to cover the entire range of self-construing; and they are concerned with three specific areas only, namely:

(i) Academic constructs of self.
(ii) Constructs of self in respect to attitudes and behaviour in class.
(iii) Constructs of self in respect to peer relationships.

In the previous section, the methods for eliciting constructs commonly used by children in the school situation were outlined. The intention now is to give a brief description of an early exploratory pilot investigation which sets out to determine the relationships between six frequently used constructs by using a modification of the Kelly REP test. The constructs were "clever", "rough", "gets on well with other children", "helpful", "plays around in lessons" and "sense of humour".
A group of 31 ten and eleven year old children were presented with a form headed in the manner shown below on which was also included the six constructs under examination together with two additional ones, "like me" and "jealous". It was hoped that correlations between the construct "like me" and the six others would give an index of constructs of self. The construct "jealous" was included as a practice item.

### Constructs of self measure

<table>
<thead>
<tr>
<th>Like me</th>
<th>Clever</th>
<th>Rough</th>
<th>Gets on well with other children</th>
<th>Helpful</th>
<th>Plays around in lessons</th>
<th>Sense of humour</th>
<th>Jealous</th>
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Eight photographs of boys and eight photographs of girls were displayed and each photograph was numbered. After a brief introduction the children's attention was drawn to the heading and the construct "jealous" which was included to give children practice in responding to the questions. Next, these instructions were given: "Look carefully at the photographs - boys at the boys' photographs and girls at the girls' photographs - and pick out the one who most looks like a boy (or girl) who is jealous and write that number". The same procedure was followed for all eight columns and for all constructs. The construct "like me" was explained as the sort of boy or girl you are, not necessarily the one you look most like.

Spearman rank order correlation coefficients between each construct for each subject were determined, the means rho's were calculated, and the inter-correlations among the mean rho's for the whole sample were determined. The results are given in Table 7:1.
Table 7:1

Mean inter-correlation coefficients between constructs

\[ N = 31 \]

Like me
Clever .150 .041
Rough .011 -.054 -.093
Gets on well with other children .149 .201 .108 -.093
Helpful .016 .001 .035 .107 .109
Plays around in lessons .026 .093 -.118 .096 .048 .089
Sense of humour .016 .002 .002 .161 .078 .123 .175

It will be noted that the coefficients are generally of a low order even where a stronger positive or negative relationship might have been expected. As a case in point, inspection of the table shows that the constructs "rough", "gets on well with other children" and "helpful" inter-relate at a minimum level only. Two comments are offered. First, it could be that children of this age group find the fine discriminations involved in a task of this kind too difficult to manage. Secondly, it may be that the constructs are, in fact, independent in the construct systems of this group of children.

Doubts about the efficiency of the test, together with the fact that the number of constructs it included was small, led to the decision to form measures in which constructs of self would be rated on a three point scale in a conventional manner. As a result of further extensive exploratory testing it was considered advisable to use a nine point scale which gave more widely differentiated scores. It was at this stage, too, that the decision was made to group the common constructs elicited into the three main areas previously referred to, academic constructs of self, constructs of self in respect to attitudes and behaviour in class, and constructs of self in respect to peer relationships.

What follows next is a description of the construction of the constructs of self measures. Only the first scale, that concerned with academic self constructs (henceforth designated ASC), is described in
detail and this account will serve as an example of how all the remaining constructs of persons tests were devised.

**The academic constructs of self measure.** This test originally consisted of eight items relevant to this area which were frequently mentioned by the sample from which the pool of constructs was elicited. The items were:

- Finds school work easy.
- Near the top of the class in most subjects.
- Below average in school work.
- Good at English.
- Above average in school work.
- Gets on well with school work.
- Poor at Maths.
- Slow to understand new work.

Oppenheim (1966) warns of a tendency for subjects to assent rather than dissent to statements irrespective of their content which is known as acquiescence response set. To counteract this effect, positive and negative constructs were included and a table of random numbers was used to determine the order in which the items were presented.

A group of 64 children in the ten plus age range were invited to participate in the initial testing. They were told that the present writer was interested in how children thought about themselves and that he was making up a questionnaire to help him find out more about how they do so. They were also assured that all answers would remain strictly confidential.

Children rated each construct on a nine point scale by encircling one of nine crosses, the extreme poles of which were designated "Most like me" and "Least like me". A practice item "fair-haired" was also included and the children were asked to consider if "fair-haired" most described them and if it did to encircle the x in the column "most like"; and if "fair haired" least described them, to encircle the x under the column headed "least like". It was then strongly emphasised that any of the intermediate points could be used and a number of examples were given, for instance, it was pointed out that if a person was dark but
but not very dark then he would encircle the second or third cross. In the same way the eight constructs comprising the test were rated.

An item analysis was then carried out by correlating scores on each item separately with the total test scores. The coefficients obtained are listed in Table 7:2 below.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finds school work easy</td>
<td>.762</td>
</tr>
<tr>
<td>Near the top of the class in most subjects</td>
<td>.787</td>
</tr>
<tr>
<td>Below average in school work</td>
<td>.806</td>
</tr>
<tr>
<td>Good at English</td>
<td>.560</td>
</tr>
<tr>
<td>Above average in school work</td>
<td>.762</td>
</tr>
<tr>
<td>Gets on well with school work</td>
<td>.823</td>
</tr>
<tr>
<td>Poor at Maths</td>
<td>.714</td>
</tr>
<tr>
<td>Slow to understand new work</td>
<td>.450</td>
</tr>
</tbody>
</table>

The constructs "good at English" and "slow to understand new work" were eliminated and as a further check on the uni-dimensionality of the scale the Kuder-Richardson Formula 20 in the version which is suitable for use with multiple-choice responses, was applied to the data. This formula is commonly used in establishing a test's reliability but it also provides an index of test-homogeneity. According to Nunnally (1970), its essential purpose is to determine the internal consistency of a test by establishing the average correlations between the items of which the test is composed. Thus if the items on a test inter-correlate highly with each other and are a measure of much the same attribute, then the resultant coefficient will be high. For the academic self construct measure a coefficient of .860 was obtained which was sufficiently high to warrant the conclusion that the test is internally consistent and that it is measuring one attribute only.

The next stage in the endeavour to establish the uni-dimensionality of the test was to submit all scores to factor analysis. Vernon (1950) has suggested that a ratio of 4 to 1 between the first and second factor
of a test can be accepted as evidence of a test's uni-dimensionality. Put in another way, if the amount of variance explained by the first factor is four times as great as that explained by the second factor, then on this criterion, the test is judged to be uni-dimensional.

The factor analysis programme used was Version 2.3 dated March 15th., 1972 from the handbook "Statistical Package for the Social Sciences", Vogelback Computing Center, Northwestern University. The factor analysis data are set out in Table 7:3.

Table 7:3
"Academic self construct measure"
Factor analysis data

| Percentage variance on Factor 1: | 58.9 |
| Percentage variance on Factor 2: | 13.9 |
| Ratio between percentage variances on Factor 1 and 2: | 4.2:1 |

In accordance with Vernon's (1950) criterion, the ASC scale can be considered to measure one attribute only, as the ratio between the variance on the first and second factors is 4.2 to 1.

Evidence both from the K.R. 20 reliability coefficient and from the factor analysis of the data, support the claim that the academic self-construct scale is uni-dimensional.

The construct of self in relation to attitudes and behaviour in class measure (henceforth designated CSABC) was constructed in the same way. The initial pool of common constructs in this area comprised the following: "hard-working", "gets on well with teachers", "causes trouble in class", "keen to do well in school", "gets into trouble at school", "plays around in lessons", "interested in school work", "lazy in school", "polite" and "badly behaved in school".

A total of 70 children in the 10 plus and 12 plus age groups rated each construct on a nine-point scale and Table 7:4 shows correlation coefficients between scores on each item and the total test scores for the six items which were retained to constitute the final form of the test.
Table 7:4
"Construct of self in respect to attitudes and behaviour in class" measure
Product moment correlation coefficients between scores on each item and total test scores

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes trouble in class</td>
<td>.688</td>
</tr>
<tr>
<td>Keen to do well in school</td>
<td>.611</td>
</tr>
<tr>
<td>Gets into trouble in school</td>
<td>.755</td>
</tr>
<tr>
<td>Interested in school work</td>
<td>.691</td>
</tr>
<tr>
<td>Polite in class</td>
<td>.681</td>
</tr>
<tr>
<td>Lazy in school</td>
<td>.782</td>
</tr>
</tbody>
</table>

As in the case of the academic self construct measure, the uni-dimensionality was established by using formula K.R.20 and by submitting all scores to factor analysis. The results are given in Table 7:5.

Table 7:5
"Construct of self in respect to attitudes and behaviour in class" measure
Test uni-dimensionality data

<table>
<thead>
<tr>
<th>K.R. 20 coefficient</th>
<th>Percentage variance on Factor 1:</th>
<th>Percentage variance on Factor 2:</th>
<th>Ratio between percentage variances of Factors 1 and 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>.834</td>
<td>55.5</td>
<td>14.3</td>
<td>3.9 to 1</td>
</tr>
</tbody>
</table>

It will be noted that the K.R. 20 coefficient is high and can be taken as evidence of the internal consistency of the test. The ratio between the percentage variances on the first and second factors of the test was 3.9 to 1. Although this does not exactly meet the requirements set by Vernon (1950), it is considered sufficiently close to warrant the factor analysis data as providing further evidence of the test's uni-dimensionality.

"The construct of self in respect to peer relationships" measure (henceforth designated CSPR) was constructed in the same manner. The original pool of items in this area consisted of: "kind", "annoys other children", "rough", "good-tempered", "cheerful" and "popular".
A total of 65 children in the 10 plus age group participated in this stage of the pilot testing. Items were rated on a nine point scale and Table 7:6 shows correlation coefficients between scores on each item and the total test scores for the four items which were retained to constitute the final form of the test.

Table 7:6

"Construct of self in respect to peer relationships" measure
Product moment correlation coefficients between scores on each item and total test scores.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>.813</td>
</tr>
<tr>
<td>Annoys other children</td>
<td>.787</td>
</tr>
<tr>
<td>Rough</td>
<td>.784</td>
</tr>
<tr>
<td>Good-tempered</td>
<td>.827</td>
</tr>
</tbody>
</table>

The K.R. 20 formula was then applied to the data and all scores were submitted to factor analysis in order to determine the degree of uni-dimensionality of the test. The results are given in Table 7:7.

Table 7:7

"Construct of self in respect to peer relationships" measure
Test uni-dimensionality data

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.R. 20 coefficient</td>
<td>.812</td>
</tr>
<tr>
<td>Percentage variance on Factor 1:</td>
<td>61.9</td>
</tr>
<tr>
<td>Percentage variance on Factor 2:</td>
<td>16.0</td>
</tr>
<tr>
<td>Ratio between percentage variance of Factors 1 and 2:</td>
<td>3.9 to 1</td>
</tr>
</tbody>
</table>

The K.R. 20 coefficient is regarded as being sufficiently high to provide evidence of the internal consistency of the test and this contention is supported by the factor analysis data which again almost reaches the standard set by Vernon (1950).

In summary, the results of the statistical procedures just outlined indicate that the constructs of self tests are essentially measuring one attribute only and that the consistent responses children made to the individual items of the tests suggest that the items are meaningful to them.
(iv) **Test reliability and validity.**

The reliability and validity of the academic self-construct measure is now described and it is again pointed out that the comments which follow apply equally to all constructs of persons scales used in this investigation.

In the standard texts on psychometric methods, for example Guilford (1954), a distinction is made between reliability as defined by a test's internal consistency and test-retest reliability. In the first instance, emphasis is on the extent to which there is consistency between the items making up the scale; in the second instance, attention focusses on the stability of scores over a period of time. Helmstadter (1966) makes the same distinction in slightly different terms. He considers a reliability coefficient to be an indication of the extent to which a test contains variable errors; that is to say, errors which differed from person to person during any one testing, or which varied from time to time for a given person measured by the same instrument.

Accordingly, in the construction of the ASC scale, attention was given to both forms of reliability. The means by which the unidimensionality of the test was determined have already been described and it is only necessary to point out that the procedures applied there gave evidence of the test's internal consistency. First, the K.R. 20 formula was applied to the data and a coefficient of consistency of .860 was established. Secondly, the scores were submitted to factor analysis and as the ratio between the percentage variance on the first and second factors exceeded 4 to 1, this result too can be taken as evidence that children were consistent in their ratings on all items of the test.

The second aspect of reliability in which the stability of scores over a period of time serves as the criterion was also considered. A sample of 58 children drawn from two classes, one of pupils aged 10 plus, the other of pupils aged 12 plus, completed the test on two occasions with an interval of four weeks between the two administrations. The product moment correlation coefficient between the two sets of scores was .801 which was considered to be firm evidence of the consistency of children's responses over a period of time. However, as Wylie (1961) has
remarked: "in the majority of studies no reliability estimates are
given, and those that are presented are usually of the split-half or
inter-judge variety, giving no indication of stability test-retests".
Few standards for comparison are therefore available.

As reliability is also a function of the length of the test and
as the number of items in the ASC scale is relatively small, it was
decided also to use the Spearman-Brown prophecy formula which gives
a prediction of what the reliability of the test would be if it were
twice as long. On the same data, a coefficient of .899 was established
which can be considered highly satisfactory.

With respect to the other two constructs of self measures, the
evidence relating to internal consistency has already been presented and
it was considered to be satisfactory. Table 7:7 below sets out the
test-retest reliability data for these two tests. Subjects were aged
10 plus and 12 plus and the interval between administrations was four
weeks.

Table 7:7

"Constructs of self in respect to attitudes and behaviour in
class" measure and "Constructs of self in respect to peer
relationships" measure.

<table>
<thead>
<tr>
<th>Test-retest reliability data</th>
<th>Product moment coefficient</th>
<th>Spearman-Brown coefficient</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSABC scale</td>
<td>.677</td>
<td>.807</td>
<td>52</td>
</tr>
<tr>
<td>CSPR scale</td>
<td>.739</td>
<td>.850</td>
<td>53</td>
</tr>
</tbody>
</table>

The coefficients are lower than those obtained for the ASC scale
but taking into account the nature of the tests, they can be considered
sufficiently high as to afford evidence of the stability of children's
responses on the scales over a period of time.

The validity of the ASC measure is the next point for discussion.
A number of different interpretations of validity are given in the
standard psychometric tests, the most important of which can be
subsumed under the headings content, empirical and construct validity,
although the various forms are not mutually exclusive.

By content validity is meant "the adequacy with which a specified
domain of content is sampled" (Nunnally, 1967). In this instance, the
test is not correlated with an outside criterion and it must stand by
itself as an efficient means of measuring what it is supposed to measure. Again according to Nunnally (1967), the two major conditions for ensuring content validity can be met first by collecting a representative set of items, and secondly, by employed "sensible" methods of test construction. Prominent among the sensible methods to which Nunnally refers is an assessment of the test's internal consistency which serves to ensure, at least, that the test measures one attribute.

Empirical or predictive validity, in one of its forms, consists of comparing a set of scores with some other relevant outside criterion. Thus children's achievement scores on an English test could be compared with teacher ratings of pupils' performances in that subject. In the second variation, empirical validation studies make a comparison of scores on the same test between groups where differences are expected. An example of this type would be where scores on an attitude test concerned with capital punishment are obtained from members of the Howard League of Penal Reform and from another organisation drawn from more reactionary sections of society. If the scores differed, then the test meets the requirements of empirical validity.

In some respects, content validity is essentially a subjective process; and as empirical validity depends on the unlikely extensive availability of suitable criteria groups and relevant associated measures, these forms of validation in themselves are considered by some to be inadequate measures of what a test is supposed to measure.

The third main division, construct validity, is associated with the work of Cronbach (1960). It is complex in nature, and it is designed to meet the criticisms expressed in the preceding paragraph. A construct in this context can be considered as a hypothetical trait or quality which is never isolated but which stands in relation to certain other constructs. The inter-relationships which are predicted among constructs stem from psychological theories which are themselves attempts to describe and explain human behaviour in a systematic way. It then follows that on the basis of given theoretical assumptions, relationships should or should not exist between the variables forming the substance of the test and other variables relevant to the situation.
The process involved in this form of validation is a long and involved one. Cronbach (1960) warns that construct validity is established only through a long continual inter-play between observation, reasoning and imagination and that the process is really the same as that by which scientific theories are developed.

It would seem that the outcome of any enquiry where a network of relationships is predicted from psychological theory, and where the predictions are subjected to empirical verification, must contribute towards establishing the validity of the test instruments used in that study. In short, the study itself is the validation procedure, although Cronbach would go further and say that adequate construct validation can only be achieved through a series of connected studies.

The first essential step in the construct validation process would seem to be to ensure that the instrument is uni-dimensional. Unless the test itself is internally consistent in measuring a given attribute, it is difficult to justify proceeding further. Once uni-dimensionality has been established, not one relationship, but a network of positive and negative relationships among variables relevant in the situation is theoretically predicted, and which is then experimentally verified through the use of sophisticated statistical techniques. Kerlinger (1969) puts the matter neatly when he says that construct validity unites psychometric notions with scientific theoretical notions.

As far as the ASC scale is concerned, the underlying construct stems from the theoretical assumptions previously outlined, and further, the test has been shown to be uni-dimensional. In broad terms, it can be anticipated that scores on this test will correlate positively with academic ability, the position in class scale, teacher ratings on children's task orientation and the academic socio-metric measure. However, the strength of the relationship is likely to vary from test to test, and in such a sensitive and complex area as this one, inconsistencies between groups are likely to occur as the relevant literature plainly indicates. Further consideration of the construct validity of the ASC test is deferred until the next chapter.

Much the same comments apply to the CSABC and CSPR scales. In both cases, test uni-dimensionality has been satisfactorily demonstrated.
and the hypotheses when tested will provide further validity data. More specifically, it is anticipated on theoretical grounds that the CSABC scale will correlate positively with academic ability and with teacher ratings of children's attitudes in class.

As far as the CSPR scale is concerned, it is anticipated that scores on this measure will correlate positively with teachers' ratings of pupils' peer relationships and with sociometric results on the affective criterion. However, the equivocal nature of previous findings in this area should be noted.

Further discussion of the test validity of the constructs of self scales appears in Chapter 8 when the inter-correlations between the variables under examination will be interpreted.

One further matter concerning the construct of self scales needs explanation. In a further effort to counteract acquiescence response set, for purposes of administration, the three scales were combined and the items of which they are composed were set out in random order in the form shown in Appendix A.1.

b. Constructs of peers scales.

The purpose of these tests was to obtain a measure of children's constructs of peers who were considered by them to be high and low in academic ability. Subjects were not asked to rate individual children in their classes for two reasons; first, because it would be difficult to explain to the children why certain of their number had been chosen and not others; secondly, because it might cause resentment and embarrassment among the children selected; and thirdly, because rating a number of individuals would considerably increase the time spent in testing. It was therefore decided to ask children to make a generalisation about their peers in the two criteria groups concerned.

As previously explained, constructs of peers high and low in academic ability together with those who were favourably and unfavourably regarded were obtained at the same time as the personality dimensions used to form the constructs of self scales. Substantially
the same items were used in both instances and although it was expected that children's modes of construing on the two sets of measures would be closely comparable, it was decided to submit scores derived from a pilot administration of the "Constructs of peers" scales to separate analysis. A group of 40 middle school children aged 12 plus were used for this purpose.

First, this group was asked to think of the children they knew who got on very well with school work. They were then asked to look at a practice item "fair-haired" and to decide whether the term most described most children they knew who got on very well with school work - and if so, to encircle the cross under the heading "most like". Similar instructions were given concerning the "least like" pole and several examples of the use of intermediate points in the scale were given. The original pool of items for the CSABC and CSPR scales were then rated in the same way. The same procedure was followed in the rating of children considered not to get on very well with school work. Thus, 80 sets of ratings were available, 40 for each criterion group.

After an item-analysis had been carried out by correlating scores on each item with the total test scores, it was decided to retain the following items:

"Constructs of peers in respect to Attitudes and Behaviour in class" scale. (CPABC)

Interested in school work; gets into trouble in school;
lazy in school; polite; causes trouble in school.

"Constructs of peers in respect to peer relationships" scale (CPPR)

Kind; annoys other children; popular; rough; good-tempered.

The K.R.20 formula was then applied and the scores submitted to factor analysis. The resulting uni-dimensionality data for the two tests are given in Tables 7:8 and 7:9 respectively.
Table 7:8
"Constructs of peers in respect to Attitudes and Behaviour in class" scale

**Uni-dimensionality data**

<table>
<thead>
<tr>
<th></th>
<th>N = 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.R. 20 coefficient</td>
<td>.926</td>
</tr>
<tr>
<td>Percentage variance on Factor 1</td>
<td>69.6</td>
</tr>
<tr>
<td>Percentage variance on Factor 2</td>
<td>13.2</td>
</tr>
<tr>
<td>Ratio between percentage variance on Factors 1 and 2</td>
<td>5.4 to 1</td>
</tr>
</tbody>
</table>

The K.R. 20 coefficient is high and provides strong evidence of the internal consistency of the test, a finding which is supported by the factor analysis data where the ratio between the percentage variance on Factors 1 and 2 exceeds the criterion set by Vernon (1950).

Table 7:9
"Constructs of peers in respect to peer relationships" scale

**Uni-dimensionality data**

<table>
<thead>
<tr>
<th></th>
<th>N = 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.R. 20 coefficient</td>
<td>.871</td>
</tr>
<tr>
<td>Percentage variance on Factor 1</td>
<td>75.1</td>
</tr>
<tr>
<td>Percentage variance on Factor 2</td>
<td>8.7</td>
</tr>
<tr>
<td>Ratio between percentage variance on Factors 1 and 2</td>
<td>9 to 1</td>
</tr>
</tbody>
</table>

The K.R. 20 coefficient for this scale reaches a high level as does the ratio between the percentage variance on factors 1 and 2 as determined by the factor analysis procedures. The scale can therefore be regarded as being uni-dimensional.

**Reliability and validity of the CPABC and CPPR scales.**

As just reported, the K.R.20 and factor analysis data indicated that the scales were internally consistent and thus one of the conditions necessary to establish the reliability of the tests has been set. Test-retest reliability procedures were also carried out by asking a group of 60 children aged 10 plus and 12 plus to complete the tests on two occasions with an interval of four weeks between the two administrations. The results are given in Table 7:10.
Table 7:10

"Constructs of Peers in respect to Attitudes and Behaviour in Class" and "Constructs of Peers in respect to Peer Relationships" Scales.

<table>
<thead>
<tr>
<th></th>
<th>Product moment coefficient</th>
<th>Spearman-Brown coefficient</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPADG scale</td>
<td>.653</td>
<td>.796</td>
<td>60</td>
</tr>
<tr>
<td>CPPR scale</td>
<td>.698</td>
<td>.820</td>
<td>60</td>
</tr>
</tbody>
</table>

These coefficients while not so high as some of those obtained on the self report measures, do suggest that children's responses on the same tests are relatively stable over a period of time.

The constructs of peers scales differ from other measures used in this study because ratings of academic status groups are asked for and not ratings of individual children. For this reason it is not possible to examine inter-relationships between variables for purposes of establishing construct validity. However, if ratings of children of those above and below average in academic ability do differ in the expected direction, then this can be taken as some indication of the validity of the constructs of peers scales.

As a precaution against acquiescence response set, the two peer constructs scales were combined and the items of which they are composed were set out in random order. A practice set of three constructs preceded the tests proper. The final form of the instrument is shown in Appendix A.2.

c. Teachers' constructs of children measures.

Evidence was given in Chapter 2 which intimated that teachers and children apparently used the same broad dimensions in assessing pupils in the classroom situation, but as the terms in which they do so obviously differ, it was necessary to construct separate scales for teachers. Eighteen teachers (10 women and 8 men) whose teaching service ranged from two to twenty-five years with a median of eight years were approached, and the constructs obtained from them formed the pool of
items from which the scales were constructed. For this purpose a modified written version of the Kelly REP test was used which took the following form. After a general explanation of the object of the questionnaire, teachers were asked to think of any three boys in their present class and to designate them A, B and C, respectively. The teachers were then asked to indicate the way or ways in which they thought that A and B were alike, but different from C. The same procedure was used for comparing and contrasting

(i) three other boys – one tall, one of medium height, and one short;
(ii) three girls selected at random;
(iii) three other girls, one of whom was tall, one of medium height and one short.

Thus from each teacher, constructs of twelve children were obtained, and in all, 216 children were rated as a result of this procedure.

From the pool of constructs obtained, three scales referring to task orientation, attitude in class, and peer relationships were formed which were then distributed to sixteen teachers who were asked to select five boys and five girls at random from their class registers and to rate them on the dimensions given. Items were arranged in positive and negative form, and both poles of the construct were given, as in most cases, both extremes of the continuum appeared in the pool of items obtained from teachers. As a five point scale is customarily used in schools for assessment purposes, it was decided to use a five point scale, too, in the teacher constructs measures.

An item analysis was carried out, as a result of which the following items were selected to form the final scales.

Constructs of teachers in respect to children's task orientation scale. (CTTO)
Attentive – inattentive
Hardworking – lazy
Interested – uninterested
Involved – uninvolved
Conscientious – not conscientious
Constructs of teachers in respect to children’s attitude in class scale (CTAC)

Polite - rude
Considerate - inconsiderate
Reliable - unreliable
Co-operative - unco-operative
Accepts authority - rejects authority.

Constructs of teachers in respect to children’s peer relationships scale (CTPR)

Popular - unpopular
Friendly - unfriendly
Sympathetic - unsympathetic
Pleasant - unpleasant

The tests for uni-dimensionality were then applied and the results are given in Tables 7:11, 7:12 and 7:13 respectively.

Table 7:11
“Constructs of teachers in respect to children’s task orientation” scale.

Uni-dimensionality data

Children’s N = 160

K.R. 20 coefficient
 Percentage variance on Factor 1
 Percentage variance on Factor 2
 Ratio between percentage variance on Factors 1 and 2

Both measures indicate a very high level of uni-dimensionality on this test.

Table 7:12
“Constructs of teachers in respect to children’s attitude in class” scale.

Uni-dimensionality data

Children’s N = 160

K.R. coefficient
 Percentage variance on Factor 1
 Percentage variance on Factor 2
 Ratio between percentage variance on Factors 1 and 2

The data indicate that the test has a very high degree of internal consistency and can therefore be regarded as measuring one attribute only.
Table 7:13
"Constructs of teachers in respect to children's peer relationships" scale

<table>
<thead>
<tr>
<th>Uni-dimensionality data</th>
<th>Children's N = 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.R. 20 coefficient</td>
<td>.853</td>
</tr>
<tr>
<td>Percentage variance on Factor 1</td>
<td>69.9</td>
</tr>
<tr>
<td>Percentage variance on Factor 2</td>
<td>13.1</td>
</tr>
<tr>
<td>Ratio between percentage variance on Factors 1 and 2</td>
<td>5.3 to 1</td>
</tr>
</tbody>
</table>

These results satisfy the criteria for uni-dimensionality but it will be noted that K.R. 20 coefficient and the ratio between the percentage variance on factors 1 and 2 are lower here than in the case of the CTTO and CTAC scales.

Reliability and validity

The three tables immediately above also testify to the reliability of the tests in terms of their internal consistency. In addition, test-retest reliability coefficients were obtained from 12 teachers who each rated five boys and five girls in their classes on two separate occasions. The period between the completion of the tests was unfortunately not uniform but for the majority of the sample it was approximately eight weeks. The results are given in Table 7:14 below.

Table 7:14
"Constructs of teachers in respect to children's task orientation" scale
"Constructs of teachers in respect to children's attitude in class" scale
"Constructs of teachers in respect to children's peer relationships" scale

<table>
<thead>
<tr>
<th>Test-retest reliability data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Product moment Spearman-Brown coefficient coefficient</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>CTTO scale</td>
</tr>
<tr>
<td>.853</td>
</tr>
<tr>
<td>.920</td>
</tr>
<tr>
<td>120</td>
</tr>
<tr>
<td>CTAC scale</td>
</tr>
<tr>
<td>.868</td>
</tr>
<tr>
<td>.929</td>
</tr>
<tr>
<td>120</td>
</tr>
<tr>
<td>CTPR scale</td>
</tr>
<tr>
<td>.857</td>
</tr>
<tr>
<td>.923</td>
</tr>
<tr>
<td>120</td>
</tr>
</tbody>
</table>

The coefficients are uniformly high and testify to the stability of teachers' test responses over a period of time.

With respect to the validity of the tests, it is expected that to some degree, the CTTO and CTAC scales will positively correlate with children's academic ability, with the academic sociometric measure, and
with the ASC and CSABC scales. It is also tentatively suggested that
the CTPR scale will correlate positively with academic ability, with
the affective sociometric results and with the CSPR scale. However,
attention is again drawn to the ambiguous nature of the findings in
this field.

The CTTO and CTAC indices were combined but the CPPR scale
remained separate so as to emphasise that children's peer relationships
were being assessed in that measure. All items began with the positive
pole of the continuum, because during pilot testing, teachers complained
that it was difficult and time consuming to rate both negative and
positive items in the form given. An alternative would have been to
provide a separate rating sheet for each child but this made the task
appear to be much more daunting to teachers than it actually was. The
final form of the test appears in Appendix A.3.

The teachers were also asked to indicate the extent to which they
considered each item to be a desirable or an undesirable characteristic
by rating it on a five point scale. The questionnaire was included
because it was thought that the information obtained might be useful in
interpreting the results from this part of the investigation.

d. The sociometric tests.

Two sociometric criteria of association were selected, one of
which was concerned with the extent to which children recognise the
academic level of their peers, and the other with children's social
acceptability in general. The following two questions were asked:

"Will you please write where it says 1 below, the name of the boy
(if you are a boy) and the girl (if you are a girl) whom you would choose
to represent the whole of your year group in a "Top of the Form" contest.
Write your second and third choices where it says 2 and 3. Give first
and last names please".

"In the same way, please write the name of the person of your own
sex and in your own year group whom you would most like to sit next to
on the coach and go around with when work is over on a school trip.
Again, please write where it says 2 and 3, the names of the second and
third person you would like to be with".

The former will be referred to as the academic sociometric criterion,
the latter the affective sociometric criterion.
In a pilot administration, both questions seemed to be meaningful to children in this age group, and there were no difficulties in obtaining responses from them.

As boys' and girls' results are being analysed separately, choices were restricted to children's own sex. The very marked sex cleavage characteristic of pre-adolescence and which has been reported extensively in the literature (e.g. Gronlund, 1959) would seem to justify that restriction.

**Reliability and validity.**

The reliability and validity of the sociometric test has received a great deal of attention in the literature, notably by Lindzey and Byrne (1960) and Gronlund (1959).

With respect to reliability, some doubt exists as to whether traditional standards can be applied to sociometric data. Most tests measure some constant factor and if similar scores are obtained on two administrations of the same test, then it is regarded as being reliable. But as Pepinsky (1949) points out, there are no right or wrong answers in a sociometric test and the subject is free to vary his response to the same question over a period of time. Nevertheless reliability coefficients have provided essential information concerning the degree of consistency that can be expected in sociometric choices, and have justified the use of sociometry as a systematic measure of social behaviour.

Plouton, Black and Fruchter (1955) after a comprehensive review of 53 reliability studies, arrived at the following conclusions:

1. That it is possible for group members to make consistent judgements.
2. That the consistency of choice judgement tends to decline as the interval between tests is increased.
3. That choices tend to become more reliable as the age of the subjects increases.
4. That results obtained from general criteria tend to be more stable than choices based on specific criteria.
5. That first choices are more consistent than succeeding choices.
6. That the larger the number of criteria used, the greater is the consistency of choices likely to be.
7. That overchosen and underchosen positions tend to be more stable than average sociometric categories.
Perhaps one of the most extensive investigations where stability of choices was studied was carried out by Bonney (1943), and it continued over a four year period. He obtained for example, coefficients ranging from .67 to .84 for one year intervals, and he demonstrated that sociometric scores were as stable from year to year as were intelligence test and achievement scores.

The internal consistency criterion for test reliability is not really appropriate for sociometric measures as the different components are designed to explore different aspects of social interaction. However, Gronlund (1955) who selected criteria relating to children's seating, work and play activities, obtained coefficients ranging from .76 to .86 for boys and from .76 to .89 for girls.

The previous discussion on construct validity has an important bearing on sociometric research. According to this notion, sociometric measures should stand in relationship to other important variables in an experimental situation, if their validity is to be established. As every sociometric investigation provides further validational data, the literature available for comment is not only extremely extensive, but it is hedged about with many qualifications. Sociometric status has been related to leadership, various indices of personal and social adjustment, personality measures of many kinds, as well as to intelligence and achievement scores. In summarising his chapter on the validity of sociometric results, Gronlund (1959) reaches the following conclusions:

1. Sociometric studies are significantly related to the actual behaviour of people, to teachers' judgements of pupils' social acceptance, to adults' ratings of pupils' social acceptance, to adult ratings of pupils' social adjustment, to the reputations pupils hold among their peers, to specific problems of social adjustment, and, within limits, to problems of personal adjustment.

2. Pupils with high sociometric status are generally characterised by feelings and behaviours which are indicative of good personal-social adjustment. In contrast, pupils with low sociometric status tend to have socially ineffective behaviour characteristics, and tend to exhibit evidence of poor personal-social adjustment.
Just one validation study is cited, that of Selmer (1960) who compared results from a group of 10 year old children on a sociometric test with Ohio Social acceptance scores, California Test of Personality scores and with teacher ratings of personality adjustment. Reported inter-correlation coefficients were as follows:

<table>
<thead>
<tr>
<th>Tests</th>
<th>Sociometric</th>
<th>Ohio</th>
<th>Teacher rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>.68</td>
<td>.54</td>
<td>.37</td>
</tr>
<tr>
<td>Teacher rating</td>
<td>28</td>
<td>.37</td>
<td>.37</td>
</tr>
</tbody>
</table>

As far as this study is concerned, the academic sociometric measure is expected to correlate positively with the academic level of the children chosen. The general sociometric measure is expected to relate to children's academic ability and with teachers' and children's assessments of pupils' peer relationships. A copy of the test, in full, is given in Appendix A.4.

e. **The attitude scales.**

The purpose of these scales, which are published by the N.F.E.R., are to determine children's attitudes to school, their interest in school work, and the importance they attach to doing well in school. Subjects are required to respond to the following items in which a number of variations of the three point scale are employed.

**Attitude to school**

School is fun
School is boring
I like school
I bet going out to work is better than school
I would leave school tomorrow if I could
Going to school is a waste of time

**Interest in school work**

We spend too much time doing Maths
I like doing hard Maths problems
At school they make you do things you don't want to do
We have interesting lessons in school
I enjoy most school work
School lessons are boring
Importance of doing well

I should like to be one of the cleverest pupils in the class
I work and try very hard in school
I should like to be very good at school work
Doing well at school is most important to me
I should like to be better at games than at school work

Full details of the construction of the tests are given in Barker-Lunn (1970) but a brief description of the procedures carried out now follows. The original statements were obtained from group discussions with children, and as a result of exploratory factor analysis, ten scales were formed, three of which are used in this study. Of these three, two are Guttman scales, and the other is a factor scale. Internal consistency of the measures was determined by Cronbach’s alpha-coefficient, and for the Guttman scales, coefficients of reproducibility were also calculated with the following result:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Coefficient of reproducibility</th>
<th>Alpha coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude to school</td>
<td>.95</td>
<td>.89</td>
</tr>
<tr>
<td>Interest in school work</td>
<td>.95</td>
<td>.88</td>
</tr>
<tr>
<td>Importance of doing well</td>
<td>Factor scale</td>
<td>.77</td>
</tr>
</tbody>
</table>

The alpha-coefficients provide evidence of the internal consistency of the measures and therefore, of their reliability. No test-retest reliability data were given.

It was stated that support for the validity of the scales comes from three sources, (a) the internal structure of the instruments, (b) from the correlations of the different scales with other measures with which they would be presumed to be related, (c) from expected group differences, those predicted on theoretical grounds or on the basis of other workers' findings.

In connection with this investigation, it is suggested that the scales will correlate with academic ability, with the CTTO scale and with the academic sociometric measure.

The scales were combined and the items were presented to children in the form shown in Appendix A.5.
f. **The position in class scale.**

Research findings summarised in Chapter 4 indicated that university students' estimates of the grades they were likely to achieve in college were remarkably accurate predictors of actual grades later awarded. Although the estimates of younger pupils and those below average in ability were found to be less reliable, it was decided to incorporate in the test battery a modified form of grade prediction to serve as an additional index of academic self construct. Children were asked simply to estimate the class position they thought they would most likely reach in a general test of school work, assuming that there were exactly 30 children in the class.

For purposes of determining test-retest reliability, the questionnaire was completed twice by 58 children aged 10 plus and 12 plus, with an interval of four weeks between the two administrations. The resulting product moment reliability coefficient was .847 and the Spearman-Brown prophecy coefficient was .914. As the Position in Class scale is intended to reinforce the ASC scale, for purposes of construct validity, the expectation is that scores on this test will correlate to some degree with academic ability, with teacher ratings of children's task orientation and with the academic sociometric measure. A copy of the form completed by children is given in Appendix A.6.

g. **The Verbal Reasoning tests.**

The N.F.E.R. Verbal Test D was administered to the 10 plus age group and the Verbal Test EF to the 12 plus age group with the object of providing an index of academic ability. The tests are described in the manuals as providing "a measure of general scholastic ability". Verbal Test D was standardised in 1962 on a sample of about 3,200 children. The K.R. 20 reliability formula coefficient was .958 and in support of its validity, a coefficient of .90 was reported between this test and an N.F.E.R. closed verbal test. Verbal Test EF was standardised in 1960 on a sample of about 4,000 children. The reliability coefficient was .97 and findings in support of the test's validity were reported in the manual. Copies of the tests are shown in Appendix A.7.
The samples drawn from the three schools differed in their degree of test sophistication, and it was found impossible to control this factor. Children in School NS complete a battery of N.F.E.R. achievement tests regularly each year, children in School ES have only once before completed standardised tests, while children in School LS have never before been tested in this way.

5. Procedure for data collection.

Administration of tests to children.

All tests (with the exception in some cases of the Verbal tests) were administered by the present writer who visited each of the 23 classes taking part in the investigation on two occasions. At the beginning of the first session when the Verbal test was administered, the children were told that the present writer was interested in how hard or how easy children found the problems that they were going to try to solve later, and that the purpose of the visit was to try out the test. The instructions for the administration of the test given in the manual were strictly followed and the children appeared to respond well and with interest to the task they had been set.

In School NS, N.F.E.R. tests, including the ones used in this study, were regularly taken as part of the general assessment procedures of the school, and the results were made available to the present writer. Enquiries revealed that the tests were administered strictly in accordance with the manual of instructions.

On the second testing occasion, the booklet shown in Appendix B which contains all the remaining children's measures, was introduced in the following words.

"I've come back today to thank you for the help you gave me last week and to ask you to help me again now. This time I'm trying out some different kinds of questions - which for a change - have no right and no wrong answers. I want to know what you think about a lot of things - like other children, yourself and school - and I want you please to answer my questions as truthfully as you can. Just say what you think is right. There's something else I want to say - and that is that your answers will be strictly confidential. Do you know what that means? (Answers are received). That's right - you could say
they are top secret. Only I will see what you have written, and I don’t know who you are anyway. The papers won’t be shown to your teachers; and to make sure no peeping goes on now, I want you to cover up your answers with the paper I’ve had put out for you.

Now please turn to page 2 where it has "Children you get on well with" written at the top. Have you found it? That’s fine! (This was included as a practice section where children used the constructs "kind", "helpful" and "rough" to rate the element "Children you get on well with").

"Now I want you to think of the children you know who you get on well with. Now look down to where it says "kind". I’ve written that word on the blackboard, too, and against it are nine crosses. Over the first cross is the word most; over the last cross is the word least. This is what I want you to do. If you think the word kind most describes most children you get on well with, put a circle round the first cross like this. If you think the word "kind" least describes most of the children you get on well with, put a circle round the last cross here, underneath where it says "least". If you think that some are kind and some are not or you just can’t make up your mind, you’ll put your cross right here in the middle. Where do you think you’ll put your circle if you think they are kind but not very kind? Come and show me on the blackboard. Fine. And now if you think they are unkind, but not very unkind? Good.

Now you will see that there are nine crosses for you to use from most to least and you can put your circle round any one of them that best shows what you think.

Cover up your answer and let’s move on to the next word which is "rough". We are going to do the same kind of thing again. If you think that the word "rough" most describes most of the people you get on well with — put your circle round the first cross; if you think it least describes them, put your circle round the last cross." (The use of the intermediate points was again stressed). The last word in this group is "Helpful". (The same procedure was followed.)

"Next, I want you to look at where it says "Gets on well with school work". I want you to consider whether the word "kind" most describes most of the children you know who get on well with school work, and if it does to put a circle round the cross below where is says most."
The instructions continued as before for each of the ten constructs making up that section. Children were questioned to ensure that they knew the meanings of the word "popular" and "polite" and they were encouraged to ask for any guidance they needed.

The same instructions were given for the section headed "Children who don't get on well with school work" and when it was completed, the section concerned with self was introduced in the following way.

"If you look at the top of the next page you will see the word "self" written there. The first description underneath that, is "hard working". (This was a practice item). Now if you think that "hard working" most describes you, then you put your circle round the cross underneath where it says most; if you think it least describes you, you'll put a circle round the cross underneath where is says least. If you think you're really neither one nor the other, you'll put your circle round the middle cross". (The use of intermediate points was then dealt with).

"Now please be honest - and put what you really think you are. Remember, your work is top secret - and because you're covering up your work as you go along, no-one in this room will see what you have written."

The remaining constructs were read out and then rated in turn by the children. Care was taken to ensure that the subjects knew the meaning of the word "average" and any queries were answered. The section headed "like I'd like to be" was then introduced.

"I want you to think now of what you'd like to be like, not what you are like. Look at the word "hard working". If this is most what you'd like to be like, then put your circle round the first cross. If it's least like what you'd like to be like - that is if you'd like to be thoroughly idle - then put your circle round the cross in the last column. If it doesn't matter to you one way or the other, then put your circle round the middle cross. Again, of course, you can put your circle round any one of the nine crosses which best tells what you would like to be like. Put what you really think - and don't try to be funny and make a joke about it because if you do it won't help me at all. Thank you".
The remaining constructs were then read out in turn by the investigator and rated by the children. Negative items like "poor at Maths" were also put in positive form orally, like this. "If you most like to be poor at Maths, then you'll put your circle round the first cross - but if you'd like to be good at Maths - then your circle goes round the last cross, the one to your right. I'll say that again".

When the construct of self measures had been completed, the sociometric questions were next considered. Children were asked to follow, as the first question was read.

"Will you now please write where it says 1 below, the name of the boy (if you're a boy) and the girl (if you're a girl) whom you would choose to represent the whole of your year group in a "Top of the Form" contest. Write your second and third choices where it says 2 and 3. Give first and last names please".

A general discussion was held on the "Top of the Form" and the children were led to form the conclusion that it was necessary to choose children who were very clever, who had a good general knowledge and who were good at solving hard problems. Children were told they could choose those who were absent, and they were reminded of their names, and it was stressed that they could nominate any child of their own sex not only in their own class but in any class in the year group. Children were reminded of the names of the other forms. Where subjects could think of only one or two suitable children, they were told that this was quite acceptable although they were asked to name three if they could.

The second sociometric question was then read out, which was as follows:

"In the same way, please write the name of the person of your own sex and in your own year group whom you would most like to sit next to on the coach and go around with when work is over on a school trip. Again, please write where it says 2 and 3, the names of the second and third person you would like to be with".

Here, it was emphasised that it was the children they just like to be with and go around with who were to be chosen, not necessarily those they'd like to work with.
The Position in Class scale was then introduced. First, the following instructions were read: "Suppose that there are exactly 30 children in your class. Underline the class position you think you'd most probably reach in a general test of school work".

In situations where setting operated for part of the time, children were asked to answer the question in respect to the mixed ability groups to which they belonged, not the sets. Additional instructions were given as follows.

"If you think you'd be likely to come near the top then underline around 1, 2, 3 or 4, whichever you think it's most likely to be; if you think you'd come somewhere near the bottom, then underline around 27, 28, 29 or 30. If you think you're about average, underline somewhere around the middle positions of 14, 15, and 16. If you think you're above average, but not right near the top, then you would underline around 7, 8 or 9; if you think you're likely to be below average, but not right near the bottom, then you'd underline around positions 22, 23 and 24."

The attitude scales were introduced by reading the preliminary instructions which appeared on the paper, and which were as follows.

"Over the page you will see some of the things boys and girls have said about school. We should like to know what you feel and think about these things — whether you agree or disagree with what other boys and girls have said. This is NOT a test and there are NO RIGHT and NO WRONG answers. Please answer as truthfully as you can. Just say what you think is most true of you. Your answers will be strictly confidential."

Two practice items then followed. The questions were read to the children in turn and the alternative responses were indicated in each case.

The Teacher Scales. Form teachers in Schools NS and ES completed the constructs of children scales, but not those in School LS. Each year group of teachers was approached separately and given an outline of the purpose of the study and the procedures used in the construction of the scales. As far as possible, teachers were asked to rate the pupils in accordance with the normal curve of distribution but some of them found this very difficult to do where personality constructs were
concerned, notably those centring on peer relationships. Teachers were also asked to rate all children on one construct before proceeding to the next, rather than rating one child at a time on all constructs.

For the second year children, the scales were completed by the form teachers in charge of each class. In the fourth year, where specialisation and setting had been introduced, the scales were completed by the form teachers who had responsibility for the pastoral care and general supervision of the children, but in this case contact between teachers and children was not necessarily extensive.

6. Design of study and procedure for analysis of data.

It was explained in Section 3 of this chapter where details of the sample were given, that because of matching difficulties, the boys in School LS were excluded from the sample. It was also pointed out that teacher ratings were not available for girls in School LS.

Diagrammatically, the sample is represented thus:

<table>
<thead>
<tr>
<th></th>
<th>School NS</th>
<th>School ES</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>All data</td>
<td>All data</td>
<td>No data</td>
</tr>
<tr>
<td></td>
<td>available</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Girls</td>
<td>All data</td>
<td>All data</td>
<td>All data available except teacher ratings</td>
</tr>
<tr>
<td></td>
<td>available</td>
<td>available</td>
<td></td>
</tr>
</tbody>
</table>

First, in the main part of the investigation, data from both boys' groups and all three girls' groups are used in examining the relationships between academic ability and the variables which are the concern of this study. The same applies to a subsidiary purpose of the investigation which is concerned with the relationship between children's academic self construct scores and their scores on the variables under consideration here.

Secondly, with respect to the second subsidiary aim of this enquiry, the effects of setting, in the case of boys a comparison is made between School NS where no setting is practised and School ES where setting extensively operates for about half the school day. In the case of girls a further comparison is made, as a group from School LS where limited setting has been introduced is included.
The initial statistical procedure for data analysis is the analysis of variance (ANOVA) technique where two factors, academic ability and age are taken into account. The age group factor has two levels, 10 plus and 12 plus; and the academic ability factor has four levels which are determined by dividing the verbal reasoning test rank order list into quartiles. Boys' and girls' results are considered separately. The format of the ANOVA design is given immediately below.

<table>
<thead>
<tr>
<th>Age level</th>
<th>Ability level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quartile 1</td>
</tr>
<tr>
<td>10 plus</td>
<td></td>
</tr>
<tr>
<td>12 plus</td>
<td></td>
</tr>
</tbody>
</table>

In addition, a number of other analyses are carried out which will now be described taking as an example the relationship between children's academic ability and their academic self constructs (ASC).

First, from the ANOVA table, significant differences in mean ASC scores among children in the differing academic ability quartiles will be determined.

Secondly, the ability factor will be further examined by examining differences in mean ASC scores between children in the upper and lower ability quartile groups. A t test for independent samples will be used for this purpose.

Thirdly, correlation coefficients between children's V.R.Q's and their scores on the ASC scale will be determined. Coefficients from the two age groups will be examined for evidence of possible developmental age trends in the relationship between the two variables and where appropriate only, the test statistical differences between coefficients described by Bruning and Katz (1968) will be applied.

Fourthly, possible age differences in ASC scores between younger and older children (as a group and irrespective of ability) will be noted.

Fifthly, where ability and age interaction effects are identified by the ANOVA table, these will be examined.

Sixthly, possible sex differences in ASC scores will be determined using a t test.
The ANOVA computer programme used was contained in the University of London Computer Centre Bulletin, 5 3/3, dated September, 1971 and the t test programme which was designated BRXD 70 t appeared in the Health Sciences Computing Facility of UCLA manual and was dated November, 1971.

A second general procedure to be employed is to compute intercorrelation matrices for all variables studied, for boys and girls separately, and for each age group separately. The computer programme used for this purpose was the BMD 030 correlation with item deletion version contained in the manual of the Health Sciences Computing Facility of UCLA.

Four more matters concerned with data analysis now remain to be considered.

The first concerns the testing of hypotheses 1 and 2 which relate to differences in constructs of children in respect to peers high and low in academic ability. The pattern of analysis in this instance is somewhat different. Initially, a t test for related samples will be used to determine differences between peer constructs of children in the two academic criteria groups for each age and sex group separately. From then on, the standard procedure for analysis will apply.

The second matter concerns the testing of hypothesis 4 where the relationship between academic ability and sociometric choice is examined. The choice pattern of children in the upper and lower quartile groups will be scrutinised in order to determine the number of choices given by subjects to children in their own and each of the remaining three quartile groups. A chi-square test will be applied to the resulting choice distributions.

The third matter concerns the testing of hypothesis 16 which relates to the possible effects of setting. First, correlations coefficients between V.A.Q's and scores on the relevant variables in the fourth year groups of the three participating schools will be compared. The test for differences between independent correlations described by Bruning and Katz (1968) will be used for this purpose where a significant association occurs between the two variables in a school group. Secondly, since setting operates in the fourth year only,
coefficients for each age group in each school will be compared so that changes which might be associated with setting can be identified. Thirdly, a t test will also be used to determine differences between scores of children in the upper quartile groups in fourth year classes in each school, and similarly for lower quartile groups.

Finally, in a separate section of the study, the relationship between children's level of academic self construct and the other relevant variables will be examined in turn. Initially, coefficients between ASC scores and scores on each variable will be determined. Then a comparison will be made between mean scores of children in the upper and lower ASC quartile groups on each variable concerned, and a t test will be applied to the results.

Following the testing of the hypothesis, the relationship between ASC scores and peer and teacher ratings will be examined as will the association between ASC scores and U.R.Q's. In addition, scores on the construct of self and attitudinal indices of upper ASC quartile children who are in the third or fourth academic quartile will be compared with those of children in the lower ASC quartile who are in the first and second academic quartile. Thus differences in scores between children who over-estimate and under-estimate their academic performance will be ascertained and as groups are small in this part of the analysis, a Mann-Whitney U test will be used.
CHAPTER 8

ANALYSIS OF RESULTS

The data will be analysed in the order of the hypotheses listed in Chapter 7, Section 2. This chapter will be divided into the following six sections, under which the hypotheses are grouped, and at the conclusion of each section the results will be summarised and discussed.

1. Children's constructs of peers in the school situation.
2. Teacher constructs of children in the school situation.
3. Children's constructs of self in the school situation.
4. Children's school related attitudes.
5. The influence of "setting".
6. The academic self construct and its relationship to the other variables under consideration in this study.
7. Inter-relationships between variables and a consideration of the construct validity of the tests used.

1. Children's constructs of peers in the school situation.

The first hypothesis reads "that children's constructs of the attitudes and behaviour in class of peers high in academic ability tend to be more favourable than their constructs in these respects of peers low in academic ability".

To test the hypothesis, a five-item "Constructs of peers in respect to attitudes and behaviour in class" scale (CPABC) was devised, which subjects completed to rate first "children they know who get on very well with school work" and secondly, "children they know who don't get on very well with school work". Thus two scores were obtained from each subject, one for children above average in ability which will be referred to as the CPABC Av+ scale; and the other for children below average in ability which will be referred to as the CPABC Av- scale.

The "constructs of peers" measures provide indices of groups of children and not of individual subjects and in this way they differ from all other measures used in the study where scores for individual subjects
are obtained. For this reason, the standard procedure for analysis
is modified accordingly.

First of all, the hypothesis is tested by determining differences
between mean scores of subjects on the CPABC Av+ and CPABC Av- scales
in the various sex and age groups.

Then from this point on, a number of subsidiary matters will be
considered and the focus of attention will no longer be on differences
in mean scores between the two measures but on the separate CPABC Av+
and CPABC Av- scores. By this means, children's reactions to peers in
the two academic criteria groups can be more fully investigated. The
analysis proceeds by investigating how peers of high and low academic
standing, respectively, are construed in relation to the academic
ability level of the children construing. Age trends in this association
will be noted.

The age factor is then taken into account in another way.
Differences in how children in the two academic criteria groups are
construed in the older and younger age ranges are then examined,
irrespective of the ability level of the subjects construing.

Finally, sex differences in CPABC scores are investigated.

To put it in another way, four questions are asked:

1. Are children of high and low academic status, respectively,
construed differently by peers of varying academic ability levels?

2. Are developmental age differences in that relationship discernible?

3. Are children in the two academic criteria groups construed
differently by younger and older subjects?

4. Are children of high and low academic standing construed
differently by boys and girls?

A comparison of mean scores on the CPABC Av+ and CPABC Av- scales.

Hypothesis 1 is tested by determining differences between mean
scores of subjects on the CPABC Av+ and CPABC Av- scales in the various
sex and age groups. A t test for related samples was used in this
analysis. Table 8:1 refers.
A comparison of mean scores on the CPABC Av+ and CPABC Av- scales analysed according to sex and age groups

<table>
<thead>
<tr>
<th></th>
<th>CPABC Av+ scale</th>
<th>CPABC Av- scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>31.20</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>27.97</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>177</td>
<td>34.86</td>
</tr>
<tr>
<td>2nd Year</td>
<td>179</td>
<td>31.77</td>
</tr>
</tbody>
</table>

Comparison of mean scores on the CPABC Av+ and CPABC Av- scales clearly indicate that children high in academic ability are rated more favourably by their peers on this dimension than are children low in academic ability. The level of confidence reached the .001 level in each of the comparisons made. Accordingly, hypothesis 1, which states "that children's constructs of the attitudes and behaviour in class of peers high in academic ability tend to be more favourable than their constructs in these respect of peers low in academic ability" is confirmed.

The analysis proceeds by concentrating on how peers in high and low academic status groups are regarded by children in the various ability, age and sex groups. To this end, an analysis of variance technique was applied to CPABC Av+ and CPABC Av- scores separately which allowed comparisons to be made between constructs of subjects in the four V.R.Q. quartile groups into which the subjects are divided, and in the two age groups. A separate analysis is undertaken for boys and girls and the results are given in Table 8:2.
Table 8:2

CPABC measures

Analysis of variance according to academic ability and age groups

CPABC Av+ scale

<table>
<thead>
<tr>
<th></th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (N = 201)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>208.694</td>
<td>3.624</td>
<td>.05</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>534.050</td>
<td>9.725</td>
<td>.01</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>15.472</td>
<td>.269</td>
<td>n.s.</td>
</tr>
<tr>
<td>Girls (N = 356)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>346.781</td>
<td>6.743</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>827.523</td>
<td>16.091</td>
<td>.001</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>161.662</td>
<td>3.144</td>
<td>.05</td>
</tr>
</tbody>
</table>

CPABC Av− scale

<table>
<thead>
<tr>
<th></th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (N = 201)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>304.656</td>
<td>7.271</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>449.173</td>
<td>8.490</td>
<td>.01</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>15.179</td>
<td>.287</td>
<td>n.s.</td>
</tr>
<tr>
<td>Girls (N = 356)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>111.235</td>
<td>2.008</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>200.954</td>
<td>3.771</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>54.029</td>
<td>.975</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The academic ability factor.

Table 8:2 indicates that both boys and girls in the various academic ability groups differ in their perceptions of peers of high academic status. The same trend is evident for boys in respect to perceptions of peers low in academic status, but not for girls. The situation becomes clearer when mean CPABC scores of children in the upper and lower academic quartiles are contrasted, for it was there that the main differences occurred. These results are set out in Table 8:3.
Table 8.3
A comparison of mean CPABC scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th></th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>CPABC Av+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>34.00</td>
<td>5.95</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>31.26</td>
<td>7.59</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>35.42</td>
<td>4.71</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>35.54</td>
<td>7.12</td>
</tr>
<tr>
<td>CPABC Av-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>18.33</td>
<td>7.37</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>22.23</td>
<td>7.82</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>22.11</td>
<td>8.93</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>23.65</td>
<td>10.31</td>
</tr>
</tbody>
</table>

It will be noted that on the CPABC Av+ scale upper quartile children rated high academic status peers more favourably on each of the four comparisons than did lower quartile children. However, the degree to which this occurred differed considerably. The trend was most marked among 2nd. year girls (p. = .001) and 4th. year boys (p. = .05) but the difference did not reach statistical significance in the case of 2nd. year boys and 4th. year girls.

The same general trend, but in the reverse direction, is also noted among CPABC Av- scale comparisons. In each instance, upper quartile children rated those of low academic status less favourably than did lower quartile children, but again the degree to which they did so differed markedly. Among the 4th year boys' group, the difference reached the .01 level of significance and amongst 2nd year boys and 4th year girls, the .05 level. No significant differences were noted in the mean CPABC Av- scores for 2nd year girls.

Subject to the qualifications made immediately above, there was a tendency for some upper quartile children to attribute more favourable characteristics to peers in high ability groups and less favourable characteristics to peers in low ability groups than did children in the lower quartile groups.
One further means of exploring the relationship between VRQ's and CPABC scores in which data from the entire sample is used, is by determining correlation coefficients between the two variables. The results are shown in Table 8:4.

**Table 8:4**  
Correlation coefficients between VRQ's and CPABC scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficient</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPABC Av+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.15320</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.16914</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.09047</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.33156</td>
<td>.001</td>
</tr>
<tr>
<td>CPABC Av-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>-.35162</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>-.18215</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>-.20768</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>199</td>
<td>-.12034</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

On the CPABC Av+ scale, a positive relationship between VRQ's and scores on this measure was noted among 2nd year girls and a negative relationship was noted between VRQ's and CPABC Av- scores among 4th year boys' and 4th year girls' groups. The relationship was not significant in the remaining comparisons.

On the CPABC Av- scale only is a possible developmental age trend in the relationship between the two variables evident, but differences between coefficients were not significant as indicated by the Bruning and Katz (1968) test for difference between independent correlations.

In summary, the results presented in Tables 8:2, 8:3 and 8:4 indicate that in some instances children high in academic standing were construed more positively by upper quartile children than by lower quartile children and that children low in academic standing were construed less favourably by subjects in upper quartile groups than by subjects in lower quartile groups. However, the tendency was pronounced only in the 2nd year girls' CPABC Av+ scores and 4th year boys' CPABC Av- scores. Elsewhere, the relationship between the two variables was moderate or non significant.
The age factor.

The ANOVA table, Table 8:2 indicated an age difference in mean CPABC scores on three of the four comparisons made. These differences are further investigated in Table 8:5.

Table 8:5
A comparison of mean CPABC scores of children in the upper and lower age groups, analysed according to sex

<table>
<thead>
<tr>
<th></th>
<th>4th Year</th>
<th></th>
<th></th>
<th>2nd Year</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>F</td>
<td>p</td>
</tr>
<tr>
<td>CPABC Av+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>96</td>
<td>31.20</td>
<td>7.71</td>
<td>105</td>
<td>27.97</td>
<td>7.85</td>
<td>9.27</td>
<td>.01</td>
</tr>
<tr>
<td>Girls</td>
<td>177</td>
<td>34.88</td>
<td>5.55</td>
<td>179</td>
<td>31.77</td>
<td>8.72</td>
<td>16.09</td>
<td>.001</td>
</tr>
<tr>
<td>CPABC Av-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>96</td>
<td>20.34</td>
<td>7.44</td>
<td>105</td>
<td>23.30</td>
<td>7.48</td>
<td>7.27</td>
<td>.01</td>
</tr>
<tr>
<td>Girls</td>
<td>177</td>
<td>24.03</td>
<td>7.91</td>
<td>179</td>
<td>24.95</td>
<td>8.26</td>
<td>3.77</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The data in this table enable age differences in CPABC scores identified in the ANOVA table to be more closely examined. On the CPABC Av+ measure, 4th year children as a group and irrespective of ability level construed high academic status peers more favourably than did 2nd year children. As far as the CPABC Av- results were concerned, 4th year boys construed low academic status peers less favourably than did 2nd year boys but amongst girls this trend was not in evidence.

The general trend, subject to the exception of CPABC Av- girls' results, is for older children to construe high academic status peers more favourably, and low academic status peers less favourably, than did younger children in this sample.

Ability and age interaction effect.

An ability and age interaction effect among girls on the CPABC Av-scale was identified in the ANOVA table, Table 8:2. An inspection of the data reveals a number of inconsistencies between means of the various quartile groups, only the most important of which need be referred to. It appeared that upper quartile younger girls rated below average peers more highly than did their older counterparts; and that lower quartile younger girls rated that same group less favourably than did their older peers in the corresponding quartile group.
Sex differences in mean CPABC scores.

Sex differences in scores on the two measures are now considered. A t test for independent samples was used for this comparison and the results are shown in Table 8.6.

Table 8.6
A comparison of mean CPABC scores of boys and girls, analysed according to age group.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPABC Av+ scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>31.20</td>
<td>7.71</td>
<td>177</td>
<td>34.88</td>
<td>5.52</td>
<td>4.13</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>27.97</td>
<td>7.86</td>
<td>179</td>
<td>31.77</td>
<td>8.77</td>
<td>3.76</td>
<td>.001</td>
</tr>
<tr>
<td>CPABC Av- scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>20.34</td>
<td>7.44</td>
<td>177</td>
<td>24.03</td>
<td>7.91</td>
<td>3.83</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>23.30</td>
<td>7.48</td>
<td>179</td>
<td>24.91</td>
<td>8.26</td>
<td>1.68</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

It is evident from the CPABC Av+ results given in the above table, that girls rated superior ability peers far more favourably than did boys. The CPABC Av- scores showed, too, that fourth year girls rated children of below average academic ability more favourably than did boys, but although the same trend was observed in the second year, the sex differences did not reach statistical significance. In general, then, there was a strong tendency for girls to perceive peers in both extreme academic status groups more favourably than did boys.

Summary of CPABC results.

1. In general, children high in academic ability were rated markedly more favourably on this dimension than were children low in academic ability.

2. A further concern was with the extent to which children in two academic criteria levels were rated differently by subjects in the four V.R.Q. quartile groups. The results were inconsistent. Correlation coefficients between V.R.Q.'s and CPABC Av+ scores were significant in one of the four comparisons only and, on the CPABC Av- scale, two of the four coefficients denoted a significant relationship between the two variables.
When scores of children in extreme quartile groups were compared, a tendency was noted for upper quartile subjects to attribute more favourable characteristics to peers in the high academic status group and less favourable characteristics to peers in the low academic status group than did children in the lower quartile category. The trend, however, was not consistent over all age groups.

3. The ability factor data were then examined for evidence of possible developmental age trends in the relationship between academic ability and CPABC scores. In essence, the object of this part of the enquiry was to discover whether the relationship between the two variables became more marked over a period of time. Correlation coefficients indicated that this trend occurred slightly in the CPABC Av-results only but the differences between the coefficients were non-significant. Again no consistent tendency emerged.

4. Age trends in mean CPABC scores of the whole age group where the ability level of the construing subjects was ignored also received attention. A strong tendency emerged, with the exception of CPABC Av-girls, for children in high academic status groups to be construed more positively in the older age range than in the younger one. Conversely, children in low academic status groups were rated less positively by older children than by younger children.

5. A minor ability and age interaction effect among girls on the CPABC scale was noted. It appeared that upper quartile younger girls rated below average peers more highly than did older girls in the corresponding upper quartile group; in the fourth quartile group, the reverse trend operated.

6. Girls rated children in both academic criteria groups more positively than did boys.

The CPPR scale.

Hypothesis 2 reads "that children's constructs of the peer relationships of peers high in academic ability tend to be more favourable than their constructs in this respect of peers low in academic ability".

To test this hypothesis a five-item "Constructs of peers in respect to peer relationships scale" (CPPR) was devised which subjects completed
to rate "children they know who get on very well with school work" and "children they know who don't get on very well with school work". Thus two scores were obtained, one for above average ability children which will be referred to as the CPPR Av+ index; and the other for children below average in ability which will be referred to as the CPPR Av- scale.

The procedure for testing this hypothesis and for examining the data further is the same as that adopted for hypothesis 1.

A comparison of mean scores on the CPPR Av+ and CPPR Av- scales.

Hypothesis 2 is tested by comparing mean scores of children on the CPPR Av+ and CPPR Av- scales, for each sex and age group studied. Table 8:7 refers.

<table>
<thead>
<tr>
<th></th>
<th>CPPR Av+ scale</th>
<th>CPPR Av- scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>32.23</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>31.00</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>177</td>
<td>32.78</td>
</tr>
<tr>
<td>2nd Year</td>
<td>179</td>
<td>29.18</td>
</tr>
</tbody>
</table>

Comparison of scores on the CPPR Av+ and CPPR Av- measures point overwhelmingly to the conclusion that children high in academic ability are rated more positively in regard to peer relationships than are children low in academic ability. Hypothesis 2 is accordingly confirmed.

Ability, age and sex differences in CPPR scores.

The data will now be examined to determine whether children of high and low academic standing are construed differently by:

a. children in differing V.R.Q. quartile groups (this association will also be examined for developmental age trends),
b. children in differing age groups,
c. children in differing sex groups.

An analysis of variance table now follows in which the ability and age factors in CPPR scores are considered. Table 8:8 refers.
Table 8:8

CPPR measures

Analysis of variance according to academic ability and age groups

<table>
<thead>
<tr>
<th>CPPR Av+ scale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (N = 201)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>123.163</td>
<td>3.820</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>1.832</td>
<td>.057</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>69.039</td>
<td>2.141</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Girls (N = 356)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>3</td>
<td>39.270</td>
<td>.937</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>893.616</td>
<td>21.314</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>42.229</td>
<td>1.007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPPR Av- scale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (N = 201)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>139.484</td>
<td>3.109</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>256.356</td>
<td>6.713</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>28.139</td>
<td>.627</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Girls (N = 356)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>3</td>
<td>224.725</td>
<td>5.671</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>102.237</td>
<td>2.580</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>08.308</td>
<td>2.220</td>
</tr>
</tbody>
</table>

The academic ability factor.

The ANOVA table indicates a difference between mean CPPR scores of children in differing ability levels in three of the four comparisons made. The situation is further investigated by examining scores of children in the upper and lower quartile groups where the main differences occurred. This is the purpose of Table 8:9.
A comparison of mean CPPR scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPPR Av+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24 34.30 4.36</td>
<td>24 28.58 6.05</td>
<td>3.69</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26 32.38 6.88</td>
<td>27 31.25 5.99</td>
<td>.63</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45 33.00 4.40</td>
<td>45 32.63 6.93</td>
<td>.28</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44 30.45 9.13</td>
<td>45 28.11 7.50</td>
<td>1.32</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPPR Av-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24 19.95 6.68</td>
<td>24 25.25 6.50</td>
<td>2.78</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26 23.50 7.01</td>
<td>27 25.77 6.32</td>
<td>1.16</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45 23.82 6.84</td>
<td>44 26.67 5.99</td>
<td>1.95</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44 20.47 8.30</td>
<td>45 24.51 5.71</td>
<td>2.66</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It will be noted that on the CPPR Av+ scale, there is a marked difference in scores of 4th year boys in upper and lower quartile groups, which would account in part for the significant difference between ability levels among boys recorded in Table 8:8. In the remaining three CPPR Av+ comparisons, upper quartile children's scores are slightly higher than those of lower quartile children, but the differences were not statistically significant.

On the CPPR Av- scale, the differences recorded in Table 8:8 are accounted for, in part, by the finding in Table 8:9 that among 4th year boys and 2nd year girls, upper and lower quartile group scores differed significantly. The same trend was observed in respect to 2nd year boys and 4th year girls but it did not reach the .05 level of significance.

Among 4th year boys, then, the CPPR Av+ results indicate that children in the high academic status groups were rated more positively by upper quartile subjects than by lower quartile subjects. In no other instance did differences in scores reach a conventional level of statistical significance on this scale. The CPPR Av- results showed that there was a tendency for the lower academic status group to be less positively perceived by upper quartile subjects than by lower quartile subjects, but differences in scores were statistically significant only among 4th year boys and 2nd year girls.
Next, correlation coefficients were determined between V.R.Q's and CPPR scores. Table 8:10 refers.

**Table 8:10**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficient</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPPR Av+</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.24265</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.10607</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>-.00258</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.13781</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>CPPR Av−</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>-.35047</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>-.09513</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>-.19021</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>-.23552</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Among 4th year boys a positive and significant relationship is indicated between V.R.Q's and CPPR Av+ scores and a negative and significant relationship between V.R.Q's and CPPR Av− scores. In no other age or sex group did a correlation coefficient reach the .05 level of significance on either scale. However, differences between coefficients of older and younger boys did not reach a conventional level of significance.

These data may, or may not, reflect a slight possible developmental age trend in this association in respect to boys' results but they obviously do not in respect to girls' results.

In summary, it would appear that in the 4th year boys' group, children high in academic standing are construed more positively by above average ability subjects than they are by below average ability subjects, and that for children low in academic standing a reverse trend obtained. However, in the remaining comparisons made, no significant relationship between the two variables was found, except in the 2nd year girls' CPPR Av− results.
The age factor.

The ANOVA table, Table 8:8, indicates an age difference in mean CPPR scores on three of the four comparisons made. The differences are examined in more detail in Table 8:11.

Table 8:11
A comparison of mean CPPR scores of children in the upper and lower age groups, analysed according to sex

<table>
<thead>
<tr>
<th></th>
<th>4th Year</th>
<th></th>
<th>2nd Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
</tr>
<tr>
<td>CPPR Av+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>96</td>
<td>31.23</td>
<td>5.42</td>
<td>105</td>
</tr>
<tr>
<td>Girls</td>
<td>177</td>
<td>32.78</td>
<td>5.79</td>
<td>179</td>
</tr>
<tr>
<td>CPPR Av-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>96</td>
<td>21.89</td>
<td>6.64</td>
<td>105</td>
</tr>
<tr>
<td>Girls</td>
<td>177</td>
<td>25.19</td>
<td>6.27</td>
<td>179</td>
</tr>
</tbody>
</table>

This table shows that on the CPPR Av+ scale, older girls (but not boys), rated superior ability children more favourably than did their younger counterparts. On the CPPR Av- measure, older boys (but not girls) rated children low in academic ability less favourably than did their younger peers. In general, then, no consistent age trend is discernible.

Sex differences in mean CPPR scores.

Sex differences in scores on the two measures are now compared and a t test for independent samples was used for this purpose. The results are set out in Table 8:12.

Table 8:12
A comparison of mean CPPR scores of boys and girls, analysed according to age group

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPPR Av+ scale</td>
<td></td>
<td>4th Year</td>
<td>96</td>
<td>31.23</td>
<td>5.42</td>
<td>177</td>
<td>32.78</td>
<td>5.79</td>
<td>2.19</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>2nd Year</td>
<td>105</td>
<td>31.00</td>
<td>6.21</td>
<td>179</td>
<td>29.88</td>
<td>7.96</td>
<td>-1.32</td>
<td>n.s</td>
<td></td>
</tr>
<tr>
<td>CPPR Av- scale</td>
<td></td>
<td>4th Year</td>
<td>96</td>
<td>21.89</td>
<td>6.64</td>
<td>177</td>
<td>25.19</td>
<td>6.27</td>
<td>4.00</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>2nd Year</td>
<td>105</td>
<td>24.18</td>
<td>6.86</td>
<td>179</td>
<td>23.86</td>
<td>6.83</td>
<td>.38</td>
<td>n.s</td>
<td></td>
</tr>
</tbody>
</table>

The results set out in this table indicate a difference in responses between the two age groups. Amongst 4th year children in this sample, it would seem that girls construe peers in both academic criteria groups in more positive terms than do boys. Among 2nd year children, no such sex difference was apparent.
Summary of CPPR results.

1. The results clearly indicate that children of high academic status were rated markedly more favourably in respect to peer relationships than were children low in academic status.

2. The extent to which children of high and low academic standing were perceived differently by their peers in the four V.R.Q. groups was then considered. Among 4th year boys only, a positive and significant correlation was found between V.R.Q's and CPPR Av+ scores and a negative and significant correlation was also noted between V.R.Q's and CPPR Av- scores for that same group. In none of the other six comparisons made did a correlation coefficient indicate a statistically significant relationship between the variables under consideration. A further approach to the problem was attempted by comparing scores of children in the extreme quartile groups. 4th year boys in the first quartile construed children in the upper ability group more favourably and children in the lower ability groups less favourably than did their fourth quartile peers. Only one other significant difference in scores was observed, and that was among 2nd year girls on the CPPR Av- scale. In only two of the four groups studied, therefore, was support given to the contention that there is an association between the academic level of the child construing and his judgements of peers in the contrasting academic status groups.

3. The ability factor data were then examined for evidence of a possible developmental age trend in the relationship between academic ability and CPPR scores. This relationship was more pronounced among 4th year boys than it was among 2nd year boys but differences between coefficients were not significant. The same pattern did not obtain in respect to girls' scores and the results were therefore inconclusive.

4. In general, no consistent age trend in scores of total age groups (irrespective of ability quartile) was identified. On the CPPR Av+ scale, upper ability children were construed more positively by 4th year girls than was evident in the corresponding 2nd year group of girls, and on the CPPR Av- measures, lower ability children were rated less positively by 2nd year boys. No other age differences in scores emerged.

5. A sex difference in responses between the two age groups was noted. 4th year girls construed peers in both academic criteria groups in more positive terms than did boys but among 2nd year children no such sex difference was observed.
The affective sociometric test

Hypothesis 3 reads "that there is a positive relationship between children's level of academic ability and their affective sociometric status".

This hypothesis was tested by asking subjects to nominate three children of their own sex and in their own school year group whom they would most like to associate with during their free time on a school trip. Unlike the constructs of peers measures, this technique enabled scores to be obtained for each individual subject. A total sociometric score was calculated for each child and an analysis of variance was carried out, according to ability, for each sex group separately. Scores of children in extreme quartile groups were compared and correlation coefficients between V.R.Q's and sociometric scores were determined for the whole sample. In this instance, of course, no purpose is served in comparing scores of the different age and sex groups.

**Ability difference in scores on the affective sociometric test.**

The analysis of variance data is given in Table 8:13.

<table>
<thead>
<tr>
<th>Table 8:13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analysis of variance according to academic ability group</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>d.f.</th>
<th>MS</th>
<th>f</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>7.694</td>
<td>2.014</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>8.264</td>
<td>3.094</td>
<td>.05</td>
</tr>
</tbody>
</table>

**The academic ability factor.**

No differences were observed among the mean sociometric scores of boys in the four academic quartile groups, but a difference at the .05 level of significance emerged in the girls' results. Additional data on the relationship between V.R.Q's and sociometric status comes from a comparison of mean scores of children in the upper and lower quartile groups which is set out in Table 8:14.
A comparison of mean sociometric scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>3.25</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>2.57</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>2.62</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>3.45</td>
</tr>
</tbody>
</table>

This closer inspection of the data reveals that amongst 4th year boys, children in the upper quartile group were higher in sociometric position than children in the lower quartile group (p. = .05). This relationship was also found to exist among 2nd year girls (p. = .001) but not amongst 4th year girls and 2nd year boys. No consistent trend in results is therefore evident.

In the next stage of the analysis, correlation coefficients were determined between V.R.Q's and sociometric results, the details of which are given in Table 8:15 below.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficient</th>
<th>p</th>
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<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.27939</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.08452</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.05665</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.27716</td>
<td>.01</td>
</tr>
</tbody>
</table>

Data in this table substantially confirm the results detailed in ANOVA table and Table 8:14 where mean scores of upper and lower quartile children were compared. A positive and statistically significant relationship exists between V.R.Q's and sociometric scores among 4th year boys and 2nd year girls, but not among 4th year girls and 2nd year boys.

The data suggest that the association between the two variables is slightly intensified over the two year period in the case of boys, but this certainly does not hold for the girls' comparison where a reverse trend is evident. Findings concerning the existence of a possible developmental age trend in the association between academic ability and sociometric status are therefore inconclusive.
In general, the hypothesis "that there is a positive relationship between children's level of academic ability and their affective sociometric status" received limited support only as the findings are inconsistent across age and sex groups.

Summary of affective sociometric criterion results.

1. Overall differences in mean sociometric scores between children in the four V.R.Q. groups were significant for boys at the .05 level but were not significant for girls. An inspection of scores of upper and lower quartile subjects revealed that the former groups obtained higher scores than the latter groups but only in the case of 4th year boys and 2nd year girls did the differences reach a conventional level of statistical significance, at the .05 and .001 levels, respectively. Correlation coefficients between V.R.Q's and sociometric scores on the affective criterion were positive and statistically significant in the 4th year boys' and 2nd year girls' groups but not in the 4th year girls' and 2nd year boys' groups. In general, the findings in this respect are inconsistent.

2. The relationship between academic ability and sociometric status increased over the two year period for boys and decreased over the same period of time for girls. No clear developmental age trend in this association was therefore apparent.

Direction of sociometric choice according to level of academic ability.

Hypothesis 4 states "that on the affective sociometric criterion, children tend to choose as associates those of similar intelligence level to themselves".

Results from the affective sociometric test referred to in the previous pages were also used to test this hypothesis. But where previously the central concern was with the academic level of the subject being chosen, what is now under consideration is the association between the level of academic ability of the choosers and the children they chose. In other words, what is being investigated here is the extent to which children choose those of similar intelligence level to themselves. Each quartile group in each sex and age group was considered in turn and the number of choices given to its own and other quartile groups was determined.
As the main interest centres on upper and lower academic quartile groups, only these results are given below in Table 8:16. A chi-square test was used to determine differences in distribution of choices for each quartile group separately.

### Table 8:16

Direction of affective sociometric choices of subjects in upper and lower ability quartile groups in relation to the ability level of the children chosen, analysed according to sex and age groups

<table>
<thead>
<tr>
<th>Choices given to Quartile Quartile Quartile Quartile chi-square</th>
<th>d.f.</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>4th Year girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>59</td>
<td>28</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>33</td>
<td>36</td>
</tr>
</tbody>
</table>

This table indicates that among 4th year boys and 2nd year girls, there is a statistically significant tendency for upper quartile children to direct a disproportionate number of sociometric choices to their own quartile group. The 2nd year boys' results, although statistically significant do not suggest that upper quartile children give more choices to their own ability level peers than they do to other groups except in one respect. Only nine choices were given to 2nd quartile children whereas 3rd and 4th quartile children received 24 and 13 choices, respectively. In no instance was an in group preference observed in the lower quartile results in any age or sex group.

A marked preference to select children of one's own intelligence level was apparent in the 4th year boys' and 2nd year girls' groups, and
to that extent only is the hypothesis "that on the affective sociometric criterion, children tend to choose those of similar intelligence level to themselves" confirmed. In general, the results do not support this contention.

**Academic sociometric criterion.**

Hypothesis 5 states "that there is a positive relationship between children's level of academic ability and their academic sociometric status". Essentially, what is being investigated here is children's ability to recognise the high academic competence of others and the hypothesis was tested by asking children to nominate three peers of the same sex and in the same year group as themselves whom they considered would best represent their school in a general knowledge contest. Each subject's score was calculated and the standard procedure for analysis of data in this study was applied.

**Ability group differences in scores on the academic sociometric test.**

The analysis of variance data is given in Table 8:17.

<p>| Table 8:17 |</p>
<table>
<thead>
<tr>
<th>Analysis of variance according to academic ability group</th>
</tr>
</thead>
<tbody>
<tr>
<td>d.f.</td>
</tr>
<tr>
<td><strong>Boys (N = 201)</strong></td>
</tr>
<tr>
<td>Ability</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
</tr>
<tr>
<td>Ability</td>
</tr>
</tbody>
</table>

**The academic ability factor.**

A highly significant difference was observed between mean academic sociometric scores of children in the four quartile groups for both boys and girls. A more detailed analysis was next carried out by comparing mean scores of children in the upper and lower academic quartile groups and the results are shown in Table 8:18.
Table 8:18
A comparison of mean academic sociometric scores of children in upper and lower V.R.Q. quartile groups, analysed according to age and sex

<table>
<thead>
<tr>
<th>Age and Sex</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>7.20</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>27</td>
<td>5.73</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>44</td>
<td>3.77</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>45</td>
<td>5.36</td>
</tr>
</tbody>
</table>

Little comment is necessary here. In each instance, a highly significant difference was indicated between academic sociometric scores of children in the extreme ability quartile groups.

One further analysis was carried out where correlation coefficients between V.R.Q's and academic sociometric scores were established. Table 8:19 refers.

Table 8:19
Correlation coefficients between V.R.Q's and academic sociometric scores

<table>
<thead>
<tr>
<th>Age and Sex</th>
<th>N</th>
<th>Coefficient</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.54688</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.47226</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.36843</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.47801</td>
<td>.001</td>
</tr>
</tbody>
</table>

Again, the results are clear. In each age and sex group, a highly significant and positive relationship was indicated between V.R.Q's and academic sociometric status.

The ability factor data give no indication of a developmental age trend in the association between V.R.Q's and academic sociometric status.

In general, the findings from Tables 8:17, 8:18 and 8:19 unequivocally support the hypothesis "that there is a positive relationship between children's level of academic ability and their academic sociometric status" and hypothesis 5 is accordingly confirmed.

Summary of academic sociometric criterion results.

1. In all analyses carried out, a highly significant relationship was found between children's level of academic ability and their academic sociometric status.
2. As the relationship between ability and academic sociometric status was stronger among 4th year boys than it was among 2nd year boys, and weaker among 4th year girls than it was among 2nd year girls, no consistent developmental age trend in this association is apparent.

Discussion of data presented in Section 1: Children's constructs of peers in the school situation.

Two measures, the "Constructs of peers in respect to attitudes and behaviour in class" scale and the "Constructs of peers in respect to peer relationships" scale were devised and they were completed by subjects, first to assess children they considered to be successful in school work, and secondly, to assess children they considered to be unsuccessful in school work. That children were able to recognise the ability of others, at least in broad terms, was demonstrated by the academic sociometric criterion findings where a positive and highly significant relationship obtained between V.R.Q's and academic sociometric status in all participating sex and age groups.

The first hypothesis 'that children's constructs of the attitudes and behaviour in class of peers high in academic ability tend to be more favourable than their constructs in these respects of peers low in academic ability' was confirmed. When mean CPABC Av+ and mean CPABC Av-scores of subjects in the several criteria groups were compared, children high in academic ability were found to be rated uniformly more positively on this dimension than were children low in academic ability, and to a marked degree.

The data were then re-examined to take account of possible differences in perceptions of peers of high and low academic standing which might be associated with membership of the various ability, age and sex groups which are being studied.

The first additional area of enquiry was concerned with the extent to which children who were high and low in academic standing were rated differently by their peers in the four V.R.Q. quartile groups. In other words, the intention was to discover whether any bias towards one group or the other was evident which might be associated with the ability level of the subject making the judgement. Correlation coefficients between
V.R.Q's and CPABC scores were significant in three of the eight comparisons made only but a tendency emerged for upper quartile children to attribute more favourable characteristics to peers in high ability groups and less favourable characteristics to peers in low ability groups than did children in lower quartile groups. In the latter groups, too, differences between CPABC Av+ and CPABC Av- scores were less marked. To a certain extent, then, the ability level of the subjects who were rating was associated with the judgements they made of children in the two criteria groups, but this bias was not generally found.

A second and associated matter of interest was concerned with developmental age trends in the relationship between V.R.Q's and CPABC scores. What was being investigated here was whether the association between the two variables was stronger among older children than it was among younger ones. There was, in fact, little conclusive evidence to suggest that it was. On the CPABC Av- scale the relationship was more pronounced in the 4th year but as this pattern was not repeated for CPABC Av+ results, no firm inferences can be drawn from these findings.

The third concern was with age changes in mean CPABC scores. The purpose here was to discover whether children of high and low academic standing were construed differently in the two age groups, and in this analysis, the ability level of the children rating was ignored. A comparison of mean scores of children in each group suggested that in most instances, older children assess high academic status peers more positively, and low academic status peers less positively, than did younger children, and to this extent, a developmental trend was evident.

Finally, it was clearly established that there was a tendency for girls to perceive peers in both extreme academic status groups more favourably than did boys.

The second hypothesis "that children's constructs of the peer relationships of peers high in academic ability tend to be more favourable than their constructs in this respect of peers low in academic ability" was also confirmed. On the CPFR measures, children high in academic status were rated more favourably on these traits than were children low in academic ability, a finding which was consistent across all age and sex groups studied.
A detailed examination of the CPPR data was also undertaken but few clear trends emerged. Only limited support was given to the contention that there is an association between judgements of children in the contrasting academic groups and the ability quartile of the subjects construing. No consistent developmental age trends in this association was apparent either.

Other findings can be briefly summarised. Differences in mean CPPR scores of children in the two age groups appeared, but they were inconsistent between the sex groups. Finally a sex difference where girls construed peers in both extreme academic groups more favourably than did boys emerged among older children but not younger ones.

When results of the CPABC and CPPR measures are compared, significant trends in relation to the academic standing of the children construing and to age and sex groups are somewhat less pronounced in the CPPR data than they are in the CPABC data. But as far as the crucial matter under discussion is concerned, findings from both indices substantially confirm the view that children's constructs of peers above average in ability and below average in ability, differ in the expected direction and to a marked extent.

A comparison of findings reported in the present study with previous research results will now be made but differences in the underlying rationale, content, and degree of structure of the construct measures used are among the complicating factors encountered in attempting this exercise. A further important consideration is whether subjects rated groups of children as opposed to rating individual subjects.

In the present investigation, children were asked to use the peer construct scale to assess contrasting ability groups and not individual children. The technique was similar to that used by Strauch (1970) whose work was referred to in Chapter 2, Section 1(ii). He found, from his Osgood semantic differential scale results, that without exception his subjects held mentally retarded pupils in lowest regard and that they rated regular class pupils most favourably of all. Special class pupils were placed in the middle position. No other study reviewed involved comparing and contrasting generalised assessments made of children in
differing intelligence categories but a research by Renz and Simenson (1969) is pertinent to this issue. They obtained free descriptions of individual mentally retarded children known to the subjects and it appeared that the slow learning group was not rejected with greater frequency than the normal group. Thus evidence in partial support of the CPABC and CPPR results reported here comes from Strauch's study, but not from that carried out by Renz and Simenson.

Reverting to studies where generalisations were obtained, the next matter to be considered is the relationship between the academic level of the subjects assessing and their constructs of peers high and low in academic standing. In this study, subjects in both upper and lower V.R.Q. quartile groups construed high ability peers more favourably than they did low ability peers, although the extent to which they did so differed. This is in contrast to the findings of Luchins and Luchins (1948) and Hargreaves (1968) who obtained free descriptions from upper academic stream children of their peers in the lower stream and vice versa. The results suggested that the two groups saw each other in negative and stereotyped terms but it is emphasised that perceptions of the subjects' own groups were not asked for. Their findings differed from the conclusions reached by Clark (1964a) who from an analysis of free descriptions of individual retarded children well known to the subjects, found no significant differences between the I.Q. means of accepting, indifferent and rejecting groups of subjects.

The investigations of Luchins and Luchins (1948) and Hargreaves (1968) as far as they are relevant to this study, support the findings reported in this section; and the study of Clark (1964a) as far as it is relevant, too, does not. The contradictory findings outlined in this discussion might be attributed to the different ratings instructions given by the various investigators. It is possible for a subject to possess a negative stereotype of mentally retarded or slow learning children generally and yet to be favourably disposed to one or more individual members of those groups whom he knows well. In the absence of research where large numbers of ratings of individual children whose achievement is below average are compared with stereotypes the same subjects hold of that group, then such comment must remain purely speculative.
Affective sociometric results.

An affective sociometric test was included in the present study because it provided an indirect evaluation of individual subjects by their peers in a situation which was meaningful to them and by a method which was not likely to invite obvious unfortunate comparisons. The hypothesis "that there is a positive relationship between children's level of academic ability and their affective sociometric status" received partial support. A relationship among the two variables was found in the expected direction among 4th year boys and 2nd year girls but not among 2nd year boys and 4th year girls. The results were therefore inconsistent across sex and age groups.

As reported in Chapter 2, 1(ii), Dentler and Hackett (1962), after an extensive review of the related literature, gave substantial support to the generalisation that mental ability is positively and significantly associated with sociometric status although the association is uniformly limited to the .25 to .50 range. In this investigation, coefficients were of a lower order and ranged from .05665 to .27939.

Secondly, sociometric scores of children in upper and lower V.R.Q. quartile groups were examined, which is generally thought to be a more sensitive way of determining the relationship between the two variables. Again the results were inconclusive. Although upper quartile groups tended to obtain higher mean scores than did lower quartile groups, only in the case of 4th year boys and 2nd year girls did the differences reach a conventional level of statistical significance. The trend of the findings is the same as that reported in Chapter 2, 1(ii) but it is certainly not so strongly in evidence. Although Elkins (1958) and Gallagher and Crowder (1957) identified some highly intelligent subjects who were placed in the lowest sociometric group and vice versa, their work still confirmed the common finding that children in the two extreme intelligence groups differ significantly in sociometric status. Results from this study, therefore, are only partially in accord with those reported in previous investigations.

A third treatment of sociometric results examined the relationship between the intelligence level of children choosing and the children they chose. Hypothesis 4 which stated "that on the affective sociometric
criterion, children tend to choose as associates those of similar intelligence level to themselves" received limited support only. When direction of choices of upper and lower quartile groups were examined, a statistically significant difference of consequence in the choice distribution was found only among upper quartile 4th year boys and 2nd year girls. This means that many children of high intelligence go outside their own intelligence range in choosing friends, and the same applies to many children in the low intelligence category. It is noticeable, however, that a marked in-group preference was found in two of the four upper quartile groups, but in none of the four lower quartile groups.

In the review of relevant literature, Barbe's (1956) study was cited, which is perhaps the most extensive in this area. He noted a general tendency for his subjects to choose those of the same or higher intelligence level as themselves, but despite this trend, below average children did not nominate those of very high intelligence. In contrast, about 20% of bright children's choices went to those with I.Q's of 100 and below. The results reported in the present study do not generally correspond with Barbe's findings. While an in-group preference was apparent in some instances, in general, children direct a sizeable proportion of their choices to peers in other ability groups.

In considering the affective sociometric results as a whole, it would seem that only among 4th year boys and 2nd year girls did a relationship exist between V.R.Q's and sociometric status. It was in those groups, too, that a marked in-group preference based on ability level, was apparent. Elsewhere, no relationship which reached a level of statistical significance was observed and no clear developmental age trends were observed either.

It now remains to consider the relationship between the "Constructs of peers" measures and the affective sociometric test. The former gives an assessment of selected groups of children on traits which are considered to be meaningful and important to the subjects concerned. The latter test identifies children's chosen companions in a given social situation and further, for the reasons expressed in Chapter 2, it is thought to give a measure of each individual subject's standing on a
favourable-unfavourable continuum. On neither test, however, are subjects required to rate directly all the pupils in their own class.

The peer construct scale results indicated that when children are asked to give an overall impression, they attribute more favourable characteristics to peers of high academic standing than they do to peers of low academic standing. The sociometric test results, however, revealed that while verbal reasoning scores and sociometric status may be positively related in some instances, the association did not hold good for all groups. However, the direction of choice table showed that despite any negative impressions that might be subscribed to, a sizeable proportion of children in upper and lower quartile groups expressed a preference to associate with some peers in different academic groups from their own. The notable exceptions were the upper quartile 4th year boys' and 2nd year girls' groups where a marked in-group preference was apparent.

In completing a sociometric test of this kind subjects do not assess each member of the class on a social acceptability criterion but what they do is to single out three classmates whom they would prefer to associate with in a given social situation. The information thus obtained is incomplete, and as indicated previously in this discussion, it would be instructive to discover the degree to which generalisations about ability groups as groups corresponded with totals derived from summing the rating scores of individual members of those same groups.

In brief, and as indicated by the test instruments used in this study, the results in this section suggest that although general impressions of children high in academic ability are more favourable than those of children low in academic ability, the relationship between verbal reasoning ability and social acceptance did not consistently obtain over the sex and age groups studied. Further, whatever general impressions might be held, and while some in-group preferences were apparent, many children in both the upper and lower quartile groups intimated a preference to associate with schoolmates dissimilar in ability level to themselves.
2. Teacher constructs of children in the school situation.

In this section, results from the three teacher constructs of children scales concerned with task orientation, attitudes in class and peer relations will be considered in hypothesis order. The scales were completed by teachers in School NS and School ES only.

Before the analysis proceeds, a preliminary comment is made. Although teachers were asked to rate children on a five point scale in accordance with the normal curve of distribution where possible, some teachers found this difficult to do especially where peer relationships were concerned. However, despite variations among teachers in the range of the scale used, ratings did discriminate between children in the various academic ability groups in the expected direction.

The procedure for analysis will be as follows. First, the analysis of variance technique will be used to identify differences between the four ability groups. Secondly, scores of children in upper and lower quartile groups will be compared. Thirdly, coefficients between V.R.Q's and teacher ratings will be determined. Finally, differences between boys and girls in respect to teacher ratings will be examined.

In this section, as teachers are the construing subjects, developmental age trends in the association between academic ability and teacher scale scores, and age differences in general, will not be investigated.

The CTTO scale.

The sixth hypothesis states "that there is a positive relationship between children's level of academic ability and teachers' ratings of the children's task orientation". This hypothesis was put to the test by asking teachers to complete a five-item "Constructs of teachers in respect to children's task orientation" (CTTO) scale.

Ability group differences in mean CTTO scores.

First, ability group differences in mean CTTO scores are examined using an analysis of variance technique.

The results are presented in Table 8:20.
Table 8:20

CTTO measure

Analysis of variance according to academic ability group

<table>
<thead>
<tr>
<th></th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>3</td>
<td>380.542</td>
<td>18.939</td>
<td>.001</td>
</tr>
<tr>
<td>Ability (N = 201)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>3</td>
<td>243.081</td>
<td>15.284</td>
<td>.001</td>
</tr>
<tr>
<td>Ability (N = 246)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8:20 shows that for both sexes, a highly significant difference in CTTO scores was in evidence between children in the four verbal reasoning quartile groups. A comparison of mean CTTO scores of subjects in upper and lower quartile groups now follows and the results are given in Table 8:21.

Table 8:21

A comparison of mean CTTO scores of children in the upper and lower V.R.Q. quartile groups, analysed according to age and sex

<table>
<thead>
<tr>
<th>Quartile</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>Lower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>21.33</td>
<td>3.95</td>
<td>24</td>
<td>13.50</td>
<td>4.06</td>
<td>6.77</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>27</td>
<td>19.80</td>
<td>4.79</td>
<td>27</td>
<td>14.22</td>
<td>4.56</td>
<td>4.34</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>29</td>
<td>21.96</td>
<td>3.33</td>
<td>28</td>
<td>16.14</td>
<td>4.97</td>
<td>5.17</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>33</td>
<td>21.51</td>
<td>3.64</td>
<td>33</td>
<td>18.15</td>
<td>4.45</td>
<td>3.36</td>
<td>.001</td>
</tr>
</tbody>
</table>

The results given above show clearly that in each age and sex group studied, upper quartile children received significantly higher CTTO ratings than did lower quartile children.

Confirmation of these findings comes from an examination of correlations between V.R.Q.'s and CTTO scores which are given in Table 8:22.

Table 8:22

Correlation coefficients between V.R.Q.'s and CTTO scores

<table>
<thead>
<tr>
<th>Quartile</th>
<th>N</th>
<th>Coefficients</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.48403</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.46193</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>113</td>
<td>.51757</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>133</td>
<td>.35684</td>
<td>.001</td>
</tr>
</tbody>
</table>
The results given in Table 8:22 again confirm the general findings reported previously that there is a positive and highly significant relationship between children's level of academic ability and teacher constructs of children's task orientation. Hypothesis 6 is thus confirmed.

**Sex differences in mean CTTO scores.**

Sex differences in mean scores on this dimension are now examined. Table 8:23 refers.

**Table 8:23**

A comparison of mean CTTO scores of boys and girls, analysed according to age group.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>17.23</td>
<td>5.14</td>
<td>113</td>
<td>19.24</td>
<td>4.58</td>
<td>2.96</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>17.07</td>
<td>4.98</td>
<td>133</td>
<td>19.73</td>
<td>4.27</td>
<td>4.35</td>
<td>.001</td>
</tr>
</tbody>
</table>

A comparison of mean CTTO scores of boys and girls indicates a clear sex difference. 4th year girls' scores were significantly higher than those of boys, and this trend was even more marked in the 2nd year group.

In addition to identifying sex differences in CTTO scores, this table is also useful in that it illustrates the generally high level of teacher ratings.

**Summary of CTTO results.**

The findings reported in this sub-section point to a positive and highly significant relationship between pupils' level of academic ability and constructs of teachers in respect to children's task orientation. This association was consistently found in all three analyses made. In addition, it was reported that teachers rated girls more positively than they did boys on this dimension.
The CTAC scale.

The next hypothesis which was generated, hypothesis 7, states "that there is a positive relationship between children's level of academic ability and teachers' ratings of children's attitudes in class". A five-item "Constructs of teachers in respect to children's attitude in class" (CTAC) scale was constructed in order to test the hypothesis and the scale was completed by form teachers in School ES and School NS. The procedure for analysis of scores is the same as that which applied to CTTO results.

Academic ability group differences in mean CTAC scores.

The analysis begins by examining ability group differences in mean CTAC scores and the results are given in Table 8:24.

<table>
<thead>
<tr>
<th>Boys (N = 201)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>146.414</td>
<td>8.082</td>
<td>.001</td>
</tr>
<tr>
<td>Girls (N = 246)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>62.386</td>
<td>4.346</td>
<td>.01</td>
</tr>
</tbody>
</table>

This table indicates a strong difference in mean CTAC scores of children in the four ability groups which is further investigated by comparing scores of children in upper and lower V.R.Q. groups. The results are given in Table 8:25.

<table>
<thead>
<tr>
<th>Upper quartile</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Lower quartile</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>21.16</td>
<td>4.08</td>
<td>3.44</td>
<td>24</td>
<td>17.04</td>
<td>4.21</td>
<td>3.44</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>21.23</td>
<td>3.54</td>
<td>2.95</td>
<td>27</td>
<td>17.96</td>
<td>4.68</td>
<td>2.95</td>
<td>.01</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>29</td>
<td>21.75</td>
<td>3.04</td>
<td>2.34</td>
<td>28</td>
<td>19.10</td>
<td>4.66</td>
<td>2.34</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>33</td>
<td>21.90</td>
<td>3.40</td>
<td>1.61</td>
<td>33</td>
<td>20.33</td>
<td>4.45</td>
<td>1.61</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The results in Table 8:25 point to a significant difference in scores of children in the extreme quartile groups and to a lesser extent for 4th year girls. No significant difference in scores of upper and lower quartile groups among 2nd year girls was in evidence.
The relationship between V.R.Q's and CTAC scores is further explored in Table 8:26 where coefficients between the two variables for each age and sex group are given.

Table 8:26
Correlation coefficients between V.R.Q's and CTAC scores

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>Coefficient</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.30363</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.34951</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>113</td>
<td>.30558</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>133</td>
<td>.21830</td>
<td>.01</td>
</tr>
</tbody>
</table>

In each category, a positive and significant relationship was found between V.R.Q's and CTAC scores but it will be noted that the coefficient for 2nd year girls is lower than that determined for the other groups.

In general, the ability factor results strongly support the contention that there is a positive relationship between children's level of academic ability and teacher constructs of children's attitudes in class. Hypothesis 7 is therefore confirmed.

Sex differences in mean CTAC scores.

In Table 8:27, a comparison is made between mean CTAC scores of boys and girls.

Table 8:27
A comparison of mean CTAC scores of boys and girls analysed according to age group

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th>Girls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>18.54</td>
<td>4.47</td>
<td>113</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>19.49</td>
<td>4.19</td>
<td>133</td>
</tr>
</tbody>
</table>

A comparison of mean CTAC scores of boys and girls indicates a clear sex difference. 4th year girls' scores were significantly higher than those of boys and the same trend was seen in the 2nd year to an even more marked extent.

It should be noted, too, that teacher ratings on this dimension tended to be high.
Summary of CTAC results.

The results presented in this sub-section point to a positive and significant relationship between children's intellectual ability and teacher constructs of children in respect to attitude in class. Correlation coefficients between V.R.Q's and CTAC scores were uniformly positive and significant as were differences in scores between children in upper and lower quartile groups. Teachers also rated girls more favourably on this dimension than they did boys.

The CTPR measure.

Hypothesis 8 states "that there is a positive but limited relationship between children's level of academic ability and teachers' ratings of the children's peer relationships". A four-item "Construct of teachers in respect to children's peer relationships" (CTPR) scale was devised, and as before, teachers were asked to rate each item on a five point scale. The standard procedure is used to analyse the results.

Academic ability group differences in CTPR scores.

The analysis of variance data relating to ability group differences in mean CTPR scores is given in Table 8:28 below.

<table>
<thead>
<tr>
<th></th>
<th>d.f.</th>
<th>SS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>33.801</td>
<td>3.833</td>
<td>.05</td>
</tr>
<tr>
<td><strong>Girls (N = 246)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>24.063</td>
<td>3.154</td>
<td>.05</td>
</tr>
</tbody>
</table>

The ANOVA table above indicates a statistically significant difference between mean CTPR scores of children in the four quartile groups, but for both sexes it reached the .05 level of significance only. Mean scores for upper and lower quartile groups are now compared. Table 8:29 refers.
A comparison of mean CTPR scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th>Age and Gender</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>N = 24, Mean = 16.12, S.D. = 2.80</td>
<td>N = 24, Mean = 13.75, S.D. = 2.50</td>
<td>3.09</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>N = 26, Mean = 16.50, S.D. = 2.59</td>
<td>N = 27, Mean = 14.96, S.D. = 2.76</td>
<td>2.09</td>
<td>.05</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>N = 29, Mean = 16.48, S.D. = 2.32</td>
<td>N = 28, Mean = 15.46, S.D. = 3.20</td>
<td>1.35</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>N = 33, Mean = 16.81, S.D. = 2.63</td>
<td>N = 33, Mean = 15.63, S.D. = 3.00</td>
<td>1.70</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Differences among mean CTPR scores of upper and lower quartile 4th year boys and 2nd year boys reached the .01 and .05 level of significance respectively. No statistical differences were observed in girls' results which is surprising in view of the ANOVA table data. An inspection of the data revealed that in one second year group, the mean for quartile 2 children was 17.00 as opposed to 14.63 in the fourth quartile, and it was there that the statistical difference occurred.

Correlations between V.R.Q's and CTPR scores are next shown. Table 8:30 refers.

Table 8:30
Correlation coefficients between V.R.Q's and CTPR scores

<table>
<thead>
<tr>
<th>Age and Gender</th>
<th>N</th>
<th>Coefficient</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.30715</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.21802</td>
<td>.05</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>113</td>
<td>.21338</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>133</td>
<td>.19153</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

It will be seen that only in the case of 4th year boys did the coefficients indicate a strong and positive relationship between V.R.Q's and CTPR scores. The 2nd year boys' and 4th year girls' coefficients reached the .05 level of confidence only and a non-significant relationship obtained between the two variables among 2nd year girls.

In summary, the ability factor results indicate that a relationship between ability and CTPR scores does exist but at a moderate level. Thus hypothesis 8 which specifically stated that there is a positive but limited relationship between children's level of academic ability and teacher ratings of children's peer relationships is confirmed.
Sex differences in mean CTPR scores.

In Table 8:31, differences of mean CTPR scores of boys and girls are compared.

Table 8:31
A comparison of mean CTPR scores of boys and girls, analysed according to age group

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>14.82</td>
<td>3.08</td>
<td>113</td>
<td>16.11</td>
<td>3.17</td>
<td>2.98</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>15.70</td>
<td>2.99</td>
<td>133</td>
<td>16.27</td>
<td>2.73</td>
<td>1.52</td>
</tr>
</tbody>
</table>

The results presented above indicate that a significant sex difference in favour of girls obtained in mean CTPR scores among 4th year children, but not among 2nd year children.

A general tendency for teachers to rate all children relatively highly on this dimension should be noted.

Summary of CTPR results.

The findings reported in this sub-section indicate that in general, a positive relationship exists between children's academic ability and teacher ratings of pupils' peer relationships but it varied within the groups concerned from highly significant to non-significant. The correlation coefficient between the two variables was strongest in the 4th year boys' group and weakest in the 2nd year girls' group.

Differences between mean CTPR scores of subjects in the upper and lower quartile groups were statistically significant for boys but not for girls. This indicates that the main differences between the girls' mean scores occurred in the quartile groups as a whole, not just the extreme quartiles.

A significant sex difference in scores in favour of girls was noted in the 4th year, but no sex differences in teacher ratings on this dimension were apparent in the 2nd year.

Correlation coefficients between V.R.Q's and constructs of teachers ratings.

For ease of comparison, coefficients between V.R.Q's and teacher scale ratings are given in Table 8:32 below.

Table 8:32

<table>
<thead>
<tr>
<th></th>
<th>4th Year boys</th>
<th>2nd Year boys</th>
<th>4th Year girls</th>
<th>2nd Year girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Coefficient</td>
<td>Coefficient</td>
<td>Coefficient</td>
</tr>
<tr>
<td>CTTO</td>
<td>0.48403***</td>
<td>0.46193***</td>
<td>0.51757***</td>
<td>0.35684***</td>
</tr>
<tr>
<td>CTAC</td>
<td>0.30366**</td>
<td>0.34951***</td>
<td>0.30550**</td>
<td>0.21830**</td>
</tr>
<tr>
<td>CTPR</td>
<td>0.30715**</td>
<td>0.21802*</td>
<td>0.21338*</td>
<td>0.19153</td>
</tr>
</tbody>
</table>

*** = p. 001
** = p. 01
* = p. 05
Table 8:32 enables a general impression to be given of the relationship between V.R.Q's and ratings on each of the constructs of teachers' scales. The relationship between V.R.Q's and CTTO ratings were positive and significant at the .001 level of probability. The relationship was less marked on the CTAC scale but was still significant at the .01 level or more. On the CTPR scale, the association was least pronounced of all and in one instance, the coefficient indicated a non-significant relationship.

Teacher assessments of construct scale items.

Each teacher was asked to indicate the extent to which he or she thought that the constructs comprising the scales were desirable or undesirable characteristics by rating them on a five point scale. Mean ratings are given in Table 8:33.

### Table 8:33
Teachers' assessments of constructs on a desirable-undesirable continuum
(N = 16)

<table>
<thead>
<tr>
<th>Construct Scale</th>
<th>Mean Ratings</th>
<th>CTAC Scale</th>
<th>Mean Ratings</th>
<th>CTPR Scale</th>
<th>Mean Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attentive</td>
<td>1.31</td>
<td>Polite</td>
<td>2.23</td>
<td>Popular</td>
<td>2.69</td>
</tr>
<tr>
<td>Hardworking</td>
<td>1.69</td>
<td>Considerate</td>
<td>1.69</td>
<td>Friendly</td>
<td>2.10</td>
</tr>
<tr>
<td>Interested</td>
<td>1.16</td>
<td>Reliable</td>
<td>1.77</td>
<td>Sympathetic</td>
<td>2.13</td>
</tr>
<tr>
<td>Involved</td>
<td>1.23</td>
<td>Co-operative</td>
<td>1.69</td>
<td>Pleasant</td>
<td>1.92</td>
</tr>
<tr>
<td>Conscientious</td>
<td>1.62</td>
<td>Accepts authority</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the above ratings, 1 represents the highest level of desirability; 5 the lowest. In descending order of importance, the constructs were rated as follows:

- Interested 1.16 Considerate 1.69 Friendly 2.10
- Involved 1.23 Co-operative 1.69 Sympathetic 2.13
- Attentive 1.31 Reliable 1.77 Polite 2.23
- Conscientious 1.62 Pleasant 1.92 Popular 2.69
- Hardworking 1.69 Accepts authority 2.00

Teachers appear to place highest value on those qualities associated with children's attitudes to work. All five items comprising the CTTO were rated as being the most desirable in the total list of 14 items. While there is an overlap appearing between constructs on the CTAC and CTPR scales, in general, qualities associated with peer relationships are rated lower in terms of relative desirability by teachers.
Discussion of data presented in Section 2: Teacher constructs of children in the school situation.

Three measures, the "Constructs of teachers in respect to children's task orientation" scale, the "Constructs of teachers in respect to children's attitude in class" scale and "Constructs of teachers in respect to children's peer relationships" scale were used by six teachers in School NS and ten teachers in School ES to rate pupils in their forms. The findings can be briefly summarised as follows.

The sixth hypothesis "that there is a positive relationship between children's academic ability level and teachers' ratings of the children's task orientation" was unequivocally confirmed. Correlation coefficients between V.R.Q's and CTTO scores were uniformly highly significant as were differences between scores of children in upper and lower ability quartile groups.

The seventh hypothesis "that there is a positive relationship between children's level of academic ability and teachers' ratings of children's attitude in class" was also confirmed. Here, too, coefficients between V.R.Q's and mean CTAC scores were significant at the .01 or above but differences between scores of children in upper and lower ability quartiles differed quite considerably and they were more pronounced in boys' groups.

The eighth hypothesis "that there is a positive but limited relationship between children's level of academic ability and teachers' ratings of children's peer relationships" was confirmed, too. Correlation coefficients between V.R.Q's and CTPR scores reached the .01 and .05 level respectively for the older and younger boys' groups but the relationship was significant in the older girls' group only. Differences between scores of children in upper and lower quartile groups were statistically significant for boys but not for girls.

Two other general findings of importance must now be considered. The first is that a significant sex difference in favour of girls obtained between mean scores on each scale and for each age group, except among 2nd year children on the CTPR scale.
The second general finding of note is that mean scores on all three scales tended to be high. This is most clearly demonstrated in Tables 8:23, 8:27 and 8:31 where scores of boys and girls were compared. On the CTTO and CTAC measures, mean scores were in the region of 17 and 19 for boys, respectively, with corresponding S.D's of 4 and 5; and for girls, means on these two scales were in the region of 19 and 20, respectively, with corresponding S.D's of 3.5 and 4.5. On the CTPR scale, means and S.D's were around 15 and 3 respectively, for both boys and girls. What these data underline is that teachers tended to use the upper rating points on the scales, and especially on the CTPR measure. Thus, as a generalisation, it can be said that teachers tended to rate children in their classes favourably, and that any differences between scores are confined to a relatively narrow range. An associated consideration to bear in mind is that the results do not identify differences in rating styles among teachers, although some tended to rate more highly than others. As the substance of the hypotheses in this section centres on the relationship between V.R.Q's and teacher ratings, this is not a matter for concern, for as is plain from the results, teachers did discriminate in relative terms between the various academic groups and in the direction expected.

In Chapter 2:2 (i), literature relating to teachers' constructs of their pupils was reviewed, the most important of which is reconsidered now. There, the work of Hallworth (1961) and his associates suggested that two main dimensions are consistently found in teachers' assessments of their pupils; the first has been named "Extraversion" (sociability), the second "the good pupil" (reliability and conscientiousness). Findings in support of this generalisation came from an impressionistic study by Hargreaves (1972) but an important qualification was made by Morrison and McIntyre (1969) who produced evidence to show that teachers are more concerned with academic ability and its concomitants than they are with social traits such as confidence, sociability and popularity. Cohen and Cohen (1970), too, also commented on teachers' emphasis on such characteristics as "co-operativeness", "hard-working" and "truthfulness" in judging children.
In the present study, the results also reflected teachers' concern with children's attitudes to work and their responsiveness in class, but a concern is also shown with children's peer relationships although to a lesser degree. Teacher assessments of the items comprising the scales on a desirable-undesirable continuum suggested that teachers place highest value on those qualities associated with children's attitudes to school work; next highest on those qualities associated with children's general attitudes in class; and the lowest value of all is attached to qualities associated with successful peer relationships. However, the small number of teachers used in this part of the study prevented useful and detailed statistical analysis of their responses and these findings should be regarded as being essentially impressionistic. Nevertheless, crude as they are, they do seem to be in accord with the results detailed in the studies just mentioned.

In Chapter 2:2 (ii), literature relevant to teachers' constructs of children of differing intelligence levels was reviewed. Research in this area is not extensive but Hallworth (1964), as an outcome of a series of investigations, concludes that teachers tend to regard highly intelligent children more favourably than they do those of low intelligence. Confirmation of this finding comes from Bush's (1954) study where it was found that teacher liking was related to every single characteristic on which he asked teachers to rate pupils - intelligence, attainment, class conduct, quality of thinking, emotional balance and probable college success.

In the present study, differences in the relationship between V.R.Q's and teacher rating indices were in evidence which suggested that teachers were discriminating between the three dimensions when judging children. A positive and significant relationship was found between academic ability and teachers' constructs in respect to children's task orientation and, to a lesser extent (particularly among girls), between V.R.Q's and general attitude in class ratings. However, the relationship between academic ability and CTPR ratings was moderate only and varied quite considerably from group to group. The association between the two variables was strongest among 4th year boys (p. = .01); moderate
among 4th year girls and 2nd year boys (p. = .05); and non-significant among 2nd year girls. Further, differences in mean CTPR scores between subjects in upper and lower V.R.Q. groups were of a relatively low order, varying from 1.02 to 2.37 points. The variations between teacher ratings on the three scales may be due, in part, to differences in the nature of the task set. On the CTTO and CTAC measures, it is teacher constructs which are directly asked for, and asked for on children's characteristics known to be of importance to teachers. On the CTPR scale, teachers are faced with a more difficult exercise. Here, they are asked to assess how children react to each other in a social situation, and this is a matter which they have indicated to be of less relative importance to them anyway. One further point needs to be stressed. It by no means follows, despite previous research findings, that academic ability and effective peer relationships are invariably or necessarily related.

In brief, and as indicated by the test instruments used in this study, the main conclusion arrived at in this section is that there is a positive and significant relationship between children's level of academic ability and teacher constructs of children's task orientation and attitudes in class, and that a relationship also holds between V.R.Q's and teacher constructs of peer relationships although to a much lesser degree. In addition, some evidence was presented which supports the view that teachers consider children's attitudes to work and their attitude in class generally as being of more importance in assessing children in the school situation than children's peer relationships.
3. Children's constructs of self.

In this section, results from the five measures concerned with children's constructs of self will be detailed. The test instruments are:

a. the academic constructs of self measure (ASC)
b. the position in class scale (PIC)
c. the actual/ideal ASC scores discrepancy measures (ASC Dis)
d. the constructs of self in respect to attitudes and behaviour in class measures (CSABC)
e. the constructs of self in respect to peer relationships scale (CSPR)

The results will be analysed in hypothesis order and the following procedure will be followed.

First, an ANOVA technique will be used which takes into account ability and age factors.

Secondly, the ability factor will be considered further by comparing mean constructs of self scores of subjects in upper and lower V.R.Q. quartile groups. Correlation coefficients between V.R.Q's and constructs of self scores will also be determined. These results will also be examined for developmental age trends in order to discover whether the relationship between V.R.Q's and construct of self scores becomes more pronounced as a function of age.

Thirdly, the age factor will next be considered and means of older and younger children (as a group and irrespective of ability) will be compared where a statistically significant difference is identified in the ANOVA table.

Fourthly, ability and age effects will be investigated where these are indicated by the analysis of variance findings.

Finally, differences in mean scores of boys and girls will be compared.

The ASC and PIC scales.

Hypothesis 9 states "that there is a positive relationship between children's level of academic ability and their academic self construct". Two measures were used to test this hypothesis. The first and more important one was a six item "Academic constructs of self" index (ASC),
pertaining to various aspects of academic competence and the second was a "Position in class" scale (PIC) where children were asked to estimate the class position they would most likely reach in a general test of school work assuming that there were exactly 30 pupils in the class.

The results are now analysed following the procedure described above.

**Ability and group differences in mean ASC and PIC scores.**

An ANOVA table, concerned with ability and age group differences in ASC and PIC scores now follows. Table 8:34 refers.

<table>
<thead>
<tr>
<th>Table 8:34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of variance according to academic ability and age groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>1943.546</td>
<td>32.049</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>331.452</td>
<td>5.466</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>201.508</td>
<td>3.323</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>2446.105</td>
<td>31.527</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>104.399</td>
<td>1.346</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>38.751</td>
<td>.499</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>1158.182</td>
<td>41.391</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>172.263</td>
<td>6.156</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>84.104</td>
<td>3.006</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>1101.956</td>
<td>37.166</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>390.063</td>
<td>13.156</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>10.604</td>
<td>1.045</td>
</tr>
</tbody>
</table>
The ability factor.

Table 8:34 demonstrates that for both sexes, a highly significant difference between mean ASC scores of children in varying ability quartile groups exists. The same trend was also noted in relation to PIC scores.

A comparison of mean ASC scores of subjects in upper and lower quartile groups now follows and a similar analysis is given for PIC scores. Findings are given in Table 8:35.

Table 8:35
A comparison of mean ASC scores and mean PIC scores respectively, of children in the upper and lower V.R.Q. quartile groups
analysed according to age and sex

<table>
<thead>
<tr>
<th>ASC scale</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>46.41</td>
</tr>
<tr>
<td>2nd year boys</td>
<td>26</td>
<td>39.61</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>39.11</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>41.93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PIC scale</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>5.62</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>9.30</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>10.68</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>7.06</td>
</tr>
</tbody>
</table>

The results set out immediately above indicate a major and highly significant difference in mean ASC and mean PIC scores between children in differing extreme V.R.Q. quartile groups. A further confirmation of the strong relationship between V.R.Q's and scores on the academic constructs of self measures comes from an examination of coefficients between the two variables which now follows. Table 8:36 refers.
Table 8:36
Correlation coefficients between V.R.Q's and academic constructs of self score

<table>
<thead>
<tr>
<th>ASC scale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficients</td>
<td>P</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.71169</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.49927</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.42092</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.46414</td>
<td>.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PIC scale</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficients</td>
<td>P</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>-.72140</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>-.50638</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>-.49566</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>-.49214</td>
<td>.001</td>
</tr>
</tbody>
</table>

For each age and sex group, a positive and significant relationship is found between V.R.Q's and ASC scores. This is in accord with coefficients determined between V.R.Q's and PIC scores although there, because a low score denotes a high level of academic self construct and vice versa, they indicate a highly negative relationship. One point of particular interest is that the relationship between the variables under review is strongest among 4th year boys.

In respect to developmental age trends, a test for differences between independent correlations indicated that a significant difference at the .05 existed between coefficients of 2nd and 4th year boys on both scales. This could be interpreted as a strengthening of the association as a function of cognitive development but it will be noted that a similar trend did not appear in the girls' results and it is difficult to determine the generality of this finding.

Considered as a whole, the evidence presented in Tables 8:34, 8:35 and 8:36 gives strong support to the hypothesis that there is a positive relationship between children's academic ability and their academic self construct. Hypothesis 9 is therefore confirmed.
The age factor.

Table 8:34 indicates that age differences in scores are present in three out of the four analyses made. On the ASC scale, means for 4th year boys and 2nd year boys, respectively, were 36.04 and 33.39; mean class positions for the same groups, 12.47 and 14.4 respectively. Differences in mean scores (which were significant at the .05 level) were thus in favour of the older boys on both scales. On the PIC scale, the mean class position of 4th year girls was 14.56 as opposed to a mean class position of 12.62 for 2nd year girls. Thus, in contrast to the boys, scores here were in favour of 2nd year girls and the difference in means reached the .001 level of significance. No clear developmental trend in respect to the association between V.R.O's and scores on these two measures is therefore apparent.

Interaction effect.

An interaction effect occurred between ability and age among boys on both ASC and PIC scales. On the ASC scale, the data indicate that older upper quartile boys rated themselves more favourably than did younger upper quartile boys. At the other extreme end of the ability scale, the trend was reversed with younger boys rating themselves more favourably than older boys. The same pattern obtained on the PIC measure. What this means is that older upper quartile boys assess their own academic competence more positively as they grow older and that older lower quartile boys assess their own academic competence less positively as they grow older.

Sex differences in mean ASC and PIC scores.

Finally sex differences in academic constructs of self scores are considered and the results are given in Table 8:37.

Table 8:37

<table>
<thead>
<tr>
<th>ASC scale</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>36.04</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>33.39</td>
</tr>
<tr>
<td>PIC scale</td>
<td>4th Year</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>2nd Year</td>
<td>105</td>
</tr>
</tbody>
</table>
No statistically significant sex difference between mean ASC scores is apparent but on the PIC measure 4th year boys gave lower estimated class positions than did girls and 2nd year boys gave higher estimated class positions than did girls. These differences, which were at the p.05 level of confidence only, were thus inconsistent across the age groups.

Summary of ASC and PIC results.

1. The findings set out in this sub-section give clear support to the view that there is a positive and highly significant relationship between children's level of academic ability and their academic constructs of self. It will be noted that the relationship between the two variables was strongest in the 4th year boys' group; and it was in that group, too, that differences between mean scores of children in extreme V.R.Q. groups were greatest.

2. The results were examined for evidence of a developmental age trend in the relationship between V.R.Q's and scores on the two measures. This association was significantly intensified over the two year period among boys but not among girls and no conclusive evidence of a general developmental age trend in relation to this variable was therefore found.

3. A minor age difference among boys on both measures was reported, which favoured older boys. On the PIC scale only, a marked age difference in favour of younger girls was reported, a finding in contrast to the boys' results. No consistent age trends in results therefore emerged in this analysis.

4. An interaction effect between age and ability for boys on both scales was noted which suggested that older upper quartile boys assess themselves as having more success academically than do younger upper quartile boys and in the other extreme quartile groups a reverse age trend operated.

5. No statistically significant sex difference was apparent on the ASC scale. On the PIC scale, however, a sex difference in scores occurred in favour of boys in the 4th year and in favour of girls in the 2nd year. In both year groups, the difference was statistically significant at the .05 level.
The actual/ideal ASC scores discrepancy measure.

The next hypothesis which was generated, hypothesis 10, stated "that there is a negative relationship between children's level of academic ability and the discrepancy between their actual and ideal scores on the ASC measure". This hypothesis was tested by asking children to complete the ASC scale twice, first to indicate their actual level of academic ability, and secondly, to indicate the level of academic ability they would ideally like to reach. It was, of course, anticipated that the discrepancy between scores on these two administrations would be lower in the case of above average children than it would be for below average children. In effect, this scale gives an indication of the extent to which children believe they have attained their ideal level of academic competence. A low discrepancy score signifies a close correspondence between actual and ideal ASC responses; a high discrepancy score denoted a limited correspondence between responses on the two administrations.

The analysis of data now follows.

Ability and age group differences in mean ASC Dis scores.

An analysis of variance according to ability and age groups was carried out and the results are shown in Table 8:38.

Table 8:38
Analysis of variance according to ability and age groups

<table>
<thead>
<tr>
<th>ASC Dis measure</th>
<th>d.f.</th>
<th>$F$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys ($N = 201$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>1122.180</td>
<td>17.712</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>251.606</td>
<td>3.971</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>145.120</td>
<td>2.291</td>
</tr>
<tr>
<td>Girls ($N = 356$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>1593.694</td>
<td>20.663</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>87.243</td>
<td>1.131</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>103.807</td>
<td>1.345</td>
</tr>
</tbody>
</table>
The ability factor.

The results show very clearly that mean ASC discrepancy scores differ markedly between children in the four academic ability quartile groups. This finding is reinforced by comparing scores of children in the extreme ability quartile groups which are set out in Table 8:39.

Table 8:39
A comparison of mean ASC discrepancy scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>5.04</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>11.38</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>11.28</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>8.36</td>
</tr>
</tbody>
</table>

In each age and sex group, it is apparent that children in upper quartile groups have markedly lower ASC discrepancy scores than do their peers in lower quartile groups. The relationship between V.R.Q's and ASC discrepancy scores is further explored in Table 8:40 where correlation coefficients between the two variables are given.

Table 8:40
Correlation coefficients between V.R.Q's and ASC discrepancy scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficient</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>-.64556</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>-.31723</td>
<td>.01</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>-.35520</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>-.37216</td>
<td>.001</td>
</tr>
</tbody>
</table>

Again, the data indicate a firm relationship between V.R.Q's and ASC discrepancy scores which is most marked in the 4th year boys' group.

In respect to developmental age trends, a test for differences between independent correlations indicated a significant difference at the .01 level in the relationship between V.R.Q's and ASC Dis scores of 2nd and 4th year boys. Older upper quartile boys too, rated themselves higher on this dimension than did younger boys in the corresponding quartile group. No differences of note connected with this trend were apparent in the girls' results and evidence for the existence of a developmental age trend in the association is therefore confined to the boys' findings.
In sum, the ability factor results strongly confirm hypothesis 10 which states "that there is a negative relationship between children's level of academic ability and the discrepancy between their actual and ideal scores on the academic self construct measure".

The age factor.

One age difference of relatively minor importance was noted among boys where the 4th year group had a mean ASC Dis score of 13.54 as opposed to 15.81 for 2nd year boys. There was thus a tendency for actual and ideal scores of older boys to correspond more closely than those of younger boys.

Sex differences in mean ASC Dis scores.

Sex differences in scores on this measure were examined and the results are given in Table 8:41 below.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>13.54</td>
<td>8.53</td>
<td>177</td>
<td>15.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>15.81</td>
<td>9.28</td>
<td>179</td>
<td>14.60</td>
</tr>
</tbody>
</table>

No statistically significant sex differences in scores on this dimension were found.

Summary of ASC Dis results.

1. The results set out in this sub-section clearly demonstrate that there is a strong relationship between children's academic ability and the discrepancy between their actual and ideal scores on the ASC measure.

2. Evidence of a possible developmental age trend was found in the boys' results where the relationship between V.R.Q. and ASC Dis scores was markedly more pronounced among older children than it was among younger ones. A similar trend did not appear in the girls' results and these data cannot therefore be regarded as being conclusive.

3. An age difference in favour of older boys was noted.

4. No significant sex differences in responses on this dimension occurred.
The CSABC Measure.

Hypothesis 11 is now considered which states "that there is a positive relationship between children's academic ability and their constructs of self in respect to attitudes and behaviour in class". A five-item "Constructs of self in respect to attitudes and behaviour in class" scale (CSABC) was used to test this hypothesis and the results are analysed in standard form below.

**Ability and age group differences in mean CSABC scores.**

The analysis proceeds by examining ability and age group differences in mean CSABC scores. Table 8:42 refers.

**Table 8:42**

Analysis of variance according to academic ability and age groups

<table>
<thead>
<tr>
<th>CSABC measure</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>538.971</td>
<td>10.254</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>260.389</td>
<td>4.958</td>
<td>.05</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>38.461</td>
<td>.732</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>571.744</td>
<td>9.493</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>36.771</td>
<td>.611</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>266.208</td>
<td>4.420</td>
<td>.01</td>
</tr>
</tbody>
</table>

**The ability factor.**

Highly significant differences at the .001 were observed between mean CSABC scores of children in the four academic quartile groups. Scores of children in the extreme quartile groups are next examined and the results are detailed in Table 8:43.

**Table 8:43**

A comparison of mean CSABC scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>45.58</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>41.00</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>43.55</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>45.90</td>
</tr>
</tbody>
</table>
A highly significant difference in scores at the .001 level in favour of children in the upper quartile groups was observed in three of the four comparisons made. Results for the 4th year girls' group, however, did not conform to this trend and differences between scores of subjects in the two criteria groups there did not reach a conventional level of significance. The matter is further investigated in Table 8:44 where correlation coefficients between V.R.Q's and mean CSABC scores are given.

Table 8:44

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficient</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.31194</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.31956</td>
<td>.01</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.09986</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.42715</td>
<td>.001</td>
</tr>
</tbody>
</table>

Here, too, it is noted that while coefficients generally reach the .01 level of confidence or more, among 4th year girls the correlation coefficient between the two variables was low and not significant statistically.

As far as developmental age trends in the relationship between V.R.Q's and CSABC scores are concerned, Table 8:45 indicates little difference in coefficients between the two boys' groups but there was amongst girls. However, in that sex group, the relationship was stronger in the 2nd year than in the 4th year which is a trend in the opposite direction to that expected. No evidence at all therefore exists that there is a developmental age trend in this association.

In summary, the main findings reported in this sub-section support the hypothesis that there is a positive and significant relationship between children's level of academic ability and their constructs of self in respect to attitudes and behaviour in class. However, results for 4th year girls do not conform to this trend.

The age factor.

An age difference was observed between mean CSABC scores of boys in the two age groups which was significant at the .05 level of probability. The mean score for older boys was 40.85 as opposed to 38.47.
for younger boys which indicates that 4th year boys, irrespective of
ability level, rated themselves more favourably in this dimension than
did 2nd year boys.

Interaction effect.

An interaction effect between ability and age was observed among
the girls' results which was significant at the .05 level. As far as
upper academic quartile girls were concerned, the mean scores of older
pupils was lower than that of younger pupils. In contrast, the
differences in responses among lower academic quartile girls was in the
opposite direction with the mean scores of 4th year girls reaching a
higher level than that of 2nd year girls.

Sex differences in mean CSABC scores.

Table 8:45 details mean CSABC scores of children in the two
sex groups.

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>40.85</td>
<td>7.55</td>
<td>177</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>38.47</td>
<td>7.78</td>
<td>179</td>
</tr>
</tbody>
</table>

A sex difference in mean CSABC scores in favour of girls is
apparent among 4th year children which reaches the .05 level of
significance. The same trend was noted in results for the younger age
group but here the difference was more marked and reached the .001 level
of significance.

Summary of CSABC results.

1. The results reported in this sub-section, with the exception
of those of 4th year girls, support the contention that there is a
positive and significant relationship between children's level of academic
ability and their constructs of self in respect to attitudes and behaviour
in class.

2. That data was examined for evidence of developmental age trends
in the relationship between V.R.Q's and CSABC scores and it was plain that
since there was little difference in the boys' results and since the girls' results were in the opposite direction to that expected, no such trend existed.
3. An age difference in scores in favour of older boys was noted.

4. An ability and age interaction in the girls' results was reported where the mean scores of upper quartile 4th year girls was lower than that of 2nd year girls. In the lower quartile groups, the trend was reversed.

5. A sex difference in mean scores was identified which was in favour of girls in both age groups.

The CSPR measure.

Hypothesis 12, the last in this group, reads "that there is a positive relationship between children's academic ability and their constructs of self in respect to peer relationships". A four-item "Constructs of self in respect to peer relationships" (CSPR) was constructed for the purpose of testing this hypothesis and the results are set out in standard form below.

Ability and age differences in mean CSPR scores.

An analysis of variance was carried out according to ability and age groups. The data are given in Table 8:46.

<table>
<thead>
<tr>
<th>Ability x age</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>1</td>
<td>125.117</td>
<td>3.966</td>
<td>.05</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>23.730</td>
<td>.698</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>20.948</td>
<td>.664</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The ability factor.

The table above indicates a statistical difference in mean CSPR scores at the .05 level of significance among boys in differing academic ability quartile groups and among girls at the .01 level. More detailed data relating to extreme quartile groups are given in Table 8:47.
Table 8:47
A comparison of mean CSPR scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th></th>
<th>Lower quartile</th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>27.70</td>
<td>3.85</td>
<td>24</td>
<td>23.58</td>
<td>6.58</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>26.23</td>
<td>5.17</td>
<td>27</td>
<td>23.11</td>
<td>5.06</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>27.77</td>
<td>5.78</td>
<td>44</td>
<td>25.75</td>
<td>5.98</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>26.59</td>
<td>6.59</td>
<td>45</td>
<td>25.26</td>
<td>6.59</td>
</tr>
</tbody>
</table>

Here, it will be seen that differences between mean CSPR scores of children in the two academic criteria groups are significant at the .05 with the exception of the 4th year girls' comparison where differences in mean scores were not significant. In the ANOVA table, a statistically significant difference of .01 was reported between means of girls in the four quartile groups, and an examination of the data made it clear that the greatest differences were found in relation to intermediate quartile groups and not extreme quartile groups.

Coefficients between V.R.Q's and CSPR scores are given in Table 8:48.

Table 8:48
Correlation coefficients between V.R.Q's and CSPR scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficients</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.16891</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.21635</td>
<td>.05</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.12750</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.21416</td>
<td>.05</td>
</tr>
</tbody>
</table>

Coefficients for 2nd year boys and girls were statistically significant but at the .05 level only. No significant relationships were observed between the two variables in the case of 4th year boys and girls.

The data given in Table 8:48 do not provide any evidence in support of a developmental age trend in the relationship between V.R.Q's and CSPR scores. For both sexes, the association was stronger among younger subjects than it was among older subjects.

In summary, the results detailed in this sub-section suggest that the relationship between children's level of academic ability and their constructs of self in respect to peer relationships is limited. While
coefficients between V.R.Q's and CSPR scores were found to be statistically significant for 2nd year groups (but at the .05 level only), coefficients for 4th year groups were not statistically significant. Moreover, comparisons between scores of children in extreme academic status groups generally indicated differences at the relatively low level of .05, while mean scores of 4th year girls' upper and lower quartile groups did not differ significantly. It was evident from the ANOVA data, that the greatest differences in scores occurred in relation to intermediate quartile groups and not to extreme quartile groups. In general, then, as the findings in this connection were inconclusive, hypothesis 12 gains little support.

The age factor.

An age difference among boys was observed where the mean CSPR scores of the 4th year groups was 20.19 as opposed to 24.45 for the 2nd year group. Older boys therefore rated themselves less favourably on this scale than did younger boys.

Sex differences in mean CSPR scores.

Sex differences in mean CSPR scores are investigated and the data are given in Table 8:49.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Boys</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>26.09</td>
<td>5.54</td>
<td>177</td>
<td>27.01</td>
<td>5.30</td>
<td>1.33</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>24.45</td>
<td>5.81</td>
<td>179</td>
<td>26.49</td>
<td>6.40</td>
<td>2.75</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It will be seen that a highly significant sex difference in favour of girls obtains for 2nd year children but not for 4th year children.

Summary of CSPR measure results.

1. In general, results of this analysis give limited support only to the contention that there is a positive relationship between level of academic ability and children's constructs of self in respect to peer relationships. Extreme quartile group comparisons of mean scores were significant at the .05 level in three of the four cases examined, but non-significant in the remaining one. Further, coefficients between V.R.Q's and CSPR scores were of a low order and reached the .05 level for the 2nd year group only.
2. No evidence in support of a developmental age trend in the relationship between V.R.Q's and CSPR scores was found.

3. An age difference in scores was reported in favour of 2nd year boys.

4. A highly significant sex difference in scores in favour of girls was found in the 2nd year age group, but not in the 4th year age group.

**Correlation coefficients between V.R.Q's and construct of self scores.**

Coefficients between V.R.Q's and scores on each construct of self measure are given in Table 8:50 below. As scoring is in the opposite direction in the ASC discrepancy and ASC Dis scales from that obtaining in the other three measures, a negative coefficient denotes a positive relationship.

<table>
<thead>
<tr>
<th></th>
<th>4th Year Boys</th>
<th>2nd Year Boys</th>
<th>4th Year Girls</th>
<th>2nd Year Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>.771169***</td>
<td>.49967***</td>
<td>.42092***</td>
<td>.46414***</td>
</tr>
<tr>
<td>ASC Dis</td>
<td>-.64556***</td>
<td>-.31723**</td>
<td>-.35520***</td>
<td>-.37216***</td>
</tr>
<tr>
<td>PIC</td>
<td>-.72140****</td>
<td>-.50638***</td>
<td>-.49566***</td>
<td>-.49214**</td>
</tr>
<tr>
<td>CSABC</td>
<td>.31194**</td>
<td>.31956**</td>
<td>.09986</td>
<td>.42715***</td>
</tr>
<tr>
<td>CSPR</td>
<td>.16891</td>
<td>.21635*</td>
<td>.12750</td>
<td>.21416*</td>
</tr>
</tbody>
</table>

* *** = p.001  
** ** = p.01  
* * = p.05

This table enables a general impression of the relationship between V.R.Q's and scores on each construct of self measure to be given. Coefficients between V.R.Q's and all academic self construct scores were high and reached the p.001 level with one exception. The relationship between V.R.Q's and CSABC as indicated by the coefficients was also marked and there, with the exception of 4th year girls, the level of probability was p.01 or above. The lowest relationship of all was found between academic ability and CSPR scores. The coefficients for 2nd year boys and girls reached the .05 level, but those obtaining for 4th year boys and girls were not significant.
Discussion of data presented in Section 3: Children's constructs of self.

Five scales concerned with children's constructs of self were completed by the children. They were:

a. the academic constructs of self measures (ASC)
b. the position in class scale (PIC)
c. the actual/ideal ASC scores discrepancy measures (ASC Dis)
d. the constructs of self in respect to attitudes and behaviour in class measures (CSAABC)
e. the constructs of self in respect to peer relationships scale (CPPR).

The results will be summarised and discussed in hypothesis order.

Hypothesis 9 stated "that there is a positive relationship between children's level of academic ability and their academic self construct". Two measures were used to test the hypothesis, the ASC scale and the PIC scale, results of which, for purposes of comparing findings from this study with those of previous investigations, will be discussed separately.

A positive and highly significant relationship was found between children's level of academic ability and their ASC scores, and hypothesis 9 was accordingly confirmed. The relationship between the two variables was strongest among 4th year boys where the coefficient was .711 but coefficients from the remaining boys' groups and the girls' groups were in the order of .464 to .499. While the boys' results, where the association between V.R.Q's and ASC scores was significantly stronger among older subjects than younger ones, suggested the existence of a developmental age trend in this association, results of girls did not, and the generality of the findings is in question. One small age difference at the .05 level in favour of older boys was noted as well as an interaction effect between age and ability which indicated that older upper quartile boys assess themselves as being more successful academically than do younger upper quartile boys and that in the other extreme quartile groups a reverse trend operated. No sex differences in ASC scores were noted.

In Chapter 4, Section 1, a number of studies were reviewed in which children's awareness of the level of their own academic ability as reflected in their school achievement were investigated. In the main,
a positive relationship was found between the subjects' academic self construct and their actual ability by Wooster (1970), Brookover et al (1964), Barker-Lunn (1970) and Dyson (1967). The data presented here confirm that tendency.

However, the work of Ringness (1969) indicated that the ability to form a "realistic" academic self construct is in part dependent on the level of intelligence of the pupils concerned and the results of this study will now be considered from that perspective. In brief, the mean ASC scores of upper quartile children invariably exceeded those of lower quartile children and scores of children in the intermediate quartile groups were in the expected direction. Thus it can be stated that while individual subjects in each quartile group may be inaccurate in assessing themselves academically as measured against "objective" standardised tests, aggregate scores of children in each ability quartile point to the conclusion that children of all ability levels can as a group make a reasonable estimate of their level of academic achievement. Within the intelligence and age range of the subjects co-operating in this study, therefore, the finding of Ringness (1969) is not supported.

In the same section of the review, the work of Wooster (1970) and Phillips (1963) dealt with an associated matter, namely, the age factor. Their conclusions indicated that the ability to form a "realistic" academic self construct was in part contingent on the age of the participating subjects and the data obtained in the present study will now be examined from this perspective. A strong relationship was found between verbal reasoning scores and ASC scores in both age groups but it was most pronounced among 4th year boys. Differences in mean scores of children in the two extreme groups were greatest in this same sex and age category, too.

It is appropriate in this context next to consider the ability and age interaction effect previously referred to which intimated that older upper quartile boys rated themselves as being more successful in school work than did younger upper quartile boys and that in the other extreme quartile groups, the findings were reversed. Differences in scores were at the .05 level only and applied to boys but not to girls but they do suggest that as a function of age, both bright and slow learning children became more proficient in estimating their own standard of academic achievement.
To what extent the boys' results in this regard represent a
general developmental age trend between the ages of 10 plus and 12
plus is difficult to say, but as a similar pattern in girls' scores
over the two year period did not occur, these results are treated
with some caution. The findings of Wooster (1970) and Phillips (1963)
are therefore supported on the basis of boys' results but not girls'
results.

Overall, however, data from the ASC scale give unqualified
support to findings from those previous studies where a strong
relationship between intelligence level and academic self construct
has been found.

The second technique used to test hypothesis 9 was the "Position
in class" scale. Findings from this measure also give clear support
to the hypothesis that there is a positive and significant relationship
between children's academic ability and their academic self construct.
As in the ASC results, the relationship was strongest among 4th year
boys and it was in that group too that difference in mean PIC scores
between children in the upper and lower quartile groups was greatest.
There was a possibility that a developmental age trend in the
association between V.R.Q's and PIC scores occurred in the boys' results
but not in the girls' results. A minor age difference among boys was
noted which confirmed the ASC findings that older boys as a group and
irrespective of ability assessed themselves as having higher academic
standing than the 2nd year boys' group. Among girls, in contrast, the
age difference was in favour of younger subjects. A similar interaction
effect between ability and age for boys was also observed which suggests
that upper quartile boys assess themselves as being successful
academically more often than do younger upper quartile boys and that
in the contrasting quartile group a reverse trend was found to exist.
Finally, a sex difference was reported in mean PIC scores in favour of
boys in the 4th year and girls in the 2nd year.

In Chapter 4, Section 2, studies were referred to where student
estimates of grades they were likely to achieve were compared with actual
grades eventually obtained. The work of Baird (1969), Jones and
Griensers (1970), Kubiniec (1970), Biggs and Tinsley (1970) and Keefer
(1969) found that such student predictions were remarkably accurate among
university students but this conclusion was not extended to apply to younger students of average and below average ability (Birnbaum, 1972) and it was in this age group, too, that Wylie and Hutchins (1967) reported a considerable over-estimation of academic ability.

In the present investigation, it was clear that the technique of asking children to assess their own class position was successful in its main function — that of indicating the degree to which subjects in the varying ability levels differ in academic self appraisal. Individual children, could, of course, be wildly inaccurate in estimating their own academic standing but aggregate scores of children in the four quartile groups differed in the expected direction and coefficients between V.R.Q's and PIC scores were consistently positive and significant, too.

However, obvious over-estimate of class position occurred. While mean positions for the total groups (ignoring ability level) were in the region of 12 to 14, means of lower quartile children were of the order of 17 to 19 and were over-optimistic in terms of objective criteria. Nevertheless, it must be stressed that mean scores of children in the four quartile groups were in the expected direction and it seems that in general, children are able to assess their relative class position reasonably competently. The PIC measure was essentially a rating device using a 30 point scale which enabled children to make relatively fine discriminations and which permitted a wide range of scores to be obtained. In the studies of Wylie and Hutchins (1967) and Birnbaum (1972) where younger children and those of average and below average ability were found to be inaccurate in assessing their school performance, a five point scale was used which restricted the range of responses, and this may account for the lack of success in discriminating between the separate ability bands.

In summary, the PIC results indicate that most children in all ability ranges can estimate their own academic competence reasonably well and they reinforce the ASC measure findings previously reported. On both scales, scores related positively and significantly to children's V.R.Q's and the relationship was strongest among 4th year boys.
It was found that mean PIC scores of children in extreme ability groups differed in the expected direction and most of all among 4th year boys, a result which again parallels the ASC findings. The age and ability interaction effect also followed the same pattern on the two scales where older upper quartile boys assessed themselves as being more successful academically than did younger upper quartile boys while in the other extreme quartile groups a reverse trend was noted. No consistent sex differences were found on these scales.

At this point, reference is conveniently made to the actual/ideal discrepancy scores on the ASC measure. Children completed the ASC scale twice, first in terms of their academic standing as they actually saw it, and secondly, in terms of the academic standing they would like to achieve. The discrepancy between the two scores indicates the extent to which their actual level of achievement corresponds to the desired level of achievement. The results presented here clearly established that there was a strong association between children's measured academic ability and their ASC Dis scores. As expected, the correspondence between actual and ideal scores was greater among above average ability children than among below average children and the same tendency was noted in the intermediate quartile scores. Coefficients between V.R.Q's and ASC Dis scores were positive and significant in all groups and particularly so for 4th year boys. There is a suggestion that a developmental age trend in the association between the two variables existed for boys, but not for girls. A minor age difference in favour of older girls was noted but no statistically significant sex differences occurred.

In summary, the ASC Dis results show that children of all ability levels tend to aspire to high academic achievement and that they can assess, within broad limits, their success in achieving that aspiration. Considered as a whole, results from the three academic self construct measures are clear. While individual subjects in all ability levels may make inaccurate judgements, there is evidence to suggest that irrespective of ability, children are able to assess their relative academic standing reasonably accurately.
The CSABC and CSPR results will next be discussed. In previous researches, a wide range of personality dimensions have been included in general construct of self instruments so that most studies reported in the review of literature have limited relevance to the present discussion. For this reason it is proposed to outline CSABC and CSPR scale findings first, and then to make such comparisons with previous research as are possible.

Hypothesis 11 stated "that there is a positive relationship between children's academic ability and their constructs of self in respect to attitudes and behaviour in class". A five-item "Constructs of self in respect to attitudes and behaviour in class" scale was used to test the hypothesis, which, with the exception of the 4th year girls' group was confirmed. No developmental age trend in the relationship between V.R.Q's and CSABC scores was apparent but an ability and age interaction effect was observed which indicated that in the upper quartile groups older girls rated themselves less favourably than did their younger peers and that among lower quartile groups a reverse trend occurred. Sex differences in favour of girls were found in both age ranges.

Hypothesis 12 stated "that there is a positive relationship between children's academic ability and their constructs of self in respect to peer relationships". A four-item "Constructs of self in respect to peer relationships" scale was used to test the hypothesis which received only limited confirmation. Mean scores of children in the four quartile groups differed in the expected direction at the .05 level for boys and at the .01 level for girls. However, correlation coefficients between V.R.Q's and CSPR scores were of a low order and reached significance in the case of older children only. This suggests that it was in connection with the intermediate ability ranges that the greatest statistical differences in mean scores occurred. Further, although mean scores of subjects in upper and lower quartile groups differed, the differences were significant at the .05 level only for three out of the four comparisons made, and they were not significant in the remaining instance. No developmental age trend occurred in the relationship between V.R.Q's and CSPR scores. In fact, girls' results were in the opposite direction to that anticipated. In addition, an age difference in favour of 2nd year
boys and a sex difference in favor of girls among younger children were reported. Reviewed as a whole, the evidence gives partial support only to hypothesis 12. While differences in mean scores between children in the extreme quartile groups tended to be in the expected direction, coefficients between V.R.Q's and CSPR scores were significant only in the case of older children.

Previous research in this area, which was reviewed in Chapter 4, Section 3, is limited and inconclusive. A relationship was reported between self-esteem and academic achievement by some investigators but of more relevance to this enquiry were studies which concentrated on the association between constructs of self indices of children of varying academic ability. According to Andrews (1971), poor readers see themselves as being more hostile and aggressive than do good readers but on other dimensions no differences between the two groups were recorded. In Anastasiow's (1967) study, a marked and significant difference between boys in the two academic criteria groups emerged. Among less able boys, lower self construct scores were found for mental abilities and school subjects. Among less able girls, however, lower self construct scores were reported in the area of school subjects, mental abilities, happy qualities, physical appearance, social relationships and social values. On the other hand, Dyson (1967) found no differences at all between general constructs of self and ability and Henderson et al (1965) reported a very limited relationship only between the two variables.

The CSABC and CSPR results tentatively support the findings of Andrews (1971) and Anastasiow (1967) but any attempt to compare findings directly is of little value because each study concentrates on different aspects of self evaluation. What can be stated is that the relation between ability and CSABC scores reported here is, in the main, positive and significant and that a relationship between V.R.Q's and CSPR scores exists but it is much less marked.

It seems profitable at this juncture to explore the similarities and differences which appeared in children's scores on all the construct of self measures as they related to ability level. The position as a whole is most clearly seen in Table 8:54 where correlation coefficients between V.R.Q's and scores on the various indices are set out. The relationship between V.R.Q's and academic self construct scores was almost invariably
strong; the relationship between V.R.Q's and CSABC scores was positive and significant but not to such a marked extent; and the relationship between V.R.Q's and CSPR scores tended to be moderate only. Expressed in another way, the relationship between ability and constructs of self is most marked in the academic area where children are given some standards in the form of teachers' comments and school reports against which they can assess themselves. The second dimension, which is concerned with attitudes and behaviour in class, also relates to the academic area and how children respond to it. Here too, the relationship with ability is positive and significant. The third dimension of self is concerned with peer relationships, which is, perhaps, a more personal matter. It could be, too, that this area is relatively unrelated to other aspects of self which centre on ability level. It is possible moreover, that children find it more difficult to assess themselves on these characteristics and another factor to be taken into account is that they might be more reluctant to respond frankly on this measure. Whatever the causes might be, the relationship between ability and CSPR scores existed but it was moderate only in comparison with the association found in respect to the other two areas of self, and less uniform from group to group.

As a generalisation, and ignoring the detail, it can be said that children in the various ability groups saw themselves in very different terms academically and to a lesser but still marked extent in the way they judged their own behaviour and attitudes in class. In contrast, there were only limited differences in the way children assessed their own interpersonal behaviour.
4. Children's school related attitudes.

In this section, results from the three measures concerned with children's school related attitudes will be detailed. The test instruments used were:

a. Attitudes to school scale (ATS)
b. Interest in school work scale (ISW)
c. Importance of doing well scale (IDW)

The results will be considered in hypothesis order and the standard procedure for analysis will be followed.

The ATS scale.

Hypothesis 13 states "that there is a positive relationship between children's academic ability and their attitudes towards school". The hypothesis was tested by administering a six-item "Attitudes to school" scale, and the results are set out below.

Ability and age group differences in mean ATS scores.

An ANOVA table, concerned with ability and age group differences in ATS scores now follows. Table 8:51 refers.

<table>
<thead>
<tr>
<th>Table 8:51</th>
<th>Analysis of variance according to academic ability and age groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATS measure</td>
</tr>
<tr>
<td></td>
<td>d.f.</td>
</tr>
<tr>
<td>Boys (N = 201)</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
</tr>
<tr>
<td>Girls (N = 356)</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
</tr>
</tbody>
</table>

The ability factor.

The ANOVA table above, indicates a highly significant difference in mean ATS scores of boys in the four ability levels but not girls. The relationship is further explored by comparing mean ATS scores of children in upper and lower quartile groups and the results are given in Table 8:52.
Table 8:52
A comparison of mean ATS scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th></th>
<th></th>
<th>Lower quartile</th>
<th></th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>3.87</td>
<td>1.19</td>
<td>24</td>
<td>2.54</td>
<td>1.28</td>
<td>3.73</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>3.65</td>
<td>1.32</td>
<td>27</td>
<td>2.62</td>
<td>1.49</td>
<td>2.64</td>
<td>.05</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>3.68</td>
<td>.97</td>
<td>44</td>
<td>3.15</td>
<td>1.39</td>
<td>2.07</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>3.81</td>
<td>1.18</td>
<td>45</td>
<td>3.42</td>
<td>1.42</td>
<td>1.43</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The results presented immediately above indicate a highly significant difference in mean ATS scores of upper and lower quartile groups among 4th year boys. The same relationship exists among 2nd year boys and 4th year girls' groups but to a much lesser extent. Differences between mean ATS scores of girls in upper and lower quartile bands were not statistically significant.

A further examination of the data now follows where correlation coefficients between V.R.Q's and ATS scores have been established. Table 8:53 refers.

Table 8:53
Correlation coefficients between V.R.Q's and ATS scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficients</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.35128</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.29211</td>
<td>.01</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.15727</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.04441</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

A sex difference is apparent in these results. While coefficients between V.R.Q's and ATS scores of boys were positive and significant, the coefficients for girls although positive, did not reach a conventional level of statistical significance.

Considered as a whole, the evidence presented in Tables 8:51, 8:52 and 8:53 indicate that among boys a positive and significant relationship exists between V.R.Q's and ATS scores which is stronger in the older age group. A slight possibility exists that this may be a developmental age trend but differences in coefficients in the two age groups were not significant. Among girls the relationship between the two variables was not significant, and apart from a minor difference in mean scores of
extreme quartile groups in the 4th year, there is no evidence to suggest that girls' V.R.Q's are associated with their scores on the ATS measure. Hypothesis 13 which states "that there is a positive relationship between children's academic ability and their attitudes towards school" is confirmed in the case of boys, but not in the case of girls.

The age factor.

An age difference in mean ATS scores in the boys' results was identified in Table 8:51. A further inspection of the data indicated that the mean scores of 4th year boys was 3.51 as opposed to a mean of 3.15 for 2nd year boys. Thus older boys' attitudes to school were more favourable than those of younger boys.

Sex differences in mean ATS scores.

Finally, sex differences in mean ATS scores will be considered and the results are given in Table 8:54.

Table 8:54

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>3.51</td>
<td>1.29</td>
<td>177</td>
<td>3.51</td>
<td>1.11</td>
<td>.06</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd year</td>
<td>105</td>
<td>3.15</td>
<td>1.43</td>
<td>179</td>
<td>3.44</td>
<td>1.40</td>
<td>1.65</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

There are no statistically significant differences apparent between mean ATS scores of boys and girls in either age group.
Summary of ATS results.

1. The findings set out in this sub-section are inconclusive. A positive and significant relationship between children's academic ability and their attitudes towards school was confirmed for boys only. This association was marked in the older age group, but among girls, apart from a minor difference in scores of extreme quartile groups in the 4th year, there was no evidence to suggest a relationship between the two variables.

2. No conclusive evidence of a developmental trend in the relationship between V.R.Q's and ATS scores was found.

3. An age difference in scores in favour of older boys was reported.

4. No sex differences which were statistically significant occurred on this dimension.

The ISW scale.

Hypothesis 14 which states "that there is a positive relationship between children's academic ability and their interest in school work" was next considered. A six-item "Interest in school work" (ISW) measure was used to test the hypothesis and the results are analysed below in standard form.

Ability and age group differences in mean ISW scores.

An ANOVA table, Table 8:56 now follows, which is concerned with ability and group differences in ISW scores.

<table>
<thead>
<tr>
<th></th>
<th>ISW measure</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boys (N = 201)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td></td>
<td>3</td>
<td>3.592</td>
<td>1.966</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>1</td>
<td>17.737</td>
<td>9.707</td>
<td>.01</td>
</tr>
<tr>
<td>Ability x age</td>
<td></td>
<td>3</td>
<td>.479</td>
<td>.262</td>
<td>n.s.</td>
</tr>
<tr>
<td><strong>Girls (N = 356)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td></td>
<td>3</td>
<td>2.603</td>
<td>1.581</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>1</td>
<td>.036</td>
<td>.022</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ability x age</td>
<td></td>
<td>3</td>
<td>.030</td>
<td>.018</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
The ability factor.

Unexpectedly, the ANOVA indicates that there are no statistical differences between mean scores of children in the four ability quartile bands. However, the matter is further explored by examining mean scores of children in the extreme academic status groups and the results are given in Table 8:57.

Table 8:57

A comparison of mean ISU scores of children in the upper and lower V.R.Q. quartile groups, analysed according to age and sex

<table>
<thead>
<tr>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
</tr>
</tbody>
</table>

In each of the comparisons made, no statistical difference was observed in mean scores of children in upper and lower quartile groups.

The analysis proceeds by examining correlation coefficients between V.R.Q's and ISU scores.

Table 8:58

Correlation coefficients between V.R.Q's and ISU scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficients</th>
<th>p.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>0.18054</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>0.17259</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>0.07964</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>0.08211</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The results presented above show that although coefficients for boys are slightly higher than those for girls, there is no evidence to suggest that V.R.Q's and ISU scores are significantly related.

In the ability factor data as a whole, there was no suggestion of a developmental age trend between V.R.Q's and ISU scores.

The results in this sub-section can be quickly summarised. There are no data to suggest in Table 8:56, 8:57 and 8:58 that a positive relationship exists between children's academic ability and their interest in school work. Accordingly, hypothesis 14 is rejected.

The age factor.

An age difference in mean ISU scores among boys was identified in the ANOVA table. For 4th year boys the mean score was 3.28 and for
2nd year boys it was 2.68. Thus older boys have a greater interest in school work than do younger boys, as indicated by this measure. **Sex differences in mean ISW scores.**

Sex differences in mean ISW scores are finally considered and the results are given in Table 8:59 below.

**Table 8:59**

A comparison of mean ISW scores of boys and girls, analysed according to age group

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th></th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>4th Year</td>
<td>96</td>
<td>3.28</td>
<td>1.32</td>
</tr>
<tr>
<td>2nd Year</td>
<td>105</td>
<td>2.68</td>
<td>1.37</td>
</tr>
</tbody>
</table>

It will be seen that a minor sex difference in scores occurs in favour of girls in the 2nd year but that differences in scores between boys and girls in the 4th year are not statistically significant.

**Summary of ISW results.**

1. The findings set out in this sub-section clearly indicated that no relationship at a statistically significant level exists between children's academic ability and their interest in school work in the sample studied.

2. There was no evidence of a developmental age trend in the association between V.R.Q's and ISW scores.

3. An age difference in scores in favour of older boys was reported which was statistically significant at the .01 level.

4. A sex difference in favour of girls in the 2nd year was also noted.

**The IDW scale.**

A five-item "Importance of doing well" measure was used to test Hypothesis 15 which stated "that there is a positive relationship between children's academic ability and their attitude towards the importance of doing well in school work". The standard procedure is used to analyse the results.

**Ability and age group differences in mean IDW scores.**

An ANOVA table, Table 8:60 was drawn up which is concerned with ability and age group differences in IDW scores.
Table 8:60

Analysis of variance according to academic ability and age groups

<table>
<thead>
<tr>
<th>IDW measure</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (N = 201)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>6.581</td>
<td>2.486</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>23.885</td>
<td>9.023</td>
<td>.01</td>
</tr>
<tr>
<td>Ability and age</td>
<td>3</td>
<td>2.629</td>
<td>.993</td>
<td>n.s.</td>
</tr>
<tr>
<td>Girls (N = 356)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>3</td>
<td>11.966</td>
<td>3.429</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>.243</td>
<td>.070</td>
<td>n.s.</td>
</tr>
<tr>
<td>Ability x age</td>
<td>3</td>
<td>1.790</td>
<td>.512</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The ability factor.

Although no overall differences between mean IDW scores of children in the four quartile groups are indicated in the ANOVA table, in order to maintain uniformity in presentation of data, mean scores of children in extreme academic status groups are now compared.

Table 8:61

A comparison of mean IDW scores of children in the upper and lower V.R.Q. quartile groups analysed according to age and sex

<table>
<thead>
<tr>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
</tr>
<tr>
<td>2nd year boys</td>
<td>26</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
</tr>
</tbody>
</table>

Two minor differences in scores of subjects in the two extreme academic status groups occurred, amongst 4th year boys and 2nd year girls. In both instances, upper quartile children attached greater importance to doing well than did their counterparts in the lower quartile bands. These differences are obscured when the data for both age groups are combined, as in the case of the ANOVA treatment.

Next, correlation coefficients between V.R.Q's and IDW scores are shown.
Table 8:62
Correlation coefficients between V.R.Q's and IDW scores

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Coefficients</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>96</td>
<td>.27936</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>105</td>
<td>.10625</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>177</td>
<td>.12079</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>179</td>
<td>.17715</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

The data presented above indicate that a positive and significant relationship exists between V.R.Q's and IDW scores among 4th year boys only. No other coefficient was statistically significant.

With respect to developmental age trends in the relationship between V.R.Q's and IDW scores, the association between the two variables increased in the boys' groups although not significantly, but not in the girls' groups where a decrease was reported.

In summary, the results set out in Tables 8:60, 8:61 and 8:62 are inconclusive. No overall difference in mean quartile scores exists when boys' and girls' results are considered as a whole. However, a significant difference in the expected direction and at the .05 level was found between extreme quartile group scores among 4th year boys and 2nd year girls. Further, a significant relationship at the .01 level was found between V.R.Q's and IDW scores in the 4th year boys' group but in no other instance. There is therefore some evidence which points to a relationship between children's academic ability and the importance they attached to doing well in school work. However, it is limited in nature, and in general, hypothesis 15 is not confirmed.

The age factor.

The mean IDW scores of boys in the 4th year was 7.65 as opposed to a mean of 6.99 in the 2nd year. Older boys, therefore attach greater importance to doing well in school than do younger children, as indicated by this measure.

Sex differences in mean IDW scores.

Finally, sex differences in mean IDW scores are considered, and the results are given in Table 8:63.
In neither age group was a sex difference in mean IDW scores observed.

Summary of IDW results.

1. A positive relationship, significant at the .01 level, was found between V.R.Q's and IDW scores in the 4th year boys' group only and it was there, too, that differences in mean scores of boys in the two extreme quartiles differed statistically and in the expected direction. No other evidence in support of the hypothesis was found in the remaining three groups apart from a difference in mean scores of girls in the extreme quartile bands in the 2nd year girls' group.

2. There was some slight indication of a possible developmental age trend in the relationship between V.R.Q's and IDW scores among boys, but not among girls.

3. A significant age difference in scores in favour of older boys was noted.

4. No sex differences in scores were observed in either age group.

Correlation coefficients between V.R.Q's and school related attitudes scores.

To facilitate inter-scale comparisons, coefficients between V.R.Q's and scores on each attitude scale are shown in Table 8:64 below.

Table 8:64
Correlation coefficients between V.R.Q's and attitude measure scores

<table>
<thead>
<tr>
<th></th>
<th>4th Year boys</th>
<th>2nd Year boys</th>
<th>4th Year girls</th>
<th>2nd Year girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATS</td>
<td>.35128***</td>
<td>.29211**</td>
<td>.15727</td>
<td>.04441</td>
</tr>
<tr>
<td>ISW</td>
<td>.10054</td>
<td>.17259</td>
<td>.07964</td>
<td>.06211</td>
</tr>
<tr>
<td>IDW</td>
<td>.27936**</td>
<td>.10625</td>
<td>.12079</td>
<td>.17715</td>
</tr>
</tbody>
</table>

*** = p .001  ** = p .01

This table enables a broad impression of the relationship between V.R.Q's and scores on each attitude scale to be given. It will be noted
that two of three coefficients for 4th year boys are significant and at the .001 level and .01 level, respectively. Apart from that only one coefficient is statistically significant at a conventional level and the data therefore testify to a generally weak relationship between academic ability and attitudes.

Discussion of data presented in Section 4: Children's school related attitudes.

Three attitude scales were completed by children to test hypotheses 13, 14 and 15. They were:

a. the "Attitudes to school" scale (ATS)
b. the "Interest in school work" scale (ISW)
c. the "Importance of doing well" scale (IDW)

The results are summarised in hypothesis order and are discussed as a whole.

Hypothesis 13 states "that there is a positive relationship between children's academic ability and their attitudes to school" and to put it to the test children completed a six-item "Attitudes to school" scale. A positive and significant relationship was found to exist between V.R.Q's and ATS scores of boys which was more marked in the older age group. Among girls, apart from a minor difference in scores of extreme quartile groups in the 4th year, a significant relationship between the two variables was not found. The findings were therefore inconclusive and the hypothesis "that there is a positive relationship between children's academic ability and their attitudes to school" was confirmed for boys only.

Hypothesis 14, which states "that there is a positive relationship between children's academic ability and their interest in school work" was tested by administering a six-item "Interest in school work" measure. Overall, the data clearly indicated that no relationship at a statistically significant level existed between the two variables and hypothesis 14 was accordingly rejected.

Hypothesis 15, which stated "that there is a positive relationship between children's academic ability and their attitude towards the importance of doing well in school work" was tested by administering a five-item "Importance of doing well" scale. A positive relationship between the two variables was found among 4th year boys only and it was
in that same group that differences in mean extreme quartile group scores differed in the expected direction. The only other support for the hypothesis came from a reported difference in mean scores of girls in the extreme quartile bands in the 2nd year and the hypothesis was not therefore generally confirmed.

Table 8 in which all coefficients between V.R.Q's and attitude scales were set out, points to a weak association between ability and attitudes. This is particularly so in respect to the girls' results where not one coefficient between the two variables reached a conventional level of significance. Coefficients were significant in the 4th year boys' groups in two of the three attitude scales; and in the 2nd year boys' group in one of the three attitude scales.

The results just summarised confirm the inconclusive nature of findings in this matter generally. In Chapter 5, Section 1, a number of studies were reviewed where coefficients were determined between school-related attitude measures and achievements as reflected in intelligence test or standardized achievement test scores.

Shepps and Shepps (1971) obtained coefficients of .37 (p. = .05) and .29 (n.s) between the two variables among elementary school children while Irwin (1967) reported a low but positive correlation of .14 (n.s) between the attitudes and academic performance of first year college students. Alpase (1953), whose subjects were eighth grade pupils, found that little or no relationship existed between attitude scores and standardized achievement test scores but significant relationships did emerge between attitudes and school grades where coefficients of .31 and .37 were reported (p. = .001).

Barker-Lunn (1969), some of whose attitude scales are used in the present study, reported coefficients ranging between .13 to .20, all of which were statistically significant at the .01 level or more, between the "Attitude to school" scale and various indices of academic ability. Against the same criteria, coefficients with the ISW scale varied between .10 to .18, all but one of which was significant at the .01 level or above. Coefficients between ability and the IDW measure were of a higher order and ranged from .17 to .28, and they too, were statistically significant at a high level. The sample used was a large one and
consisted of 2,087 nine to eleven year old children in all, and this accounts for the high level of significance of the correlation coefficients.

Berk et al (1970) administered all ten of Barker-Lunn's attitude scales to a group of American children. Scores on only three of them related to ability and they were academic self-image (p. = .01), anxiety (p. = .01) and attitudes towards school (p. = .05). In the present study two of the four coefficients on the last named scale were significant at the p.01 and p.001 levels, respectively, and two were not significant. On the ISW and IDU measures, only one of the coefficients was significant.

A strong impression is gained from previous research, and which is reinforced by the findings reported in this study, that when an overall relationship is sought between attitudes and ability, a positive correlation is usually found but only a small proportion of the coefficients reach statistical significance at a high level.

A more sensitive method of determining the relationship between ability and attitude is by dividing the sample into a number of ability groups and then comparing the scores obtained for each group. When this procedure is adopted differences in scores in the expected direction have usually been reported as, for example, by Mitchell and Shepherd (1967) and by Goldberg et al (1966). In confirmation, Brodie (1964) and Williams (1970) found that ability scores of children in the top 10% band in terms of favourability of attitude were significantly higher than those of children in the bottom 10% band. In the Barker-Lunn (1970) major study of streaming, results were not presented in a form which makes comparisons possible with those obtained in the present investigation but she concluded that as a general rule, attitudes are positively and significantly associated with the ability group in which children are categorised. As a generalisation, the strength of the association between the two variables differs according to the number of groups into which the sample is divided so that the strongest association is found where the grading is finest.

Evidence from this study, where four ability groups were formed, only partially supports the trend reported in the literatures. When scores of subjects in the extreme quartile groups were compared, it was found that differences in scores on the ATS scale were significant in three out of four of the comparisons made; on the ISW scale no statistical differences
were observed; and on the IDU scale two of the four comparisons made were statistically significant but at the p.05 level only.

A brief reference is now made to three other issues. The first concerns developmental age trends in the relationship between academic ability and attitudes related to school. There was a possibility that such an association existed on the ATS and IDU scales among boys but not among girls. The only research cited in the literature on this point is Barker-Lunn's (1970) which showed that pupils in A stream classes tended to improve and that pupils in lower streams tended to deteriorate in scores over a period of time. Ferri (1971) reported a downward trend for each of the three ability groups but it was more pronounced among middle and bottom stream children. To some extent, then, the findings of the present study in regard to boys might therefore support the evidence from previous research just summarised.

The second additional issue is a related one, namely, age differences in scores. In the present study it was reported that on the ATS, ISU and IDU scales an age difference in favour of older subjects existed, but this trend was not found among girls. This is in accord with the findings of Ferri (1971) which were reported in the previous paragraph.

The third additional issue concerned sex differences in scores. In this study, a sex difference in scores in favour of girls was noted in the 2nd year group and on the ISU but not ATS or IDU scales. There is thus very limited support for Barker-Lunn's (1970) findings that girls' attitudes tend to be more favourable than those of boys.

In brief, results from the present investigation confirm the view that even when the more sensitive technique of comparing attitude scores of children in differing ability groups is used, an association between ability and attitudes is not uniformly found and it seems apparent that the relationship between the two factors is not as strong or invariable as is sometimes supposed.
The analysis of the relationship between children's level of academic ability and the variables under consideration in this study is now complete. The general pattern of inter-relationships will be discussed in Chapter 9 and to facilitate this appraisal, data presented in Sections 1 to 4 of this chapter are summarised in Table 8:65 below.

Table 8:65
Correlation coefficients between V.R.Q's and scores on all other scales administered

<table>
<thead>
<tr>
<th>4th Year boys</th>
<th>2nd Year boys</th>
<th>4th Year girls</th>
<th>2nd Year girls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coefficients</strong></td>
<td><strong>Coefficients</strong></td>
<td><strong>Coefficients</strong></td>
<td><strong>Coefficients</strong></td>
</tr>
<tr>
<td><strong>Acad. Soc.</strong></td>
<td>.54688***</td>
<td>.47226***</td>
<td>.36843***</td>
</tr>
<tr>
<td><strong>Aff. Soc.</strong></td>
<td>.27939**</td>
<td>.08452</td>
<td>.05665</td>
</tr>
<tr>
<td><strong>CTTO</strong></td>
<td>.48403***</td>
<td>.46193***</td>
<td>.51757***</td>
</tr>
<tr>
<td><strong>CTAC</strong></td>
<td>.30363**</td>
<td>.34951***</td>
<td>.30558**</td>
</tr>
<tr>
<td><strong>CTPR</strong></td>
<td>.30715**</td>
<td>.21802*</td>
<td>.21338*</td>
</tr>
<tr>
<td><strong>ASC</strong></td>
<td>.71169***</td>
<td>.44927***</td>
<td>.42092***</td>
</tr>
<tr>
<td><strong>PIC</strong></td>
<td>-.72410***</td>
<td>-.31723*</td>
<td>-.35520***</td>
</tr>
<tr>
<td><strong>ASC Dis</strong></td>
<td>-.64556***</td>
<td>-.50638***</td>
<td>-.49566***</td>
</tr>
<tr>
<td><strong>CSABC</strong></td>
<td>.31194**</td>
<td>.31956**</td>
<td>.09986</td>
</tr>
<tr>
<td><strong>CSPR</strong></td>
<td>.16891</td>
<td>.21635*</td>
<td>.12750</td>
</tr>
<tr>
<td><strong>ATS</strong></td>
<td>.35168***</td>
<td>.29211**</td>
<td>.15727</td>
</tr>
<tr>
<td><strong>ISU</strong></td>
<td>.16054</td>
<td>.17259</td>
<td>.07964</td>
</tr>
<tr>
<td><strong>IDU</strong></td>
<td>.27935**</td>
<td>.10625</td>
<td>.12079</td>
</tr>
<tr>
<td><strong>CPABC Av+</strong></td>
<td>.16891</td>
<td>.16914</td>
<td>.09047</td>
</tr>
<tr>
<td><strong>CPPR Av+</strong></td>
<td>.15320</td>
<td>.10607</td>
<td>-.00258</td>
</tr>
<tr>
<td><strong>CPABC Av-</strong></td>
<td>-.35162***</td>
<td>-.18215</td>
<td>-.20768*</td>
</tr>
<tr>
<td><strong>CPPR Av-</strong></td>
<td>-.35047***</td>
<td>-.09513</td>
<td>-.19021</td>
</tr>
</tbody>
</table>

The following general comments are made:

1. A strong relationship exists between ability and academic sociometric status but in respect to affective sociometric status, the relationship was variable.

2. Coefficients between V.R.Q's and CTTO and CTAC scores were positive and significant and the relationship obtained for CTPR scores, but not so consistently and not to such an extent.

3. The relationship between ability and ASC, PIC, ASC Dis and CSABC scores were almost uniformly positive and highly significant. Coefficients between V.R.Q's and CSPR scores were of a lower order and were statistically significant in two of the four groups concerned only.
4. The association between V.R.Q's and peer, teacher and self indices concerned with academic achievement was characteristically high and much more pronounced than that observed in indices concerned with children's peer relationships.

5. Coefficients between V.R.Q's and attitude scale scores were generally low and were significant only in three of the twelve relationships determined.

6. The relationship between academic ability and constructs of children high and low in academic attainment was significant only in five of the sixteen comparisons made.

5. The influence of setting.

It has sometimes been suggested that grouping by ability increases children's awareness of their own level of academic competence and that of others and that this sharpened awareness will be reflected in their construct systems generally. In this section, the possible association between the practice of setting and the relationship between the major variables under consideration in this study will be investigated. This is a relatively minor part of the enquiry from which limited inferences only can be drawn, as the numbers involved in the contrasting age and sex groups in the three participating schools are small. Details of the sample are as follows:

<table>
<thead>
<tr>
<th></th>
<th>School ES</th>
<th>School NS</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>44</td>
<td>-</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>63</td>
<td>42</td>
<td>-</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>74</td>
<td>59</td>
<td>46</td>
</tr>
</tbody>
</table>

Setting is practised extensively in the 4th year of School ES and to a very limited extent in the 4th year of School LS. Mixed ability grouping operates in the 4th year of School NS and in the 2nd years of all three schools.

Hypothesis 16 states "that the relationship between children's academic ability and their constructs of self and others and their school related attitudes becomes more pronounced in schools which are "set" than in schools where children are randomly grouped".
To test this hypothesis two main comparisons will be made. First, correlation coefficients between V.R.Q's and scores on the relevant variables of children in 4th year classes in the three schools will be compared. The test for differences between independent correlations described by Bruning and Katz (1968) will be applied wherever a significant association occurs between the two variables in any school group. Secondly, since setting operates in the 4th year only, the coefficients for each age group in each school will be compared so that changes which might be associated with setting can be identified. Tests for significance between coefficients will be applied as described above.

A t test will also be used to determine differences between mean scores of children in first quartile groups in the 4th year classes in each school and similarly for fourth quartile children.

The data will be analysed and discussed under the following three headings:

a. Children's constructs of peers.
b. Children's constructs of self.
c. Children's school related attitudes.

Children's constructs of peers.

The substance of the findings reported in Tables 8:1 and 8:2 is that the attitudes and behaviour in class and the peer relationships of children of high academic standing were construed more positively than those of children of low academic standing. What now follows in Tables 8:66 and 8:67 is a breakdown of the results of the constructs of peers tests into the separate school and age groups.
A comparison of mean scores on the CPABC Av+ and CPABC Av- scales analysed according to school, sex and age groups

<table>
<thead>
<tr>
<th>School NS</th>
<th>CPABC Av+ scale</th>
<th>CPABC Av- scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>44</td>
<td>30.57</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>42</td>
<td>28.00</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>46</td>
<td>33.83</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>59</td>
<td>30.51</td>
</tr>
<tr>
<td>School ES</td>
<td>CPABC Av+ scale</td>
<td>CPABC Av- scale</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>31.67</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>63</td>
<td>30.05</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>35.62</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>74</td>
<td>32.84</td>
</tr>
<tr>
<td>School LS</td>
<td>CPABC Av+ scale</td>
<td>CPABC Av- scale</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>64</td>
<td>34.89</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>46</td>
<td>31.67</td>
</tr>
</tbody>
</table>

A comparison of mean scores on the CPPR Av+ and CPPR Av- scales analysed according to school, sex and age groups

<table>
<thead>
<tr>
<th>School NS</th>
<th>CPPR Av+ scale</th>
<th>CPPR Av- scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>44</td>
<td>31.64</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>42</td>
<td>31.55</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>46</td>
<td>31.52</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>59</td>
<td>30.88</td>
</tr>
<tr>
<td>School ES</td>
<td>CPPR Av+ scale</td>
<td>CPPR Av- scale</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>30.94</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>63</td>
<td>30.54</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>33.43</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>74</td>
<td>32.89</td>
</tr>
<tr>
<td>School NS</td>
<td>CPPR Av+ scale</td>
<td>CPPR Av- scale</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>64</td>
<td>33.48</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>46</td>
<td>23.98</td>
</tr>
</tbody>
</table>
The data set out here again underline how differently children in high and low academic status groups are construed by their peers on these dimensions and as measured by these tests. Only one major exception to the general trend occurred and that was in School ES 2nd year girls' group where the differences between scores on both scales were non significant. No explanation can be offered for this finding. In the 2nd year boys' groups differences on the CPABC scale tended to be somewhat less than those reported on other scales, but they were all statistically significant.

The findings presented here leave little doubt that according to responses on the CPABC and CPPR measures, children high in academic ability were construed more positively than their peers in low status groups, irrespective of the form of grouping employed in the school. Hypothesis 16 is therefore not confirmed in this regard.

The CPABC and CPPR scores were also used to determine differences in how children in the two academic criteria groups were rated by children of differing V.R.Q. levels. This association, in respect to 4th year school groups, is now examined and the results are given in Table 8:68. A line drawn underneath two or more coefficients indicates a statistically significant difference between those coefficients.
Table 8.68
Correlation coefficients between V.R.Q's and CPABC and CPPR scores, analysed according to 4th year school groups

<table>
<thead>
<tr>
<th>School ES</th>
<th>School NS</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPABC Av+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.248</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.010</td>
</tr>
<tr>
<td>CPABC Av-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>-.223</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>-.193</td>
</tr>
<tr>
<td>CPPR Av+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.247</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.332**</td>
</tr>
<tr>
<td>CPPR Av-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>-.164</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>-.108</td>
</tr>
</tbody>
</table>

* denotes that the relationship between V.R.Q's and scale scores is significant at the .05 level, two asterisks the .01 level and three asterisks the .001 level.

+ denotes a statistically significant relationship between the underlined coefficients at the .05 level. Two crosses denote the .01 level.

What the coefficients indicate is the relationship between V.R.Q's and constructs of peers scores. The main inter-school differences appear in respect to children in the low academic category. For boys, in School NS the relationship between V.R.Q's and scores on both scales was more pronounced than that which obtained in School ES. For girls, in School NS the same tendency was noted except that it applied to the CPABC Av- measure only.

Only one more significant difference between coefficients occurred which suggested that in respect to high academic status children, the association between V.R.Q's and CPPR Av+ scores was more marked among School ES 4th year girls than it was among their age counterparts in School NS.

In summary, then, while the relationship between V.R.Q's and constructs of below average peers scores was most marked in the mixed ability group,
the one significant difference in correlation coefficients in respect to above average children indicated a stronger relationship between V.R.Q's and CPPR Av+ scores for boys in School ES than for boys in School LS. There are thus no consistent findings in relation to grouping practices observable in this sub-section, which support Hypothesis 16.

Next follows a comparison of coefficients between V.R.Q's and constructs of peers scores of children in the two age groups. Table 8:69 refers.

**Table 8:69**

A comparison of coefficients between V.R.Q's and constructs of peers scores of children in the two age groups, analysed according to schools.

<table>
<thead>
<tr>
<th></th>
<th>4th Year</th>
<th>2nd Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>Coefficients</td>
</tr>
<tr>
<td>CPABC Av+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>.248</td>
<td>.025</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>.025</td>
<td>.055</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>.010</td>
<td>.360**</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>.061</td>
<td>.229</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>.059</td>
<td>.486***</td>
</tr>
<tr>
<td>CPABC Av-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>-.223</td>
<td>-.194</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>-.524***</td>
<td>-.156</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>-.193</td>
<td>-.235</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>-.390***</td>
<td>-.104</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>-.019</td>
<td>-.225</td>
</tr>
<tr>
<td>CPPR Av+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>.247</td>
<td>.233</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>.261</td>
<td>.058</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>.332**</td>
<td>.235</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>.042</td>
<td>.181</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>.045</td>
<td>.175</td>
</tr>
<tr>
<td>CPPR Av-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>-.164</td>
<td>.117</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>-.523***</td>
<td>-.071</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>-.108</td>
<td>-.378**</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>-.309*</td>
<td>-.208</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>-.151</td>
<td>-.023</td>
</tr>
</tbody>
</table>

* = significance level between V.R.Q's and scale scores
+ = significance level between coefficients
There is a suggestion in these results that the relationship between \( V.R.Q^* \)'s and scores on the constructs of peers below average in academic status scale becomes more pronounced over the two year period in School NS, although in only one instance was the difference between coefficients statistically significant. This means that over the two year period there is a somewhat greater difference in the expected direction between children of varying intelligence levels in their constructs of low academic status peers in the mixed ability situation than there is in the "set" school.

Two other significant differences between coefficients were reported in connection with the girls' groups in School ES and School LS. The relationship between \( V.R.Q^* \)'s and CPABC \( Av^+ \) scores decreased over the two year period. Thus, there is less difference between children of varying ability levels in their scores on the CPABC \( Av^+ \) in the 4th year than there is in the 2nd year. This trend is opposite to that which was predicted.

In summary, in the twenty groups observed, there were three statistically significant differences in coefficients between \( V.R.Q^* \)'s and constructs of peers scores over the two year period. One of these indicated that the relationship between the two variables increased in the "set" school on the CPPR \( Av^- \) measures. The remaining two differences concerned a decrease in the relationship among girls in both set schools on the CPABC \( Av^+ \) measure over the two year period. In regard to grouping practices in schools, the results are inconsistent and hypothesis 16 is not supported.

Summary of constructs of peer measures results.

1. In general, children high in academic status were construed more positively on the CPABC and CPPR measures than were children low in academic status, irrespective of grouping practices adopted.

2. While the relationship between \( V.R.Q^* \)'s and scores on constructs of peers of below average ability measures were most marked in the mixed ability groups, the one significant difference in correlation coefficients in respect to above average children indicated a stronger relationship between \( V.R.Q^* \)'s and CPPR \( Av^- \) scores for boys in School ES than for boys in School LS. With regard to the possible influence of grouping practices, the results are therefore inconsistent.
3. Over the two year period, the relationship between V.R.Q's and the CPPR Av- measure increased for boys in School NS. Over the same period, the relationship between V.R.Q's and CPABC Av+ measures decreased among girls in the two "set" schools. Again, in regard to grouping practices, the results are inconsistent.

The sociometric measures.

The main sociometric findings given in Tables 8:18 and 8:16 can be briefly stated thus. On the academic sociometric criterion where subjects were asked to nominate peers of superior intelligence, a highly significant relationship obtained between V.R.Q's and academic sociometric status. On the affective test, where subjects nominated children they would like to associate with in a purely social situation, the relationship between V.R.Q's and affective sociometric status was much less marked and varied from group to group. In the next table, Table 8:70, school differences in this respect are examined by comparing coefficients between verbal reasoning test scores and scores on the two sociometric measures of 4th year children in the three schools.

Table 8:70
Correlation coefficients between V.R.Q's and sociometric scores analysed according to 4th year school groups

<table>
<thead>
<tr>
<th></th>
<th>School ES</th>
<th></th>
<th>School NS</th>
<th></th>
<th>School LS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficient</td>
<td>N</td>
<td>Coefficient</td>
<td>N</td>
<td>Coefficient</td>
</tr>
<tr>
<td>Academic status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.605***</td>
<td>44</td>
<td>.476***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.193</td>
<td>46</td>
<td>.384***</td>
<td>64</td>
<td>.400***</td>
</tr>
<tr>
<td>Affective status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.233</td>
<td>44</td>
<td>.351*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.108</td>
<td>46</td>
<td>.169</td>
<td>46</td>
<td>.010</td>
</tr>
</tbody>
</table>

On the academic sociometric criterion, coefficients between V.R.Q's and academic sociometric status were positive and significant in all groups with the exception of the 4th year girls in School ES.

On the affective sociometric criterion, the relationship between verbal reasoning test results and affective sociometric was variable and in one instance only, the 4th year boys' group in School NS, did it reach the .05 level of statistical significance. However, the
coefficient in that group was not statistically different from that in the corresponding boys' group in School ES.

Considered as a whole, there is no evidence in this table to warrant the assumption that grouping practices influence the overall association between children's sociometric choices and their V.R.Q's.

The analysis continues by examining sociometric scores of children in the upper quartile groups in the three schools, and then scores of children in the lower quartile groups. Table 8:71 refers.

**Table 8:71**

Comparison of mean scores of subjects in Quartiles 1 and 4, respectively in 4th year classes, analysed according to sex group.

<table>
<thead>
<tr>
<th>Academic criterion</th>
<th>School ES</th>
<th>School MS</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Quartile 1 boys</td>
<td>13</td>
<td>8.92</td>
<td>8.30</td>
</tr>
<tr>
<td>Quartile 4 boys</td>
<td>13</td>
<td>8.07</td>
<td>4.27</td>
</tr>
<tr>
<td>Quartile 1 girls</td>
<td>17</td>
<td>3.05</td>
<td>5.88</td>
</tr>
<tr>
<td>Quartile 4 girls</td>
<td>17</td>
<td>2.29</td>
<td>4.71</td>
</tr>
</tbody>
</table>

**Affective criterion**

| Quartile 1 boys    | 13 | 2.84 | 1.86 | 11 | 3.45 | 1.21 |
| Quartile 4 boys    | 13 | 2.15 | 1.72 | 11 | 1.90 | .94  |
| Quartile 1 girls   | 17 | 2.05 | 1.39 | 12 | 3.58 | 1.92+| 16 | 2.50 | 1.36 |
| Quartile 4 girls   | 17 | 2.47 | 1.28 | 11 | 2.54 | 2.20 | 16 | 2.43 | 1.93 |

+ = significant at .05 level.

It will be noted that there are no significant differences between means of subjects in various quartile groups on the academic criterion. However, upper quartile girls in the mixed ability school obtained a significantly higher mean score than upper quartile girls in both the other schools, but the level of confidence was at the moderate level of .05 only. There is a possibility that this result may be connected with the practice of mixed ability grouping, but a causal relationship may not be assumed.
The sociometric data is now examined for age differences in the relationship between V.R.Q's and sociometric scores. Table 8:72 refers.

**Table 8:72**

A comparison of coefficients between V.R.Q's and sociometric scores of children in the two age groups, analysed according to schools

<table>
<thead>
<tr>
<th>Academic status</th>
<th>4th Year</th>
<th>Coefficients</th>
<th>2nd Year</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.605***</td>
<td>63</td>
<td>.437***</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.476***</td>
<td>42</td>
<td>.566***</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.193</td>
<td>74</td>
<td>.562***</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.384**</td>
<td>59</td>
<td>.402**</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.400***</td>
<td>46</td>
<td>.431**</td>
</tr>
</tbody>
</table>

**Affective status**

| School ES Boys    | 52       | .233         | 63       | .094         |
| School NS Boys    | 44       | .351*        | 42       | .211         |
| School ES Girls   | 67       | .108         | 74       | .211         |
| School NS Girls   | 46       | .169         | 59       | .330**       |
| School LS Girls   | 44       | .010         | 46       | .340*        |

On the academic criterion, the association between V.R.Q's and sociometric scores was positive and significant in all groups except one, namely, the School ES girls' groups where the relationship might have been expected to be stronger. This finding seems to be unrelated to grouping practices.

On the affective criterion, the relationship between V.R.Q's and sociometric status was variable from group to group but no age difference which might be associated with grouping practices was discernible. In general, then, the affective sociometric data do not support hypothesis 16.

In a second treatment of sociometric results in Section 1 of this chapter, the problem examined was whether children tend to choose as associates those of similar intelligence level to themselves. There was a tendency for this to occur among upper quartile children but not lower quartile children. This is a matter of particular interest to the present issue because it has been argued that the bringing together of children of roughly comparable ability into sets might result in a social
cleavage between children in differing achievement groups. That position would be supported by current theories of interpersonal attraction which emphasise the importance of the propinquity factor and the "similarity of salient characteristics" factor in friendship formation, conditions for the operation of which are provided by setting.

Accordingly the choices of children in the upper and lower V.R.Q. quartile groups were analysed in terms of the number of choices given to children in each of the four quartile groups. The results are set out in Table 8:73.

Table 8:73
Direction of affective sociometric choices of subjects in upper and lower sociometric quartile groups in relation to academic ability of children chosen, analysed according to sex, age and school groups.

<table>
<thead>
<tr>
<th>Choices given to quartiles</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>d.f</th>
<th>chi-square</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS 4th Year boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>12</td>
<td>12</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>7.12</td>
<td>n.s.</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>.85</td>
<td>n.s.</td>
</tr>
<tr>
<td>NS 2nd Year boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>8</td>
<td>2</td>
<td>10</td>
<td>7</td>
<td>3</td>
<td>5.21</td>
<td>n.s.</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>3</td>
<td>3</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>13.84</td>
<td>.01</td>
</tr>
<tr>
<td>ES 4th Year boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>21</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>24.01</td>
<td>.001</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>2</td>
<td>5</td>
<td>11</td>
<td>10</td>
<td>3</td>
<td>7.67</td>
<td>n.s.</td>
</tr>
<tr>
<td>ES 2nd Year boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>14</td>
<td>7</td>
<td>14</td>
<td>6</td>
<td>3</td>
<td>6.40</td>
<td>n.s.</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>8</td>
<td>9</td>
<td>8</td>
<td>10</td>
<td>3</td>
<td>.18</td>
<td>n.s.</td>
</tr>
<tr>
<td>NS 4th Year girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>11</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>2.12</td>
<td>n.s.</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>10</td>
<td>3</td>
<td>5.53</td>
<td>n.s.</td>
</tr>
<tr>
<td>NS 2nd Year girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>21</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>21.64</td>
<td>.001</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>8</td>
<td>10</td>
<td>14</td>
<td>9</td>
<td>3</td>
<td>2.36</td>
<td>n.s.</td>
</tr>
<tr>
<td>ES 4th Year girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper quartile</td>
<td>14</td>
<td>11</td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>2.90</td>
<td>n.s.</td>
</tr>
<tr>
<td>Lower quartile</td>
<td>10</td>
<td>7</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>2.25</td>
<td>n.s.</td>
</tr>
</tbody>
</table>


Table 8:73 continued

<table>
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<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>d.f.</th>
<th>chi-square</th>
<th>p</th>
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<td>7</td>
<td>3</td>
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<td>n.s.</td>
</tr>
</tbody>
</table>

It will be seen that in only three of the twenty comparisons made was the distribution of responses statistically significant. The groups concerned were:

School NS 2nd year boys - lower quartile
School NS 2nd year girls - upper quartile
School ES 4th year boys - upper quartile

The inconsistencies in results are obvious. In School NS, where mixed ability grouping is favoured, the differences centred on the 2nd year group, but no in-group preference was found in the 2nd year boys' upper quartile group or in the 2nd year girls' lower quartile group.

The other instance of a statistically significant difference in choice distribution occurred in the 4th year boys' upper quartile group in School ES. This finding may or may not be attributed to setting. In support, it is pointed out that in the corresponding lower quartile group few choices were given to boys in the top half of the V.R.Q. range although the distribution as a whole was not significant. In opposition to the view that the in-group preference was a consequence of setting, it is pointed out that a similar pattern of responses did not obtain among girls in the set school and that an in-group bias in choices was observed in two of the eight groups in the mixed ability school. Only further extensive enquiries could resolve the issue, and in summary, hypothesis 16 receives cautious and limited confirmation in this regard.

One other analysis of effective sociometric results was carried out, namely, that concerning in-class and in-set choices of 4th year pupils in School ES. Table 8:74 refers.
Table 8.74

4th Year classes - In-class and in-set preferences

<table>
<thead>
<tr>
<th>Class</th>
<th>Class/set</th>
<th>In</th>
<th>Out</th>
<th>d.f.</th>
<th>chi-square</th>
<th>p</th>
<th>In</th>
<th>Out</th>
<th>d.f.</th>
<th>chi-square</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS 4th Year boys</td>
<td>NS 4th Year boys</td>
<td>106</td>
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<td>1</td>
<td>66.41</td>
<td>.001</td>
<td>111</td>
<td>20</td>
<td>1</td>
<td>62.24</td>
<td>.001</td>
</tr>
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<td>ES 4th Year boys</td>
<td>ES 4th Year boys</td>
<td>85</td>
<td>46</td>
<td>1</td>
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<td>.001</td>
<td>146</td>
<td>20</td>
<td>1</td>
<td>95.61</td>
<td>.001</td>
</tr>
<tr>
<td>NS 4th Year girls</td>
<td>NS 4th Year girls</td>
<td>88</td>
<td>41</td>
<td>1</td>
<td>16.21</td>
<td>.001</td>
<td>146</td>
<td>20</td>
<td>1</td>
<td>95.61</td>
<td>.001</td>
</tr>
<tr>
<td>ES 4th Year girls</td>
<td>ES 4th Year girls</td>
<td>115</td>
<td>51</td>
<td>1</td>
<td>24.67</td>
<td>.001</td>
<td>146</td>
<td>20</td>
<td>1</td>
<td>95.61</td>
<td>.001</td>
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<tr>
<td>LS 4th Year girls</td>
<td>LS 4th Year girls</td>
<td>134</td>
<td>27</td>
<td>1</td>
<td>72.91</td>
<td>.001</td>
<td>146</td>
<td>20</td>
<td>1</td>
<td>95.61</td>
<td>.001</td>
</tr>
</tbody>
</table>

In all three schools a pronounced in-class preference was apparent which underlines the obviously powerful effect of the proximity factor in determining children's friendship patterns. However, it was less marked in School ES than in most other groups, partly because 26 choices of 4th year boys and 31 choices of 4th year girls were given to children in the same set as themselves but who were members of a different form. This implies that membership of the same set, which accounts for about a fifth of all choices given, is a relatively important factor in friendship formation, and it is one which is likely to become one of greater significance as setting is extended to other subjects as children pass from age group to age group.

Summary of sociometric results.

1. The relationship between V.R.Q's and academic sociometric status was positive and significant in all groups and was unrelated to school grouping practices.

2. The relationship between V.R.Q's and affective sociometric status varied from group to group but there was no evidence to suggest that the association was influenced by different methods of grouping in schools.

3. On the academic sociometric criterion, no differences between means of children in the same upper and lower quartile groups in the separate schools were reported. On the affective criterion, however, upper quartile girls in the mixed ability school obtained a significantly higher mean score than did their counterparts in the two other schools, but at the .05 level only.

4. An in-group preference based on ability was reported in three of the twenty comparisons made. Of these, only one might possibly be associated
with the practice of setting.

5. A pronounced in-class preference was noted in all 4th year
groups. It was least noticeable in the School 5 classes where
approximately a fifth of all choices given could be attributed to the
effect of setting.

Summary of constructs of peers results.

In brief, the constructs of peers measures results demonstrated
that children high in academic status were construed more positively
in respect to attitudes and behaviour in class and in respect to peer
relationships than were children low in academic status, irrespective
of the form of grouping adopted in the schools. Also investigated was
the question of how children in the two academic criteria groups were
regarded by peers of differing intellectual levels in the three school
situations. Again, no pattern which might be associated with setting
emerged.

The sociometric results indicated that the relationship between
V.R.Q's and sociometric scores on both tests were generally unrelated
to grouping practices. With respect to in-group preferences based on
ability, there was a possibility that in one instance only might this
be attributed to setting but there was some evidence to suggest that
setting was becoming a relatively important influence in children's
friendship patterns.

Constructs of self measures.

In Section 3 of this chapter, the relationship between children's
V.R.Q's and scores on a number of constructs of self indices were
determined and in this connection the following measures were administered.

a. the academic self construct scale (ASC)
b. the Position in class scale (PIC)
c. the actual/ideal ASC discrepancy scale (ASC Dis)
d. the constructs of self in respect to attitudes and behaviour
   in class scale (CSABC)
e. the constructs of self in respect to peer relationships scale (CSPR).

As a generalisation, it can be said that children in the various
ability groups saw themselves in very different terms academically (and
in the expected direction) and to a lesser though still marked extent
in the manner in which they judged their own attitudes and behaviour in
class. In contrast, there were only limited differences in children's
constructs of their own interpersonal behaviour.

The issue which is now raised is whether the relationship between
academic ability and children's constructs of self is influenced by
setting.

In examining this point, first, correlation coefficients between
V.R.Q's and all the constructs of self scores are set out in Table 8:75.
Where a significant difference occurs between coefficients in the
different school groups concerned, this is indicated by underlining the
means.

Table 8:75
Correlation coefficients between V.R.Q's and constructs of self
scores, analysed according to 4th year school groups

<table>
<thead>
<tr>
<th>Scale</th>
<th>School ES</th>
<th>School NS</th>
<th>School LS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficients</td>
<td>N</td>
</tr>
<tr>
<td>ASC scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.784***</td>
<td>44</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.506***</td>
<td>46</td>
</tr>
<tr>
<td>PIC scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.730***</td>
<td>44</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.398***</td>
<td>46</td>
</tr>
<tr>
<td>ASC Dis scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.705***</td>
<td>44</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.392***</td>
<td>46</td>
</tr>
<tr>
<td>CSABC scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.266*</td>
<td>44</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.057</td>
<td>46</td>
</tr>
<tr>
<td>CSPR scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.180</td>
<td>44</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.109</td>
<td>46</td>
</tr>
</tbody>
</table>

Asterisks denote statistically significant coefficients between
V.R.Q's and attitude scores. * = .05 level; ** = .01 level; *** = .001 level.

Where coefficients between groups are statistically significant they
are underlined. + = .05 level; ++ = .01 level.
The general pattern of results which emerged is much as would be expected. The relationship between V.R.Q's and the academic constructs of self indices is highly significant in all instances with one exception, namely, School NS 4th year girls' group on the PIC scale.

On the CSABC measures, a positive and highly significant relationship between ability and scores on this scale was found only in the School NS 4th year boys' group; on the CSPR scale, no significant relationships were observed.

School differences in coefficients will now be considered, two only of which were statistically significant. On the PIC scale girls in the mixed ability school obtained a lower coefficient than those in the school where limited setting operated, but in any event the School NS results were exceptional to the trend. On the ASC Dis scale, a difference occurred between coefficients of girls in the two set schools. There is thus no support given by the findings in this table to the suggestion that setting influences the relationship between the two variables under discussion, and hypothesis 16 in this regard is rejected.

A further means of investigating the possible effect of setting on children's constructs of self is by comparing mean scores of subjects in the corresponding upper and lower quartile groups in each school. By doing so, it is possible to discover whether children of high and low academic ability respectively, have more positive constructs of self in set or randomly grouped schools. Table 8:76 refers.
**Table 8:76**

Comparison of mean scores of subjects in Quartiles 1 and Quartiles 4, respectively in 4th year classes, analysed according to sex group.

<table>
<thead>
<tr>
<th>Scale</th>
<th>School ES</th>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>School NS</th>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
<th>School LS</th>
<th></th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
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<td></td>
</tr>
<tr>
<td>Quartile 1 boys</td>
<td>13</td>
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<td>11</td>
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<tr>
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<td>11</td>
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<td>12</td>
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</tbody>
</table>

* denotes t value significant at the .05 level  
** denotes t value significant at the .01 level  
Statistical differences between means occurred in groups underlined.
In the main, there is little difference in the mean scores of children in the criteria groups being discussed. The ASC and PIC scale upper quartile girls' results indicated that subjects in School LS have more positive constructs on this dimension than do their counterparts in the two other schools. This school group also had a significantly lower ASC Dis score than did upper quartile School NS girls. No other differences of significance were observed.

Hypothesis 16 is not here confirmed as the differences referred to above are unlikely to be associated with setting for the reason that no differences occurred between the two schools where grouping policies differed most, School ES and School NS.

The final stage in the analysis of construct of self scores involved comparing coefficients between V.R.Q's and construct of self scores of children in the two age groups, and to note such statistical differences between coefficients as occurred. The results of this analysis are set out in Table 8:77.
Table 8:77
A comparison of coefficients between V.R.Q's and constructs of self scores of children in the two age groups, analysed according to schools.

<table>
<thead>
<tr>
<th>Scale</th>
<th>4th Year</th>
<th></th>
<th>2nd Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficients</td>
<td>N</td>
<td>Coefficients</td>
</tr>
<tr>
<td>ASC scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.784***</td>
<td>63</td>
<td>.520***</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.699***</td>
<td>42</td>
<td>.353*</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.506***</td>
<td>74</td>
<td>.529***</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.283*</td>
<td>59</td>
<td>.457**</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.552***</td>
<td>46</td>
<td>.365*</td>
</tr>
<tr>
<td>PIC scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.738***</td>
<td>63</td>
<td>.513***</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.742***</td>
<td>42</td>
<td>.230 ++</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.398***</td>
<td>74</td>
<td>.656***</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.196</td>
<td>59</td>
<td>.370***</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.532***</td>
<td>46</td>
<td>.221</td>
</tr>
<tr>
<td>ASC Dis scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.705***</td>
<td>63</td>
<td>.382**</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.634***</td>
<td>42</td>
<td>.492***</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.392***</td>
<td>74</td>
<td>.421***</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.505***</td>
<td>59</td>
<td>.493***</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.660***</td>
<td>46</td>
<td>.296*</td>
</tr>
<tr>
<td>CSABC scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.266*</td>
<td>63</td>
<td>.382**</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.401**</td>
<td>42</td>
<td>.274</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.057</td>
<td>74</td>
<td>.490*** ++</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.227</td>
<td>59</td>
<td>.342**</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.030</td>
<td>46</td>
<td>.471***</td>
</tr>
<tr>
<td>CSPR scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.180</td>
<td>63</td>
<td>.366**</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.187</td>
<td>42</td>
<td>.038</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.109</td>
<td>74</td>
<td>.155</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.162</td>
<td>59</td>
<td>.355***</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.093</td>
<td>46</td>
<td>.056</td>
</tr>
</tbody>
</table>

Asterisks denote statistically significant coefficients between V.R.Q's and Scale scores. One asterisk signifies .05 level; two asterisks .01 level and three asterisks .001 level.

Where coefficients between groups are statistically significant they are underlined. ++ = .05 level; ++ = .01 level.
Again, in connection with the main focus of enquiry, the results presented above are inconclusive. On the academic self construct measures the main differences occurred in the boys' groups. On the ASC scale, the relationship between the two variables increased over the two year period in both Schools ES and NS. On the PIC scale, a similar trend occurred for School NS boys only and on the ASC Dis scale for School ES boys only. On that same scale, a further and similar statistically significant difference in coefficients was noted between older and younger children in the School LS girls' group.

The other difference occurred on the CSABC measure where the relationship between V.R.Q's and CSABC scores decreased - not increased - over the two year period in the School ES and School LS girls' groups. This finding is contrary to expectation.

In summary, such statistically significant differences that did exist between older and younger children in respect to constructs of self and ability level, cannot be attributed to setting. Hypothesis 16 in this respect is not therefore supported.

**Summary of constructs of self results.**

In essence, the findings set out in this sub-section, while identifying certain differences between sub-groups in the various schools, did not reveal any relationship between V.R.Q's and constructs of self scores which might be associated with different grouping practices adopted.

**Attitude Measures.**

In Section 4 of this chapter, the relationship between V.R.Q's and children's school-related attitudes was investigated and to this end, the following three scales were administered:

a. Attitudes to school scale (ASC).

b. Interest in school work scale (ISW).

c. Importance of doing well scale (IDW).

In that section, it was stated that an association between the two variables was not uniformly found and that it is not as marked as is sometimes supposed.

The analysis proceeds by considering the possible effects of setting on this relationship, and in the first instance, correlation coefficients between V.R.Q's and attitude scores in the three schools are compared. Table 6:78 refers.
Table 8:78
Correlation coefficients between V.R.Q.'s and attitude test scores, analysed according to 4th year groups.

<table>
<thead>
<tr>
<th></th>
<th>School ES</th>
<th></th>
<th>School NS</th>
<th></th>
<th>School LS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Coefficients</td>
<td>N</td>
<td>Coefficients</td>
<td>N</td>
<td>Coefficients</td>
</tr>
<tr>
<td><strong>ATS scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.259</td>
<td>44</td>
<td>.426***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.073</td>
<td>46</td>
<td>.368*</td>
<td>64</td>
<td>.092</td>
</tr>
<tr>
<td><strong>ISW scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.196</td>
<td>44</td>
<td>.164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.164</td>
<td>46</td>
<td>.018</td>
<td>64</td>
<td>.046</td>
</tr>
<tr>
<td><strong>IDW scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>52</td>
<td>.082</td>
<td>44</td>
<td>.612*** ++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>67</td>
<td>.094</td>
<td>46</td>
<td>.227</td>
<td>64</td>
<td>.034</td>
</tr>
</tbody>
</table>

Asterisks denote statistically significant coefficients between V.R.Q.'s and attitude scores. * = .05 level; ** = .01 level; *** = .001 level.

Where coefficients between groups are statistically significant they are underlined. + = .05 level; ++ = .01 level.

It will be seen that a positive relationship between the two factors occurred in the School NS boys' and girls' groups on the ATS scale, and for School NS boys on the IDW scale.

However, only one statistically significant difference between coefficients occurred and that was between the 4th year boys' groups on the IDW scale. Thus while there is a suggestion that the relationship between V.R.Q.'s and attitudes scores is stronger among subjects in School NS, a statistically significant difference between coefficients was observed in one comparison only. Hypothesis 16 relating to this issue is therefore not confirmed.

The analysis continues by examining attitude scores of children in the corresponding quartile groups in the three schools. Table 8:79 refers.
Table 8.79
Attitude measures

Comparison of mean scores of subjects in Quartiles 1 and Quartiles 4, respectively in 4th year classes, analysed according to sex group

<table>
<thead>
<tr>
<th>School ES</th>
<th></th>
<th>School NS</th>
<th></th>
<th>School LS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>S.D.</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>ATS scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartile 1 boys</td>
<td>13</td>
<td>4.00</td>
<td>1.00</td>
<td>11</td>
<td>3.72</td>
</tr>
<tr>
<td>Quartile 4 boys</td>
<td>13</td>
<td>3.00</td>
<td>1.08</td>
<td>11</td>
<td>2.00</td>
</tr>
<tr>
<td>Quartile 1 girls</td>
<td>17</td>
<td>3.64</td>
<td>1.22</td>
<td>12</td>
<td>3.41</td>
</tr>
<tr>
<td>Quartile 4 girls</td>
<td>17</td>
<td>1.30</td>
<td>1.30</td>
<td>11</td>
<td>2.27</td>
</tr>
<tr>
<td><strong>ISW scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartile 1 boys</td>
<td>13</td>
<td>3.86</td>
<td>1.21</td>
<td>11</td>
<td>3.36</td>
</tr>
<tr>
<td>Quartile 4 boys</td>
<td>13</td>
<td>2.92</td>
<td>1.40</td>
<td>11</td>
<td>3.72</td>
</tr>
<tr>
<td>Quartile 1 girls</td>
<td>17</td>
<td>3.17</td>
<td>1.33</td>
<td>12</td>
<td>3.00</td>
</tr>
<tr>
<td>Quartile 4 girls</td>
<td>17</td>
<td>2.41</td>
<td>1.46</td>
<td>11</td>
<td>2.96</td>
</tr>
<tr>
<td><strong>IDU scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartile 1 boys</td>
<td>13</td>
<td>7.61</td>
<td>1.80</td>
<td>11</td>
<td>7.20</td>
</tr>
<tr>
<td>Quartile 4 boys</td>
<td>13</td>
<td>7.92</td>
<td>1.18</td>
<td>11</td>
<td>6.36</td>
</tr>
<tr>
<td>Quartile 1 girls</td>
<td>17</td>
<td>7.52</td>
<td>2.42</td>
<td>12</td>
<td>7.33</td>
</tr>
<tr>
<td>Quartile 4 girls</td>
<td>17</td>
<td>7.35</td>
<td>1.73</td>
<td>11</td>
<td>5.90</td>
</tr>
</tbody>
</table>

* denotes t value significant at the .05 level.

Statistical differences in means occurred in groups underlined.

It will be noted first, that no statistically significant differences occur between means of children in the upper quartile groups. The second main point is that no statistical difference in means is significant beyond the .05 level.

All comments from here on, refer to lower quartile groups. Only one difference in means concerns boys. On the ATS scale, subjects in School NS had a lower mean score than their counterparts in School ES.

The remaining significant t values concern lower quartile girls' groups. In each of the three scales, 4th year girls in School LS had higher mean scores than girls in School NS. The mean score of that same group was higher than that of girls in School ES on the IDU scale.

Apart from the one boys' difference reported, the main differences in means occurred between children in Schools NS and LS where the difference in school organisation is slight. There is no evidence then
in this table which points to an association between children's academic ability and their school-related attitudes which could be attributed to setting and hypothesis 16 is accordingly rejected.

One further analysis is now made in which coefficients of younger and older children in the three schools are compared. The data are given in Table 8:80.

**Table 8:80**

A comparison of coefficients between V.R.Q's and attitude scores of children in the two age groups, analysed according to schools.

<table>
<thead>
<tr>
<th></th>
<th>4th Year</th>
<th>2nd Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATS scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.259</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.462**</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.073</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.368*</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.092</td>
</tr>
<tr>
<td><strong>ISW scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.196</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.164</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.164</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.018</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.046</td>
</tr>
<tr>
<td><strong>IDW scale</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ES Boys</td>
<td>52</td>
<td>.082</td>
</tr>
<tr>
<td>School NS Boys</td>
<td>44</td>
<td>.612**</td>
</tr>
<tr>
<td>School ES Girls</td>
<td>67</td>
<td>.094</td>
</tr>
<tr>
<td>School NS Girls</td>
<td>46</td>
<td>.227</td>
</tr>
<tr>
<td>School LS Girls</td>
<td>64</td>
<td>.034</td>
</tr>
</tbody>
</table>

Asterisks denote statistically significant coefficients between V.R.Q's and attitude scores. * = .05 level; ** = .01 level; *** = .001 level.

Where coefficients between groups are statistically significant they are underlined. + = .05; ++ = .01 level.
One statistically significant difference between children in the two age groups occurred and that was in the School NS boys' group on the IDW scale. This result suggested that the relationships between the two variables increased over the two year period but this isolated result cannot be taken to have any bearing on the issue under discussion. Hypothesis 16, as far as this aspect is concerned, is thus rejected.

**Summary of attitude measure results.**

The results presented in this sub-section do indicate some differences in the relationship between V.R.Q's and attitude scores among the various sub-groups, but there is no firm evidence to suggest that they are influenced by grouping practices.

**Summary and discussion of results presented in Section 5: The influence of setting.**

In this section, Hypothesis 16 was tested which states "that the relationship between children's academic ability and their constructs of self and others and their school-related attitudes becomes more pronounced in schools which are "set" than in schools where children are randomly grouped".

The hypothesis was tested in two main ways. First, by comparing the relationship between academic ability and scores on all the relevant indices of 4th year children in schools where mixed ability grouping, extensive setting and limited setting is practised. Secondly, by noting changes in coefficients between young and older age groups which might be associated with school organisational procedures. It is again stressed that the numbers of children involved in the respective groups are small in this part of the enquiry and that any tentative conclusions which are drawn must be interpreted with this point in mind.

Results from the constructs of peers measures demonstrated that children high in academic status were construed more positively than were children low in academic status, irrespective of the form of grouping adopted in the schools. Also considered was the question of how children in the two academic criteria groups were regarded by peers of differing intelligence levels, but again, no pattern emerged which might be associated with setting.
Reference is now made to the little available evidence which has an indirect bearing on this question. A central issue in the literature summarised in Chapter 6, Section 3, was whether segregation of pupils into stratified ability groups influences children's constructs of peers in any way. Both Luchins and Luchins (1948) and Hargreaves (1967) reported a tendency for mutually negative stereotypes to exist between children in various streams but this finding cannot be attributed to ability grouping alone, as neither investigations included a control group in its experimental design. Other writers, notably Renz and Simenson (1969) whose design did include a control group, were able to show that the retarded were not automatically rejected with greater frequency by regular class pupils despite the fact that they were academically segregated.

The investigations just cited referred to the complete segregation of children into academic streams and not the partial segregation of children into sets which is the subject of the present enquiry. The findings reported in the previous paragraph are not therefore directly relevant to the issue under discussion, and in any event, they were inconsistent.

As summarised above, the results suggested that almost uniformly, children of high academic standing are construed more positively in respect to their attitudes and behaviour in class and to their peer relationships than are children low in academic standing. The second point is that while there are variations in the relationship between V.R.Q's and constructs of peers in the two ability groups, none can definitely be ascribed to the influence of grouping practices. No support is therefore given to hypothesis 16 in this respect.

The sociometric results next received attention. The relationship between V.R.Q's and academic sociometric status was positive and significant in all groups and was not related to ability grouping. There were, however, variations in the relationship between V.R.Q's and affective sociometric status reported but they too were not associated with methods of grouping either. However, upper quartile 4th year girls in School NS obtained a higher mean score than did their counterparts in the corresponding quartile in the other two schools, a finding which indicates that bright girls in mixed ability classes are more favoured socially.
The results of previous sociometric research relevant to this discussion were summarised in Chapter 6, Section 3, and they are now compared with findings reported in the present study. In Borg's (1964) investigation of some 4,000 pupils, children superior in intelligence were found to have higher sociometric status in randomly grouped classes while average and slow pupils received higher status in ability grouped classes. In the present enquiry, Borg's findings are supported in regard to the above average group by the girls' results only and in no other respect.

Direction of choice in relation to ability quartile group was next examined. An in-group preference based on ability was reported in a small minority of groups, only one of which might possibly be associated with setting. A pronounced in-class preference was noted in all 4th year groups but it was least evident in the School ES classes where approximately a fifth of all choices might be attributed to the effect of setting.

The issue of the relationship between grouping practices and social interaction between children of varying intelligence levels was also raised in Chapter 6, Section 3. Willig (1963) found that in both streamed and unstreamed classes, girls tended to choose those of similar intelligence to themselves and it was concluded that mixed ability grouping does not facilitate social mixing among girls of differing intelligence levels. However, among one boys' unstreamed group, intelligence did not appear to be associated with friendship formation while in another similar group, an in-group preference was observed only among extreme I.Q. quartile boys. More recently, and as part of an extensive investigation into comprehensive education, Honks (1968) and Ross et al (1972) noted considerable differences in inward direction of friendship choices in relation to ability both within and between schools, but they did not seem to be related, at least directly, to the degree of ability grouping.

Other studies have concentrated on the social effects of special class placement on friendship patterns, which in the main appear to have been slight. Smith and Kennedy (1967) found that the sociometric status of retarded children was not influenced by different grouping practices. On the other hand, Fann (1956) in an investigation of the social effects of enrichment classes for the gifted, reported a marked cleavage between
his group of exceptional children and the "normal" population which he attributed to this form of segregation. Contrary findings however, were reported by Goldsworth (1959) who examined the same problem.

In essence, previous research findings suggest that while in-group preferences based on ability level are sometimes encountered, there is only limited evidence to warrant the view that they are directly related to school organisational procedures.

As far as the present investigation is concerned, it is evident that the results are in accord with conclusions reached in the preceding paragraph. While in-group preferences based on ability were observed, none was directly attributable to grouping practices. The only finding which is firmly associated with setting is that children in School ES tend to choose as friends a disproportionate number of children from their own academic set group. If that trend is intensified as the degree of setting increases, then this form of partial ability grouping might encourage a greater in-group preference based on ability level.

Considered as a whole, however, the sociometric results give no support to hypothesis 16.

The relationship between V.R.Q's and constructs of self scores in connection with grouping practices employed in the three school situations was examined and no differences were found between criteria groups which could be directly related to setting. The relationship between V.R.Q's and academic constructs of self was found to be positive and highly significant but unconnected with ability grouping. In the review of relevant literature it was seen that intellectually superior children tended to have more positive academic self-images in both streamed and unstreamed classes according to evidence produced by Barker-Lunn (1970) and Dyson (1967). The results of this study support their findings.

In the present study, the relationship between V.R.Q's and more general constructs of self was found to be slight and in no way attributable to grouping practices. This is in accord with Dyson's (1967) findings but studies concerned with the general constructs of children for whom special educational provision was made have produced conflicting results. Frankel (1969) reported significant gains for talented children who had attended an advanced course of training. With respect to the retarded, Carroll (1967) and Meyerowitz (1962) suggested that complete
segregation was associated with a low general self construct but Mayer (1966) and Ringness (1962) disagreed with this conclusion. The test instruments used, the grouping situations and the type of subject referred to in these studies differ from those involved in the present investigation. All that can be said is that in the conditions obtaining here the relationship between V.R.Q's and general constructs of self was slight and unconnected with setting.

In essence, then, the results concerned with the association between V.R.Q's and general and academic constructs of self do not support hypothesis 16.

Finally, the association between academic ability and children's school-related attitudes was examined. While the association between the two variables tended to be stronger in the mixed ability school (which is contrary to expectation) only one statistically significant difference between coefficients occurred and that was between the 4th year boys' groups on the IDW scale. The relationship between these two variables increased over the two year period for boys in the mixed ability group, but not elsewhere. This is an isolated result and cannot be taken as evidence of a general tendency for an increased association between ability and attitudes to obtain in randomly grouped classes.

In no other research has the relationship between scores on the two dimensions as influenced by grouping practices been investigated. There is a suggestion that within streamed schools pupils in a stream classes tended to improve and that pupils in lower streams tended to deteriorate in scores over a period of time but this trend is not borne out in the present enquiry. What can be said is that there is no evidence concerning the relationship between ability and attitudes which can be put forward in support of hypothesis 16.

In this section, the association between V.R.Q's and a number of variables has been examined as it relates to grouping procedures in schools. There were isolated instances where the relationship was stronger in the set groups (as recorded for example in Tables 8:70 and 8:71) but they were not consistent among boys and girls and in any case the strongest relationships sometimes occurred in schools where mixed ability grouping was extensively practised. A further difficulty met with in interpreting the results was that such associations that were
discovered might just be peculiar to given groups of children and
not causally related to school organisational procedures. As a
consequence, there is no evidence to suggest that the association
differs in schools which favour different grouping practices, and
neither does this relationship become more pronounced in set schools
as a function of age than it does in randomly grouped schools.

6. The Academic self construct and its relationship to the other
variables under consideration in this study.

Hypothesis 17 was expressed in omnibus form and reads "that there
is a positive relationship between children's academic constructs of
self and their general constructs of self and others and their school
related attitudes". To test this hypothesis, the relationship is
determined between ASC scores and scores on each of the following groups
of tests in turn.

   a. Constructs of self scales.
   b. Attitude measures.
   c. Constructs of peers high and low in academic status scales.

The subjects in each sex and age group were ranked in order of
ASC scores and the rank order list was divided into quartiles. Scores
of children on the scales in question will be examined in the upper and
lower quartile groups only but coefficients between ASC scores and scores
on all tests considered will be determined for the whole sample. Data
from both forms of analysis will be included in the same table.

Following the testing of the hypothesis, the relationship between
ASC scores and peer and teacher ratings will be examined as will the
association between ASC scores and V.R.Q's.

One more analysis will be made in this section and that concerns
children whose ASC quartile is markedly different from their V.R.Q.
quartile. Scores on the construct of self and attitudinal measures of
children in the upper ASC quartile but who are in the 3rd and 4th V.R.Q.
quartile will be compared with those of children in the lower ASC quartile
but who are in the 1st and 2nd V.R.Q. quartile.

Construct of self scales.

The analysis begins by comparing constructs of self scores of
children in upper and lower ASC quartile groups and by determining
correlation coefficients between the ASC scores and scores on other
construct of self indices. Table 8:81 refers.
Table 8.81
A comparison of constructs of self scores of children in upper and lower ASC quartile groups. Correlation coefficients between ASC scores and scores on other constructs of self measures.

<table>
<thead>
<tr>
<th>PIC scale</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th>t</th>
<th>N</th>
<th>Coefficient</th>
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<tbody>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>4.54</td>
<td>3.00</td>
<td>24</td>
<td>20.16</td>
</tr>
<tr>
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<td>26</td>
<td>8.26</td>
<td>5.29</td>
<td>27</td>
<td>17.51</td>
</tr>
<tr>
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<td>10.97</td>
<td>4.18</td>
<td>44</td>
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<td>5.42</td>
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<td>3.19</td>
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<td>6.55</td>
<td>3.04</td>
<td>44</td>
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<td>5.46</td>
<td>44</td>
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<td>CSPR scale</td>
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<td>4th Year girls</td>
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<td>29.71</td>
<td>4.96</td>
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<td>24.38</td>
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<td>29.40</td>
<td>5.71</td>
<td>45</td>
<td>24.26</td>
</tr>
</tbody>
</table>

In this and the following tables, three asterisks denote a significance level of .001, two asterisks .01 and one asterisk, .05.

The ASC Dis scale was scored in the opposite direction from the ASC scale and the coefficients reported are therefore positive.

Predictably, the relationship between ASC scores and scores on the other two academic self construct measures, the PIC and ASC Dis scales, was uniformly positive and highly significant. A consistently positive and highly significant relationship was also found between ASC scores and scores on the CSABC scale. In regard to the CSPR scale, coefficients between the two variables were significant at the .05 level for boys and at the .01 and .001 levels, respectively, for girls. Extreme quartile group comparisons
indicated a highly significant difference in CSPR in the expected
direction for girls. For boys, one t value was significant at the .05
level and the other was not significant.

In summary, a uniformly positive and highly significant relationship
was found between ASC scores and scores on the other academic self
construct measures and the CSABC scale. A positive and significant
relationship existed between ASC scores and CSPR ratings for girls but to
a much lesser extent among boys.

**Attitude measures.**

Attitude scores of children in upper and lower ASC groups are next
compared and coefficients between ASC scores and scores on the attitudes
scales are also determined. The data are presented in Table 8:82.

**Table 8:82**

A comparison of attitude scale scores of children in upper and lower ASC
quartile groups. Correlation coefficients between ASC scores and attitude
measure scores.

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th></th>
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<td>S.D.</td>
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<td>Mean</td>
<td>S.D.</td>
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<td>3.92</td>
<td>1.26</td>
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<td>2.55</td>
<td>1.31</td>
</tr>
<tr>
<td>4th Year girls</td>
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<td>3.93</td>
<td>1.00</td>
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<td>3.06</td>
<td>1.12</td>
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<td>1.09</td>
<td>45</td>
<td>2.84</td>
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<tr>
<td><strong>ISW scale</strong></td>
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<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>4.00</td>
<td>1.28</td>
<td>24</td>
<td>2.50</td>
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<td>1.17</td>
<td>44</td>
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</tr>
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<td>2nd Year girls</td>
<td>44</td>
<td>3.75</td>
<td>1.94</td>
<td>45</td>
<td>2.24</td>
<td>1.68</td>
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<td><strong>IDU scale</strong></td>
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<td>7.00</td>
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<td>2nd Year boys</td>
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<td>7.24</td>
<td>1.41</td>
<td>27</td>
<td>6.25</td>
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<td>7.91</td>
<td>1.60</td>
<td>44</td>
<td>6.61</td>
<td>1.96</td>
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<td>2nd Year girls</td>
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<td>8.29</td>
<td>1.28</td>
<td>45</td>
<td>6.55</td>
<td>2.05</td>
</tr>
</tbody>
</table>

Without exception, a positive and highly significant association is
apparent between ASC status and scores on the ATS and ISW scales. Even on
the "Importance of doing well" scale where a lesser association might have
been expected, coefficients between ASC and IDW scores were all significant at the .01 level or above. Although differences in inter-quartile scores for boys reached only a moderate level of significance (.05), differences for girls reached the .001 level.

In summary, then, a positive and highly significant relationship almost uniformly obtained between ASC scores and scores on the three attitude measures.

Constructs of peers measures.

The purpose of the next analysis is to discover whether children of varying ASC levels differ in their constructs of peers in high and low academic ability groups. Subjects used the CPABC and CPPR measures to rate most children they knew who "got on well with school work" and similarly most children they knew "who did not get on very well with school work". The standard procedure for analysis of data in this section is followed.

Table 8:03

A comparison of construct of peers scores of children in upper and lower ASC quartile groups. Correlation coefficients between ASC scores and constructs of peers scores.

| CPABC Av+ scale | Upper quartile | Lower quartile |       |       |       |       |
|-----------------|----------------|----------------|-------|-------|-------|-------|-------|
|                 | N Mean S.D.    | N Mean S.D.    | t.    | N     | Coefficient |
| 4th Year boys   | 24 33.04 7.68  | 24 27.62 6.65  | 2.61* | 96    | .22139*    |
| 2nd Year boys   | 26 32.50 6.53  | 27 25.66 6.27  | 3.88***| 105   | .32310***  |
| 4th Year girls  | 45 36.24 5.08  | 45 34.75 5.58  | 1.32  | 177   | .08791     |
| 2nd Year girls  | 44 36.02 7.36  | 45 27.42 9.53  | 4.77***| 179   | .38495***  |

| CPPR Av+ scale  | Upper quartile | Lower quartile |       |       |       |       |
|-----------------|----------------|----------------|-------|-------|-------|-------|-------|
|                 | N Mean S.D.    | N Mean S.D.    | t.    | N     | Coefficient |
| 4th Year boys   | 24 32.83 5.24  | 24 27.37 5.85  | 3.40***| 96    | .34251     |
| 2nd Year boys   | 26 33.73 5.04  | 27 30.03 5.88  | 2.46* | 105   | .25302*    |
| 4th Year girls  | 45 34.60 4.81  | 44 31.95 6.36  | 2.21* | 177   | .16997     |
| 2nd Year girls  | 44 32.27 9.02  | 45 29.28 7.03  | 1.71  | 179   | .16986     |

| CPABC Av- scale | Upper quartile | Lower quartile |       |       |       |       |
|-----------------|----------------|----------------|-------|-------|-------|-------|-------|
|                 | N Mean S.D.    | N Mean S.D.    | t.    | N     | Coefficient |
| 4th Year boys   | 24 16.95 6.66  | 24 24.12 7.20  | 3.58***| 96    | -.34747*** |
| 2nd Year boys   | 26 23.76 7.39  | 27 23.51 6.90  | .13   | 105   | -.10508   |
| 4th Year girls  | 45 23.53 8.12  | 44 25.54 8.12  | 1.16  | 177   | -.08270   |
| 2nd Year girls  | 44 23.34 9.54  | 45 24.04 8.79  | .36   | 179   | -.00185   |

| CPPR Av- scale  | Upper quartile | Lower quartile |       |       |       |       |
|-----------------|----------------|----------------|-------|-------|-------|-------|-------|
|                 | N Mean S.D.    | N Mean S.D.    | t.    | N     | Coefficient |
| 4th Year boys   | 24 19.00 7.07  | 24 24.04 6.48  | 2.57* | 96    | -.28354** |
| 2nd Year boys   | 26 24.26 6.79  | 27 27.00 7.43  | 1.40  | 105   | -.16624   |
| 4th Year girls  | 45 25.04 6.38  | 44 25.52 5.88  | .37   | 177   | -.09397   |
| 2nd Year girls  | 44 21.77 7.60  | 45 24.02 7.07  | 1.44  | 179   | -.12026   |
The CPABC Av+ scale results indicate that there is a tendency for children high in ASC level to construe children in high academic status groups more favourably than do children low in ASC level. The trend varies from group to group but it is non significant only in the 4th year girls' group. Coefficients between scores on the two variables were positive and significant, again with the exception of the 4th year girls' group.

On the CPPR Av+ scale a similar tendency is seen but it is less marked. In this instance, differences in CPPR Av+ scores of subjects in 2nd year girls' extreme ASC groups were not significant. Coefficients between the two variables were positive and significant among boys, particularly those in the 4th year, but not among girls.

On the CPABC Av- and CPPR Av- scales, the inter-quartile comparison of scores was significant in the case of 4th year boys only. It was in that same group that coefficients between ASC scores and scores on the scales in question were significant. No other differences were observed on the CPABC Av- and CPPR Av- scales.

In brief, a tendency was noted - particularly among 4th year boys- for children in high ASC level groups to construe peers of high academic status more favourably in respect to attitudes and behaviour in class and to peer relationships than do children in low ASC level groups. Among 4th year boys a tendency was noted for high ASC level groups to construe children in low academic status groups less favourably than did their peers in low ASC quartile groups. In the main, however, constructs of peers low in academic ability were not associated with ASC level.

Hypothesis 17 is now considered. From the data set out in Table 8:81 it is clear that a uniformly positive and high significant relationship exists between ASC scores and scores on the other academic self construct measures and the CSABC scale. A positive and significant relationship was also found between ASC scores and CSPR ratings for girls but to a much lesser extent among boys. The weight of the evidence from constructs of self measures strongly supports the hypothesis.

The findings presented in Table 8:82 indicate that a positive and highly significant relationship almost uniformly obtained between ASC
scores and scores on the three attitude measures. Firm support for the hypothesis, therefore, comes from this analysis.

Lastly, a tendency was noted for children in high ASC level groups to construe peers of high academic standing more favourably in respect to attitudes and behaviour in class and to peer relationships than did children in low ASC level groups. In the main, no association was found between ASC level and constructs of peers of low ability, except among 4th year boys where the upper ASC quartile group construed low ability children less favourably than did the lower ASC quartile group. The hypothesis receives some support in respect to constructs of children high in academic status, but to a limited extent only in respect to children of low academic status.

The burden of the evidence is clearly in support of hypothesis 17 which states "that there is a positive relationship between children's academic constructs of self and their general constructs of self and others and their school-related attitudes".

Relationship between ASC scores and peer and teacher ratings.

Although no hypothesis has been formulated, it is a matter of interest to examine the relationship between peer and teacher ratings and children's ASC level.

Peer ratings.

Peer ratings are considered first, using the sociometric data.

Table 8:84

A comparison of sociometric scores of children in upper and lower ASC quartile groups. Correlation coefficients between ASC scores and attitude measures.

<table>
<thead>
<tr>
<th>Academic</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th>t</th>
<th>N</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24 6.41 6.92</td>
<td>24 .33 .76</td>
<td>4.28***</td>
<td>96</td>
<td>.47622***</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>27 6.53 6.88</td>
<td>26 .51 .80</td>
<td>4.43***</td>
<td>105</td>
<td>.54143***</td>
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<td>44 .59 1.40</td>
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<td>2nd Year girls</td>
<td>44 5.72 5.42</td>
<td>45 .75 1.22</td>
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<td>179</td>
<td>.45759***</td>
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<td>24 2.00 1.00</td>
<td>2.55*</td>
<td>96</td>
<td>.26021**</td>
</tr>
<tr>
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<td>27 1.92 1.92</td>
<td>2.29*</td>
<td>105</td>
<td>.21559*</td>
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<tr>
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<tr>
<td>2nd Year girls</td>
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<td>45 2.20 1.42</td>
<td>2.23*</td>
<td>179</td>
<td>.17433</td>
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</table>
On the academic sociometric criterion subjects were asked to nominate intelligent and knowledgeable peers who would best represent their year group in a "Top of the form" contest. Without exception, all inter-quartile group comparisons indicate a positive and highly significant difference in academic sociometric test scores. In each age and sex group, coefficients between the two variables are also uniformly positive and highly significant. The academic standing of children in the upper ASC quartile groups is clearly much higher than the academic standing of children in the lower ASC quartile groups.

On the affective sociometric test, which is essentially an index of children's social acceptability, inter extreme ASC quartile group comparisons showed that differences in scores were significant in the expected direction at the .05 level in three of the four groups. Coefficients between ASC scores and affective sociometric status were positive and significant for boys, but not for girls. Some association is seen to exist, then, between the two variables in both boys' groups but to a very limited extent only in one girls' group.

Teacher ratings.

Teacher ratings will now be compared with ASC scores. The three teachers' scales were concerned with task orientation (CTTO), attitudes in class (CTAC) and peer relationship (CTPR).
A comparison of scores on teacher scales of children in upper and lower ASC quartile groups. Correlation coefficients between ASC scores and teacher ratings.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Upper quartile</th>
<th>Lower quartile</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
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<th>Mean</th>
<th>S.D.</th>
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<td>3.24*</td>
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<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>21.07</td>
<td>4.26</td>
<td>27</td>
<td>18.92</td>
<td>4.25</td>
<td>1.84</td>
<td>105</td>
<td>.17448</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>22</td>
<td>22.13</td>
<td>3.44</td>
<td>31</td>
<td>19.32</td>
<td>4.90</td>
<td>2.45*</td>
<td>113</td>
<td>.26919**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>34</td>
<td>22.52</td>
<td>2.87</td>
<td>34</td>
<td>21.29</td>
<td>3.62</td>
<td>1.56</td>
<td>133</td>
<td>.19523</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTPR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>16.50</td>
<td>2.71</td>
<td>24</td>
<td>13.18</td>
<td>3.30</td>
<td>3.01**</td>
<td>96</td>
<td>.37671***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>16.57</td>
<td>2.65</td>
<td>27</td>
<td>15.59</td>
<td>3.12</td>
<td>1.24</td>
<td>105</td>
<td>.13104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th Year girls</td>
<td>22</td>
<td>17.00</td>
<td>2.37</td>
<td>31</td>
<td>16.03</td>
<td>3.24</td>
<td>1.26</td>
<td>113</td>
<td>.06419</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>34</td>
<td>16.70</td>
<td>2.15</td>
<td>34</td>
<td>16.00</td>
<td>3.21</td>
<td>1.06</td>
<td>133</td>
<td>.15887</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teacher ratings were not available for girls in School LS and it is for that reason that the numbers in the girls' ASC quartile groups are reduced.

On the CTTO scale, the relationship between teacher ratings and ASC status was consistently positive and highly significant in all age and sex groups.

The relationship between ASC scores and ratings on the CTAC scale were positive and significant for older children but not for younger ones. This means that teachers in 2nd year classes consider that children in varying ASC levels differ little in terms of their attitudes in class.

Lastly, the association between ASC status and ratings on the CTPR dimension was significant only in the 4th year boys' group. Apart from that, no differentiation was made by teachers between the peer relationships of children in varying ASC levels.

In summary, teacher ratings differed markedly in favour of upper ASC level on the CTTO scale, among older children on the CTAC scale and in the 4th year boys' group only on the CTPR scale.
The relationship between V.R.Q's and ASC scores.

The relationship between V.R.Q's and ASC scores will now be examined. Table 8:86 refers.

Table 8:86

A comparison of V.R.Q's of children in upper and lower ASC quartile groups. Correlation coefficients between V.R.Q's and ASC scores.

<table>
<thead>
<tr>
<th></th>
<th>Upper quartile</th>
<th>Lower quartile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4th Year boys</td>
<td>24</td>
<td>116.12</td>
</tr>
<tr>
<td>2nd Year boys</td>
<td>26</td>
<td>106.69</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>45</td>
<td>112.93</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>44</td>
<td>103.88</td>
</tr>
</tbody>
</table>

The results presented in this table need little comment. As expected, a positive and highly significant relationship exists between ASC scores and V.R.Q's in all groups. However, the relationship is clearly not a perfect one, for the mean V.R.Q's of upper ASC quartile subjects were around 6 to 10 points lower than mean scores of upper V.R.Q. subjects. In similar fashion, the mean V.R.Q's of lower ASC quartile subjects were usually in the region of 9 to 10 points higher than mean V.R.Q's of children in the lower V.R.Q. quartile group. What this obviously means is that some children are over-estimating and others are under-estimating their achievement in school. It is proposed next, to consider the relationship between construct of self and attitude scale scores of children whose ASC level was considerably higher than that warranted by their V.R.Q. with those of children whose ASC level was considerably lower than that warranted by their V.R.Q. In other words, the question now being asked is this. Do children who over-estimate their ability hold more favourable attitudes to self and school than those who under-estimate their ability? More specifically, the children selected for study here are those who are in the upper quartile on the ASC dimension but in the 3rd or 4th quartile on the V.R.Q. dimension. Their scores will be compared with those of children who are in the lower quartile on the ASC dimension but who are in the 1st or 2nd quartile on the V.R.Q. dimension. Because of small numbers in the 4th year boys' group, the 2nd and 4th year boys' groups are combined for the purpose of this analysis. A Mann-Whitney U test for differences between independent samples was used because it takes into account skewed differences which frequently occur where small numbers are concerned. Table 8:87 refers.
Table 8:87

A comparison of mean CSABC, CSPR and attitude measure scores of children who are in the upper ASC quartile group (but 3rd or 4th V.R.Q. quartile group) and children who are in the lower ASC quartile group (but 1st or 2nd V.R.Q. quartile group)

<table>
<thead>
<tr>
<th></th>
<th>Upper ASC quartile (3rd/4th V.R.Q. quartile)</th>
<th>Lower ASC quartile (1st/2nd V.R.Q. quartile)</th>
<th>U</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSABC scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>27</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>6</td>
<td>10</td>
<td>4</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>22</td>
<td>.01</td>
</tr>
<tr>
<td>CSPR scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>37</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>.01</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>44</td>
<td>n.s.</td>
</tr>
<tr>
<td>ATS scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>10</td>
<td>.01</td>
</tr>
<tr>
<td>4th Year girls</td>
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<td>12</td>
<td>.05</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>.01</td>
</tr>
<tr>
<td>ISW scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>0</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>.001</td>
</tr>
<tr>
<td>IDU 1 scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>33</td>
<td>n.s.</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>6</td>
<td>10</td>
<td>30</td>
<td>n.s.</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>37</td>
<td>n.s.</td>
</tr>
<tr>
<td>ASC Dis scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd and 4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year boys</td>
<td>7</td>
<td>13</td>
<td>0</td>
<td>.001</td>
</tr>
<tr>
<td>4th Year girls</td>
<td>6</td>
<td>10</td>
<td>7</td>
<td>.001</td>
</tr>
<tr>
<td>2nd Year girls</td>
<td>10</td>
<td>12</td>
<td>0</td>
<td>.001</td>
</tr>
</tbody>
</table>
On the CSABC scale, upper ASC girls in both age groups who over-estimated their academic level rated themselves significantly more positively than did lower ASC girls who under-estimated their academic level. On the same scale the boys' scores differed in the expected direction but largely because of one exceptional score in the upper quartile group, the difference was not statistically significant. On the CSPR scale, a statistically significant difference in scores between the two criteria groups was observed in the 4th year girls' group but not in the other two groups.

With regard to the ATS scale, a positive and significant difference between scores of children in the two groups was observed in all sex and age groups. A similar trend, with the exceptions of 4th year girls, was noted on the ISU scale but not on the IDU scale. ASC Dis scale findings demonstrated a difference in discrepancy between actual and ideal ASC scores among the two groups and in the expected direction.

It can be inferred from these results that, in the main, children who over-estimated their school performance tend to have more positive constructs of self in respect to attitudes and behaviour in class, more positive attitudes to school in general and profess to greater interest in school work than did children who under-estimated their school performance. There was no difference between the two groups in their attitude towards the importance of doing well in school, a finding endorsed by the ASC Dis results which indicated that subjects in both groups aspired to high academic performance irrespective of their ability to assess themselves accurately on this dimension.

The analysis of the relationship between ASC level and the variables under consideration in this study is now complete. The general pattern of inter-relationships will be discussed in the summary and in Chapter 9, and to facilitate this appraisal, data presented in this section are summarised in Table 8:88 which follows.
### Table 8:88
Correlation coefficients between ASC scores and scores on all other scales administered.

<table>
<thead>
<tr>
<th></th>
<th>4th Year boys</th>
<th>2nd Year boys</th>
<th>4th Year girls</th>
<th>2nd Year girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>Coefficients</td>
<td>Coefficients</td>
<td>Coefficients</td>
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<tr>
<td>Acad.Soc</td>
<td>.47622***</td>
<td>.54143***</td>
<td>.34213***</td>
<td>.45759***</td>
</tr>
<tr>
<td>Aff.Soc</td>
<td>.26021**</td>
<td>.21559*</td>
<td>.00888</td>
<td>.17433</td>
</tr>
<tr>
<td>CTTO</td>
<td>.53229***</td>
<td>.35645***</td>
<td>.37675***</td>
<td>.33123***</td>
</tr>
<tr>
<td>CTAC</td>
<td>.41427***</td>
<td>.17448</td>
<td>.26919**</td>
<td>.19523*</td>
</tr>
<tr>
<td>CTPR</td>
<td>.37671***</td>
<td>.13104</td>
<td>.06419</td>
<td>.15887</td>
</tr>
<tr>
<td>VRQ</td>
<td>.71169***</td>
<td>.44927***</td>
<td>.42092***</td>
<td>.46414***</td>
</tr>
<tr>
<td>PIC</td>
<td>-.83171***</td>
<td>-.60124***</td>
<td>-.66266***</td>
<td>-.64677***</td>
</tr>
<tr>
<td>ASC Dis</td>
<td>-.85440***</td>
<td>-.86951***</td>
<td>-.84525***</td>
<td>-.86993***</td>
</tr>
<tr>
<td>CSABC</td>
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<td>.50961***</td>
<td>.42615***</td>
<td>.54070***</td>
</tr>
<tr>
<td>CSPR</td>
<td>.24257*</td>
<td>.21363*</td>
<td>.39337***</td>
<td>.28251**</td>
</tr>
<tr>
<td>ATS</td>
<td>.52697***</td>
<td>.40603***</td>
<td>.26910**</td>
<td>.33724***</td>
</tr>
<tr>
<td>ISW</td>
<td>.40068***</td>
<td>.49406***</td>
<td>.30191**</td>
<td>.39916***</td>
</tr>
<tr>
<td>IDU</td>
<td>.31784**</td>
<td>.37339***</td>
<td>.29284**</td>
<td>.31236**</td>
</tr>
<tr>
<td>CPABC Av+</td>
<td>.22139*</td>
<td>.32130***</td>
<td>.08791</td>
<td>.38498***</td>
</tr>
<tr>
<td>CPPR Av+</td>
<td>.34251**</td>
<td>.25302*</td>
<td>.16997</td>
<td>.16985</td>
</tr>
<tr>
<td>CPABC Av-</td>
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<td>-.10508</td>
<td>-.08270</td>
<td>-.00185</td>
</tr>
<tr>
<td>CPPR Av-</td>
<td>-.28354**</td>
<td>-.16624</td>
<td>-.09397</td>
<td>-.12026</td>
</tr>
</tbody>
</table>

The following general comments are made:

1. A strong relationship exists between ASC level and academic sociometric status but in respect to affective sociometric status, the relationship was variable.

2. Coefficients between ASC scores and CTTO ratings were positive and highly significant; between ASC scores and CTAC ratings moderately significant; and between ASC scores and CTPR significant only in the 4th year boys' group.

3. The relationship between ASC level and academic ability was positive and highly significant.

4. Coefficients between ASC scores and scores on the PIC, ASC Dis and CSABC scales were uniformly positive and highly significant.
5. The association between ASC status and CSPR scores was positive but varied in significance level from group to group.

6. The association between ASC status and peer, teacher and self indices concerned with academic achievement was characteristically high and much more pronounced than that observed in indices concerned with children's peer relationships.

7. Correlations between ASC scores and all attitude measures were consistently positive and highly significant statistically.

8. In the 4th year boys' group, a tendency was observed for upper ASC quartile subjects to construe peers high in academic status more favourably and peers low in academic status less favourably than did their lower ASC quartile peers. The only other finding here was that 2nd year children in the upper ASC quartiles tended to regard high academic status children more favourably than did lower quartile subjects.

9. The results of the 4th year boys' group are particularly interesting. There, every single coefficient between ASC scores and scores on the other variables was positive and statistically significant. ASC level was strongly associated with peer and teacher ratings in both the academic and social areas. ASC level was also strongly related to scores on all other academic and social constructs of self measures and to scores on all three attitude tests. Finally, high ASC level children in this group construed peers of high academic standing more positively and peers of low academic standing less positively than did children in the low ASC level.

Discussion of data presented in Section 6: The academic self construct and its relationship to the other variables under consideration in this study.

Hypothesis 17, which was a general one, stated "that there is a positive relationship between children's academic constructs of self and their general constructs of self and others and their school-related attitudes". The hypothesis was tested by determining the relationship between ASC scores and scores on each of the following groups of tests in turn:

   a. Constructs of self scales.
   b. Attitude measures.
   c. Constructs of peers high and low in academic status scales.
As far as the construct of self measures were concerned, quite predictably, the relationship between ASC status and the PIC and ASC Dis scales was uniformly positive and statistically significant to a marked degree. A consistently positive and highly significant relationship was also found between ASC scores and scores on the CSABC scale. In regard to the CSPR scale, coefficients between the two variables were significant at the .05 level for boys, and the .01 and .001 levels respectively, for girls. Extreme quartile comparisons indicated a highly significant difference in CSPR scores in the expected direction for girls. For boys, one t value was significant at the .05 level and the other was not.

The attitude measure results are of particular importance. Without exception, a positive and highly significant relationship almost uniformly obtained between children's ASC status and their attitudes to school, their interest in school work, and their attitude towards the importance of doing well in school work. This means that children who consider their own standard of achievement to be high react more positively to the school situation than is the case with children who consider their standard of achievement to be low. It is also of interest to note that in general, the association between attitude scores and ASC status was much more marked than that which obtained between attitude scores and V.R.Q. status.

The CPABC and CPPR results were not so clear-cut. In the 4th year boys' comparison, upper ASC quartile children tended to regard high academic status children more positively and low academic status children less positively than did their peers in the lower quartile group. There was also a tendency observed for upper ASC quartile children in the 2nd year groups to construe high academic status peers more favourably than did their counterparts in lower ASC quartile groups. No other differences occurred.

The results just summarised give firm support to hypothesis 17 in respect to the Constructs of self scales and the attitude measures. The results of the constructs of peers scales partially supported the hypothesis in respect to constructs of children high in academic status but it received very little confirmation in respect to constructs of children of low academic status.
In order to give a more complete account of the position of children of varying ASC levels, the reactions of peers and teachers towards them were also examined. In the academic area, the academic sociometric data demonstrated that peers were aware of the relative high academic standing generally of peers obtaining high ASC scores and teachers clearly differentiated between children in the separate ASC criteria groups in regard to their involvement in school work. CTAC ratings for all 4th year subjects, and for 2nd year boys but not girls, suggested that teachers attributed more positive attitudes in class to high ASC status children than they did to low ASC status children as indicated by correlation coefficients between the two variables.

A positive and significant relationship was found between ASC scores and children's affective sociometric status among 4th year boys and it was in that group too, that CTPR ratings also related to that dimension. Apart from a minor exception in the second year, no other peer or teacher assessment of peer relationships was associated with ASC status.

The next relationship to be examined was that between ASC scores and V.R.Q's. The association between these two variables was positive and highly significant, but it was, of course, by no means a perfect one. It then follows that some children who judge themselves to be high in academic achievement are not in fact in that category as indicated by verbal reasoning test results. Conversely, by the same criterion, some children at the lower end of the ASC scale underestimate their relative academic competence.

The mean V.R.Q's of upper ASC quartile subjects were around 6 to 10 points lower than mean scores of upper V.R.Q. quartile subjects; the mean V.R.Q's of lower ASC quartile subjects were usually in the region of 9 to 10 points higher than mean V.R.Q's of children in the lower V.R.Q. quartile groups.

This point was pursued further by comparing construct of self and attitude scores of subjects in the upper ASC quartile group who were in the 3rd or 4th V.R.Q. quartiles with those of subjects in the lower ASC quartile group who were in 1st or 2nd V.R.Q. quartiles. What emerged was
a tendency, with some exceptions, for children in the former group which over-estimated their performance, to rate themselves more positively in respect to attitudes and behaviour in class, to hold more positive attitudes towards school and to profess greater interest in school work than did children in the latter group which under-estimated their school achievement. Both groups however, indicated a strong desire to achieve a high academic standard.

No previous research appears to have taken academic constructs of self as its main focus of attention but there are three points arising from the relevant literature which have some bearing on the issue.

The first is concerned with self-esteem in general. In Chapter 4, Section 3, the well-known study by Coopersmith (1969) was cited where determinants and concomitants of self-esteem in general were investigated. He reported that his high esteem group of 10 year old boys were "active and expressive both academically and socially". Elsewhere Coopersmith (1967) reports coefficients of .28 (p = .05) between self-esteem and intelligence and .30 (p = .05) between self-esteem and academic achievement. Favourable self-esteem, then, seems to be associated with successful performance in school, which, subject to considerable qualifications arising from the different test instruments used, is a finding partly supported by the results from the present study.

The second matter relates to the association between academic constructs of self and constructs of self on other dimensions. Anastasiow (1967) made various comparisons between what he described as very bright and less able students. Among less able boys, lower self construct scores were found for mental abilities and school subjects. Among less able girls, however, lower self-evaluations occurred in the areas of school subjects, mental abilities, happy qualities, physical appearance, social relationships and social values. The strong suggestion is that for girls, self-deprecating attitudes tend to cluster, but not for boys. In the present investigation, scores on the constructs of self indices tended to correlate highly for both sexes.

Thirdly, the relation between self-esteem and sociometric status is considered. One other section of Coopersmith's (1967) study has some relevance to this discussion. He discovered that self-esteem and
social acceptability were not related. In the present study, a positive relationship was found between ASC scores and affective sociometric status among boys, but not among girls.

All in all, however, there appears to be little direct reference in the literature to the determinants and concomitants of academic constructs of self but on the basis of the results presented in this section some broad generalisations can be made. As compared with children in the lower ASC status group, children who rated themselves highly on the ASC scale also obtained high scores on the PIC and ASC Dis measures, and their V.R.Q. results bear testimony to the relative accuracy of their assessments as a group. Their peers, too, as indicated by the academic sociometric data also recognise the relatively high academic standing of the upper ASC status groups and the CTTO ratings further testify to the superior application to school work of this group in the eyes of their teachers. Teacher ratings in respect to attitude in class, did not differentiate so sharply between children at various points on the ASC continuum.

A particularly striking finding was the very strong association identified between ASC scores and attitude measure results. The high ASC status group, in comparison with their low ASC status peers, have more positive attitudes to school, more interest in school work, and they attached greater importance to doing well in school work.

Outside the academic area, self, teacher and peer constructs do not correspond so closely. There was a suggestion that boys (and particularly those in the 4th year) rated high ASC status groups as being more socially acceptable than children in the corresponding low status groups, and CTTPR ratings indicated an association between the two variables too, but only among 4th year boys.

As far as the constructs of children of varying ASC levels in respect to their constructs of high and low academic status peers is concerned, again the 4th year boys’ group is prominent. There, upper ASC quartile children tend to regard high academic status children more favourably and low academic status children less favourably than did their peers in the lower quartile group. A tendency was also noted for upper ASC quartile 2nd year children to assess high academic status children
more positively than did their lower ASC quartile classmates. No other differences in scores were observed.

To put it briefly, in contrast to their low ASC status peers, children in the superior ASC category tended to rate themselves more positively on all constructs of self scales and attitude measures and to construe children of above average academic competence more positively as well. Their self-evaluations are consistently reflected in peer and teacher ratings in the academic area, but not generally in the area of peer relationships. In the latter case, the 4th year boys' group is the major exception. In that group, where every correlation coefficient was positive and statistically significant, an association was found between ASC scores and peer and teacher ratings of peer relationships, and in their turn, upper quartile boys more positively rated high achieving children and less positively rated low achieving children than did lower quartile boys.

7. Inter-relationships between variables and a consideration of the construct validity of the tests used.

In this section, it is proposed first to consider relationships within the following groups of variables:

a. construct of self measures
b. sociometric measures
c. attitude measures
d. teacher ratings

Secondly, inter-relationships between the ASC, CSABC, academic sociometric status, ATS, ISW, CTTO and CTAC variables which are central to the academic area under consideration in this enquiry will be discussed.

Thirdly, in similar fashion, the three peer relationships measures, the CSPR, affective sociometric status and CTPR variables will be examined.

Fourthly, inter-relationships which bear on the construct validity of the test constructed for use in this study are considered.

All correlational data are given in Table 8.09 where coefficients are set out according to age and sex group. Girls' coefficients are shown above the diagonal; boys' coefficients below it. Coefficients concerned with groups of variables, e.g. all construct of self indices, are enclosed within lines.
### Table 8:89

**Inter-correlations between main variables**

**4th Year**

<table>
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<tr>
<th></th>
<th>V.R.Q.</th>
<th>ASC</th>
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Inter-correlations between main variables (continued)

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Coefficients of .195 significant at .05 level
Coefficients of .254 significant at .01 level
Coefficients of .321 significant at .001 level
Relationships within groups of variables.

Constructs of self measures.

There are four main points which arise concerning these measures which are:

1. A marked relationship is evident between the three scales concerned with academic self constructs, the ASC, the ASC Dis and the PIC scales. Coefficients between these measures were all significant at the .001 level and ranged from .536 to .869.

2. Coefficients between scores on the ASC and CSABC scales were in the region of .5 which was generally higher than that obtaining between ASC Dis and CSABC scores. Coefficients there ranged from .219 to .419. Coefficients between PIC and CSABC scores were in the .2 to .5 range.

3. Coefficients between scores on both ASC measures and CSPR scores were of a lower order still and ranged from .033 (n.s.) to .393 (.001).

The relationship between CSABC and CSPR scales tended to be a strong one. All coefficients in this area were in the region of .4 and .5 and were significant at the .001 level.

As a general rule, the academic scales inter-correlated highly, but the relationship between academic scales and the CSPR measure was relatively of a much lower order.

Sociometric measures.

Coefficients between both measures, the academic and effective sociometric tests, were positive and significant at the .001 with the exception of the 2nd year girls' group.

Attitude measures.

Inter-correlations between the ATS, ISU and IDU were almost invariably positive and highly significant at the .001 level. Two exceptions occurred in the 4th year boys' group where the coefficients were significant at the .01 and .05 levels, respectively.

Teacher construct measures.

All coefficients were positive and highly significant at the .001 levels. Correlations were highest between the CTTO and CTAC scales, and lowest between the CTTO and CTPR measures.

Inter-relationships between the central variables in this study concerned with academic ability.

What follows next is an examination of the relationships between the ASC, CSABC, Academic sociometric status, ATS, ISU, CTTO and CTPR scales
which are the most important of those concerned with academic ability in the present enquiry. In Table 8:90 which follows, the number of coefficients which reached the .05 level of significance or more on each relationship determined is given. As there are two age and two sex groups involved, the total number of coefficients possible is four in each case.

Table 8:90
Number of coefficients significant at .05 level or above in inter-relationships between central academic variables which were reported in Table 8:89.

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It will be noted that the relationship between the ASC measure and the other academic scales is a strong one while the association between the attitude scales and the CTAC measure tended to be low. In the main, a positive and significant relationship obtained between the variables considered in this analysis.

Inter-relationships between the peer relationships variables.

The inter-relationships between the three peer relationships scales are next considered. All coefficients at the .05 level or above are recorded and a total of four statistically significant coefficients is possible in each case.

Table 8:91
Number of coefficients significant at the .05 level of significance or above between the peer relationships variables which were reported in Table 8:89.

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The four coefficients between CSPR and affective sociometric status, and the four coefficients between the CSPR scale and the CTPR measure were statistically non-significant. It is interesting to note, however, that the relationship between children's sociometric status and CTPR ratings was statistically significant in three of the four groups. These data suggest that teachers' and children's judgements of peer relationships tend to be similar but they were not in accord with children's self-ratings on this dimension.

Construct validity of test instruments.

In Chapter 7, predictions were made concerning inter-relationships between certain of the variables considered in this study which would support the claim that the tests instruments devised were valid. This matter is now re-considered and the construct validity of each scale is considered in turn. The coefficients referred to are set out in Table 6:89.

The ASC measure.

As predicted, correlation coefficients between ASC scores and scores on the verbal reasoning test, the PIC, CTPR and academic sociometric scales were positive and highly significant. The construct validity of the ASC scale was therefore established.

The CSABC measure.

Coefficients between CSABC scores and scores on the verbal reasoning test, the CTPR and ATS scales were positive and highly significant. The predictions made were confirmed and the construct validity of the CSABC scale was accordingly established.

The CSPR measure.

The inter-relationships predicted between CSPR scores and scores on the CTPR and affective sociometric measures were not substantiated. Coefficients between the variables were of a low order and not significant and only in the sense that the CSPR scale is internally consistent can it be claimed that the CSPR scale is a valid test instrument.

The CTTO measure.

In general, the CTTO scale correlated positively and significantly (and as predicted) with children's academic ability, their academic sociometric status, and their scores on the ASC and CSABC scales. As the only exception was among 4th year girls on the CSABC measure, the construct validity of the CTTO scale can be said to have been established.
The CTAC measure.

Scores on the CTAC scale positively and significantly correlated with children's V.R.Q's and their scores on the academic sociometric measure. Coefficients between CTAC scores and scores on the ASC scale were positive and significant for older but not younger subjects; and coefficients between the CTAC and CSABC variables were positive and significant for boys but not girls. Thus, while not entirely consistent, the inter-relationships reported do suggest that the CTAC scale can be regarded as a valid test instrument.

The CTPR measure.

Coefficients between CTPR scores and V.R.Q's were positive and significant with the exception of the 2nd year girls' group. Coefficients between CTPR ratings and affective sociometric status were positive and significant with the exception of the 4th year girls' group. To that extent the CTPR scale is valid but coefficients between CTPR and CSPR scores were of a low order and no evidence to support the validity of the scale came from this measure.

The CPABC measure.

This scale was used to rate academic ability groups and not individuals, and so inter-relationships between related variables cannot be established here as in the case of the scales so far considered. However, as children of high ability were rated more positively than children of low ability on this dimension, and as this finding is supported by the CSABC, CTTO and CTAC validation data, some support can be given to the claim that the CPABC scale is a valid instrument.

The CPPR measure.

The CPPR was also used to rate groups. It, too, successfully discriminated between subjects in the two academic criteria groups but as the CSPR and CTPR validation data were inconsistent, only limited evidence exists as to the construct validity of the CPPR measure.

In general, inter-relationships between the academic variables were as predicted and the six academic and behaviour in class scales fulfilled the conditions necessary to establish their construct validity. These conditions were fulfilled in part for the CTPR and CPPR scales but not at all for the CSPR scale.
CHAPTER 9

SUMMARY AND CONCLUSIONS

In this study, an attempt was made to determine:

(i) how children in differing academic ability levels are construed by their peers and by their teachers,

(ii) the relationship between children's academic ability and their constructs of self,

(iii) the relationship between children's academic ability and their attitudes towards school.

In other words a simple question was posed, namely, "Are the constructs of peers and teachers reflected in children's evaluations of themselves and what is the relationship between academic ability and its concomitants, and children's school-related attitudes?"

At the same time, developmental age trends in the relationships just described, and age and sex differences in scores on the various scales, were also examined.

Two further subsidiary matters were investigated. The first centred on the relationship between intelligence level and scores on the other variables in the situation which might be associated with the practice of "setting". The second subsidiary enquiry set out to determine the inter-relationships between academic constructs of self and general constructs of self, peer and teacher ratings and school-related attitudes.

To this end a number of tests were constructed which related to peer constructs of children high and low in academic ability, teacher constructs of their pupils and children's constructs of self. The tests were demonstrated to be reliable, and with few exceptions mainly concerned with peer relationships, they fulfilled the stringent conditions required to establish their construct validity. Sociometric tests and published attitude and verbal reasoning tests were also administered.

The subjects taking part in the investigation were 201 boys and 356 girls drawn from the 10 plus and 12 plus age groups who were attending middle schools in prosperous areas in the home counties.

Attention was first directed towards peers' constructs of children of varying academic levels of ability and this formed the substance of
hypotheses 1 to 4. Data were obtained from constructs of peers scales, on which pupils high and low in academic ability were rated, and from academic and affective sociometric measures which provided indices of the academic and social position of individual children as judged by their classmates.

The two constructs of peers scales contained statements known to be of relevance and meaning to the children in the age groups being studied. One was concerned with attitudes and behaviour in class and the other with peer relationships; and they were used by children to rate groups of peers whom they considered to be successful and unsuccessful respectively, in school work.

The main results were unambiguous. When differences between mean scores of children in the two academic groups were compared, it was clearly established that children high in ability were rated more positively both in respect to attitudes and behaviour and to peer relationships than were children low in ability. Less clear-cut was the relationship between constructs of children in the two contrasting academic groups and the ability quartile of the subjects construing. To some degree there was a tendency for upper quartile children to attribute more favourable characteristics to peers of high ability and less favourable characteristics to peers of low ability than did children in lower quartile groups, but this was not uniformly found.

No statistically significant developmental age trends were found in the relationship between V.R.Q's and scores on construct of peer scales. Age differences in mean scores between the two age groups did occur; but they were confined almost entirely to boys' groups and they indicated that older boys construed high ability children more favourably and low ability group children less favourably than did younger boys. Sex differences in scores were also observed which demonstrated that in the 4th year, girls construed peers in both criteria groups and on both scales more favourably than did boys. This trend applied to 2nd year girls on the CPABC Av+ scale only. Thus it seems that sex differences in constructs of peers of high and low ability increase as the children become older.

In contrast to the main construct of peers results, the sociometric findings were consistent in only one respect. On the academic criterion,
a highly significant relationship between children's level of ability and their academic sociometric status was found from which it can be inferred that children are generally successful in distinguishing between their schoolmates in terms of their intelligence and general knowledge. On the other hand, the affective criterion data indicated that a positive and significant relationship between verbal reasoning test scores and children's affective sociometric status existed in some groups but not others and that this phenomenon was not consistently related to either sex or age group membership.

What these results demonstrated was that by and large, the sociometric position of children was not connected with their academic status but what they did not indicate was the extent to which social interaction occurred between children in the various ability quartile groups. This aspect was the subject of hypothesis 4 which, in the main, received only limited support. When direction of choices in relation to ability of upper and lower quartile groups was examined, a statistically significant difference in the choice distribution rarely emerged but when it did, it was invariably found in upper quartile groups. The few in-group preferences based on ability which did exist were confined to the academically able, but as a rule, it seems that children in both high and low ability groups go beyond their own academic range in choosing friends.

In the summary which concluded Section 1 of the previous chapter, the relationship between the constructs of peers' measures and the affective sociometric test was discussed. It was pointed out that the former measures give an assessment of selected groups of children, while the latter provide ratings of each individual subject's standing on a favourable-unfavourable continuum. One is a device for rating groups, the other for nominating individuals, and it may be that in part, the discrepancy in findings reported in Section 1 of Chapter 8 can be attributed to differences in the two forms of test instrument used. This point will now be pursued further.

On the constructs of peers measures (CPABC and CPPR) children were asked to make a judgement of most children they know of high and low intelligence, respectively. Essentially it was a generalisation that was asked for, and so the question immediately arises as to how much importance
can be attributed to such a generalisation. In reply, it is first
pointed out that the items making up the test instruments were known
to be of meaning and relevance to the subjects to whom they were
administered. Secondly, the reliability of the tests was reasonably
high and although it was not possible to obtain extensive construct
validity data, the tests were successful in discriminating between the
two academic criteria groups and in the expected direction. There is
therefore some evidence to show that reliability and validity conditions
have been fulfilled.

An additional matter must now be considered and that is the extent
to which generalisations about groups are akin to stereotypes, which are
here defined as rigid over-generalisations which have little or no
foundation in fact. The probability is that some element of stereotyping
is involved in making group judgements of this nature, but it is also
likely that the judgements, in part, are less subjectively and emotionally
based. In considering this point, it is convenient to take into account
the teacher construct scales. Briefly, teachers when assessing individual
children in their classes found marked differences between pupils in the
separate intelligence groups in the area of task orientation; the
differences were less marked in respect to attitudes in class; and less
marked still in respect to peer relationships. There is thus a measure of
agreement between peer and teacher ratings in respect to attitude and
behaviour in class which suggests that children in the two contrasting
academic groups tend to differ on these traits. When it comes to peer
relationships, however, there is no such correspondence. It may be that
there is a tendency for children in the two academic groups to differ in
the quality of their personal relationships and that this has gone unobserved
by teachers. But the affective sociometric results suggest that these
differences may not be all that great, and if this is so, then it seems that
some stereotyping is reflected in the constructs of peers' results. What
this means is that the possession of high or low ability may provoke
unwarranted initial impressions, which in the case of children of low
ability may constitute an unfortunate social barrier. In the school
situation, then, it would appear to be necessary to make more explicit to
children that possession of one characteristic or set of characteristics
does not necessarily imply the possession of other apparently associated characteristics. While it is not suggested that all group judgements are suspect, children should be led to realise that they often have limited application. It is not envisaged that such teaching should be isolated but that it would form part of an approach which sets out to prevent children from forming inappropriately rigid construct systems in respect to racial stereotypes and in their interpersonal relationships generally.

In summary, it is tentatively submitted that while there are some reasonably "objective" grounds for differentiating between the attitudes and behaviour of children in contrasting ability groups, there is a possibility that stereotyping might be operating in respect to peer relationships. However, the sociometric results are encouraging because they suggest that while children of lower intelligence are less positively construed than their peers of higher intelligence on the CPABC and CPPR scales, in the face to face situation they do not seem to be at a social disadvantage. Of particular interest in this context is the finding that in many (but not all) of the upper and lower quartile groups, an in-group preference based on ability was not observed.

It was previously pointed out that there were doubts about the propriety of asking children for direct ratings of their peers. However, only by comparing scores derived from such ratings with scores from judgements of academic criteria groups, can the relationship between the two types of measure be more clearly understood. As it stands, and according to the evidence presented here, it can be said that although general impressions of children high in academic ability are more favourable than those of children low in academic ability, in general, the sociometric results indicated that level of intelligence was not strongly related to social acceptance.

Teacher constructs of children of differing ability levels was the other major interpersonal element in the school situation to be analysed. This was the subject matter of hypotheses 6 to 8. Data were obtained from three teacher construct scales which were concerned with children's task orientation (CTTO), their attitudes in class (CTAC) and their peer relationships (CTPR) on which individual subjects in School ES and School NS only were rated. The constructs making up the scales were selected from
among those most frequently used by teachers and they were also rated in terms of their desirability by the teachers completing the scales. It was found that characteristics associated with working hard and co-operative behaviour in class were regarded as being more desirable relatively than characteristics associated with peer relationships.

Before proceeding further it is necessary to emphasise that as a general rule teachers tended to rate their pupils towards the upper end of the five-point scale and that such differences between sub-groups that did emerge were relatively slight. Notwithstanding this observation, however, there was a positive and significant relationship between children's ability level and teacher ratings on the CTTO and CTAC scales. The association between ability and CTPR scores was much less marked and a non-significant relationship between the two variables was found among girls' groups but not boys. The CTPR results are no doubt due in part to the greater difficulty teachers would experience in rating children's peer relationships as opposed to rating their task orientation and attitudes in class which are of more direct concern and importance to them. One other general point of interest is that with one exception, girls were rated more positively than boys in both year groups and on all scales.

The position then, appears to be this. Quite predictably and understandably teachers value qualities in their pupils which are connected with conscientious application to work and co-operative and amenable behaviour in class. Equally clearly, too, the teachers in this sample have reached the conclusion that children of high academic ability tend to possess these characteristics to a greater extent than do children of low academic ability. What is not known is the extent to which the relationship between children's ability and teacher ratings is influenced by the degree of involvement and interest children have in the tasks set them. To put the issue in other terms - it might be argued that when slow-learning children in particular have a strong investment in what they are doing in school, then that interest is likely to be reflected in teacher ratings on the task orientation and attitudes in class dimensions. All this is speculative, however, especially since in the view of the present writer, the schools participating in this enquiry were making strenuous efforts to base their curricula and practices on children's concerns. Nevertheless, this matter might well be worth pursuing further.
Briefly and in summary, a positive and significant relationship holds between ability and teacher constructs of children on the task orientation and attitude in class scales but that an association between ability and CTPR scores is much less pronounced.

To sum up so far, evidence has been produced which demonstrates that children of differing academic levels are construed differently both by peers and teachers. On the attitudes and behaviour in class dimensions, children and teachers are in close agreement. But while on the constructs of peers' scales the means of high and low academic standing groups differed significantly, the differences were not endorsed by sociometric scores. On the other hand, teachers, perhaps partly because of the nature of the task set, did not distinguish sharply between children of differing intelligence on this dimension as they did in the case of children's task orientation and behaviour in class. But considered as a whole, the findings point to the conclusion that children of high ability were assessed more favourably by both peers and teachers than were children low in academic ability. The possible influence of this environmental circumstance on children's constructs of self is the next subject for discussion.

As far as constructs of self were concerned there are three main questions to be answered. First, how realistic are most children in assessing their own academic ability? Secondly, since both peers and teachers differentiated between children of varying ability levels in terms of their attitudes and behaviour in class, are these differences mirrored in children's constructs of self on these dimensions? Thirdly, as peer and teacher assessments of the peer relationships of children in the various ability groups are inconsistent, what is the relationship between intelligence and children's constructs of self in respect to their own peer relationships? These three questions are related to hypotheses 9, 10, 11 and 12.

Data were obtained from five constructs of self measures. The "Academic constructs of self" scale (ASC), consisted of six items all relating to aspects of academic competence. A second measure of academic self-assessment was the "Position in class" scale where children were required to estimate the class position they would probably reach in a
general test of school work. In a third academic measure, the ASC Dis scale, children indicated the extent to which they considered they had reached their ideal level of academic performance. In addition, a six-item "Constructs of self in respect to attitudes and behaviour in class" (CSABC) and a "Constructs of self in respect to peer relationships" scale (CSPR) were devised, the subjects of which are self-explanatory.

The first question posed, which referred to children's ability to assess their own academic performance, can be answered in unequivocal terms. A positive and highly significant association was found between children's verbal reasoning quotients and their scores on the ASC and PIC scales in all the age and sex groups studied. The relationship is not, of course, a perfect one and some children in all ability ranges will have rated themselves inaccurately as measured against standardised test results. As a general rule however, children were remarkably successful in assessing their relative academic status. Stress is placed on the term "relative" in this context because children tended on the whole to use the upper ends of the scales. For example, on the PIC measure an obvious over-estimate of class position occurred, but nevertheless, mean scores of all VUR.Q. quartile groups were in the expected direction, a trend which indicated that children were able to judge their own level of ability vis-a-vis their schoolmates with reasonable competence.

From the academic constructs of self results, it is reasonable to assume that children in the course of their interactions with peers, teachers and parents have come to realise roughly where they stand on the ability continuum. This applied as equally to children of superior ability as it did to those whose standard was below average and to boys as well as to girls. As the literature suggests that the relationship between ability and ASC and PIC scores might intensify as a function of children's cognitive development generally, the data was also examined in terms of this standpoint. There was a suggestion that this in fact did occur among boys but not among girls. Of particular interest, too, was an ability and age interaction effect in the boys' data which demonstrated that older upper quartile boys assessed themselves as being more successful academically than did younger upper quartile boys, while in the other extreme quartile groups a reverse trend was found. What seemed to be happening among the
boys in this sample (but not the girls) was that brighter children became progressively more aware of their higher academic status and that slower children progressively came to realise that their academic status was low. Why this trend should emerge among boys, but not girls, is unclear. Perhaps boys of this age increasingly attach more importance to academic achievement than do girls with the result that they differentiate more precisely between themselves and their peers in terms of academic standards. Alternatively, girls may equally recognise that such differences exist but they are more reluctant to acknowledge them in a test situation. Another possibility is that teachers may make the academic standards of boys more explicit than they do those of girls, so that sex differences in academic constructs of self arise. Only further research, however, can indicate whether or not the reported developmental age trend is indicative of a general tendency.

Next, the ASC Dis findings are referred to briefly. It was plain that children of high ability were aware that they were close to realising their ideal academic level and that children of low ability recognised that there was a considerable discrepancy between their present performance and the performance they aspired to. The same general trend was observed in the intermediate quartile groups as well.

The implications of the possession of high and low academic constructs of self is a separate issue for discussion later in this chapter. For the present, it has been established that children in differing ability levels typically aspire to a high level of academic performance and that they are comparatively successful in judging the extent to which they have reached that level. What must now be considered is the second question which relates to how differently children in the various criteria groups construe their own attitudes and behaviour in class. The answer to this question can be given in straightforward terms with only one important qualification. On balance, the evidence supported the contention that there was a positive and significant relationship between ability and CSABC scores although not so pronounced as that obtaining on the academic measures. The only qualification is concerned with the 4th year girls' group where no such association was found. The main inference is clear. Children in the various criteria groups are generally aware that they differ in the manner of their response to the school situation.
Children of high ability tend to ascribe to themselves values and standards associated with positive attitudes to work and co-operative behaviour in the classroom; children in low ability groups tend not to, at least in relative terms. It will be recalled that both peers and teachers differentiated between children of varying ability levels in terms of their attitudes and behaviour in class and the strong intimation is that the reflected self-appraisal phenomenon is operating in respect to children’s constructs of self on these dimensions. The answer then to the second question set out above is that children of varying ability levels tend to construe themselves differently in respect to their attitudes and behaviour in class and in so doing the assessments of peers and teachers are possibly reflected.

One more construct of self measure remains to be considered and that is concerned with children’s peer relationships. For the first time in commenting on the results from Section 3 of Chapter 7, a weak relationship is reported. Only a moderate association was found between ability and CSPR scores and the results were inconsistent in the various groups concerned. It is not certain that children respond so openly to items concerned with peer relationships as they do to those concerned with less personal characteristics, but taken at their face value, the findings indicate that only when mean scores of extreme quartile subjects are compared, do differences emerge in the relationship between V.R.Q’s and CSPR scores – and even then they are relatively slight. It will be remembered that while peers differentiated between the two criteria groups as groups on this dimension, the affective sociometric results led to the conclusion that sociometric position was only slightly related to intelligence level. As far as teachers were concerned, they too did not differentiate sharply between children in the various ability groups on the basis of this trait. It is possible that here too a process of reflected appraisal was at work, because in the main, the CSPR, the affective sociometric and CTPR results all pointed to a weak and inconsistent relationship between V.R.Q’s and peer relationships. In answer to the third question which prefaced these comments, it can be stated that the relationship between V.R.Q’s and CSPR scores is weak and inconsistent and that it therefore bears some correspondence to peer and teacher constructs in this respect.
Before proceeding further, evidence relating to developmental age trends in the relationships under consideration will be referred to. It was thought that the association between ability and constructs of self might become strengthened as a function of ongoing mental development, and as already stated, this did indeed apparently occur on all three academic constructs of self scales (but not the CSABC and CSPR indices) but among boys only. On the ASC and PIC scales an interesting ability and age interaction effect occurred where mean scores of older upper quartile boys were greater than those of younger upper quartile boys, while scores of older lower quartile boys were lower than those in the corresponding 2nd year group. In general, the findings summarised in this paragraph indicated that developmental age trends in the relationships between ability and constructs of self scores were evident among boys but not girls and on the academic constructs of self indices only.

A number of age differences in scores for total groups (irrespective of ability) were noted, sometimes in favour of older children and sometimes in favour of younger ones. By and large, however, the differences were relatively minor and usually applied to boys' results but not to girls'.

Some sex differences were also observed. On the PIC scale the findings were inconsistent as scores were in favour of boys in the 4th year and girls in the 2nd year. On the CSABC scale, girls in both age groups construed themselves more favourably than did boys and younger but not older girls rated themselves more positively than did boys on the CSPR scale.

Taken as a whole, the construct of self results can be briefly stated thus. Most children aspire to high academic status but as a general rule they are aware of their own relative level of academic competence. Children's constructs of self in respect to attitudes in class are also associated with their ability level, but in contrast a limited and inconsistent relationship was found between U.R.Q's and constructs of self in respect to peer relationships. A process of reflected appraisal may possibly have been at work here whereby peer and teacher constructs were instrumental in shaping children's constructs of self in respect to academic work and attitudes and behaviour in class, but not necessarily those connected with peer relationships.
After considering the findings summarised so far, it might be confidently predicted that the favourability of children's school related attitudes would in large measure be dependent on their level of academic ability. That supposition was, in fact, the basis of hypotheses 13 to 15. Data was obtained from three attitude measures. The first was a six-item "Attitudes to school" (ATS) scale, the second was a six-item "Interest in school work" (ISW) scale and the third was a five-item "Importance of doing well" (IDW) scale. The results can be quickly summarised.

A positive and significant relationship was found between V.R.Q's and ATS scores as indicated by correlation coefficients between the two variables, but in boys' but not girls' groups. When mean scores of children in extreme quartile groups were compared, statistically significant differences were found as follows:

- 4th year boys: .001
- 2nd year boys: .05
- 4th year girls: .05
- 2nd year girls: n.s.

The variation in responses from group to group is self-evident.

With regard to interest in school work, there was no evidence to suggest that it was related to ability level in any of the age or sex groups studied. The IDW results pointed to a positive relationship between V.R.Q's and scores on that scale for 4th year boys and to a lesser extent for 2nd year girls, but among the other groups, no relationship between the two measures was observed.

Not surprisingly, no firm evidence of a developmental age trend in the relationship between V.R.Q's and attitudes scores appeared on any of the scales. An age difference in favour of older boys was reported on all three measures but a similar trend was not in evidence for girls. Sex differences in scores were also reported in favour of girls in the 2nd year on the ISW scale.

In effect, therefore, the assumption that V.R.Q's would be positively and significantly related to general attitudes towards school was substantiated for boys but not girls, as indicated by coefficients between the two variables. However, differences between mean scores of extreme quartile group subjects were positive and significant at varying levels
of confidence in three of the four groups and the ATS findings on this analysis did tend to confirm the expected trend.

On the other hand, the ISU results leave little doubt that as measured by this test, there is no relationship between V.R.Q's and children's interest in school work. This is not in accord with CSABC results or with the trend suggested in ATS scores but no explanation can be offered for these contradictory findings.

Finally, the IDU results indicate that only amongst 4th year boys and to a lesser extent amongst 2nd year girls was there any suggestion that ability and the importance of doing well in school work were related. This result is less unexpected as the ASC Dis findings indicated that most pupils, irrespective of their ability level, aspired to a high standard of academic competence.

In essence, research from the present investigation points to a relationship between V.R.Q's and general attitudes towards school among boys but in respect to interest in school work and the importance of doing well, children in differing ability groups are not so strongly or consistently differentiated on these dimensions as is sometimes supposed.

In broad outline data from all peer, teacher and self construct test instruments relating to peer relationships do not suggest that academic ability is such a strong concomitant as it is in regard to attitudes to work and behaviour in class. Although on the CPPR measure peers rated children high in academic ability more positively than they did their academically less able counterparts, these findings were not strongly supported by the affective sociometric results. Further, while an in-group preference based on ability was present in some upper and lower quartile groups, as a general rule, children in this study quite freely selected companions from outside their own ability range.

Teacher constructs of the peer relationships of children in their classes revealed some differences between academic criteria groups in the expected direction, but this was not an invariable finding and the association between those two factors was not by any means so marked as that which obtained between V.R.Q's and CTTO and CTAC scores. Similarly, the constructs of self results bear witness to this trend for the relationship between ability and CSPR scores was much less pronounced than
the relationship between V.R.Q's and scores on the ASC, PIC, ASC Dis and CSABC indices.

In the area of interpersonal relationships, it is encouraging to note that below average children in this sample do not appear to be at a disadvantage - all the more so, since some previous research has suggested that this is the case. However, greater differentiation was made between pupils who were academically able, and those who were not, in respect to their attitudes to school work and their behaviour in class. Children of high ability tended to be construed more positively than their low ability peers both by their schoolmates and their teachers in respect to attitudes to work and behaviour in class. Again, in general terms, children of high ability assessed themselves considerably more positively than did low ability children on dimensions concerned with academic competence - and to a lesser degree (and with the exception of 4th year girls) in the area of attitudes and behaviour in class. Turning finally to the attitude measures, although the situation here is less sharply defined, there is a tendency for subjects in the contrasting academic groups to hold different general attitudes towards school and in the expected direction.

Some educational implications of the general findings are now considered. The relevant literature, together with some evidence from the present enquiry, would suggest that teachers attach importance to children's attitude towards school work and the behaviour in class which is commonly although not necessarily invariably associated with it. A traditional function of teachers has been, and still is, to initiate children into forms of knowledge which are considered to be worthwhile and to help them to acquire those skills which will enable them to do so. Such an educational objective would most probably be widely endorsed by teachers, but equally probably there would be wide differences in its interpretation in terms of classroom procedures. At one extreme, a didactic approach might be assumed; at the other, children might be expected to pursue their own activities with little intervention by the teacher. In the first instance, the construct system of the teacher dominates; in the second, the construct system of the children. However, it would seem to be important for the success of the educational enterprise,
that the purposes of the teacher and the purposes of the children should coincide and some implications of holding this position are now considered.

A first essential, following a principle put forward in Kelly's theory of personal constructs, would seem to be, as far as it is possible, to examine the school environment as it is construed by children. From the evidence presented in this study, it is apparent that most children whatever their ability level wanted to reach a high level of academic excellence. Whether or not children of low ability status necessarily construe themselves as being unsuccessful in more general terms is uncertain but the CSABC results (although not confirmed by the ISU findings), do suggest that low academic status children see themselves as being less involved in school work and less given to adopting attitudes considered to be favourable by teachers than are their high status peers. There was also a suggestion, although not so strong, that the two groups of children differ similarly in their general attitudes towards school. The argument can be extended further. Although it has not been empirically established, it might be legitimate to assume that the academically able pupils can make sense of what they are required to do in school; that they tend to become interested in what they are doing; and that as a consequence their attitudes to work and behaviour in class tend to be positive. Conversely, children who are experiencing learning difficulties are less likely to understand what they are about and to be less interested in their school work; and consequently, negative attitudes tend to form and behaviour in class is adversely affected.

A second essential condition then follows and that is the provision of a learning environment which is meaningful and interesting to all children and which has relevance to their concerns. Again following a main principle embodied in Kelly's personal construct theory, experimentation would seem to be a necessary feature of such a learning situation. Kelly placed much emphasis on the active, enquiring nature of the individual which he likens to the activities of a scientist, and this feature of the theory has far-reaching educational implications.

In the first place the stress on individual experimentation implies that if children are to become involved in the learning situation, a degree
of autonomy in choosing their own fields of experimentation is desirable. They will, of course, be influenced by the teacher who has a responsibility to provide a stimulating educational environment which encourages children to generate their own problems and to seek solutions to them. Obviously some constraint is unavoidable and value judgements are necessarily made as to what is in children's best interests but the scope for self-initiated, purposeful activities is still very wide. In this way, the purposes of the children and the purposes of the teacher coincide, and a source of possible conflict is thus removed.

A second and related implication concerns Kelly's notion of tight and loose construing as it bears on the role of the teacher in the learning situation. This phenomenon is relevant to academic areas as well as to the area of personal relationships and it operates in this way. Tight construing can impede cognitive development because the same kind of prediction is made regardless of the event. Equally, there are clear disadvantages to loose construing where predictions can indiscriminately cover a wide range of events. The teacher's role in this context is a demanding one. Where tight construing is in evidence, new elements need to be introduced into the situation; where loose construing is apparent then it is the teacher's task to lead children to focus on the relevant elements and to compare and contrast the differing circumstances in which the original identical predictions were made. To put it another way, when tight or loose construing is considered to be inappropriate (and there are many instances when they are not), then either additional validational data is introduced or attention is directed to existing validational data.

Clearly, these two implications assume a curriculum which recognises that individual differences in ability exist between children. They also assume that children will be given scope to experiment and to initiate enquiries into an almost limitless number of topics of interest to them and which are considered to be educationally worthwhile by their teachers. Further, as the comments on tight and loose construing may have indicated, the teacher has a positive and essential part to play in facilitating children's thinking processes.
To return to the findings presented in this study. It is suggested that peer and teacher constructs in relation to attitudes to work and behaviour in class might become less strongly associated with academic ability if the conditions set out above could be fulfilled. Considering the situation from the standpoint of below average ability pupils, a curriculum appropriate to their level and which is regarded by themselves and their teachers as being purposeful, is more likely to result in interest in school work and positive attitudes in school than a curriculum which is not. In turn, differentiation between children of varying ability levels on these dimensions by peers and teachers may not be so pronounced as a consequence.

It must be acknowledged that children's experiences throughout their school life, parental expectations and attitudes acquired from peers, may all run counter to attempts by schools to create a situation where individual differences in ability are not exaggerated and where they are considered in perspective. It must be stated clearly too, that the difficulties encountered in setting up a school environment on the principles outlined above are considerable and that it cannot be effected without taking into account (and where necessary attempting to change) the constructs towards school and education of all the individuals involved as well as the character of the community of which the school is a part. There are, in addition, problems to be overcome concerning curriculum content and classroom practices which are attendant on initiating an individual approach to children's learning.

Consideration is now given to results from the first subsidiary enquiry which was concerned with grouping practices in schools. Perhaps the main feature in which the schools taking part in this enquiry differ is in connection with their attitudes toward grouping children of roughly equal ability into "sets" for certain curriculum areas. Each set has its own syllabus considered to be suitable to the level of the children allocated to it, and the device is essentially an attempt to provide for individual differences in "basic" subjects but which at the same time permits random grouping for subjects where this is thought to be a more viable procedure. School NS randomly grouped its children in all years.
School ES and School LS set for about 50% and 20% of the school day respectively in the 4th year, but the 2nd year children were taught in mixed ability classes. The proposition was put forward that grouping by ability in this fashion might increase children's awareness of their own level of academic competence and that of others, and that this heightened awareness would be reflected in their construct systems. This was the substance of hypothesis 16 which was concerned with this subsidiary area of enquiry.

The general plan for testing this hypothesis was to compare coefficients between ability and scores on the relevant variables of 4th year subjects in set and mixed ability groups and also to compare mean scores on the various measures of children in corresponding upper and lower ability quartile groups in the contrasting situations. Additionally, since all 2nd year classes were randomly grouped, a similar comparison was made between results of 2nd and 4th year children so that possible age changes in the relationships studied under the separate grouping conditions could be identified. It will be appreciated that the size of the sub-groups involved in the detailed comparisons made was necessarily small and it was stressed that unless consistent trends were observed any conclusions formed must be tentative and treated with reserve.

Briefly stated, there was no conclusive evidence to suggest that setting directly influenced children's interpersonal constructs in the school situation. Results from the constructs of peers measures demonstrated that able children were more positively construed than those who were experiencing learning difficulties in whatever way they were grouped, and that no pattern emerged relating to how children in the two academic criteria groups were regarded by children of differing intelligence levels which could be traced to grouping procedures.

The affective sociometric data indicated that upper quartile girls in mixed ability classes were more socially favoured than their counterparts in the corresponding quartiles in the set schools but the same trend was not observed among the boys' results. When direction of sociometric choice in relation to in-group preference based on ability was examined, differences in choice distribution did occur, but they could not definitely
be attributed to the effects of ability grouping. Only in relation to in-class and in-set choices was a causal relationship with grouping practices probably established. What seemed to be happening was this. In the extensively set school children chose a greater number of companions from their own academic set group and fewer from their own class group than might have been expected. The inference is that the set group was providing a social situation where children, because of the proximity factor, could form new friendships, which of course, were with those of roughly similar ability to themselves. If further research indicated that this tendency was more pronounced elsewhere, this trend would merit close attention in middle schools where setting is the major organisational procedure adopted and in the older age groups of upper and comprehensive schools where setting is most commonly and extensively employed. Many schools give children opportunities of maintaining old friendships and forming new ones with pupils covering the whole ability range by retaining mixed ability grouping in such curriculum areas as art and physical education, and the findings from this study confirm the desirability of this policy, if children are to benefit from associating with and learning to value and respect as persons, pupils possessing different intellectual abilities.

Results from the construct of self indices followed the same pattern. The relationship between V.R.Q's and academic constructs of self scores was found to be positive and highly significant in both mixed ability and set groups. The association between V.R.Q's and scores on the CSABC and CSPR measures varied greatly from group to group, but here too, there was no evidence to connect the variations with a particular form of grouping.

Finally, scores from the attitudinal measures are considered. There was a suggestion that the relationship between V.R.Q's and attitude test scores was greater in the mixed ability school than in the set schools, which is, of course, contrary to expectation, but in only one instance was a statistically significant difference found between coefficients of the relationship between the two variables. Apart from that, an examination of the attitude scale data provided no evidence that the relationship in question was affected by grouping practices.

In summary, although there were isolated instances where the
relationships between V.R.Q's and scores on the relevant variables was stronger in the set groups, they could not be directly attributed to setting. In addition, the differences observed were not consistent between the sex groups, and against expectation, some of the strongest relationships occurred in the schools where mixed ability grouping predominated.

There are three essential points which it is again necessary to stress. The first is that the numbers of children involved in the cross-group comparisons effected were small. The second point is that a causal relationship between grouping practices and differences in constructs between children in the three school situations cannot be assumed. Thirdly, the objectives of this part of the study were limited and they centred on certain selected construct and attitudinal areas only.

Bearing these qualifications in mind, the impression given by the findings as a whole, is that setting appears to have little influence on the relationship between children's ability and their scores on the measures administered. Essentially, it would seem that children in the extreme ability groups are construed differently in terms of their academic level and their attitudes and behaviour in class by peers, by teachers and by themselves, without regard to the manner in which they are grouped.

The relevant literature suggested that the main effect of setting might be in its potentially divisive nature because to some extent it hinders social interaction between children of similar ability and limits interaction between those whose intelligence level differs. However, no conclusive evidence was found to substantiate that proposition and it seemed that again, regardless of grouping conditions, affective sociometric choice also was not connected with ability grouping. There was, however, a slight indication that setting was a factor in children's friendship formation as children gave a disproportionate number of choices to those in their own set group. Although this did not appear to affect greatly relationships between children of differing ability levels in the school studied, a situation could be envisaged where if setting increased and mixed ability grouping decreased, a social cleavage based on achievement level might result.

As indicated by these findings, it seems that differences associated with children's level of academic ability are as apparent under conditions
of mixed ability grouping as they are under the two forms of setting investigated. In contrast to what might have been expected, setting did not appear to strengthen children's awareness of the academic competence of themselves and others. It is possible that the value-systems obtaining with schools - or those of individual teachers - might be exercising a more important influence on children's construct systems than the form of grouping adopted. More probably, perhaps, traditional attitudes in the home and in society at large, together with early school experiences, may be counteracting the efforts of schools to ignore intellectual differences where they are an irrelevant consideration.

This part of the study was exploratory in nature, and as emphasised a little earlier, it was selective in the variables it considered. It did not take into account for example, children's attitudes towards setting and its possible effects on their morale. Neither, of course, was it concerned with justifications of setting on academic grounds or with its influence on children's attainment. It may be that setting does influence children's constructs, but in ways outside the scope of this enquiry where the main emphasis was on interpersonal constructs as they are associated with level of academic ability.

One section of the study now remains to be summarised and discussed and that is concerned with the concomitants of academic constructs of self. Simply, the objective in this connection was to determine whether children's academic constructs of self related to other dimensions of self assessment, to constructs of others and to their school-related attitudes. This purpose was formally stated in hypothesis 17 and to put it to the test a simplified procedure for analysis of data was used. First, subjects were ranked in order of their scores on the main academic self construct measure (ASC) and the rank order list was divided into quartiles. Secondly, comparisons were made between mean scores of subjects in the upper and lower ASC quartile groups. Thirdly, coefficients between ASC scores and scores on the other relevant variables were determined.

As a general rule, the results have a high degree of consistency. Predictably, a uniformly positive and highly significant relationship was found between ASC scores and scores on the other ASC measures, and too, on the CSABC scale as well. Not so predictably, a positive and significant
relationship obtained between ASC and CSPR ratings for girls and also for boys but not to such a marked extent. Turning to the attitude measure findings, they too, reflected a strong association between how children construed themselves academically and their school-related attitudes on each of the three scales. As far as their own constructs of peer ratings were concerned, a tendency was noted for subjects in high level groups to construe peers of high academic status more favourably in respect to attitudes and behaviour in class and to peer relationships than did subjects in low ability groups, but apart from that no other differences of importance emerged.

In order to give a more complete account of the situation, the sociometric results and teacher rating findings in respect to children's ASC level were also reported. The academic sociometric data indicated that the academic standing of upper quartile ASC subjects was considerably higher than that of lower ASC quartile subjects. On the affective sociometric test, coefficients between ASC scores and sociometric position were positive for boys but not for girls and the quartile group comparisons indicated a statistically significant difference between groups in three of the four comparisons made, but at the .05 level only. Lastly, the teacher ratings on the CTTO scale were found to be strongly related to the ASC level, but on the CTAC measure teachers differentiated between subjects in the two extreme ASC groups only among 4th year but not 2nd year children. An association between ASC level and CTPR scores was confined to the 4th year boys' group.

One other relationship was examined and that was between academic constructs of self scores and V.R.Q's. The association between the two variables was positive and highly significant, but it was by no means a perfect one. The mean V.R.Q's of upper quartile ASC subjects were around 6 to 10 points lower than mean scores of upper V.R.Q. quartile subjects; the mean V.R.Q's of lower ASC quartile subjects were usually in the region of 9 to 10 points higher than mean V.R.Q's of children in the corresponding V.R.Q. quartile groups. Although children in general are reasonably successful in judging their own level of academic competence, it is clear that some children who judge themselves to be high in academic achievement are not in fact in that category as indicated by verbal reasoning test results. Conversely, by the same criterion, some children at the lower
end of the ASC scale are under-estimating their relative academic level. In connection with this matter a further analysis was carried out where construct of self and attitude test scores of children in the upper ASC quartile but whose academic level was comparatively low were contrasted with those of children in the lower ASC quartile but whose academic level was comparatively high. Subject mainly to the exception of the CSABC boys' results, it was ascertained that subjects who over-estimated their school performance tended to construe themselves more positively in respect to attitudes and behaviour in class, to possess more favourable attitudes to school in general, and to profess a greater interest in school work than did subjects who under-estimated their school performance. However, there was evidence to suggest that subjects in both groups agreed on the importance of doing well in school work.

Regardless as to whether or not children's ASC ratings bear any relation to scores on standardised achievement tests, the results demonstrate that there is a strong tendency for subjects in high ASC status groups to rate themselves higher on all other constructs of self measures and to hold more favourable attitudes towards schools than do their peers who are low in ASC status. The possibility exists that a pronounced "social desirability set" might be responsible for the consistently positive attitudes expressed by the high ASC level children, but while this may be the case, it does not explain the consistently negative responses made by the low ASC status group. Again, the importance of attempting to construe the situation from the standpoint of the individual pupil is underlined. To put it briefly, with or without justification, children who believe they are succeeding in schools tend to hold positive constructs; those who believe they are not succeeding, do not.

It is by no means clear precisely what function academic self constructs serve in determining whether or not constructs are generally positive or negative and undoubtedly their influence varies from individual to individual. But in view of the strong inter-relationships determined between constructs concerning the school situation, it is profitable at this point to consider the teacher's role as it is likely to affect the formation and development of children's constructs of self.
The discussion must remain largely speculative but further insights are sought from Kelly's theory of personal constructs in attempting to reach some tentative conclusions.

The starting point for the discussion is this. In this study, the majority of children aspired to high academic achievement, but in relative terms, most of them will not achieve it. Perhaps as a consequence, their constructs of school are adversely affected and so the problem confronting teachers seems to be this. How can children be helped to acquire favourable but "realistic" academic constructs of self while at the same time avoiding negative attitudes sometimes associated with low academic self-assessment? An immediate difficulty arises in deciding what is a "realistic" academic self construct for a given child in a given cognitive area. Teacher judgements even with the help of standardised tests are never other than imperfect, and in any event, the level of achievement children reach is often contingent on the degree of interest and involvement they have in the task in hand. It therefore follows that any assessment made should be provisional and subject to continual revision as new information becomes available. All these points are acknowledged but nevertheless, considerable individual differences in children's academic performance manifestly exist, and it is submitted that subject to certain conditions to be outlined later, it is often in children's best interests to help to assess their own academic strengths and weaknesses. There is nothing inherently undesirable in children forming relatively low academic self constructs; in fact it is to be welcomed if children can acknowledge their limitations and come to terms with them provided always that they do not interfere with the attainment of goals which are within their competence, and provided too, that their general acceptance of self is not impaired. Neither, indeed, is the possession of unrealistically high academic self constructs in itself a desirable end if it results in the unhappiness and dissatisfaction which is often consequent on children striving for objectives they can never reach. All kinds of qualifications can be made on a number of grounds, but a strong case can be made for proposing that it is in the best interests of children to help them to form "realistic" academic constructs of self and to learn to cope with them confidently and without frustration.
The realisation of such an objective pre-supposes a learning situation in which a number of conditions need to be satisfied, the most important of which will be outlined shortly. First, however, it is useful to consider in this context findings from Coopersmith’s (1969) study which was cited in Chapter 4. He demonstrated that children of high self-esteem came from a supportive home environment where they were accepted by their parents and where they experienced security, affection and respect. At the same time it was evident that the parents set clearly defined limits on children’s behaviour and that they were quick to enforce them. However, within the generous limits of acceptable behaviour delineated, considerable latitude was given which permitted individual action and experimentation. One other point worth stressing is that parents helped their children to set themselves realistic objectives which they expected them to strive to achieve.

In terms of the school situation, Coopersmith’s findings have three main implications.

First, it is clear that parental influence on children’s self-esteem is strong and that attitudes already formed in the home environment may facilitate or hinder the efforts of the teacher in helping children to acquire positive and accepting academic constructs of self.

Secondly, there is major emphasis on the desirability of providing a friendly, supportive and accepting classroom environment.

Thirdly, a learning situation is implied in which experimentation prominently features as well as pupil-teacher determination of goals.

The last point leads to a reconsideration of a learning environment based on the principles of Kelly’s personal construct theory but this time in terms of its implications for children’s academic constructs of self. The pupil-teacher participation in the determination of school activities envisaged is likely to ensure that any attempted task is within the capacity of the children. As a consequence success is possible and the self-disparagement and opting out which sometimes follows from repeated failure is avoided. At the same time the teacher is able to set realistic standards and to encourage children to extend themselves academically in achieving them. When occasional failure occurs, as indeed it must, children are then in a better position to adjust to it.
In such a school environment direct comparisons between children's abilities in the form of class positions and imposed ability grouping would be avoided because they unnecessarily draw attention to differences in children's academic ability and because they may result in promoting undesirable competition which places slow learning children at a disadvantage. Groups composed of children with common aims, and which may or may not contain children of similar ability, may form spontaneously. But the essential point here is that the grouping is not externally imposed and that it arises from the purposes of the children. As a consequence it is likely to be much more acceptable to them than conventional forms of grouping practised in schools.

In the course of time, and some sooner than others, children will compare their own academic achievement with that of their peers and less able children will come to realise that their own level of ability is low. In the learning situation envisaged, children may well have gained an assurance which comes from experiencing relative academic success in addition to the support, acceptance and encouragement offered by the teachers. In these circumstances less able children might be more easily helped to accept "reality" at their own level of understanding and maturity and to cope positively with it. It is submitted that this is a preferable course of action to allowing children to form unrealistic levels of aspiration, particularly in areas of importance to them. For example, older children who expect success in public examinations but do not achieve it must inevitably experience the discomfort which is attendant on the radical re-appraisal of their situation which must follow.

It is readily acknowledged that parental expectations and attitudes in the community at large may run counter to the values of the school and the efforts which it makes in this direction. Nevertheless, the school in its turn, is in a position to influence the values and standards of society.

In summarising this speculative discussion, it is suggested that there is a need to promote an environment in which children who under-estimate and over-estimate their academic ability can be helped towards a self-accepting but realistic re-appraisal of their academic position in school. Following the perspectives of Kelly, essential favourable
conditions in achieving that end probably consist of setting up an
environment which invites experimentation in self-construing; which
allows children to anticipate events with confidence; and which
provides appropriate validational data in the form of positive and
accepting attitudes of peers and teachers alike which are based on
the moral principle of respect for persons. The social and academic
aspects of the school situation, are of course, necessarily inter-
connected. The creation of conditions in which positive and accepting
academic constructs of self are possible depends on a form of learning
environment previously described where the purposes of the children
and their teachers coincide. In short, the implications of Kelly's
theory of personal constructs are equally applicable to the academic
and interpersonal areas of school life.

In now summarising the study as a whole, the detail is ignored,
and only main conclusions and implications are outlined. Encouragingly,
the relationship between ability and constructs of self in respect to
peer relationships was minimal and there was no evidence to suggest that
teacher or peer constructs on this dimension were significantly different
for members of the various academic groups involved. However, children
of high ability tended to be construed more positively than their low
ability peers both by teachers and their schoolmates on traits concerned
with attitudes to work and behaviour in class. In broad terms, able
children assessed themselves more positively than did low ability children
on this dimension and to a somewhat lesser degree (and with the exception
of the 4th year girls' group) in the area of attitudes and behaviour in
class. In this connection, slow learning children were at a disadvantage
when compared with their high achieving peers whether or not they were
attending mixed ability or set schools. As a whole, in fact, grouping
practices appeared to exert little influence on children's interpersonal
constructs in the school situation. The relatively disadvantageous
position of slow learning children and the strong relationship found
between ASC level and positive attitudes to other areas of self and to
school and work underlined the desirability of attempting to examine the
school environment from the standpoint of individual children and of
introducing procedures where the concerns of teachers and pupils coincide.
Essentially, this study has demonstrated that the position in school of children of varying ability and academic self-construct levels differs in important respects. The implications which follow from this finding support efforts which are being made in the three schools participating in this study and elsewhere, to promote joint pupil-teacher determination of educational activities and the individual approach to children's learning which is compatible with such an end.
Some suggestions for further study.

1. As far as it is feasible, a developmental and longitudinal study of the relationship between children's academic ability and their constructs of self covering the entire middle and upper (secondary) school stages of education.

2. An investigation of the factors operating in the school situation which might influence children's constructs of self with particular emphasis on those conditions which determine children's notions of their own academic success or failure.

3. An examination of children's perceptions of parental and teacher expectations in regard to their own academic performance.

4. A developmental and longitudinal study of the relationship between children's academic self-concepts and their educational and occupational levels of aspiration. Children's attitudes towards school could also be usefully examined in this context.

5. A detailed investigation of the academic and social effects of setting in the various forms in which it is practised, taking into account where feasible, the possible effects of teacher attitudes.

6. If it could be sensitively carried out, a comparative study of children's stereotypes of criteria groups with their constructs of individual members of those same groups.
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"Self-concept and the 'disadvantage' of ethnic group membership
and mixture".
Construct of self scales

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<td>Practice items</td>
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<tr>
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<td></td>
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<tr>
<td>Rough</td>
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<tr>
<td>Finds school work easy</td>
<td></td>
<td></td>
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<tr>
<td>Causes trouble in class</td>
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<tr>
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<tr>
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<tr>
<td>Kind</td>
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<tr>
<td>Gets into trouble in school</td>
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<tr>
<td>Above average in school work</td>
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<tr>
<td>Good tempered</td>
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<tr>
<td>Poor at Maths</td>
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<tr>
<td>Interested in school work</td>
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<tr>
<td>Annoys other children</td>
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<tr>
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<td>Gets on well with school work</td>
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Like I'd like to be

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<tr>
<td>Finds school work easy</td>
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<td>Near the top of the class in most subjects</td>
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## Constructs of peers scales

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<td>Helpful</td>
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<td>Practice items</td>
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<td>Popular</td>
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<td>Get into trouble in school</td>
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<td>Good tempered</td>
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<td>Cause trouble in class</td>
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<td>Lazy in school</td>
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<td>Polite</td>
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<td>Lazy in school</td>
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<td>General attitude in class</td>
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<td>Polite - rude</td>
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### APPENDIX A3

**Constructs of Teachers scales**

Constructs are given in the following order: on the extreme left we have the label of the construct and on the extreme right the least used i.e., those least used by teachers.

<table>
<thead>
<tr>
<th>Very Desirable</th>
<th>Desirable</th>
<th>Neutral</th>
<th>Undesirable</th>
<th>Very Undesirable</th>
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<tr>
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<tr>
<td>Hardworking</td>
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</table>

- Attentive
- Hardworking
- Interested
- Involved
- Conscientious
- Polite
- Considerate

So as not to make any unwarranted assumptions, I used to estimate the extent to which teachers consider the statement of each characteristic to be desirable or undesirable. Will you please rate the traits accordingly on the following five point scale:

1. Very Desirable
2. Desirable
3. Neutral
4. Undesirable
5. Very Undesirable
Will you now please write where it says 1 below, the name of the boy (if you're a boy) and the girl (if you're a girl) whom you would choose to represent the whole of your year group in a "Top of the Form" contest. Write your second and third choices where it says 2 and 3. Give first and last names please.

1. ........................................
2. ........................................
3. ........................................

In the same way, please write the name of the person of your own sex and in your own year group whom you would most like to sit next to on the coach and go around with when work is over on a school trip. Again, please write where it says 2 and 3, the second and third person you would like to be with.

1. ........................................
2. ........................................
3. ........................................
1. School is fun

2. I work and try very hard at school

3. We spend too much time doing sums.

4. We have interesting lessons in school

5. Going to school is a waste of time

6. I should like to be one of the cleverest pupils in the class

7. I like school

8. School lessons are boring

9. I should like to be very good at school work

10. I like doing hard maths problems

11. I bet going out to work is better than school

12. I enjoy most school work

13. I should like to better at games than at school work.

14. School is boring

15. At school they make you do things you don't want to do

16. Doing well at school is most important to me

17. I would leave school tomorrow if I could
Position in class scale

Suppose that there are exactly 30 children in your class. Underline the class position you think you'd most probably reach in a general test of school work.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
VERBAL TEST D
by N. Postlethwaite, B.A.

This test is copyright

ILL IN THE FOLLOWING PARTICULARS:—

AME
OY OR GIRL
CHOOL
LASS
ATE OF BIRTH
O-DAY’S DATE

READ THE FOLLOWING CAREFULLY:

hen you are told to begin, turn over the page and begin at once.
egin at the beginning and go straight through.
o as much as you can. If you cannot do any question, do not pend too much time on it, but go on to the next.
ou will have 40 minutes to do the test.
sk no questions at all during the test.

O NOT TURN OVER OR OPEN THIS BOOKLET UNTIL YOU ARE TOLD
1. Write ONE letter in the brackets to finish the first word and start the last:  
   MIGH (............) IGHT

2. Write the correct answer in the brackets, beginning with the letter given.  
   mayor, mayoress; prince, princess; duke, (d.........................)

3. Write a word in the empty brackets so that three words on the right go together like the three words on the left:  
   sun (yellow) buttercup : : tar (.................................) night

4. Underline TWO words which mean something different from the rest:  
   (house / river / dwelling / stream / hut)

5. Fill in the missing number to make the sum correct:  
   9 × 8 = 70 + (.................)

6. Underline TWO words in the brackets that ALWAYS go with the word outside:  
   SUITCASE (handle / clothes / leather / lid / wheels)

7. Here is a code question. Write the correct answer in the brackets:  
   If DAGGER in code is BAFF6P, what is FPAB6B? (..............................)

8. Underline the TWO words, ONE from each set of brackets, which mean most nearly the opposite of each other:  
   (old / ancient / elderly) (youth / few / modern)

9. Three numbers on the right of the sign :: should go together in the same way as the three numbers on the left. Write the missing number in the brackets:  
   2 (7) 12 : : 3 (.............) 13

10. Fill in the missing number to make the sum correct:  
    8 × 3 = 26 − (.................)

11. Underline the right answer in the brackets:  
    Wrist is to elbow as ankle is to (foot / limb / knee / thigh / arm)

12. Here is a code question. Write the correct answer in the brackets:  
    If NUMBER in code is 412897, what does 79292897 mean? (..................)

13. Write the correct answer in the brackets, beginning with the letter given:  
    dog, bark; donkey, bray; lion, (r..............)

14. Underline TWO words, ONE from each set of brackets, which mean most nearly the opposite of each other:  
    (sweet / tasty / nice) (cold / sour / queer)

GO STRAIGHT ON TO THE NEXT PAGE
15. Three words on the right of the sign :: should go together in the same way as the three words on the left. Write the missing word in the brackets:
   countries (geography) towns :: dates (......................................) kings

16. Here is an alphabetical code question. Write the correct answer in the brackets:
   If SERVICE in code is TFSWJDF, what does DSFWJDF mean? (......................................)

17. Write the correct answer in the brackets beginning with the letter given:
   calf, veal;  cow, beef;  sheep, (m......................................)

18. Write ONE letter in the brackets to finish the first word and start the last:
   RAT (......................................) STATE

19. Fill in the missing number to make the sum correct:
   $6 \times 7 = 50 - (......................................)$

20. Here is a code question. Write the correct answer in the brackets: If TEDDY BEAR in code is Q2446 7259, what does 492596 mean? (......................................)

21. Write ONE letter in each bracket to continue the order of the letters in the line below:
   C F I L O (.............) (.............)

22. Here is an alphabetical code question. Write the correct answer in the brackets:
   If SAINT in code is TBJOU, what does UJOT mean? (......................................)

23. Write the correct answer in the brackets, beginning with the letter given:
   Eye is to sight as hand is to (t..............................)

24. One of the words in the brackets includes the meaning of all the others. Underline it:
   (house / hut / dwelling / flat / mansion)

25. Three numbers on the right of the sign :: should go together in the same way as the three on the left. Write the missing number in the brackets:
   1 (5) 9 :: 3 (......................................) 11

26. Here is a code question. Write the correct answer in the brackets:
   If MECHANICAL in code is 4237980396, what is CHEMICAL in the same code? (......................................)

27. Underline the right answer in the brackets:
   Money is to purse as handkerchief is to (nose / hand / pocket / cold / cotton)

28. Fill in the missing number to make the sum correct:
   $20 \times 20 = 600 - (......................................)$

---

**TURN OVER WITHOUT WAITING TO BE TOLD**
29. Write ONE letter in each bracket to continue the order of the letters in the line below:
   D J E K F L (........................) (........................)

30. The words in this line form a series. Complete the line by writing the missing word in the brackets:
   fire, rife; rime, mire; sure, (......................................)

31. Three things on the right of the sign : : should go together in the same way as the three on the left. Write the missing word in the brackets:
   et (mate) am : : lr (............................) ig

32. Underline TWO words in the brackets that ALWAYS go with the word outside:
   TEACHER (chalk / hand / hat / desk / eyes)

33. Underline TWO words which are different from the rest:
   (telephone / number / receiver / hear / speak)

34. The words in this line form a series. Complete the line by writing the missing word in the brackets:
   carrot, cart; fodder, for; solo, (......................................)

35. Fill in the missing number to make the sum correct:
   $5 \times 6 = 27 + (....................)$

36. Here is a code question. Write the correct answer in the brackets:
   If DESPERATE in code is ZYADYCFMY, what does DCYAA mean?
   (......................................)

37. Make sense of this sentence by underlining the TWO words which should change places:
   The musician proudly treasured his showed prize.

38. Underline TWO words, ONE from each set of brackets, which mean most nearly the opposite of each other:
   (brave / tough / strong) (cowardly / silly / unintelligent)

39. Three numbers on the right of the sign : : should go together in the same way as the three on the left. Write the missing number in the brackets:
   $3 \ (9) \ 27 : : 2 \ (....................) \ 8$

40. Make sense of this sentence by underlining the TWO words which should change places:
   The bus bumped with the car into a loud crash.

41. Fill in the missing number to complete this series:
   $2, \ 4, \ 7, \ 11 \ (....................) \ 22, \ 29, \ 37$

42. Make sense of this sentence by underlining the TWO words which should change places:
   The girl fell her wrist when she twisted.

**GO STRAIGHT ON TO THE NEXT PAGE**
43. Underline TWO words, ONE from each set of brackets, which mean most nearly the opposite of each other:
   (add / total / divide) (plus / answer / subtract)

44. The words in this line form a series. Complete the line by writing the missing word in the brackets:
   are, era; Elba, able; Madam, (.................................)

45. Fill in the missing number to make this sum correct:
   \[50 \times 12 = 740 - (..................)\]

46. Make sense of this sentence by underlining the TWO words which should change places:
   They climbed the window softly and opened in.

47. Write the correct answer in the brackets, beginning with the letter given:
   husband, wife; bull, cow; horse, (m.................................)

48. Write ONE letter in the brackets to finish the first word and start the last:
   HEL (............... EEL

49. Underline TWO words in the brackets that ALWAYS go with the word outside:
   DOG (lead / collar / tail / fur / kennel)

50. Underline TWO words which mean something different from the rest:
   (want / need / give / enjoy / require)

51. Fill in the missing number to make the sum correct:
   \[80 \times 5 = 800 \div (.................)\]

52. Here is a code question. Write the correct answer in the brackets:
   If PERIODICAL in code is AFM6PY6BNS, what does MFNYFM mean?
   (........................................)

53. Write ONE letter in each bracket to continue the order of the letters in the line below:
   C H D I E J (................) (................)

54. The words in this line form a series. Complete the line by writing the missing word in the brackets:
   share, she; forever, for; honourable, (.................................)

55. Three words on the right of the sign : : should go together in the same way as the three on the left. Write the missing word in the brackets:
   engine (train) carriage : : wings (.................................) fuselage

56. Write ONE letter in the brackets to finish the first word and start the last:
   FIL (...........) IX

TURN OVER WITHOUT WAITING TO BE TOLD

TOTAL

(14)
57. Write ONE letter in each bracket to continue the order of the letters in the line below:

C X D W E V (--------) (--------)

58. Here is an alphabetical code question. Write the correct answers in the brackets:
If BASEMENT in code is AZRDLDM, what does SZAKD mean?

(----------------------)

59. Write the correct answer in the brackets, beginning with the letter given:
matches, cigarettes, smoking; water, glass, (d----------------------)

60. The words in this line form a series. Complete the line by writing the missing word in the brackets:
care, dare; send, tend; last, (----------------------)

61. Three numbers on the right of the sign :: should go together in the same way as the three on the left. Write the missing number in the brackets:

4 (16) 64 :: 5 (---------) 125

62. Write ONE letter in each bracket to continue the order of the letters in the line below:

Z D X E V F T (--------) ( -------)

63. Three things on the right of the sign :: should go together in the same way as those on the left. Write the missing word in the brackets:

WDR (BIRD) IBF :: VEE (----------------------) RTO

64. Fill in the missing number to make the sum correct:

40 ÷ 8 = 2 ÷ (----------------------)

65. Here is a code question. Write the correct answer in the brackets:
If DECORATOR in code is STRANDEAN, what does ENDREAN mean?

(----------------------)

66. Write ONE letter in each bracket to continue the order of the letters in the line below:

J M P S V (--------) (--------)

67. Here is an alphabetical code question. Write the correct answer in the brackets:
If MANUFACTURE in code is LZMTEZBSTQD, what does ETQMHSTQD mean?

(----------------------)

68. The words in this line form a series. Complete the line by writing the missing word in the brackets:
rake, are; case, ace; noise, (----------------------)

69. Write TWO letters in the brackets to finish the first word and start the last:

T (--------) SY

70. Here is an alphabetical code question. Write the correct answer in the brackets:
If WASHINGTON in code is XBTIJOHUPO, what does HSBTT mean?

(----------------------)

GO STRAIGHT ON TO THE NEXT PAGE
71. Write **ONE** letter in each bracket to continue the order of the letters in the line below:
   
   F M G N H O (.........) (.........)

72. Three things on the right of the sign :: should go together in the same way as the three on the left. Write the missing word in the brackets:
   
   et (gate) ag :: sy (----------------------------------) ob

73. Write **ONE** letter in each bracket to continue the order of the letters in the line below:
   
   C Z E Y G X (.........) (.........)

74. The words in the line below form a series. Complete the line by writing the missing word in the brackets:
   
   askance, ace; rapture, rare; purchase, (-----------------------------)

75. Write the correct answer in the brackets, beginning with the letter given:
   
   one, solo; two, duet; three, (-----------------------------)

76. Write **ONE** letter in each bracket to continue the order of the letters in the line below:
   
   B Y C X D W (.........) (.........)

77. Three things on the right of the sign :: should go together in the same way as those on the left. Write the missing word in the brackets:
   
   ma (team) et :: et (-------------------------------) ar

78. Write **ONE** letter in the brackets to finish the first word and start the last:
   
   FIL (-----------) ARTH

79. Write **ONE** letter in each bracket to continue the order of the letters in the line below:
   
   B Z D Y F X (.........) (.........)

80. The words in this line form a series. Complete the line by writing the missing word in the brackets:
   
   note, tone; label, ball; fillet, (-----------------------------)

81. Three things on the right of the sign :: should go together in the same way as those on the left. Write the missing word in the brackets:
   
   RHS (FISH) IFA :: AMI (------- WSG

82. Write **TWO** letters in the brackets to finish the first word and start the last:
   
   SK (....._,_..) K

83. Write **ONE** letter in each bracket to continue the order of the letters in the line below:
   
   N L O J P H (.........) (.........)

84. Three things on the right of the sign :: should go together in the same way as those on the left. Write the missing word in the brackets:
   
   RHZ (SIX) WL :: SVY (-----------------------------) NR

**END OF TEST**

**LOOK OVER YOUR WORK UNTIL TIME IS UP**

TOTAL (14)
PRACTICE EXAMPLES

Read each question carefully before you answer it.

1. Underline the right answer in the brackets:
   Five is to six as nine is to (seven, eleven, nineteen, ten, a hundred)

2. Write ONE letter in the brackets to finish the first word and start the last:
   HA (..........) URE

3. Write ONE letter in each bracket to continue the order of the letters in the line below:
   A B D E G H (..........) (..........)

4. Underline TWO words in the brackets that ALWAYS go with the word outside:
   HORSE (birds / ears / hay / legs / collar)

5. Fill in the missing number to complete the series:
   3, 6, 9 (..........) 15, 18, 21

6. Underline the TWO words which mean something different from the rest:
   (ocean / fish / ship / sea / lake)

7. Here is a code question. Write the correct answer in the brackets:
   If FRUIT in code is spelt GSVJU, what does SJUF mean? (..................................)

8. Write the correct answer in the brackets, beginning with the letter given:
   Finger is to hand as toe is to (f..............................)

9. Make sense of this sentence by underlining the TWO words which should change places:
   The books were laden with heavy shelves.

10. The words in this line form a series. Complete the line by writing the missing word in the brackets:
    monkey, key; fair, air; that, (......................................)

11. Underline TWO words, ONE from each set of brackets, which mean most nearly the opposite of each other:
    (kind / poor / rich) (nice / polite / cruel)

12. One of the words in the brackets includes the meaning of all the others. Underline it:
    (French / English / nationality / Swedish / German)

13. Three things on the right of the sign :: should go together in the same way as those on the left. Write the missing word in the brackets:
    d (day) y :: c (..........) t

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO
NATIONAL FOUNDATION FOR EDUCATIONAL RESEARCH IN ENGLAND AND WALES

VERBAL TEST EF
(formerly Secondary Verbal Test 1)

by
OLIVE WOOD, B.A. and VALERIE LAND, B.Sc.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

FILL IN THE FOLLOWING PARTICULARS:

FULL NAME...........................................................................................................................................

SCHOOL..................................................................................................................................................

AGE.................................................................................................................................................. YEARS .................................................................................................................MONTHS

DATE OF BIRTH..................................................................................................................................

TODAY’S DATE....................................................................................................................................

<table>
<thead>
<tr>
<th>PAGE</th>
<th>ITEM Nos.</th>
<th>Right</th>
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<tr>
<td>1</td>
<td>1–14</td>
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READ THE FOLLOWING CAREFULLY:

When you are told to begin, turn over the page and begin at once. Work straight through to the end of the test.

Work as quickly and as carefully as you can. Make any alterations in your answers CAREFULLY.

No one is expected to do everything. Just do as much as you can. If you cannot do any question, don’t spend too much time on it, but go on to the next.

When you finish one page, go on to the next. You will have 40 minutes to do the test.

When you are told to stop, STOP WORKING AT ONCE.

Ask no questions at all.
1. In the question below, one letter (O, R, S or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

   half (............) snuff (............) rough (............) smooth

2. Complete this series by writing a number in the empty space:

   176, (............), 44, 22, 11

3. Continue this series by filling in the empty bracket:

   orate, rat; ether, the; chide, (..........................)

4. In the question below, one letter (O, R, S or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

   shine (............) wine (............) timber (............) wood

5. Write ONE word in the brackets to continue this series:

   cave, mouth; house, door; field, (..........................)

6. Continue this series by writing a number in each empty bracket:

   2, 4, 4, 2; 4, 8, 8, 4; 8, 16, (............), (............)

7. Write ONE word in the brackets to continue this series:

   marathon, man; diadem, dim; father, (..........................)

8. In the question below, one letter (O, R, S, or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

   pierce (............) fierce (............) timid (............) shy

9. Write ONE letter in the brackets to complete the first word and start the second:

   LUC (............) NEEL

10. Continue this series by writing a number in each empty bracket:

    3, 9, 4, 10, 5, 11, (............) (............)

11. Write ONE letter in the brackets to complete the first word and start the second:

    DR (............) ARD

12. Write ONE word in the brackets to continue this series:

    file, life; mate, tame; pace, (..........................)

13. Underline TWO words, one from each bracket, which mean most nearly the SAME as each other:

    (seldom, often, even) (likely, rarely, soon)

14. Write ONE letter in the brackets to complete the first word and start the second:

    UNI (............) ANKARD

GO STRAIGHT ON TO THE NEXT PAGE
5. In the question below, one letter (O, R, S or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

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<table>
<thead>
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<tbody>
<tr>
<td>Shindy</td>
<td>Wind</td>
<td>Breeze frieze</td>
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</table>

6. Continue this series by filling in the empty bracket:

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Toga</td>
<td>Goat</td>
<td>Slap</td>
</tr>
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</table>

7. Write a letter in each bracket to continue this series:

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</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>Z</td>
<td>C</td>
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8. Continue this series by filling in the empty brackets:

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<td>25</td>
<td>20</td>
<td>30</td>
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</table>

9. Continue this series by filling in the empty bracket:

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<thead>
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</thead>
<tbody>
<tr>
<td>Drake</td>
<td>Raked</td>
<td>Stow</td>
</tr>
</tbody>
</table>

10. Underline TWO words which must change places to make this sentence sensible:

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<tr>
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</thead>
<tbody>
<tr>
<td>Indians steered up the river to escape the they.</td>
<td></td>
<td></td>
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</tbody>
</table>

11. Write a letter in each bracket to continue this series:

<p>| | | | |</p>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>X</td>
<td>V</td>
<td>T</td>
</tr>
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</table>

12. Write ONE word in the brackets to continue this series:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crime</td>
<td>Rim</td>
<td>Later</td>
<td>Ate</td>
</tr>
</tbody>
</table>

23. In the question below, one letter (O, R, S or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Here</td>
<td>Dear</td>
<td>Expensive</td>
</tr>
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</table>

24. Write a letter in each bracket to continue this series:

<p>| | | | |</p>
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<tbody>
<tr>
<td>C</td>
<td>K</td>
<td>D</td>
<td>L</td>
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</table>

25. Continue this series by filling in the empty bracket:

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<th></th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Man</td>
<td>Factor</td>
</tr>
</tbody>
</table>

26. Write ONE letter in the bracket to complete the first word and start the second:

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>R</td>
<td>NIGHT</td>
</tr>
</tbody>
</table>

27. Write ONE word in the brackets to continue this series:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrist</td>
<td>Sir</td>
<td>Track</td>
</tr>
</tbody>
</table>

TURN OVER WITHOUT WAITING TO BE TOLD
28. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word.
   A bird often heard at night (KN..............EDGE)

29. If A = 1, B = 2, C = 3, D = 4 and so on, what, written as a letter, is the answer to the following sum?
   B + B + C = (.................)

30. Complete this series by filling in the empty bracket:
   sloop, pool; draw, (..........................); mare, era

31. Write ONE letter in the brackets to complete the first word and start the second:
   FORC (.........) SCAPE

32. Continue this series by writing a number in each empty bracket:
   7, 1, 6, 2, 5, 3, 4, 4, (..........) (..........)

33. Continue this series by filling in the empty bracket:
   carpet, tea; badges, sea; storey, (..........................)

34. Write ONE letter in the bracket to complete the first word and start the second:
   OI (.........) !MB

35. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
   Hinder, prevent, end (s..........................)

36. Fill in the missing middle word on the right:
   Latin (tin) tint :: confuse (..........................) useful

37. Write ONE letter in the brackets to complete the first word and start the second:
   FLOO (.........) EAL

38. Underline TWO words which must change places to make this sentence sensible:
   The troops have just gone with action into the command "March!"

39. Continue this series by filling in the empty bracket:
   part, tart; pan, tan; prance, (..................)

40. Here are three words in code—ABC, DBC, FECA. Here are the same three words in a different order, but not in code—PUT, INTO, OUT. Now write the following two words in the same code.
   TIN (..........................)
   POT (..........................)

GO STRAIGHT ON TO THE NEXT PAGE
42. Write ONE word in the brackets to continue this series:
chain, can; trite, tie; train, (......................)

43. Write ONE letter in the brackets to complete the first word and start the second:
FUS (........) UBLIME

44. Write a letter in each bracket to continue this series:
A A C E E G I I K M M O Q (........) (........)

45. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word:
A drinking vessel (O C..................Y)

46. Write ONE letter in the brackets to complete the first word and start the second:
GRI (........) OMB

47. Underline TWO words which must change places to make this sentence sensible:
A variety in wild-life finds refuge of the valley.

48. Here are three words in code—Y37MO, T37OL, T37YL. Here are the same three words in a different order, but not in code—CRATE, CRANE, TRAIN. Now write these two words in the same code:

NEAT (.................................)
CAR (.................................)

50. Fill in the missing middle word on the right:
caste (waste) haste :: cave (.................................) have

51. Continue this series by filling in the empty bracket:
daily, day; gaiety, gay; majority, (.........................)

52. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word:
Painting, drawing (P..................Y)

53. Underline TWO words, one from each bracket, which mean most nearly the OPPOSITE of each other:
(purpose, security, action) (adventure, policy, risk)

TURN OVER WITHOUT WAITING TO BE TOLD
54. If $A = 1$, $B = 2$, $C = 3$ and so on, what, written as a letter, is the answer to the following sum:

$$B \times J = (.................)$$

55. Write in the brackets the TWO letters which will continue the pattern of the letters in the line below.

LMNMLABCCBAFG (.........) (.........)

56. Write ONE number in the brackets to continue this series:

10, 50, 250, (.........)

57. Fill in the missing letters on the right:

1 (121) 2 :: a (______________________) d

58. Here are three words in code—W?4M, W?4M, Z?4M. Here are the same three words in a different order, but not in code—SOIL, TAIL, SAIL. Now write these two words in the same code:

LASSO (______________________)

SLIT (______________________)

59. Underline ONE word in the brackets:

Lark is to aeroplane as duck is to (pond / water / car / ship / whale)

60. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word:

To be victorious

(S.........................G)

61. Underline TWO words, one from each bracket, which mean most nearly the SAME as each other:

(attack, battle, advance) (assault, dispute, retreat)

62. If $Y = 5$, $Z = 10$ and $N = 2$, what, written as a letter, is the answer to the following sum:

$$\frac{Z}{N} = (...........)$$

63. In the question below, one letter (O, R, S or N) must be written in each space between the words to show whether the words on either side are opposites (O) or rhyme (R) or mean the same (S) or none of these (N).

feeble (...........) weak (...........) speak (...........) word

64. If 1, 2, 4, 5, 6, 7, 8, 9, and 0 are written as A, B, C, D, E, F, G, H, I, and J, what, written as a letter, is the answer to the following sum?

$$H + D - F = (...........)$$

65. Fill in the missing middle word on the right:

fuel (cruel) unkind :: boy (...............happiness

GO STRAIGHT ON TO THE NEXT PAGE

R

W
67. Underline TWO words, one from each bracket, which mean most nearly the SAME as each other:
   (peaceful, resourceful, doubtful) (certain, tranquil, full)

68. If \( E = 12, B = 4, C = 6 \) and \( D = 8 \), what, written as a letter, is the answer to the following sum?
   \[
   \frac{C \times D}{E} = (....................)
   \]

69. Underline TWO words, one from each bracket, which mean most nearly the OPPOSITE of each other:
   (loose, limp, weak) (stiff, harsh, rough)

70. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word.
   A chimpanzee (SH.....................)

71. Here are three words in code—E80N, 187P, 10PPA. Here are the same three words in a different order, but not in code—TREES, TAPE, MARK. Now write the following two words in the same code:
   TRAPPER (.........................)
   RAKE (.........................)

72. Continue this series by filling in the empty bracket:
   eclipse, clips; clips, lip; lip, (.........................)

73. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
   hold, last, castle (K.........................)

74. Write ONE word in the brackets to continue this series:
   dice, cider; tale, later; sole, (.........................)

75. In the line below, the words given can be connected by writing in the brackets a word rhyming with the word printed large on the left:
   MERRY Dogs (.........................) bones.

76. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word:
   To be in debt (P.........................)R

77. In the brackets on the right, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
   Telephone, wedding, fairy (R.........................)

78. In the line below, the words given can be connected by writing in the brackets a word rhyming with the word printed large on the left:
   RAISE Fog (.........................) trains.

TURN OVER WITHOUT WAITING TO BE TOLD
80. Underline TWO words, one from each bracket, which mean most nearly the SAME as each other:

(sheet, fog, greet) (weather, hail, shout)

81. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
Summit, toy, first

(T.............................................)

82. In the line below, the words given can be connected by writing in the brackets a word rhyming with the word printed large on the left:
MOULD
Kings (.....................................) court

83. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
Cricket, pheasant, courageous

(G.............................................)

84. A clue is given on the left to a three-letter word which, when written in the space in the brackets on the right, will be found to complete another word:
What one often does on the river

(C.............................................N)

85. Underline TWO words, one from each bracket, which mean most nearly the SAME as each other.
(abandon, quench, pain) (part, relinquish, bandage)

86. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
Poem, washing, sky

(L.............................................)

87. Underline the TWO words which must change places to make this sentence sensible:
For work his humanity helped all men.

88. In the brackets, write one word starting with the printed letter, meaning something to do with all of the three words on the left:
Timber, letter, job

(P.............................................)

89. In the line below, the words given can be connected by writing in the brackets a word rhyming with the word printed large on the left:
BEREAVES
Entertainment (.............................) boredom.

90. Write ONE letter in the bracket to complete the first word and start the second:
LETHA (.............) ISP

END OF TEST

LOOK OVER YOUR WORK UNTIL TIME IS UP
Strictly Confidential

On the next page you will see some of the things boys and girls have said about school. We should like to know what you feel and think about these things - whether you agree or disagree with what other boys and girls have said.

This is NOT a test and there are NO RIGHT and NO WRONG answers.

Please answer as truthfully as you can. Just say what you think is most true of you.

Your answers will be strictly confidential.

Here is an example:

I like watching television

If you often like watching television, put an X in the box marked YES, OFTEN.

If you sometimes like watching television, put an X in the box marked SOMETIMES.

If you never like watching television, put an X in the box marked NEVER.

Here is one for you to try.

I like swimming

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NOT SURE</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td>3</td>
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<td>4</td>
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<td>5</td>
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<td>12</td>
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<td>13</td>
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<td>14</td>
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<td>15</td>
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<td></td>
<td></td>
<td>Always</td>
<td>Sometimes</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td>1. School is fun</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I work and try very hard at school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. We spend too much time doing Maths</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. We have interesting lessons in school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Going to school is a waste of time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I should like to be one of the cleverest pupils in the class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I like school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. School lessons are boring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I should like to be very good at school work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. I like doing hard Maths problems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I bet going out to work is better than school</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. I enjoy most school work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. I should like to be better at games than at school work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. School is boring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. At school they make you do things you don't want to do</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Doing well at school is most important to me</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
17. I would leave school tomorrow if I could

<table>
<thead>
<tr>
<th>Yes</th>
<th>Not sure</th>
<th>No</th>
</tr>
</thead>
</table>

Will you now please write where it says 1 below, the name of the boy (if you're a boy) and the girl (if you're a girl) whom you would choose to represent the whole of your year group in a "Top of the Form" contest. Write your second and third choices where it says 2 and 3. Give first and last names please.

1. ........................................
2. ........................................
3. ........................................

In the same way, please write the name of the person of your own sex and in your own year group whom you would most like to sit next to on the coach and go around with when work is over on a school trip. Again, please write where it says 2 and 3, the second and third person you would like to be with.

1. ........................................
2. ........................................
3. ........................................

Suppose that there are exactly 30 children in your class. Underline the class position you think you'd most probably reach in a general test of school work.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
<table>
<thead>
<tr>
<th>Children you get on well with</th>
<th>Most</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Rough</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Helpful</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children who get on well with school work</th>
<th>Most</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Interested in school work</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Annoy other children</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Popular</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Get into trouble in school</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Rough</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Good tempered</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Cause trouble in class</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Lazy in school</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Polite</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children who don't get on well with school work</th>
<th>Most</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Interested in school work</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Annoy other children</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Popular</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Get into trouble in school</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Rough</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Good tempered</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Cause trouble in school</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Lazy in school</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Polite</td>
<td>x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>Most</td>
<td>Least</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Hard working</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Helpful</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Rough</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Finds school work easy</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Causes trouble in class</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Keen to do well in school</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Near the top of the class in most subjects</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Gets into trouble in school</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Above average in school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Good tempered</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Poor at Maths</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Interested in school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Annoys other children</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Polite</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Below average in school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Lazy in school</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Gets on well with school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
</tbody>
</table>

**Like I'd like to be**

<table>
<thead>
<tr>
<th>Self</th>
<th>Most</th>
<th>Least</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard working</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Helpful</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Finds school work easy</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Near the top of the class in most subjects</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Above average in school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Poor at Maths</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Below average in school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
<tr>
<td>Gets on well with school work</td>
<td>x x x x x x x x x x</td>
<td></td>
</tr>
</tbody>
</table>