INVESTIGATION OF THE RELATIONSHIP BETWEEN MEASURES OF THE SELF CONCEPT AND ADJUSTMENT IN CHILDREN

by

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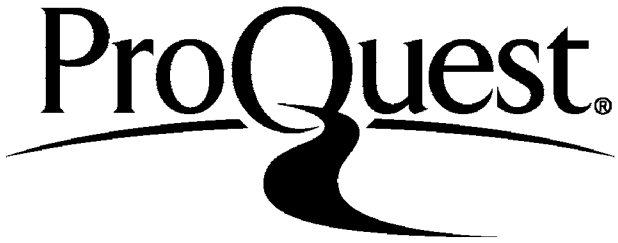

ABSTRACT

Methods of assessing the self concept were reviewed. Two measures of the self concept stated by previous experimenters to be related to psychological adjustment as measured by other psychological tests were discussed. These two measures were, uncertainty about what the self is really like, and self acceptance. An experiment was carried out to investigate the relationship of these two aspects of the self concept in children to psychological adjustment, as measured by their anxiety, neuroticism and extraversion scores on the Childrens Personality Questionnaire (C.P.A.T). The subjects were 127 children, between the ages of 7 - 12 years, and their 6 teachers. An attempt was also made to investigate the reported relationship between the children's self concept, and the personality of their teachers as measured on the 16 Personality Factor Questionnaire (I.P.A.T.), and the teachers attitudes to certain teaching situations as assessed on the Sargant Insight test using specially devised armatures.

It was found that increase in uncertainty about the self concept in children between the ages of 7 and 12

years, was associated with significantly higher neuroticism scores than decrease in, or no change in, uncertainty scores. (The change was assessed over a 10 week period in a normal school term).

Both increase and decrease in uncertainty about the self were found to be associated with significantly higher anxiety scores than no change in uncertainty.

It was found that high self acceptance and medium self acceptance were associated with significantly lower anxiety and neuroticism scores than low self acceptance.

However, looking at the separate age levels tested it was found that:-

a) the level of anxiety shown by children with high self acceptance scores rose with age.

b) the numbers of children with very high self acceptance scores decreased with age.

It was found that the anxiety scores of children in the classes of the three more introverted teachers were significantly higher than those of the children in the classes of the more extraverted teachers.

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Part 1. MEASUREMENT OF THE SELF CONCEPT

"Many psychologists have believed that if something exists it can be measured. There have been many investigators who have assumed that the self-concept refers to an existence of some sort and have gone on to measure it". C.Marshall Lowe (28) p.526.

Many psychologists and philosophers have assumed the existence of a self concept. However, until the late 1940's they were largely concerned with the problem of defining the self concept not measuring it. McDougall (29) treated it as a sentiment, the integrating core of his system of sentiments, with all the other sentiments functioning in relation to it. This view is strongly reminiscent of James who regarded the self as 'fighter for ends'.(22 p.141). Allport has said that, "psychoanalysis may well be remembered in future years for having given shelter to the self under the term ego system when positivism made it an outcast from psychological literature, when it lost it's soul, shortly after the Franco-Prussian War, and the time when it found it again, shortly after World War II".(1.p.453). The psychoanalytic theory of motivation is based on the assumption of hedonistic self-interest. However, in

psychoanalysis egoism was not attributed to the ego but to the id and its drives, the ego being a passive watchful organiser keeping the peace between the id, superego and the external environment. Later psychoanalytic writers were dissatisfied with this view, Hartmann (20) pointed out that the ego was responsible for 'adaptation to reality' using the organised ego functions such as intelligence, and perception which exist in their own right and provide an independent force for the solution of conflicts. Lewin avoids considering the ego or self as a single entity and prefers to regard it as a variable set of forces aroused whenever the person enters into some novel and perhaps dangerous relation to his environment. (27.)). A view rather similar to Hartmann although regarding the ego as less permanent and substantial.

As the process of ego development in childhood is achieved largely by giving the child a name, status, a code of behaviour, a social sense of guilt and social standards for making his judgements, Sherif concludes that the ego is nothing but the social part of man.

Some psychologists did attempt to investigate our experience of the self. It was relatively unrewarding

eg. Horowitz investigating felt localisation of self or ego, collected such widely varying reports (locating the ego in the head, heart, chest, face, brain and genitals) that he concluded ' the localisation of the self.... is not the basic phenomenon one might hope for to ease an analysis of the structure of the self and personality ' (21. p.386).

Klein and Schoenfeld (24) introduced a new aspect of ego psychology when they used the term ego-involvement to describe behaviour in which it appeared that the importance of the task to the subjects affected the consistency of their judgements.
They suggested that the person was'ego-involved' in tasks or activities which were relevant to inportant goals or sentiments and that there appeared to be some extension of the self-concept to include such related aspects of the environment.

Klein and Schoenfeld showed that where college students knew the results of the experiment to be important for their college records, their confidence ratings on their performance over 6 tests became markedly consistent. This recognition of a dimension of the self concept which lent itself to exploration and manipulation by direct experiment was an important stimulus to research in the field of ego and self psychology and began to shift the focus of interest away from theoretical attempts to define the 'self' towards consideration of its functions.

Allport (1) made a valuable classification of the ways in which the ego has been described in psychological literature, he suggested that at least 8 such categories may be distinguished and thought that they all described the activities of the self or ego at different moments of

human behaviour. His classification serves to reduce the apparent contradictions and confusions which are to be found in the literature and it may be useful to list them here together with some suggestions as to which authors have emphasised particular aspects or functions.

1) Self as knower (Descartes)
2) Self as the object of knowledge (Rogers etal)
3) As primordial selfishness
4) As Dominator (Cattell)
5) As passive organiser or rationalizer (Freud and other P.A†)
6) As fighter for ends (James)
7) Self as segregated behavioural segment among others (McDougall, Ash)
8) As subjective patterning of cultural values. (Lewin, Sherif).

On the whole the more recent work which attempts to measure the self concept has tended to treat the notion of self mainly as (2) in Allports list, that is as the object of knowledge; they have avoided speculation about the function of the ego in the total dynamics of the personality and sought to define its phenomenal character.

Allports analysis has a considerable value in placing such attempts at measurement within a definite context which defines the limits of the concept employed and its area which can be expected to be covered by individual studies.

Measurement of the self concept was not directly attempted as such until Raimy, a student of Carl Rogers,

† psychoanalysts

shifted the definitional emphasis from the analytical categorisation by outside observers of 'the self' to the self as perceived subjectively - "a learned perceptual system which functions as an object in the perceptual field". (31 p.154) - the phenomenological view of the self. Raimy showed that attitudes to the self taken from clients' protocols were a reliable index of improvement during therapy. This aspect of self functioning, that of self as object and subject and given little attention in preceding literature, flourished. Rogers theorised in a phenomenological frame of reference and with Dymond etal. started a flood of experiments on the self concept that has been joined by psychologists of other theoretical persuasions apart from Rogerians.

Raimy's method of selecting self-referential statements from protocols to show the attitude towards the self of patients, has been adapted for use with normal subjects by most experimenters. Interested as they were in groups of subjects, not one patient, they have merely selected lists of statements which appear frequently in many protocols and getting subjects to rate themselves on these have elicited self referential attitudes from the subjects. Although there are many experimenters,

there have been a few well used lists of statements. One of the first such lists to be compiled for experimental purposes was by Sheerer (34.)19) using protocols from the University of Chicago Counseling Centre. He selected 101 statements that appeared relevant for attitudes towards the self and others.

Butler and Haigh (8.).) use 100 self referential statements taken at random from therapeutic protocols.

The Allport and Odbert 1936 list of 17, 953 traits were used by Bills (15.1), the basis of selection from these being the frequent appearance of the trait or adjective in client-centred interviews.

Cattell factorised the Allport list in 1946 and produced a list of 171 trait variables. Gough (18.), used 300 adjectives from this trait list for the adjective check list (ACL). The basis for this selection is not specified.

In these experimental assessments of subjects' self concepts they are commonly asked to rate the statements or items for degree of likeness to, or truth about themselves.(Bills (5.), Berger (3), Phillips(14.1). In some cases the subjects are also required to rate the items to other criteria, how they ought to be or 'ideal self' and how other people think they are, or

'self as others see us'.

A slightly different approach has been the use of Q technique. Stephenson (114) sees this as translating ones 'inner experiences' into behaviour by means of the Q sort technique. What actually happens is that the same kind of statements or items are printed on cards and sorted by the subject into piles which are more like or more unlike him. Subjects are required to carry out this sorting to produce a forced normal distribution of the cards, with most like and unlike at opposite ends. The number of criteria by which the subject can be asked to sort the cards is virtually unlimited, the most usual for self assessment experiments being 'self', 'ideal self', and 'self as others see me'.

As can be seen, the measurement of the self concept has been carried out by the various experimenters along roughly similar lines and are subject to more or less similar criticisms from reviewers of self concept studies.(eg. Lowe(28))

A major point of criticism is the selection of items for the rating scales or cards for Q sorts. Selecting self-referential statements from protocols of people undergoing therapy using these as test items for

unrelated groups of normal subjects is strongly criticised by Crowne and Stephens (14.).

Firstly Crowne and Stephens suggest the items should be selected to be a sample of self referential statements of the population to be studied; (cf: Kelly's personal construct method) which in most cases are normal subjects not undergoing therapy. However this method of item selection in the construction of tests to be used with normal subjects is not unusual in psychology. In fact it seems to be the rule that extreme views of any characteristic or trait are deliberately included, and the response to these extreme items by the 'normal' subjects is often crucial for the derived personality scores etc.(cf: M.M.P.I.) . Furthermore, if the group of 'normals' were not too small, it is likely that some abnormal self reference statements would be produced by them and included in the final list of test items. To carry Crowne's objections to its logical conclusion and get each subject to produce his own sample of self statements is suitable only for clinical use (eg. Raimy) and would make comparison of self concepts between subjects producing dissimilar lists of self statements difficult and between groups of

subjects the task would become impossible.

The second criticism Crowne and Stephens make seems to be more telling. This is concerned with what is selected from the original lists, compiled from protocols, to be used on the final check list or on the Q sort cards. This is usually done by frequency, the most frequently mentioned aspects of self regard being the ones chosen. This provides a cumulative bias in selection. It is probable that the kind of remarks produced in therapy (even in the client-centred therapy of Rogers) are to some extent,(unmeasured extent) influenced by the theoretical persuasions of the therapist. Even the classical 'mhm' could be less non-committal when the client starts to elaborate on some aspect of self determination or organisation which the therapist thinks to be of paramount importance. When the most frequently reiterated self statements are then picked from these protocols the therapist's theoretical views are very likely to have been an important determiner of what appears most frequently and therefore of what appears on the final shortened test list. Therefore the drawback is not that the protocols of non-normals provided lists inappropriate for normal subjects, but

that these lists were taken from clinical interviews of one theoretical standpoint - Rogerian. This would have been minimised if the items had been selected so as to cover particular and specified aspects of the self concept as the particular experimenter defined it. As it is the reasons for final selection were either frequency (Sheerer) or random (eg. Butler and Haigh) or unspecified.(eg. Gough).

It appears that regardless of the main theoretical views held by experimenters, whether or not they would accept main Rogerian theory, they all accept the same operational definition of the self for the purposes of investigating the self concept. That from subjects' ratings of a set list of self-referential statements, an assessment can be made of the concept they hold of their individual 'self'.

Part 2. EXAMINATION OF TWO MEASURES OF THE SELF CONCEPT CLOSELY ASSOCIATED WITH PSYCHOLOGICAL ADJUSTMENT

a. Uncertainty as a measure of the self concept.

Validation of self concept measures have largely concentrated on examining congruence between the self concept and adjustment as shown by other psychological measures.

A measure derived from self concept assessments that Staines has argued to be indicative of 'psychological insecurity' is the amount or degree of uncertainty the subject shows. Staines's work is dealt with in some detail here as it provides the jumping-off point for the first part of the experiment to be reported in this thesis.

Staines (1966) adopts the theoretical position of Raimy and defines the self as "a learned structure, growing mainly from comments made by other people and from inferences drawn by children out of their experiences in home, school and other social groups" (36 p.97).

Staines concluded that amongst the people most likely to be influential in determining the developing self-picture in children are teachers. Therefore as his first hypothesis he stated that "it is possible to distinguish reliably between teachers in normal classrooms in respect of the frequency and kind of comments they make with reference to the self" (36 p.95).

To test this hypothesis he followed the techniques developed by Bales and Withall, (45) of observing a class as a group and recording teacher-child interaction. He used two classes from infant school (mean age 7 years 5 months) and two classes from junior school (mean age 10 years 9 months). Each class was observed for a total of just over four hours.

He analysed this data (the teachers' recorded remarks) according to which categories of the childrens' self concept they would be most likely to affect. These categories included such as attitudes and interests, values, wants and goals, status, physical characteristics,

skills of various kinds and performance. He classified the data firstly in terms of these categories using a system of indicators, showing whether the effect of the comment or situation was thought to be positive for the child (+), or negative (-), or whether the effect was likely to be positive for some children and negative for others (ambi) or just neutral (n).

Staines also derived what he called an overall potency score, by subtracting all the negative from all the positive self referential comments.

The material was rated by Staines and two school counsellors with three years psychological training. When the data was divided into units by each judge, agreement between Staines and each of the other two was above 90%. Units where agreement could not be reached after discussion were eliminated. After two months Staines and one of the other judges reanalysed a page taken at random from the records, and showed a re-test reliability for Staines of 94% and 92% for the other judge.

Staines found the difference between the two Junior teachers (A and B) in the relative numbers of positive and negative comments made to the children

to be significant where scores were large enough. (i.e. in categories into which a large number of remarks had been judged to belong).

Table 1.

SCORES ON DIMENSIONS OF SELF FOR EACH TEACHER

(Taken from Staines. (36) p.103)

Dimensions		A Raw Score	B Raw Score
Differentiation		371	313
Potency	+	290	130
	-	54	160

Staines gives both the (+)ive and (−)ive scores for the potency dimension, although the potency score he uses is in fact the difference between the (+)ive and (−)ive score e.g. +136 for A and-30 for B.

Table 2.

CATEGORIES SHOWING MOST MARKED DIFFERENCES BETWEEN TEACHERS.

(Taken from Staines (36) p.102).

	A	B
Performance.		
Skill +	107	73
Skill -	19	50
Total	141	129
Status.		
Positive (+)	70	30
Negative (-)	14	48
Total	84	78
Values.		
Responsibility	5	0
General	5	0
Total	11	2
Wants.		
Level of aspiration	11	7
Self Direction	85	14

Total scores for Values and Wants are shown in this table, they are not classified under (+)ive and(-)ive as in the other categories of Status and Performance.

The results of this analysis are shown in the table reproduced from Staines report.

As can be seen from this table there is a great difference in the potency scores of the two teachers A & B. Teacher A made many more positive self reference comments to the children and fewer negative comments than teacher B. It appears that a large part of this difference is accounted for by the remarks categorised as being relevant to the childrens' status and level of performance. Staines commented that it was useful to know that teachers differed so markedly in the kind of comments they made with reference to those aspects of the self concept. He realised that the point at which this method of investigation is least effective is in gauging the effect upon the child of the teacher's remarks. For example, one teacher used reproof much more frequently than the others, yet the observer could not say what effect her words had, and interviews with individual children showed that some children had a 'water off a duck's back' attitude towards her.

In an attempt to discover whether the different teaching styles of A & B would lead to changes in the developing self concepts of the children in their classes,

Staines carried out the second part of his investigation. It was expected that teacher A would produce more desirable changes in the childrens' self concept than teacher B.

Staines used a Q technique to assess the childrens self concepts. The children had 56 cards (see Appendix I ap102) containing statements relevant to categories such as physique, status, values, attitudes, acceptance by others etc. These cards were sorted by the children for 'self' ratings, 'ideal self' and 'self as others see us'. Unlike the original Stephenson technique the children did not have to make a forced normal distribution of the cards. They had 10 sections to sort cards into, 1, 2,and 3 for 'untrue of me' items, 4,5 and 6 for 'neither true nor untrue,' and 7,8 and 9 for 'true of me' items. The tenth section was for cards about which the children could not make up their minds - 'the don't know' section. Staines arranged to get the children to make the triple sort of the cards (self, ideal self and other self) twice, with a twelve week teaching interval between the two testing sessions.

At this point Staines did a rather strange thing. Up to now the design of the experiment appears straight

fo ward. The first part shows a significant difference between the kind ofpersonal comment made to the children in their class by teachers A & B. In the second part, Staines intends to find the effect of this difference in teaching style on the childrens' self concepts in the two classes. The logical and only methodologically defensible design would be to carry out the second part of the research while Teachers A & B carry on teaching in their usual style - the style by which he has differentiated between them. However, what Staines did was to take Teacher A (the positive or 'good' teacher) into his confidence and show him the results of the first card sort and get him to rate the children on these same qualities. Then Teacher A and Staines discussed discrepancies between A's assessments and the childrens' self picture, and also decided which aspects of the childrens' self picture needed more positive and helpful comment. A. was given a definite set to teach, with the aim of having a particular effect on the childrens' self concept, in the direction of realistic self appreciation, self confidence and differentiation between different levels of skill etc. Teacher B was left to teach in the same way as she had in the first part of the research.

In effect the second part of the research was not assessing the effect of the teaching styles of A and B on the childrens' self concepts - but was assessing the effect of the original teaching methods of A, plus a carefully worked out set for changing the childrens' self concepts as against the original teaching methods of B with no such set. Thus, whatever results Staines collected from this second part of the research - whatever the difference between the two classes - it will be impossible to say which variable was responsible. It is with this in mind that the results he did get must be examined.

The most noticeable difference is in the change in uncertainty scores between first and second testing sessions for the two classes.

	Test I	Test II
Experimental	123	72
Control	370	448

As can be seen there was a considerable drop in the total uncertainty score in the class taught by A, and an increase in the class taught by B. This difference was apparent in all three aspects of the self concept (self, ideal self and other self).

There was a greater tendency in A's class to

move away from extreme ratings (eg. 1 or 9 sections) which Staines interprets as a more realistic attitude being developed, and a decreasing tendency to see things in black and white.

Looking at individual items, a significantly greater proportion of children in A's class were willing to admit to cheating and more children felt individually responsible for their own actions (item - 'make up my own mind about what I want to do').

Staines interprets the increase in uncertainty in the self concepts of B's class as an increase in 'psychological insecurity', and the corresponding decrease in the uncertainty score of A's class as a decrease in such insecurity. It seems reasonable to argue that increased uncertainty about what the self is like suggests that the children have become more insecure. However, what has brought about this change in uncertainty and security, is unsure. It is not possible to deduce from Staines research in any satisfactory way what this insecurity in class B might be due to. The contamination of the variable due to the different teaching styles of A and B is neither the only nor the major reason for this difficulty. Even if the teaching style variable were not contaminated it would still be presumptuous in the extreme to hold it solely or even mainly responsible for the

increase or decrease in uncertainty in the classes' self concept ratings. As Staines himself mentions in his introduction, the child's self picture as a learned structure will be affected by parents, peer groups as well as teachers. Comparing only two classes he cannot rule out the possibility that something other than teacher-child interaction could have produced these results. Apart from alternative contemporary environmental pressures that could have been responsible for generating the insecurity, these results could be due to longer standing neurotic traits in the children themselves. Staines deals only with the overall increase or decrease in uncertainty of each class, it seems possible that in each class the shift in certainty could equally well have been the result of a few children undergoing a large change. In fact this global approach in attempting to assess teacher-class interaction is too simple. The interaction of one teacher and twenty-six children is highly unlikely to be simple enough to allow the one-way influence of teaching style on the development of the childrens' self concepts to be assessed, without considerable interference from other environmental pressures on and constitutional or more long standing

adjustmental differences in the children themselves.

In an attempt to assess the effect of some of the conflicting variables discussed above a modified repeat of Staines experiment was carried out.

b. Self Acceptance.

i) Derived measures of self acceptance.

Another measure of the self concept which has been stated to have a constant relationship with measures of psychological adjustment, is self acceptance. Different experimenters have used different self concept measures with consequent differences in their derived measures of self acceptance.

To start with the only published self rating scale, Bills' ((Bill. 4)) Index of Adjustment and Values (I.A.V.). Each item is rated by the subject for how well it describes him; he next rates how accepting he is of this first rating and finally he rates the item for how much he would like to be like that item. Bills' measure of self acceptance is taken as the amount of agreement, shown by the subject, between the way he sees himself as being and the way he rates himself as accepting his self ratings. His measure of self-ideal self discrepancy is taken by comparing the differences in ratings between the way the self is rated as being and the way the self is rated as wishing to be. Bendig and Hoffman ((Ben. 2.), found that the Bills' scores on self acceptance and self-ideal self discrepancy related equally well to scales on the Maudsley Personality

Inventory and concluded that one of the two measures is redundant.

Brownfain (1957.) got subjects to rank themselves on 25 words and phrases, each concerned with a different area of personality adjustment. The subjects were asked to do this twice, once with an optimistic frame of reference and once with a pessimistic one. The amount of agreement between the two ratings, Brownfain calls the stability of the self concept. The self acceptance score is taken as the sum of positive self description weights, minus the sum of negative description weights, from both sets of ratings. The inclusion of some measure such as Brownfain's stability score seems useful in self acceptance research. Modification of his measures might prove even more useful. Two separate self acceptance scores could be obtained, one from the optimistic ratings and one from the pessimistic ones. Then a stability score could be derived, on the subjects self acceptance concept, showing the range and limits of his self acceptance under these two frames of reference. Comparison of the range of self acceptance of subjects with their scores on established measures of psychological adjustment might well prove interesting.

Of course, sets other than pessimism and optimism could also be used.

Gough (1948.) using his Adjective check-list (A.C.L.) had as his measure of self acceptance the number of favourable adjectives checked, divided by the total number of adjectives checked, as being like the subject.

The most frequently used measure of self acceptance is the discrepancy between self and ideal self ratings. The self and ideal self ratings are obtained using the Q technique (already described in previous section) in studies by:- Rogers and Dymond (1954. 32.) Block and Thomas (1956.) Turner and Vanderlippe (1940.40.) and Butler and Haigh (1954), to list some of the more important studies.

The self and ideal self ratings were obtained from rating scales and adjective check lists by La Forge and Suczek (1926.) and Calvin and Holtzman (1954. 9.)

There are several obvious differences between the tests mentioned, the items or adjectives included, (see first section for discussion of item selection) form of the test (questionnaire, rating scale or Q sort) and the method of deriving the self acceptance score. (Self-ideal, self, discrepancy or proportion of

favourable adjectives checked etc.).

It cannot be discounted that the differences in items, procedure and scoring technique could result in different aspects of the internal self reflective state being expressed in the external self evaluative behaviour sampled in the different tests. One way to investigate this is to see how a group of subjects' self evaluation correlates over several of the available tests. This has been done using some of the available tests. Bills reports a correlation of .56 between his self-ideal self (S. - I.S.) discrepancy score on the I.A.V. and Phillips' self score. Omwake (1301).) found a correlation of .55 between the I.A.V. self-ideal self discrepancy score and the Phillips' self score and a correlation of .49 between the self acceptance score on the I.A.V. and the Berger self acceptance scale. Cowen ((912. 1).) found that the I.A.V. (Bills) self-ideal self score and Brownfain's self acceptance scores were uncorrelated although if the pessimistic self score on the Brownfain were used there was a small positive correlation. Correlations between Q sorts and other techniques do not appear to have been tried.

The correlations obtained are not high but are positive. In view of certain differences in test

construction (already discussed) a very high correlation would not have been expected. Crowne and Stephens in their review state that unless high congruence is shown to exist between the various measures, 'the individual's private, unique experience of self satisfaction or dissatisfaction remains, indeed, private.' (14. p.108).

Surely this does not follow. The tests could all correlate poorly and still ~~xx xxxx x xxxx~~ reflect highly differentiated aspects of the 'private' feeling of self satisfaction. How well a subject's behaviour in any testing situation reflects his 'internal' thoughts, feelings, wishes etc., is impossible to assess. The most that can be hoped for is to show that two or more tests which correlate highly together are equally effective in predicting behaviour in other situations where the subjects self evaluation is likely to prove an important variable. Depending on how closely they correlated, they could then be described as measuring the same or equivalent aspects of self evaluative behaviour.

The self concept is described by most theorists as being a subject's eye view of his total existence, broken down in words (for ease of description and assessment) to subordinate concepts of effectiveness in skills, appearance, social effectiveness etc. Certain areas

of the subject's self evaluation are obviously going to be more important in some situations than in others. Therefore in studies where self concept estimates are to be used to predict behaviour in specific situations e.g. learning a skill, it is likely that a test which concentrates on closely associated areas of self evaluation would be more profitable and the inclusion of his physical appearance as he sees it etc., would only mask a possible relationship between his idea of his own skill and his actual performance.

This is not the case in attempts to find out what high or low self acceptance means in terms of other psychological measures such as neuroticism, where subjects' self acceptance scores are to be correlated with their neuroticism scores. In such cases it would be preferable to sample various areas of self awareness, for neuroticism cannot be defined as simply and directly as ability to learn a skill and it would be difficult to hypothesise which areas of self awareness would be most affected. In fact the most likely hypothesis to be derived from most theoretical standpoints would be that the higher the subjects' neuroticism score, the greater the affected area of the self evaluative concept.

Self acceptance then, has been operationally defined by most experimenters as the discrepancy between a subject's rating of himself and his 'ideal' self rating, (whether using a rating scale or Q technique) although the proportion of favourable descriptions checked as like the subject has also been used as a measure of self acceptance.

ii) Relationship between self acceptance and adjustment.

There is some disagreement about the form of the relationship between self acceptance and psychological adjustment. Implicit in client-centred therapy is the idea that high self acceptance is related to adjustment and it is treated as a major therapeutic goal. It is sometimes stated (8.) that extremely high self acceptance could be maladapted defense on the part of a client.

In a series of psychotherapy research studies at the University of Chicago (8.) Butler and Haigh had clients make Q sorts for the self and ideal self before and after therapy to test the hypothesis that successful therapy will increase satisfaction with the 'self'. It was found that after therapy the sorts for self and ideal self moved towards a common mean, therefore the measured

self acceptance (self-ideal self discrepancy) had increased. Rudikoff (33.) using the same subjects found that the changes in self acceptance during periods of time before and after therapy were not as great as those occurring during therapy. This was interpreted as showing that it was the therapy that was mainly effective in producing the congruence between self and ideal self Q sorts.

A slightly discordant note is sounded at this point by Taylor (39.) who devised a Q sort between positive and negative statements. After subjects made repeated sortings for the self and ideal self he found that even without therapy, there was a more positive attitude towards the self and that the self and ideal self sorts moved closer together. In fact, he concluded that simply repeating the self descriptive behaviour results in increased self consistency. Along these lines Engel (16.) studying the stability of the self concept in adolescence found that over a two year period there was a trend towards a more positive self attitude. Even Dymond herself(15.) found increased congruence between self and ideal self Q sorts for subjects waiting for psychotherapy, although ratings of the same subjects based on their T.A.T. protocols showed no change

over the same period. Dymond explains this increased self acceptance without therapy as due to an increase in neurotic defenses. As Lowe (28.) points out very reasonably in his review how can she say that this is not what happens during therapy as well?

These results are only damaging from the point of view of client-centred therapists who intended the Q sort technique as an objective measure of improvement during therapy. As regards research on self acceptance it is no great drawback. It is not impossible that a person could achieve a more positive attitude towards himself without therapy, and that repeated opportunity to introspect in such a fashion could aid this process.

Calvin and Holtzman (1953.) had college students rank themselves on seven personality traits and found that the self depreciation was related to high scores on the M.M.P.I. They concluded that low self acceptance was indicative of maladjustment.

Hanlon, Hofstaetter and O'Connor (19.) compared the results of high school juniors on the California Personality Scale with the degree of congruence between ratings of self and ideal self. They found that the closer the congruence the better the adjustment on the Personality Scale. This suggested that high self

acceptance was associated with good adjustment for these subjects.

Cowen ([illegible]) found that low self ratings on the Brownfain negative self concept went with high scores on the California E.Scale .† Another instance where a negative self attitude seemed to correlate with poor adjustment.

Smith ([illegible]) compared congruence between self and ideal self Q sorts with scores on Edwards P.P.S.*, and Cattells 16 personality factors and measures of average mood. After nearly 300 correlations he concluded that having a positive self concept is indicative of good adjustment.

Taylor and Coombs ([illegible]) hypothesised that VI grade children found to be well adjusted on the California Personality Scale would more often admit self-referential statements which although unflattering are universally true. This hypothesis was confirmed. This was a somewhat unusual prediction and in a test where self acceptance was measured by self-ideal self discrepancy, such behaviourwould have given the children lowered self acceptance ratings (assuming that such unflattering

† A scalemeasuring rigidity, ethnocentrism etc.
* Personal Preference Schedule.

behaviour would not have been rated as 'ideal' by the children!). This lowered self acceptance would then have correlated with good adjustment on the C.P.S. This reflection upon the results of Taylor and Coombs leads on to the work of Block and Thomas (6.)). They conceive of maladjustment being associated with both high and low self acceptance. They argue that too high a self acceptance is due to suppressive and repressive mechanisms causing subjects to be rigid, over-controlled, restrained and aloof. However, they consider subjects with too low a self acceptance will be unable to control emotions and anxieties etc. They consider that people in the middle ranges of self acceptance will be better adjusted. Block and Thomas constructed an ego-control scale from M.M.P.I. items. This scale had a correlation of .44 with self-ideal self discrepancy,(using Q sort technique) the relationship being curvilinear. Therefore their predictions were confirmed, subjects with high self acceptance did appear controlled and low self acceptors too.lax with medium self acceptors appearing well adjusted on the ego-control scale.

Chodorkoff's ((10.)C.) results followed the same pattern as Block and Thomas'. He correlated ratings

of the self made from a biographical inventory with the results of projective techniques. He also found adjustment to lie in the middle ranges of self acceptance.

Worchel and McCormick (41.) were interested in finding out if people with high medium and low self acceptance scores (self-ideal discrepancy on the Q sort was the measure used) responded differently to situations first where their opinions were agreed with, and second where their opinions were disagreed with. The subjects were asked to solve a 'social problem' (such as what to do about a room mate they feared was becoming mentally unstable) by choosing one of two equally plausible sounding solutions. They were then asked to rate how sure they were about their choice. Then half of them listened to a tape recording of a person (supposed to be taking part in the experiment) who agreed with their choice and gave reasons why. The other half heard the 'voice' disagree with their choice.

After the subjects had heard the agreement or disagreement with their choice, they again had to rate how certain they now felt that they had made the right choice. They also had to rate the 'voice' for various qualities such as intelligence and insight etc.

Worchel and McCormick found that when subjects

were agreed with, those with low self acceptance scores became more certain of their choice. Subjects with high self acceptance showed no change in certainty ratings. The subjects with medium self acceptance showed slight increase in certainty but not as much as the low self acceptors.

When subjects were disagreed with it was found that those with low self acceptance became much less certain of their own opinions, the high self acceptance scorers became even more certain and the medium self scorers were once more in between.

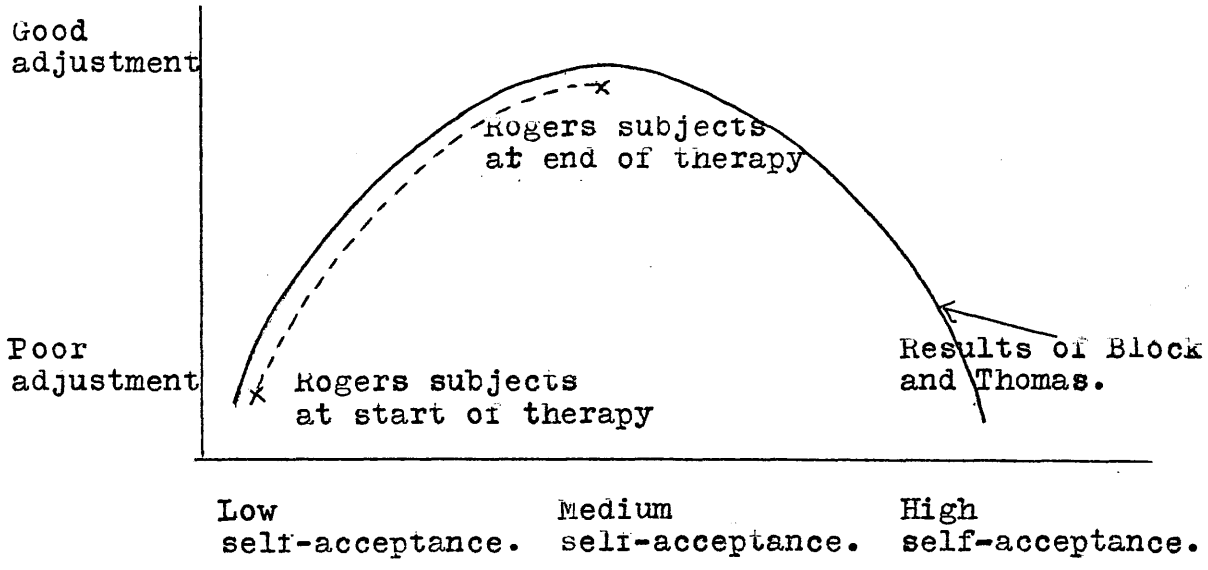
It was found that all subjects rated the 'voice' as more intelligent etc. when it agreed with their choice. The derogation of the 'voice' under conditions of disagreement was greatest in the subjects with high self acceptance scores. Worchel and McCormick interpreted their results as supporting Block and Thomas by showing that high self acceptance scorers behave irrationally in the face of disagreement with their opinions and subjects with low self acceptance are too easily swayed by contrary opinions. Subjects with medium self acceptance appeared to react in a more moderate and adjusted way to agreement and disagreement.

In summary, high self acceptance has been shown

by Rogers et al to be associated with good psychological adjustment, and by Block et al to be associated with poor adjustment - with medium self acceptance showing good adjustment.

It seems unlikely that either Rogers or Block is completely wrong, both sides having quite substantial experimental support. There is a possible explanation of this apparent contradiction. For this, it is necessary to assume that the curvilinear relationship between self acceptance and adjustment put forward by Block and Thomas is the one which fits all the data. The results from the researches of Rogers et al would fit into this scheme if it were assumed that their subjects, clients undergoing client centred therapy, were all showing very low self acceptance when they started therapy. From this it could be agrued that when they were discharged from therapy their self acceptance was not in fact high, but had merely reached the medium and well adjusted ranges of self acceptance. (see fig.1. for diagram of suggested relationship) This argument is not completely watertight, it would remain to be explained why Smith working with 24 college freshmen and Hanlon et al working with VIth grade children also tested subjects showing no higher than medium self

fig.1. To show relationship between self acceptance and adjustment.



acceptance. Smith's work is likely to remain an obstacle, but it could be argued that in the children tested by Hanlon et al, high self acceptance might not indicate poor adjustment. It is intended to explore this possibility in the second experiment described in this thesis.

It has been argued that the validation studies attempting to discover what patterns of adjustment correlate with self acceptance are based on a false assumption. This is the assumption that the tests used actually measure the subject's self acceptance. It is suggested that what these tests are measuring is the subject's need to respond to questions about himself in a socially desirable way. It is no simple matter to affirm or deny this hypothesis.

For one thing it is stated over and over again by theorists that the build up of the ideal self image is largely due to the process of socialisation, with all it's pressures, it is therefore hardly new to state that it owes much to what a subject considers to be socially desirable. It may be pointed out however, that how far a subject is prepared to rate his 'real self' as falling short of this ideal is vulnerable in a more serious way to the pressure of wanting to appear socially desirable.

Correlations reported between self scores and social desirability ratings of items are high. Kenny (1956(23.) gave 25 self descriptive items to be group of judges for social desirability scaling. Three independent samples of subjects responded to these items

in the form of rating scale and Q sort. The correlations between the social desirability scale values and ideal self scores were .82 and .59 for rating scale and Q sort, between social desirability and real self scores were .81 and .66 for rating scale and Q sort. It is interesting to note that the correlations with social desirability are considerably lower when Q sort technique was used than with the rating scale.

Edwards ([illegible].) found correlations of .84 and .87 for men and women between item placings on the Q sort and social desirability scale value of items.

Kogan, Quinn, Ax and Ripley ([illegible].) found a correlation of .67 between social desirability scale values and real self placement for a group of hospitalised psychoneurotics. The corresponding correlation for a control group of male college students was .85.

Cowen and Tongas (13.) found a correlation of .91 between social desirability ratings and the self concept score of the I.A.V. A correlation of .96 was obtained between social desirability ratings and the ideal-self score on the I.A.V. (Bills).

These correlations are all between social desirability and ideal self and social desirability

and real self. Self acceptance is usually taken as the discrepancy between real self and ideal self. However, it might be suggested that as both real and ideal self correlate highly with social desirability, then they correlate highly with each other and possibly self acceptance scores (being the discrepancy between the two) might also correlate highly with social desirability. This possibility could be explored if the correlations between self and ideal self were calculated over subjects not over items as in most of the studies. However, it still might be argued that as the correlations over item placings for social desirability and placement in Q sorts and ratings for self and ideal self are high, any scores derived from tests made up of these items will inevitably correlate closely with social desirability. In fact when subjects self acceptance scores are correlated with their scores on the K scale of the M.M.P.I. (K scale correlates .81 with Edwards social desirability scale), the correlations are much lower and range from .33 to .58 (3. 42.)

These correlations are lower, but together with the other higher correlations between item placement for self rating and social desirability scale values, they cannot be ignored. It therefore seems necessary for experimenters investigating the self concept to show that

they are not just investigating a subject's need to sort statements about himself in a socially desirable way.

One likely defense would be to consider social desirability and self acceptance to be correlated but not equivalent measures. If it could be shown that only one of them was able to successfully predict subjects' behaviour in some specific situation, this would support the hypothesis and show that it is worthwhile to keep the separate terms and definitions, even if there is some admittedly common ground between the two, (particularly in the case of the ideal self concept as has already been agreed above).

An experiment already described,(Worchel and McCormick 41.) does seem to be one instance where only predictions from self acceptance scores (self-ideal self discrepancy) are confirmed, and the kind of results that would be predicted from social desirability scores are not.

Briefly, from the self acceptance scores one would predict (as Worchel and McCormick did) that subjects with low self acceptance scores, who are shown to be insecure weak in ego-control and to lack confidence in themselves etc., would be much influenced by the

opinions of others. In the part of their experiment where a tape-recorded voice is heard to disagree with the subject's opinions and gives reasons why, it is predicted that low self acceptance scorers will change more easily and have less confidence in their own opinions whereas high self acceptance scorers will not be expected to show less confidence on their own opinions in the same situation. These predictions were confirmed, in fact some of the high self acceptance scorers became even more confident of their opinions after they had been disagreed with.

Social desirability scores were not assessed in this experiment. However, as we are considering the accusation that self acceptance tests function as social desirability scales, that a subject who scores high in self acceptance does so because he considers most like him those items which are rated most socially desirable, it seems respectable to try and predict the results of the experiment as if the high self acceptance scores were in fact indicative of a high need to appear socially desirable.

Now a subject with a low social desirability score would be expected to be little affected by the social pressure exerted by the recorded voice agreeing or disagreeing with his opinions and decisions. A

subject with a high social desirability score would be expected to be considerably affected by this social pressure. This is the reverse of what actually happened.

In summary, it is recognised that social pressures (or desirability) are indeed important in building up the ideal self image, that probably exists at least in a rough form in all people - being 'part wish, part ought'. The wish to appear more socially desirable probably affects how far a subject is willing to admit he falls short of his ideal. Allowing that this probably shortens the tested self-ideal self discrepancy of perhaps all subjects, there still remains enough variation in scores to allow behaviour of a very different kind to be accurately predicted for subjects whose self acceptance scores fall at different ends of the distribution. It has been argued above that such differences in behaviour cannot be predicted if the self acceptance scores are considered to show only the subjects' need to appear socially desirable.

Part 3. EXPERIMENT TO INVESTIGATE CERTAIN ASPECTS OF THE SELF CONCEPT IN CHILDREN

The research reported in this thesis was undertaken to investigate two aspects of the self concept in children, uncertainty about 'the self' and self acceptance. The data relevant to these two aspects of the self concept are discussed separately, although the uncertainty and self acceptance measures were derived from the same self concept Q sort (developed by Staines) administered to the same group of children.

I THE RELATIONSHIP BETWEEN UNCERTAINTY ABOUT THE SELF CONCEPT AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN

The main aim of this first part of the experiment was to repeat in modified form Staines' (36. 37.) experiment. It was planned to investigate the suggestion by Staines that increase in certainty about 'the self' during childhood was a sign of good adjustment, or 'psychological security', and that teachers' attitudes had a great effect upon this aspect of the children's developing self concept.

Staines' experiment has already been fully discussed in part 2 a. The main alterations to his experimental design were as follows:-

It was intended to assess change in the children's uncertainty about 'the self' under normal teaching conditi ons, without any particular instructions being given to the teachers of classes to try and change the children's self image.

As well as looking at the net change in uncertainty scores of the classes as a whole, it was intended to look more closely at,

a) Children who increase their uncertainty scores on the second testing session.

b) Children whose uncertainty scores remain the same.

c) Children who decrease their uncertainty scores on the second testing session.

It was also intended to see if any relation exists between the childrens' change in uncertainty scores and their scores on certain personaltiy factors.

If classes as a whole differed in the increase or decrease in their uncertainty scores, it was intended to see if this difference is linked with different attitudes of their respective teachers to certain teaching situations as assessed on a projective test, or linked with different personality ratings of the teachers concerned. The stateable hypothesis was that - children (between the ages of 7 and 12 years) who increase their uncertainty scores on Staines self concept test have anxiety, neuroticism and extraversion$ scores that differ markedly from those children who decrease their uncertainty scores and from those children whose uncertainty scores remain the same.

Subjects.

The subjects were 6 volunteer American teachers and their classes from a U.S.A.F. base in Southern England.

2 classes from Grade II age 7 - 8 years.
2 classes from Grade III age 8 - 9 years.
1 class from Grade IV age 9 - 10 years.
1 class from Grade VI age 11 - 12 years.

} All children had been with their class teachers for 3 months only at the start of the experiment.

TESTS USED IN THE EXPERIMENT

Assessment of Personality Factors of School Children.

The I.P.A.T. childrens' personality questionnaire (C.P.Q.) was administered to all the children who took part in the experiment. This questionnaire is scored for 14 Personality Factors (list and brief description in Appendix I j.). Each item in the C.P.Q. which contributes to any given factor score has been shown empirically by factor analysis to be significantly correlated with that factor (44). However the psychological identity of each factor has been established not from content or face validity of the item, but from correlation of the questionnaire factor score with behaviour rating factors (43, 44).

The C.P.Q. has anxiety versus adjustment, neuroticism and extraversion scores obtained as independant second order factors derived from weighted combinations of the original 14 personality factors (see App.I k.). These three second order factor scores were obtained for each child taking part in the experiment.

Cattell defines neuroticism as distinct from anxiety. A high anxiety score may go with a high neuroticism score or may be a purely situational and realistic anxiety when the neuroticism score is low.

The C.P.Q. was administered individually to all the children to make sure that all could read and understand the items.

Measurement of Self Concept.

Staines' card sort techniques for assessing the self concept of children was administered to the children tested in this experiment and with some differences from the way Staines used it.

I The children were only required to sort the cards to describe the self as they thought it really was, the ideal self and self as others see it card sorts were not obtained. This was for two reasons:-

a. The difference in uncertainty scores was found by Staines to be essentially similar through all three card sorts, self, ideal self and other self. It was therefore felt that there was nothing to be gained from using more than the basic card sort for the real self as perceived by the children and obvious advantage in reducing testing time already made considerable by the addition in this experiment of the C.P.Q.

b. As younger children (age 7 - 11 years) were to be tested in this experiment as well as the age range used by Staines (10 - 11 years) it was doubted that they would all be able to make the necessary distinction between the three concepts of the self.

II The children were tested individually, again because some of the children were very young and it was necessary to make sure that they could read the cards and understand what was written on them.

III The children were required to sort the cards into three piles, true of me, not true of me and not sure or don't know. Staines used 10 categories 1,2,3 for different degrees of true of me, 4,5,6 for neither like nor unlike, and 7,8,9 for not true of me and 10 for don't know. Although Staines did assess the movement toward or away from extremes of judgement (i.e. movement toward or away from 1, 9 and 5) his greatest difference between his classes was found to be movement of cards in or out of the don't know category. It was also on this aspect of self concept change that he concentrated most of his conclusions.

Another reason for simplifying the categories into which children had to sort the cards was the age of some of the children tested. It was thought that 7 and 8 year olds would find deciding whether each of the 56 self descriptive statements were like them or not quite difficult enough without having to use the finer gradings.

Assessment of Teachers.

The teachers' attitudes to various teaching situations were obtained using a form of the Sargant Insight test (S.I.) with specially designed armatures. (see App. I e. for specimen copy). The teachers' responses to these situations were analysed into three categories:

a) Where the blame for the situation was projected on to others eg. children, parents, school conditi ons etc. (P)

b) Where the blame for the situation was not projected but seen as being the fault of the teacher. (A.)

c) Where blame was neither accepted nor projected i.e. both sides in the situation considered possibly to be at fault. (M)

The 16 Personality Factor Questionnaire (16 P.F.) was administered to the teachers of the six classes. The second order factors of Anxiety and Extraversion were calculated for each teacher.

Procedure.

The children were tested individually with the self concept cards. Instructions were:- 'I am going to show you some cards with things written on them. I'll read them to you one at a time and then give them to you to look at. If what is written on the card is true about you - if you are like that - say "Yes" and put them in a pile here (one side of desk). If you think it's not like you put it here and say "No". If you cannot make up your mind say "I don't know" and put them here. If there are any words that you don't understand, ask me about them and I will try to explain what they mean'.

The teachers were given the 16.P.F. questionnaire and the S.I. blank to answer in their own time.

After a 10 week teaching interval the self-concept card sort technique was again administered individually to the children, as well as the C.P.Q.

Treatment of Results.

The total number of cards placed in the Don't Know (?) category by each child in all 6 classes was calculated for the first and second (10 weeks later) card sort.

The total number of cards in the ? category for each class was calculated for the two presentations of the test.

The total number of times each card was placed in the ? category was calculated for the two presentations of the test in the Grade II and Grade III classes only.

The raw scores from the childrens' C.P.Q.s were converted to stens and the second order factors of Anxiety, Extraversion and Neuroticism were calculated for each child.

In each class the children were divided into three groups:-

a) Those who placed more cards in the ? pile on the second presentation of the test than on the first - the +? group.

b) Those who placed the same number of cards in the ? pile on the second presentation as on the first - the S? group.

c) Those who placed fewer cards on the ? pile on the second presentation than they did on the first - the -? group.

The anxiety scores for the three groups +?, S? and -? were compared.

The neuroticism scores for the three groups +?, S? and -? were compared.

The extraversion scores for the three groups +?, S? and -? were compared.

The average neuroticism and anxiety scores were calculated for all classes.

The teachers' raw scores on the 16.P.F.Q. were converted to stens and the second order factors of Anxiety and Extraversion were calculated.

The teachers' responses to the S.I. armatures were analysed as described previously.

The mean and range of intelligence scores on the C.P.Q. (factor B) were calculated for the two classes aged 7 - 8 years and the two classes aged 8 - 9 years.

Statement of Results.

1. The children who increased their total uncertainty scores from the first to second testing session (abbreviated to +? group) and the children who decreased their uncertainty scores (abbreviated to -? group) showed no consistent difference in their anxiety scores (see Appendix Ic and If).
2. The children whose total uncertainty scores stayed the same on both testing sessions (abbreviated to S? group) had significantly lower anxiety scores than the other two groups +? and -? $p < .02$. (see Appendix IId for t-tests following Analysis of Variance and tables in Appendix Ic and If.).
3. The children in the +? group had significantly greater neuroticism scores than those in the -? group $p < .01$ (for tables of neuroticism scores see App.Id,g, for t-test following Analysis of Variance see App.IIb).
4. The children in the S? group and those in the -? group showed no consistent difference in their neuroticism scores (means were $\bar{x}_s = .3548$ and $\bar{x}_{-?} = -.375$). (see App. Id,and g).
5. The children in the S? group tended to have lower neuroticism scores than those in the +?group but the difference between the means did not reach significance at $p < .1$.

6. There was no consistent difference between the three groups +?, S? and -? in their extraversion scores (see App. Ib and e).

7. All classes except one decreased their total uncertainty score after the 10 week interval.

8. The average anxiety and neuroticism scores for the classes tested is shown in App.Ih. Classes B, C and VI have significantly higher anxiety scores than classes A, D and IV.

9. The anxiety scores and extraversion scores of the 6 teachers are shown in App.Ih.

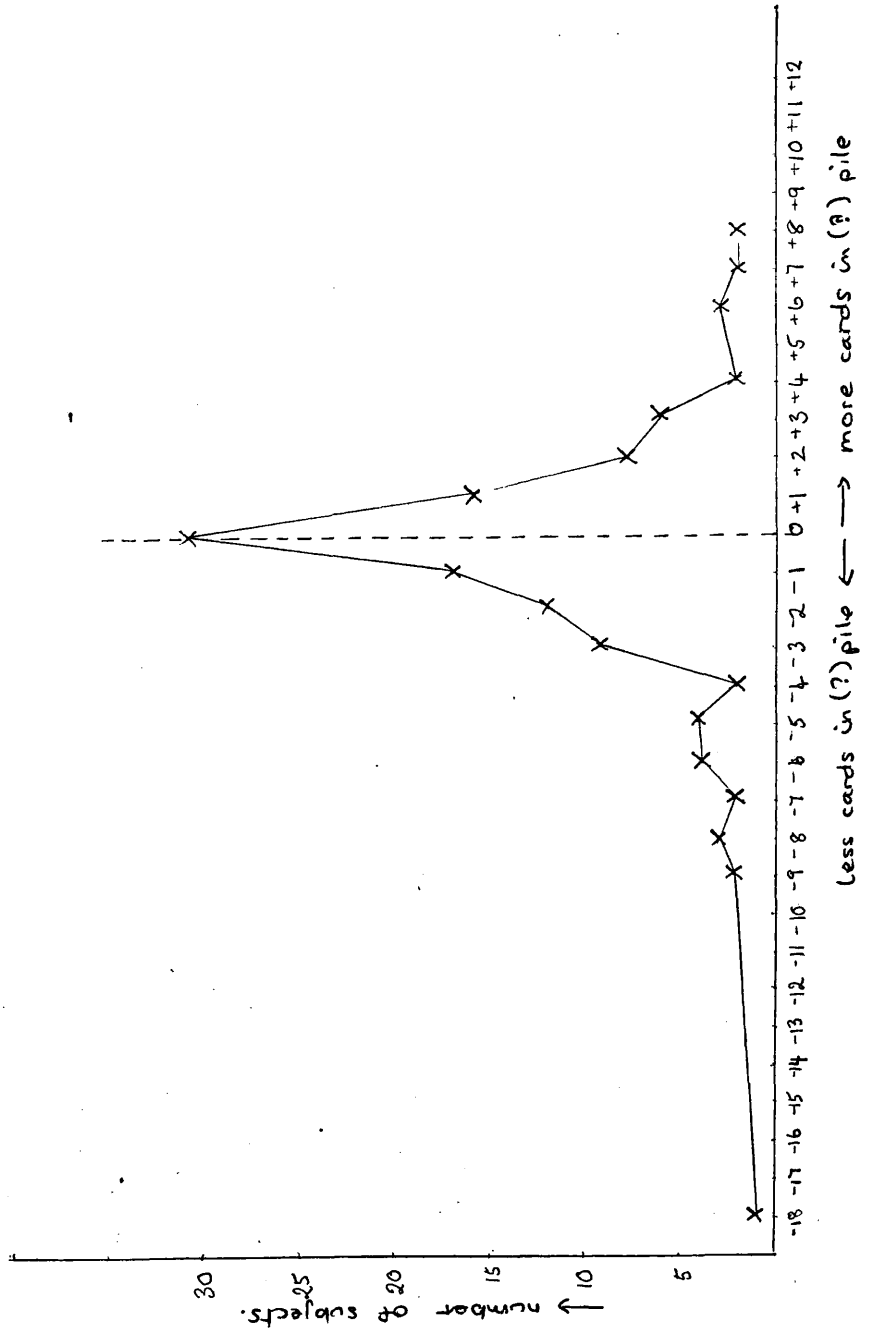
10. The mean of intelligence or Factor B scores for each class is shown in App.Im.

11. There was no significant difference between the number of times each card was placed in the ?pile on first and second testing sessions in the two classes aged 7 - 8 years and two classes aged 8 - 9 years (see App. In.).

12. The changes between the first and second ratings of the cards could not be attributed to responses to any one particular or set of cards- they appeared to be distributed fairly evenly over the whole series.

13. Fig.2. shows the distribution of the actual number of changes in the score (?)between 1st and 2nd testing sessions for all children .

fig.2. To show the distribution of the actual number of changes in the(?)score between 1st and 2nd testing sessions for all the children.



INTERPRETATION OF RESULTS

One aim of this experiment was to see what uncertainty about the self concept means in terms of other psychological measures. In particular to test Staines' hypothesis that increase in uncertainty (i.e. +? group) about the self concept is indicative of increased psychological insecurity due to situational anxiety, and that decrease in uncertainty (i.e. -? group) is indicative of increased security due to a reduction in situational anxiety. From Staines' view it would be predicted that children who neither increased nor decreased their uncertainty scores (S?) would be less anxious than the +? group but would show the same or perhaps greater anxiety than the -? group.

From the results it can be seen that both increase and decrease in uncertainty scores are associated with raised anxiety scores. Children whose uncertainty scores remain the same have significantly lower anxiety scores than those of the other two groups ($p > .02$). Therefore while the results support Staines' hypothesis that increased uncertainty is indicative of anxiety, they seriously undermine his position by showing that decreased uncertainty is an equally good indicator of anxiety, and not, as he

would have it, an indicator of increased psychological security. Therefore, at first sight, it appears that to use change in uncertainty scores on Staines' self concept Q sort as a measure of the effect of situational anxiety, it would be necessary to use some score which took into account change in both directions - increase and decrease in ? scores. It is obvious that such a measure is likely to be rough and contaminated by a second variable. There is obviously another variable, which must account for the fact that some anxious children increase their uncertainty about 'the self' and others decrease their uncertainty. It appears from the results of this experiment that this difference can be accounted for by the neuroticism scores. The children who increase their uncertainty scores have significantly greater neuroticism scores than those who decrease their uncertainty, and also have greater neuroticism scores than those children whose uncertainty scores remain the same. (This last difference just escapes significance at $p > .05$ as $t = 1.911$ and not greater than 1.997)

It therefore seems that using the increase in uncertainty about the self concept as a measure is more sensitive in selecting children with high neuroticism scores, but not children with high situational anxiety.

It appears then, that no satisfactory score can be derived from the uncertainty measures (+?, S? and -?) to gauge the effect of situational anxiety (whether or not this is due to teachers' personal comments) on the childrens' self concepts.

However, looking at the direct anxiety, neuroticism and extraversion scores of the children in each class and the anxiety, Sargant Insight and extraversion scores of the teachers, there appears to be a relationship between the extraversion scores of the teachers and the level of anxiety in their classes. From table in App.I h. it can be seen that in the classes of the three teachers with the highest extraversion scores, the children have lower anxiety scores than those children in the classes of the three more introverted teachers. This difference is significant. ($p < .01$ for χ^2 App.II e). There is no consistent relationship between any of the other scores calculated for teachers and children (see table in App. I h). The children in the introverted teachers' classes haven't got significantly higher neuroticism scores, so it cannot be argued that their higher anxiety scores are due to neurotic conflicts. It has been argued before in this reaearch that a difference in situational anxiety scores between classes is not necessarily due to anxiety produced by the

classroom situation, that the situational anxiety may be produced by home environment or peer group relationships extending beyond the classroom. To use this argument in this research would mean saying that one of the two grade II classes, one of the two grade III classes and the grade VI class contained by chance most of the anxiety producing homes and most of the unsatisfactory peer relationships. To add that these children had then been placed by chance in the classes of the three teachers with the lowest extraversion scores would strain the argument to breaking point.

It is interesting to note that this relationship between the introversion of the teachers and the anxiety level in their classes is not reflected at all in the teachers' scores on the Sargant Insight test. This evaluated the teachers' attitudes to certain teaching situations, assessing them simply on the criterion of whether they tended to'project the blame' for the situation, (eg. if cheating was due to parental pressure for good marks) or 'accept the blame' for the situation (eg. if they themselves expected too much from the children) saw the blame as equally likely to fall on both sides, or ignored the situation (eg. stating it was unlikely to happen and dismiss it). A likely hypothesis would have been that teachers who tended

to 'project the blame' for various difficult situations would raise the anxiety level in their classes.

It is of course possible that what the teachers said they would do in these situations in the artificial situation of filling out a test blank, and what they actually would do in their classrooms cannot be treated as equivalent. It is certain however, that the six teachers tested were not responding with the same well worn stereotypes of what a teacher should do, it can be seen from/the table on/p.115 that their answers are very different from one another. This at least means that they have highly individual ideas of what a teacher should do in these circumstances, and presumably these 'ideals' have some influence on how they actually handle classroom situations.

There remains then, the result that the three introverted teachers have classes whose children are significantly more anxious than the children in the more extroverted teachers' classes. As there appears to be no consistent difference in the way they plan to handle classroom situations (from the Sargant Insight data), the difference is presumably not in what the teachers do, but in the way that they do it. As the extraversion scores are most highly loaded by the factors M, F and A, the way that the extraverted teachers do it is by being

enthusiastic, happy-go-lucky (F), warm, sociable, adaptable, warm hearted (A), and sound, realistic, dependable (M).

If this experiment were repeated and confirmed using more than six teachers and their classes, it might be possible to assess what was the optimum range of extraversion for teachers, and to compare work records of the children to see if increased anxiety was in fact reflected in lower achievement then would be expected of them. Until this research is repeated and confirmed in this way it remains a significant finding for these classes tested, but still only suggestive of the general importance of the introversion-extraversion factor in the interpersonal relationships between teachers and pupils.

It may be worth mentioning at this point that the introversion scores of 155 English women student teachers (collected at teachers training colleges in the south of England) have a mean of 53.15, which falls within the range (46 - 54) of the scores of the more introverted teachers tested in this experiment.* Of course, generalisations cannot be made from the results of the experiment reported here using American teachers and children to predict the possible effect of these future English teachers on their classes' anxiety levels.

* see App.II h. for distribution of scores of English students which is approximately normal.

However the profile of average personality factor scores on Cattell's 16. P. F.test for these English students correlates highly with the corresponding profile of averages for 59 American teachers reported in the 16 P.F. test Handbook.($r_p = .76$) see App.II g. This would suggest that the two groups are very similar. It would certainly suggest that further research into the relationship found in this experiment between teachers' introversion scores and the level of anxiety shown by children in their classes is likely to be worthwhile in both American and English schools.

In summary then, the uncertainty scores, derived from Staines' self concept Q sort, dividing the children into three groups +?,(children who increased their uncertainty) -?, (children who showed decreased uncertainty) and S? (children showing no change in uncertainty) appear to reflect the neuroticism scores of the children more closely than their anxiety scores. Children in the +? group were found to be significantly more neurotic than those in the -? group, but these two groups showed no consistent difference in anxiety scores.

There does appear to be a relationship between the anxiety level of the classes tested and the introversion-extraversion scores of their teachers. The anxiety level in the classes taught by the more introverted teachers was significantly higher than that found in the classes of the extraverted classes.

Conclusion.

Increased uncertainty about the self concept was found to be associated with significantly higher neuroticism scores than decreased uncertainty about the self. High anxiety scores were found to be associated with both increase and decrease in uncertainty about 'the self'. Children who neither increased nor decreased their self uncertainty had low anxiety and low neuroticism scores.

A significantly higher level of anxiety was exhibited by the children in the classes of the more introverted teachers.

II RELATIONSHIP BETWEEN SELF ACCEPTANCE AND PSYCHOLOGICAL ADJUSTMENT IN CHILDREN.

The main aim of this part of the experiment was to obtain self acceptance scores from the children in the same six classes. It was intended to see what relationship existed between self acceptance scores and the anxiety, extraversion and neuroticism scores also collected from the children, in particular if high self acceptance was associated with good or poor adjustment.

Self acceptance scores obtained from the four age levels tested (7 - 8 years, 8 - 9 years, 9 - 10 years and 11 - 12 years) were compared.

It was also intended to see what relationship existed between the children's uncertainty scores and self acceptance scores.

Measurement of Personality Factors and Self Concept.

The tests and derived scores of anxiety, extraversion and neuroticism have already been described in the first part of the experiment.

The modified version of Staines' Q sort for assessment of the children's self concept has also been discussed in the previous experiment. A measure of self acceptance was derived from this Q sort for the real self. The usual measure of self acceptance when Q technique is used is the discrepancy between the real self and ideal self Q sorts. However, for reasons already discussed in the first part of the experiment, the children were only required to sort the cards for 'real self'. Therefore a measure similar to that of Gough was derived. He used as his self acceptance score the number of favourable adjectives, out of the total number of adjectives checked as being like the subject. Accordingly, out of the 56 descriptive statements in the list used to assess the self concept in this experiment, were selected 28 which could be sorted in an obviously favourable or unfavourable way. The self acceptance score was the number of statements 'favourably' sorted over 28 (for list of statements see App. Ia p102). The possible range of self acceptance was therefore from 0 to 28/28.

Subjects and Procedure.

These have already been described in the appropriate section in part I of the experiment.

Treatment of Results.

The self acceptance scores were calculated for each child from the first card sort.

In each class the children were divided into three groups:-

a) those with high self acceptance scores - the H.S.A. group - whose scores were in the top quartile (this was only approximate and was sometimes nearer to being the upper third where several children had the same self acceptance score).

b) those with medium self acceptance scores - the M.S.A. group - with scores between the upper and lower quartile (this was also only approximate).

c) those with low self acceptance scores - the L.S.A. group - with scores in the lower quartile.

The anxiety scores for the three groups, H.S.A., M.S.A. and L.S.A. were compared.

The neuroticism scores for the three groups H.S.A.,M.S.A. and L.S.A. were compared.

The extraversion scores for the three groups H.S.A., M.S.A. and L.S.A. were also compared.

The number of children with self acceptance scores in the top quartile of possible scores, i.e. greater than 21/28, was calculated for each age level tested.

The number of children in the high self acceptance group who had anxiety scores higher than 30 (the average level) was calculated for each age level.

The number of children in the high self acceptance group who had neuroticism scores higher than +1 (the average score) was calculated at each age level.

As a measure of self consistency, the total number of cards (out of the full 56) that were placed in a different category (like me, unlike me or don't know) on the second Q sort was calculated for each child. This was called the Total Change score.

The average Total Change scores for the three groups H.S.A., M.S.A. and L.S.A. were compared.

Children's self acceptance and uncertainty scores from part I of the experiment were compared to see if any relationship existed between the two measures.

Statement of Results

The children in the H.S.A. groups had significantly lower anxiety scores than those in the L.S.A. groups. (t - test following Analysis of Variance on difference between means $p < .01$ see App.IVc & IVd)

The children in the M.S.A. groups had significantly lower anxiety scores than those in the L.S.A. groups. (t - test on difference between means $p < .01$ see App.IVd)

Children in the H.S.A. groups had significantly lower neuroticism scores than those in the L.S.A. groups. (t - test on difference between the means $p < .01$ see App. IVb p 155.)

Children in the M.S.A. groups had significantly lower neuroticism scores than those in the L.S.A. groups. (t - test on the difference between the means $p < .02$ see App. IVb p.155.)

There was no consistent difference between the extraversion scores of the three groups, H.S.A., M.S.A. and L.S.A.

There was a significant decrease from the age of 7 - 12 (Grades II - VI) in the number of children with self acceptance scores greater than 21/28 $p < .001$. (see App. IV g iii.)

From Grade II to Grade VI, there was an increase in the numbers of children with anxiety scores greater

than 30 in the H.S.A. groups (see Table 4 on p.89).

From Grade II to Grade VI there was no overall increase in the numbers of children with neuroticism scores greater than +1 in the H.S.A. groups. As can be seen in Table 4 on p.89 the numbers increased from Grade II to Grade IV and dropped again in Grade VI.

The total change scores of the H.S.A. groups were significantly lower than those of the M.S.A. groups. $p < .01$. (t - test on difference between means see App. IV f.).

The total change scores of the M.S.A. groups were significantly lower than those of the L.S.A. groups $p < .01$. (t - test on difference between means in App. IV f.).

Relationship between self acceptance scores and uncertainty scores are shown in Table 3 (p 93)

In the H.S.A. group greater proportions of children decreased their uncertainty (39.47%) or showed the same amount of uncertainty (39.47%), and fewer children increased their uncertainty (21.0%).

In the M.S.A. group most children decreased their uncertainty scores (42.3%), fewer increased their uncertainty scores (36.5%) and fewer still had the same uncertainty scores (21.15%).

In the L.S.A. group most children decreased their uncertainty scores (51.35%), fewer children increased their uncertainty (35.13%) and fewer still showed no change in their uncertainty scores (13.51%).

Table 3.

To show the proportion of children who increased their uncertainty (+?) decreased their uncertainty (-?) and showed no change (S?) in uncertainty scores in the three groups H.S.A., M.S.A. and L.S.A.

	%children with increased uncertainty. +?	%children with unchanged uncertainty score. S?	%children with decreased uncertainty. -?
H.S.A.	21.05	39.47	39.47
M.S.A.	36.53	21.15	42.30
L.S.A.	35.13	13.51	51.35

Interpretation of Results.

From these results children with low self acceptance are significantly more anxious and more neurotic than those whose scores fall in the higher or medium range of self acceptance. This supports the work of Hanlon et al (19) who also found high self acceptance to be associated with good adjustment in children. This appears to be at variance with the conclusion reached in Part 2b ii., that the relationship of self acceptance and adjustment is curvilinear, both high and low self acceptance being associated with poorer adjustment than the medium range of self acceptance.

One interpretation of these results that requires consideration is that the test used may not contain enough items to tap the extremes of high self acceptance, that the high self acceptors in this study are better considered as falling in the medium range. This can be discounted for two reasons, the first being that if this were the case a large proportion of children would have obtained the highest possible score of self acceptance of 28/28, which is not the case, only 3 out of 127 children obtained this score

A more telling reason is provided by the consistency scores which measured the number of items

the children changed their minds about between the first and second testing sessions,(over the total 56 items - not just the 28 used to assess self acceptance). Predicting from the results of the experiment of Worchel and McCormick, (already described in detail in Part 2b ii.) one would expect high self acceptors to change their minds very little, and low self acceptors to change their minds a lot, with medium self acceptance scores to fall somewhere inbetween. The data obtained in this research fall exactly into this pattern, low self acceptors have significantly greater total change scores than medium self acceptors ($p < .01$? see App.IV f.) and medium self acceptors have significantly greater change scores than high self acceptors ($p < .01$? difference between means even greater than between L.S.A. and M.S.A.).

It appears then that the division into high, medium and low self acceptance on this test is comparable to that of Worchel and McCormick, predictions regarding changeability being equally accurate. The great difference between the results of Worchel and McCormick and this research being that they found high self acceptance to be associated with poor adjustment.

One is led to consider next the possibility that very high self acceptance in children does not

carry with it the overtones of excessive rigidity and repression that it appears to in adults. According to this argument, high self acceptance while appearing as well adjusted as medium self acceptance in children, would only be maladaptive when carried over into adult life. Such adults have failed to come to terms with reality and see themselves in shades of grey, but still cling to the childish tendency to see things in black and white (and themselves in white and white). It does not seem out of line with any theory of development to consider a self regarding attitude that is normal and widespread in childhood to be maladaptive when it appears in adulthood.

Working within such a theoretical framework one would expect, when testing groups of 'normal' children, to find a decrease in the numbers of very high self acceptance scores as the age of the children increased. Such a decrease was in fact found in this research (see table 5 p90) The number of children in each grade who scored higher than 21/28 was calculated. There was a significant decrease of 23% from Grade II to Grade III. ($p < .05$ χ^2 tables in App. IV pp165), and a difference of 31% between Grade IV and Grade VI which just escaped significance at the 5% level. There is very little difference between the numbers of high self

acceptance scores in Grades III (age 8 - 9 years) and IV (age 9 - 10 years), and this difference is not in the expected direction. Looking at the difference in the percentages of really high scores between the youngest and oldest children tested, 69.5% in Grade II and 16% in Grade VI, the drop in high self acceptance with increasing age is very marked indeed.

This theory would also gain support if the level of neuroticism and anxiety shown by the children with high self acceptance scores could be shown to rise with age. Table 4 p.89 shows the proportion of children in the high self acceptance groups at each age level who had anxiety scores greater than 30 and neuroticism scores above the mean (approx. +1).

It can be seen that the level of neuroticism increases from Grade II to Grade IV but drops again in Grade VI. The anxiety level increases from Grade II to Grade III, drops in Grade IV and rises again in Grade VI. This shows an overall increase in anxiety of 34.7% from Grade II to Grade VI.

These results only partly support the theory put forward above. It seems that high self acceptance is indeed increasingly associated with high anxiety as children get older, but that neuroticism

while appearing increasingly associated with high self acceptance up to the age of 10 years shows a drop at 11 - 12 years. It is obvious that more research is needed to confirm or deny these results using more classes at the separate age levels (remembering that it was only possible in this research to test one class at the age of 9 - 10 years and 11 - 12 years). It would also appear worthwhile to continue tracing the pattern of association between high self acceptance and adjustment through adolescence to adulthood.

In summary therefore, to consider that high self acceptance is a normal phenomenon in children and only associated with poor adjustment in adults is not an untenable position, having received some support in this thesis (using children up to the age of 12 as subjects) and seems worthy of further research.

Table 4

To show percentage of children on the H.S.A. groups who had anxiety scores greater than 30, and neuroticism scores greater than +1 for all the grades tested.

H.S.A. Group.	% with anxiety > 30.	% with neuroticism score > +1.
Grade II 7-8 years.	15.38	38.46
Grade III 8-9 years.	45.45	54.54
Grade IV 9-10 years.	33.30	66.60
Grade VI 11-12years.	50.00	37.50

Table 5

To show percentage of children with self acceptance scores greater than 21/28 at the four age levels tested.

		% children with self acceptance scores > 21/28.	
Grade II	(age 7-8)	69.56	difference sig. $p < .05$
Grade III	(age 8-9)	45.94	
Grade IV	(age 9-10)	47.36	difference closely approaches sig. at $p < .05$ (see App.IVg ii)
Grade VI	(age 11-12)	16	

Conclusion.

High and medium self acceptance in the children tested (aged from 7 - 12 years) were associated with significantly lower anxiety and lower neuroticism scores than was low self acceptance.

It was found that the incidence of extreme high self acceptance decreased with age. High self acceptance was found to be increasingly associated with raised anxiety scores as the age of the children increased.

Conclusions from Part I and Part II of the Experiment.

It was found that increase in uncertainty about the self concept in children between the ages of 7 and 12 years was associated with significantly higher neuroticism scores than decrease in or no change in uncertainty scores (the change was assessed over a 10 week period in a normal school term).

Both increase and decrease in uncertainty about the self concept were found to be associated with significantly higher anxiety scores than no change in uncertainty.

It was found that high self acceptance and medium self acceptance were associated with significantly lower anxiety and neuroticism scores than low self acceptance.

However, looking at the separate age levels tested it was found that :-

a) the level of anxiety shown by children with high self acceptance scores rose with age.

b) the numbers of children with very high self acceptance scores ($>21/28$) decreased with age.

It was found that the anxiety scores of children in the classes of the three more introverted teachers were significantly higher than those of the children

in the classes of the more extraverted teachers.

The teachers' attitudes to certain teaching situations, as assessed by a projective technique, showed no association with the level of anxiety in their classes.

The proportion of children in the high self acceptance group who neither increased nor decreased their uncertainty scores (S? group) was significantly greater than in the low self acceptance group. ($p < .025$ App. IVh.).

To conclude in less austere terms, the results of this research reveal some new relationships in children between the self concept and psychological adjustment as indicated by neuroticism and anxiety scores, and confirm and extend some relationships already reported by previous investigations.

In the first part of the experiment was considered Staines' hypothesis that situational anxiety resulted in increased uncertainty as to what the self was really like. Decreased uncertainty about the self was hypothesised, by Staines, to be indicative of 'psychological security'. The results of this experiment were such that it was necessary to completely re-think and restate the relationship between the uncertainty measure of the self concept and psychological adjustment as measured by anxiety and neuroticism scores. It was found that stability (i.e. neither increase nor decrease in uncertainty) in this aspect of the self concept was associated with good adjustment as shown by low anxiety and neuroticism scores. High anxiety scores were associated with a disturbance of this stability, shown either by an increase or a decrease in the uncertainty scores. The direction of the change in uncertainty scores was found to be a function of the neuroticism scores. The children who increased their

uncertainty scores were found to have high neuroticism scores as well as high anxiety scores, whereas the children who decreased their uncertainty scores had high anxiety scores but low neuroticism scores. An obvious avenue for further research would be to see if these two variables of anxiety and neuroticism interact in adults to produce the same pattern of change in the stability of the uncertainty measure of the self concept.

The second part of the experiment was concerned with the relationship between self acceptance as a measure of the self concept and psychological adjustment. It had been concluded in (Parker/2b that the most satisfactory conclusion to draw from the vast body of results, collected by previous experimenters, was that the relationship between self acceptance and adjustment was curvilinear - both very high and very low self acceptance being associated with poor adjustment in adults. One finding which seemed inconsistent with this view was that of Hanlon et al. Using children as subjects they found that high self acceptance was associated with good adjustment. The results of this experiment support Hanlon et al, for medium and high self acceptance were found to be associated with significantly lower anxiety and neuroticism scores than low self acceptance. Certain other aspects of the data

collected in this experiment suggest that these results be considered not so much a contradiction to the proposed relationship, but as a possible indication of the development of the relationship found to exist between self acceptance and adjustment using adult subjects. It was found that the incidence of very high self acceptance decreased with age and that high self acceptance tended to be increasingly associated with high anxiety scores as the age of the children increased. It was therefore concluded that a tenable hypothesis was that normal development resulted in greater opportunities to form a realistic and not rose-tinted picture of the self, and that such a rose-tinted picture would only survive into adult life with the help of suppressive and repressive reactions on the part of the individual to the 'reflected appraisals' from his environment. It must be stated that while the decreasing incidence of high self acceptance with age was established in this research, the increasing association of high self acceptance with high anxiety scores, did not reach statistical significance, owing to the small number of subjects in the groups. The hypothesis can be considered worthy of further experimental investigation however, and an attempt to

trace the pattern of association between high self acceptance from childhood through adolescence to adulthood would seem especially valuable.

The last major conclusion to be drawn from this research was that the children in the classes taught by the three most introverted teachers had significantly higher anxiety scores than those children in the three more extraverted teachers' classes. The importance of this finding appears to be increased when one considers that high anxiety was found to be associated with the disruption of the stability of the uncertainty measure of the self concept, and that in children with high neuroticism scores this resulted in an increase in the total uncertainty about what the self was really like. Statistically significant though this association (between teachers' introversion and childrens' anxiety scores) was, it was not felt that further speculation (eg. whether neurotic children should be spared the influence of introverted teachers) should be entertained. The probability remains that, unless this result is confirmed by large scale research using many more teachers and classes than was possible in this thesis, the relationship between teachers' personalities and the anxiety scores of the children in their classes is unlikely to be adequately described in such simple terms.

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I.a. APPENDIX

CARD SORTING TEST.

The following statements are printed on separate cards to be sorted by the children into three piles;- True, Not True, and I Don't Know. The statements are presented here under appropriate headings, but they are presented to the children in a randomised order.

Self acceptance items are underlined with the 'accepting' answer printed in.

Physical

20	Tall for my age.	Yes.
19	Thin.	
48	Nice looking.	Yes.
21	Neat and clean to look at.	Yes.

Performance.

4	Good at school work.	Yes.
23	Good at some games.	Yes.
22	Good at acting.	Yes.
13	Get on well at parties.	Yes.
12	Good at art or music.	Yes.
11	I speak well.	Yes.

Heirarchy in Performance.

29 Better at sums than any other lesson.
45 Better at English than any other lesson.
38 Better at art, music or acting than etc.
32 Better at schoolwork than anything else.
30 Better at games than at lessons.
27 Better at meeting and talking to new people.

Status-Dominance.

44	Leader in games.	Yes.
49	Near the top of the class.	
37	Try hard to be better than other people.	
10	Get my own way.	
56	As lucky as other people.	Yes.

Ingroup Acceptance By others.

2 Get on well with girls.
24 Get on well with boys.
42 Get on well with my family.

31	Popular.	Yes.
25	Nervous in front of the class.	
26	Get into trouble.	

Ingroup Acceptance Of Others.

7	Friendly.	Yes.
3	Help others when I can.	Yes.
1	Share things with people.	Yes.
33	Jealous.	No.
8	Good-tempered.	Yes.

Values.

36	Try hard to do what I think is right.	Yes.
46	Tell lies.	No.
52	Cheat.	No.
50	Take things that belong to other people.	No.
34	Brave.	Yes.
14	Stick up for my friends.	Yes.

I.a.

Interests and Attitudes.

43 Like school work.
35 Like reading.
15 Like games.
51 Like going to church or Sunday school.
28 Like stopping at home.

Wants and Goals.

40 Want to come top of the class, and beat the others.
47 Want to help people when I grow up.
16 Want to work with nice people when I grow up.
18 Want to think about interesting things when I etc.
39 Want people to like me all the time.
41 Want to be a grown-up as soon as I can.

Overall Selfhood.

17 Big enough to do what I want to do. Yes.
9 Clever enough to do what I want to do. Yes.
55 Willing to have a go at things even if they are hard to do.
53 Willing to take the blame when I should. Yes.
54 Finish whatever I start.
6 Always do what I know I should even when no-one else knows about it. Yes.
5 Make up my own mind about what I want to do. Yes.

The card numbering from 1-56 was taken from the first random order presentation

I.b.

To show average Extraversion scores of the +?, S? and -? groups for all grades.

	Grade II		Grade III		Grade IV	Grade VI
	A	B.	C	D		
+ ? scoring	9	8	7	9	10	9
same ? scoring	9	7	10	8	(only 1 child)	8
- ? scoring	9	9	9	9	10	9

I.c.

Average Anxiety vs. Adjustment Scores.

	Grade II		Grade III		Grade IV	Grade VI
	A	B	C	D		
+? scoring	29	31	37	30	30	34
same ? scoring	27	32	25	24	(only 1 child)	31
-? scoring	30	29	31	30	28	35

I.d.

Average Neuroticism Scores.

	Grade II		Grade III		Grade IV	Grade VI
	A	B	C	D		
+? scoring	-0.285	4.875	10	2	.44	1.4
same ? scoring	-0.55	3.16	.166?	-0.66?	(only 1 child stayed same)	-.33
-? scoring	-2.0	.44	2	.5	.22	-2.92

I.e.

To show the Introversion-Extraversion scores for children in the three groups +?, S? and -?.

	Grade II 7-8 yrs.						Grade III 8-9 yrs.					
	A			B			C			D		
	+?	S?	-?	+?	S?	-?	+?	S?	-?	+?	S?	-?
	8	8	5	9	4	7	6	7	8	11	8	11
	10	10	6	8	8	12	7	10	12	9	8	7
	8	9	9	8	10	9	8	11	10	7	8	8
	10	7	11	7	6	9	7	9	9	8		8
	12	11	11	9	7	8	7	8	9	8		
	9	9	9	8	7	11		12	10	11		
	7	9	12	9		8			10			
		9		7		10			10			
		9				11			8			
									9			
									10			
									7			
									7			
Mean Score	9	9	9	8	7	9	7	10	9	9	8	9

I.e.

	Grade IV 9-10 yrs.			Grade VI 11-12 yrs.		
	+?	S?	-?	+?	S?	-?
	10	7	5	11	7	9
	10		9	8	7	8
	9		12	8	11	12
	13		10	11	10	9
	11		8	9	8	6
	10		8		6	5
	10		12			10
	9		13			11
	9		11			10
						9
						12
						7
						8
						10
Mean Score	10		10	9	8	9

I.f.

To show the Anxiety scores for children who showed increased uncertainity about the self concept, (+?) same amount of uncertainties (S?), decreased uncertainty (-?) over the 10 week period.

	Grade II (age 7-8 yrs)						Grade III (age 8-9 yrs)					
	A			B			C			D		
	+?	S?	-?	+?	S?	-?	+?	S?	-?	+?	S?	-?
	24	31	33	32	26	18	38	19	35	21	25	23
	30	30	38	30	36	31	32	32	27	24	21	39
	40	29	32	25	25	38	40	28	30	39	26	27
	23	31	19	30	37	27	38	28	39	39		31
	24	27	30	42	24	29	35	22	33	28		
	34	25	29	27	43	27		23	22	31		
	28	21	30	29		32			32			
		23		32		30			23			
						29			30			
									32			
									30			
									37			
									32			
Mean Score	29	27	30	31	32	29	37	25	31	30	24	30

I.f.

	Grade IV (age 9-10 yrs)			Grade VI (age 11-12yrs)		
	+?	S?	-?	+?	S?	-?
	25	27	29	29	28	37
	26		29	33	34	44
	35		29	44	25	32
	32		29	34	30	29
	34		41	31	34	38
	30		31		32	42
	31		22			31
	36		22			31
	25		24			33
						35
						25
						41
						37
						34
Mean Score	30		28	34	31	35

I.g.

To show the Neuroticism scores of children in the +? (increased uncertainity) -? (decreased uncertainity) and S? (no change in uncertainity)

	Grade II (7-8 years.)						Grade III (8-9 years.)					
	A			B			C			D		
	+?	S?	-?	+?	S?	-?	+?	S?	-?	+?	S?	-?
	-1	+5	+6	+4	-4	-1	+13	-1	0	-5	+6	-9
	+7	-3	0	+14	+10	-3	+3	+3	-8	+2	-3	+12
	+9	-4	+2	-3	-2	+4	+9	0	+3	+4	-5	0
	-17	-2	-10	+3	+8	-1	+9	+9	+2	+10		-1
	-8	0	-6	+14	+4	+6	+17	-2	+8	+2		
	+8	-6	-3	+6	+3	-4		-8	+1	0		
	0	0	-3	-5		+6			+11			
		+4		+6		-4			-4			
		+1				+1			+1			
									+2			
									-2			
									+8			
									+4			
Mean Score	-0.285	-0.55	-2.0	4.875	3.16	0.44	10	0.166	2	2	-0.66	0.5

I.g.

	Grade IV (9-10 years)			Grade VI (11-12 years.)		
	+?	S?	-?	+?	S?	-?
	-6	+4	0	-5	+4	-4
	+6		+4	+1	0	+6
	+5		-1	+13	-14	0
	-1		+4	+4	-1	0
	+6		+10	-6	+11	+1
	+3		-4		-2	+9
	+2		-8			-16
	-2		-3			-10
	-9		0			-10
						+4
						-19
						+1
						-2
						-1
Mean Score	0.44		0.22	1.4	-.33	-2.92

I.h.

To show Relationships between Personality scores of Teachers and the average level of Anxiety and Neuroticism in their classes.

	Anxiety score of Teacher.	Extraversion score of Teacher.	Average Anxiety score of class.
Grade II A	47	58	28.6
B	42	54*	31.39
Grade III C	53	46*	30.7
D	46	77	28.7
Grade IV	50	69	29.31
Grade VI	40	51*	33.72

* Lowest Extraversion score.

\+ P = Teacher tended to see difficult classroom situations as the fault of others.

A = Tended to see difficulties as due to themselves.

M = Tended to see difficult classroom situations as multicausal.

I.h.

		Average Neuroticism of class.	Teachers score on Sargant Insight +.
Grade II	A	-.913	P
	B	2.695	A
Grade III	C	3.25	P
	D	1	A
Grade IV		.526	M
Grade VI		-1.44	M

I.i.

To show the responses of the six teachers to the 5 armatures in the Sargant Insight

I				II				III				IV				V				Totals				
P	Au	Iq	R	P	A	I	R	P	A	I	R	P	A	I	R	P	A	I	R	P	A	I	R	CLASS
X							X		X				X				X			1	3	1	1	A
X						X		X					X				X			2	2	1		B
		X		X				X				X					X			3	1	1		C
X							X		X				X				X			1	3		1	D
X						X			X				X						X	1	2	1	1	GRADE IV
X				X				X				X					X			4	1			GRADE VI

I,j.

List of Personality Factors scored on Childrens' Personality Questionnaire.

A Reserved - Easygoing

B Less intelligent - More intelligent

C Emotionally unstable - Emotionally mature

D Phlegmatic - Excitable

E Submissive - Dominant

F Serious - Happy-go-lucky

G Super Ego Weakness - Super Ego Strength

H Shy - Venturesome

I Tough minded - Tender minded

J Vigorous - Internally restrained

N Simple - Shrewd

O Secure - Guilt prone

Q_3 Lax - Self controlled

Q_4 Relaxed, low ergic tension - Tense, high ergic tension

i. Factor score combination for estimating the second order anxiety factor. (childrens personality questionare).

D x 2
Q_4 x 2
O x 2
(6-Q_3) x 2
6 - C
6 - H

Total = anxiety score.

ii. Factor score combination for estimating the second order extraversion factor (C.P.Q.)

A
F
H

Total = extraversion score.

iii. Factor score combination for estimating the second order neuroticism factor (C.P.Q.)

I x 2
O x 2
Q_4 x 2
D x I
J x I
C x - 2
E x - 2
F x - 2
H x - 2

Total = neuroticism score.

I,1,

Specimen copy of Sargant Insight test used with teachers .

NAME: AGE RANGE 20 - 30
30 - 40
40 - 50
50 - 60

Instructions

Insight into other people helps us to get along with them. This is a test of your ability to 'see into' others. This requires both imagination and the ability to 'put yourself in someone else's place'.

On these sheets you will find a number of situations described very briefly. After each you will find two questions which you are asked to answer in writing in the blank space provided.

Notice that the persons involved in the situations are not described this allows you to use your imagination as to what sort of people the characters might be.

There are no right or wrong answers , but your explanations should show understanding of the characters as you see them.

1. A teacher has made many new friends since leaving College. One day someone accuses her of being incapable of forming a permanent friendship.
   a) What did she do and why?
   b) How did she feel?
2. Ateacher finds that one of the children in her class has been cheating.
   a) What did she do and why?
   b) How did she feel?

3. A teacher is told one day that she is too methodical and orderly.
   a) What did she and why?
   b) How did she feel?

4. A teacher finds that she spends most of every lesson trying to keep order.
   a) What did she do and why?
   b) How did she feel?

5. A teacher thinks that the children in her class don't really respect her.
   a) What did she do and why?
   b) How did she feel?

I,m.

To Show means of factor B scores for each of the 6 classes tested.

		mean
Grade II	class A	3.6
	class B	4.1
Grade III	class C	3.0
	class D	3.4
Grade IV	class	3.4
Grade V	class	3.4

In i

To show number of times each self-descriptive card was placed in the ? pile on the first & second testing sessions.

Grade II class A

	Physical				Performance						Heirarchy in Performance						Status-Dominance				
	20	19	48	21	4	23	22	13	12	11	29	45	38	32	30	27	44	49	37	10	56
1st S	1	2	7	2	5	0	2	1	1	3	0	0	2	0	1	2	1	1	1	1	2
2nd S	2	2	5	4	2	0	2	0	1	3	0	1	1	0	0	1	0	0	0	0	1

	Acceptance by others						Accpt of others					Values						Interests Attitudes				
	2	24	42	31	25	26	7	3	1	33	8	36	46	52	50	34	14	43	35	15	51	28
1st S	4	0	0	0	0	0	0	1	0	0	0	2	1	1	0	0	0	1	0	0	0	0	1
2nd S	0		0	0	3	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0

	Wants & Goals						Overall Selfhood						
	40	47	16	18	39	41	17	9	55	53	54	6	5
1st S	0	0	1	1	0	0	3	1	1	1	0	1	1
2nd S	0	0	0	0	0	0	0	1	0	0	0	0	1

I,n,ii

Grade II class B

	Physical				Performance						Heirarchy in Performance						Status-Dominance				
	20	19	48	21	4	23	22	13	12	11	29	45	38	32	30	27	44	49	37	10	56
1st S.	2	5	3	3	3	0	2	0	0	1	2	2	0	0	0	1	2	0	0	0	2
2nd S.	1	3	4	4	2	2	1	1	0	3	1	3	1	0	0	2	2	3	1	0	1

	Acceptance by others						Accpt of others					Values						Interests Attitudes				
	2	24	42	31	25	26	7	3	1	33	8	36	46	52	50	34	14	43	35	15	51	28
1st S.	0	1	0	1	0	1	1	3	2	3	2	0	1	1	1	3	2	0	0	0	1	0
2nd S.	0	0	0	4	1	4	1	0	1	2	2	1	2	2	1	3	2	0	0	0	1	2

	Wants & Goals						Overall Selfhood						
	40	47	16	18	39	41	17	9	55	53	54	6	5
1st S.	1	1	2	1	0	0	0	2	0	0	1	3	2
2nd S.	0	0	1	1	1	0	3	2	1	1	0	2	1

I,n,iii

Grade III class C

	Physical				Performance						Heirarchy in Performance						Status-Dominance				
	20	19	48	21	4	23	22	13	12	11	29	45	38	32	30	27	44	49	37	10	56
1st S	2	3	6	4	8	0	2	0	2	3	1	0	0	1	2	1	2	4	1	0	3
2nd S	4	3	9	6	3	0	3	0	2	0	0	0	1	0	0	1	1	1	0	0	0

	Acceptance by others						Accpt of others					Values						Interests Attitudes				
	2	24	42	31	25	26	7	3	1	33	8	36	46	52	50	34	14	43	35	15	51	28
1st S	2	2	1	3	1	3	0	0	0	1	3	0	1	1	0	4	1	0	0	0	0	1
2nd S	0	0	0	4	0	0	1	0	0	1	1	0	1	0	0	2	1	0	0	0	0	0

	Wants & Goals						Overall Selfhood						
	40	47	16	18	39	41	17	9	55	53	54	6	5
1st S	0	0	4	0	0	1	4	4	0	0	1	3	3
2nd S	1	0	2	1	2	3	1	3	0	0	1	1	1

I,n,iv.

Grade III class D

	Physical				Performance						Heirarchy in Performance						Status-Dominance				
	20	19	48	21	4	23	22	13	12	11	29	45	38	32	30	27	44	49	37	10	56
1st S.	1	2	7	2	5	0	2	1	1	3	0	0	3	1	0	1	0	1	0	0	3
2nd S.	2	2	5	4	2	0	2	1	1	3	2	1	2	1	1	1	0	1	0	1	2

	Acceptance by others						Accpt of others					Values						Interests Attitudes				
	2	24	42	31	25	26	7	3	1	33	8	36	46	52	50	34	14	43	35	15	51	28
1stS	0	0	0	1	0	3	1	2	1	1	2	0	4	1	1	2	0	1	1	0	1	2
2nd S.	1	0	0	0	1	2	1	0	0	1	2	0	4	1	0	2	0	0	0	0	1	1

	Wants & Goals						Overall Selfhood						
	40	47	16	18	39	41	17	9	55	53	54	6	5
1st S	0	0	1	0	1	1	0	1	1	1	0	4	0
2nd S.	2	0	0	0	2	0	1	2	0	1	0	1	0

II a. Analysis of Variance on mean neuroticism scores for the three groups +?, S?, and -? overall grades.

+ ? (Raw scores)		S ? (Raw scores)		- ? (Raw scores)	
+ 4	+ 2	- 4	+ 4	+ 1	- 4
+ 14	0	+ 10	+ 4	+ 11	- 8
- 3	- 6	- 2	0	- 4	- 3
+ 3	+ 6	+ 8	- 14	+ 1	0
+ 14	+ 5	+ 4	- 1	+ 2	- 4
+ 6	- 1	+ 3	+ 11	- 2	+ 6
- 5	+ 6	+ 5	- 2	+ 8	0
+ 6	+ 3	- 3		+ 4	0
- 1	+ 2	- 4		- 9	+ 1
+ 7	- 2	- 2		+ 12	+ 9
+ 9	- 9	0		0	- 16
+ 17	- 5	- 6		- 1	- 10
- 8	+ 1	0		0	- 10
+ 8	+ 13	+ 4		+ 4	+ 4
0	+ 4	+ 1		- 9	- 19
+ 13	- 6	- 1		+ 12	+ 1
+ 3		+ 3		0	- 2
+ 9		0		- 1	- 1
+ 9		+ 9		0	
+ 17		- 2		+ 4	
- 5		- 8		- 1	
+ 2		+ 6		+ 4	
+ 4		- 3		- 10	
+ 10		- 5			

	+ ?	S ?	- ?
n =	40	31	56
$\bar{x}$ =	·3122	·3548	- ·375
Σx^2 =	2328	851	2115
T =	129	11	- 21

Results-of preliminary calculations-to be used in an analysis of the variance among the scores on P.130.

Table of Variance

	Sums of Squares	Degrees of freedom	Mean Square
Between groups	316 • 3	• 2	·158 • 15
Within groups	4866 • 197	• 124	39 • 24
Total	5294-111 •503	126	

$$F = \frac{158 \cdot 15}{39 \cdot 24} \qquad \nu_1 = 2 \qquad \nu_2 = 124$$

$$= 4 \cdot 03$$

significant. $p < \cdot 05$

($p = \cdot 05$ if $F = 3 \cdot 0708$)

II b.

i T-test on difference between mean Neuroticism scores of + ? and S ? groups.

$$t = \frac{2.8652}{\sqrt{39.24}\left(\frac{1}{40} + \frac{1}{31}\right)}$$

$$= 1.911 \quad \text{not significant at } p = .05$$

ii T-test on difference between mean Neuroticism scores of + ? and - ? groups.

$$t = \frac{3.595}{\sqrt{39.24}\left(\frac{1}{40} + \frac{1}{56}\right)}$$

$$= 2.77 \quad \text{significant } p < .01$$

($p = .01$ when $t = 2.62$).

IIc. Analysis of Variance between the mean Anxiety scores for the three groups. +?, S? and -? over all grades.

+ ? (Raw score)		S ? (Raw score)		- ? (Raw score)		
32	25	28	36	18	30	
30	26	34	25	31	37	
25	35	25	37	38	32	
30	32	30	24	27	23	
42	34	34	43	29	39	
27	30	32		27	27	
29	31	27		32	31	
32	36	25		30	29	
24	25	21		29	29	
30	29	26		33	29	
40	33	19		38	29	
23	44	32		32	41	
24	34	28		19	31	35
34	31	28		30	22	25
28		22		29	22	41
38		23		30	22	37
32		31		35	24	34
40		30		27	37	
38		29		30	44	
35		31		39	32	
21		27		33	29	
24		25		22	38	
39		21		32	42	
39		23		23	31	
29		27		30	31	
31		26		32	33	

	+ ?	S ?	- ?
n	= 40	31	56
$\bar{x}$	= 31·5	28·03	31·04
Σx^2	= 40940	25189	55805
T	= 1260	869	1739

Results-of preliminary calculations-to be used in an analysis of the variance among the scores on P.134.

Table of Variance

	Sums of Squares	degrees of freedom	Mean Square.
Between groups	245•71	2	122•855
Within groups	3881•79	124	31•304
Total	121934-117806•5	126	

$$F = \frac{122•85}{31•304} \qquad \nu_1 = 2 \qquad \nu_2 = 124$$

$$= 3•9245 \quad \text{significant } p < •05$$

$$(p = •05 \text{ if } F = 3•0708)$$

II d.

i T-test to show difference between the mean Anxiety scores of groups. + ? and S ? over all grades.

$$t = \frac{3 \cdot 47}{\sqrt{31 \cdot 304 \left(\frac{1}{40} + \frac{1}{31}\right)}}$$

$$= 2 \cdot 5914 \quad \text{significant } p < \cdot 02$$

$$(p = \cdot 02 \text{ if } t = 2 \cdot 36)$$

ii T-test to show difference between the mean Anxiety scores of groups. S ? and - ? over all grades.

$$t = \frac{3 \cdot 01}{\sqrt{31 \cdot 304 \left(\frac{1}{31} + \frac{1}{56}\right)}}$$

$$= 2 \cdot 4041 \quad \text{significant } p < \cdot 02$$

$$(p = \cdot 02 \text{ if } t = 2 \cdot 36)$$

II.e.

Differences between the numbers of children in the classes of Introverted and Extraverted teachers with Anxiety scores greater than 30.

	Anxiety scores over 30.	Anxiety scores over 30.	
Introverted teachers' classes	24	41	65
Extraverted teachers' classes	31	19	50
	55	60	115

$$x^2 = \frac{(24 \times 19 - 41 \times 31)^2 \ 115}{55 \times 60 \times 50 \times 65}$$

$$= \frac{(456 - 1271)^2 \ 115}{10725000}$$

$$= \frac{664225 \times 115}{10725000}$$

$x^2 = 7.12$ sig. $p < 0.01$ as $x^2 > 6.63$.

Difference between the numbers of children in the classes of introverted and extroverted teachers with neuroticism scores greater than +1 (the approx. mean).

	Neuroticism scores <1	Neuroticism scores >1	
Introverted teachers classes	32	34	66
Extraverted teachers classes	32	22	54
	64	56	120

$$x^2 = \frac{(32 \times 22 - 34 \times 32)^2 \, 120}{64 \times 56 \times 54 \times 66}$$

$x^2 = 1.3852$ not significant.

II.g.

Comparison of 155 English Student Teachers and 59 American teachers on 16 Personality Factors.
(I.P.A.T. 16 PF Test.)

	English Student Teachers.	American Teachers.	Difference between Groups.	
Factor	Average for Group.	Average for Group.	Averages (d)	d^2
a	6.2	6.1	.1	.01
b	5.8	5.5	.3	.09
c	3.7	5.3	1.6	2.56
e	4.7	4.2	.5	.25
f	5.4	4.0	1.4	1.96
g	5.0	5.8	.8	.64
h	5.0	5.0	.9	.81
i	6.0	6.7	.7	.49
l	6.4	4.9	1.5	2.25
m	6.5	5.0	1.5	2.25
n	6.0	5.5	.5	.25
o	6.4	5.5	.9	.81
q_1	5.3	4.4	.9	.81
q_2	7.1	5.8	1.3	1.69
q_3	5.5	5.6	.1	.01
q_4	6.4	5.5	.9	.81

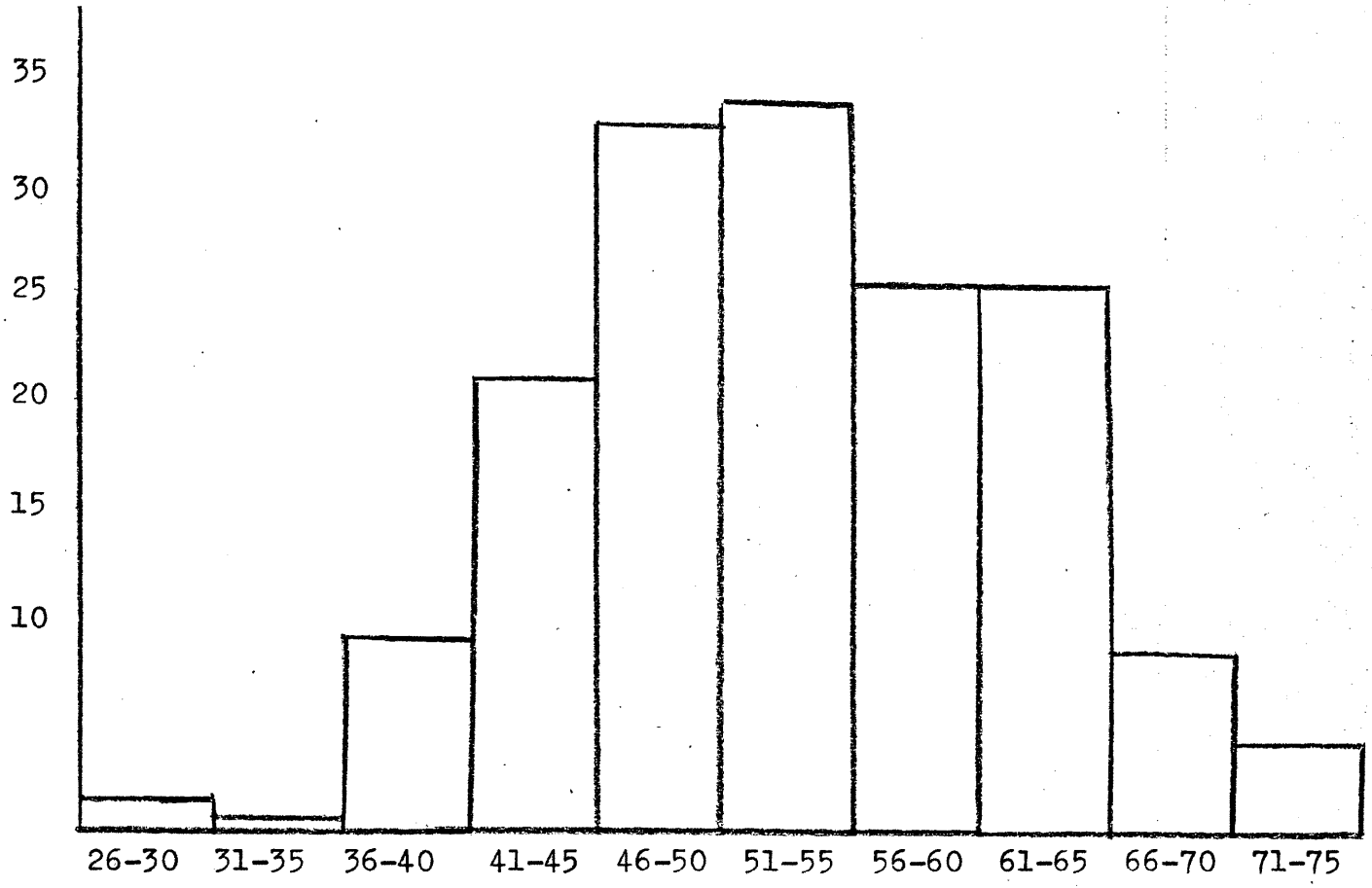
$$\Sigma d^2 = 15.69.$$

∴ Profile similarity coefficient (obtained from table p.53 of 16 PF Handbook.)

$$rp = 0.757$$

11 h

To show Distribution of Extraversion - Introversion scores for 155 Training College Students.



III.a.

To show the Anxiety scores of the H.S.A., M.S.A. and L.S.A. groups over all the Grades tested.

Grade II 7 - 8 yrs.						Grade III 8 - 9 yrs.					
A			B			C			D		
HSA	MSA	LSA	HSA	MSA	LSA	HSA	MSA	LSA	HSA	MSA	LSA
19	31	27	29	36	42	22	23	38	31	21	27
23	30	32	26	30	38	32	28	35	21	26	39
40	23	34	29	32	31	23	40	32	28	25	39
21	31	30	24	25	32	19	30	39	24	31	39
25	30	33	32	37	43	32	38	35		23	
27	24	38	27	27	36	33	28	32			
	29		29	25	18	32	22	27			
	30			30			30				
	24			27			30				
	29						37				
	28										

III.a.

Grade IV 9 - 10 yrs.			Grade VI 11 - 12 yrs.		
HSA	MSA	LSA	HSA	MSA	LSA
30	32	26	25	37	44
27	34	31	33	41	44
41	36	29	33	29	34
25	22	29	34	34	29
29	35	25	28	42	34
31	24		32	38	31
	22		25	31	37
			30	35	
				32	

III.b.

To show the Neuroticism scores of the H.S.A., M.S.A. and L.S.A. groups over all the Grades tested.

Grade II 7 - 8 yrs

A			B		
HSA	MSA	LSA	HSA	MSA	LSA
-10	-2	+1	+1	+3	+14
+4	-6	+2	-4	-4	+4
+9	-17	+8	-5	+4	-3
0	+5	+7	+4	-2	+6
-6	-3	+6	+6	+8	+3
0	-1	0	+6	+6	+10
	-3		-4	-3	-1
	-3			+14	
	-8			-1	
	-4				
	0				

Grade III 8 - 9 yrs.

C			D		
HSA	MSA	LSA	HSA	MSA	LSA
-2	-4	+9	-1	-5	0
+4	0	0	-3	-5	+4
-8	+9	+3	+2	+6	+12
-1	+1	+2	+2	0	+10
+3	+13	+17			
+8	+9	+11			
+2	+1	-8			
	+3				
	-2				
	+8				

III.b.

Grade IV 9 - 10 yrs.			Grade VI 11 - 12 yrs.		
HSA	MSA	LSA	HSA	MSA	LSA
+3	-1	+6	-19	-4	+6
+4	+6	+2	+1	+1	+13
+10	-2	-1	-10	-5	+11
-6	-3	+4	+4	-1	0
+4	+5	0	+4	+9	0
-4	0	-9	0	+1	-10
	-8		-14	-16	-2
			-1	-6	
				+4	
				-2	

III.c.

To show the Extraversion scores of the H.S.A., M.S.A. and L.S.A. groups over all the Grades tested.

Grade II 7-8 yrs.						Grade III 8-9 yrs.					
A			B			C			D		
HSA	MSA	LSA	HSA	MSA	LSA	HSA	MSA	LSA	HSA	MSA	LSA
11	7	9	11	7	9	8	10	7	8	11	8
9	11	9	4	10	9	7	11	8	8	8	7
8	10	9	9	9	12	12	8	7	8	8	7
9	8	10	7	10	7	7	8	9	9	11	8
9	10	5	8	6	7	10	6	7		11	
11	8	6	11	8	8	9	9	10			
	9		8	8	7	9	10	12			
	12			8			10				
	12			9			10				
	9						7				
	7										

III.c.

Grade IV 9-10 yrs.			Grade VI 11-12 yrs.		
HSA	MSA	LSA	HSA	MSA	LSA
10	13	10	12	9	8
7	11	10	8	7	8
8	9	12	10	11	8
10	13	10	11	10	9
9	9	5	7	5	7
8	11	9	12	6	11
	12		11	10	8
			10	9	
				9	
				6	

III.d.

Average Extraversion Scores.

	Grade II		Grade III		Grade IV	Grade VI
	A	B	C	D		
H.S.A.	10	8	9	8	9	10
M.S.A.	9	8	9	10	11	8
L.S.A.	8	8	9	8	9	8

III.e.

Average Anxiety Scores.

	Grade II		Grade III		Grade IV	Grade VI
	A	B	C	D		
H.S.A.	26	28	28	26	31	30
M.S.A.	28	29	31	25	29	35
L.S.A.	32	34	34	36	28	36

III.f.

Average Neuroticism Scores.

	Grade II		Grade III		Grade IV	Grade VI
	A	B	C	D		
H.S.A.	-.5	.571	.857	0	1.83	-4.37
M.S.A.	-4	3	3.8	-2.6	-0.428	-1.9
L.S.A.	4	5	4.857	6.5	.33	2.57

lVa. Analysis of Variance between mean Neuroticism scores for H.S.A., M.S.A. and L.S.A. groups.

H.S.A. (Raw scores)	M.S.A. (Raw scores)	L.S.A. (Raw scores)
+ 1	- 4	+ 14
- 4	+ 1	+ 4
- 5	- 5	- 3
+ 4	- 1	+ 6
+ 6	+ 9	+ 3
- 4	+ 1	+ 10
+ 6	- 16	- 1
- 10	- 6	+ 1
+ 4	+ 4	+ 2
+ 9	- 2	+ 8
0	- 1	+ 7
- 6	+ 6	+ 6
0	- 2	0
- 2	- 1	+ 9
+ 4	+ 6	0
- 8	- 2	+ 3
- 1	- 3	+ 2
+ 3	+ 5	+ 17
+ 8	0	+ 11
+ 2	- 8	- 8
- 1		0

H.S.A.contd.	M.S.A.contd.		L.S.A.contd.
- 3	- 5		+ 4
+ 2	- 5		+ 12
+ 2	+ 6		+ 10
+ 3	0		+ 6
+ 4	- 9		+ 2
+ 10	- 4		- 1
- 6	0		+ 4
+ 4	+ 9		0
- 4	+ 1		- 9
- 19	+ 13		+ 6
+ 1	+ 9		+ 13
- 10	+ 1		+ 11
+ 4	+ 3		0
+ 4	- 2		0
- 0	+ 8		- 10
- 14	- 2		- 2
- 1	- 6		
	- 17		
	+ 3	+ 5	
	- 4	- 3	
	+ 4	- 1	
	- 2	- 3	
	+ 8	- 3	
	+ 6	- 8	
	- 3	- 4	
	+ 14	0	
	- 1		

	H.S.A.	M.S.A.	L.S.A.
N =	38	52	37
$\bar{x}$ =	- .4473	- .2692	3·703
Σx^2 =	1443	1982	1917
T =	- 17	- 14	137
$\frac{T^2}{N}$ =	$\frac{289}{38}$	$\frac{196}{52}$	$\frac{18769}{37}$

Results of preliminary calculations to be used in an analysis of the variance among the scores on P.151 and P.152.

Table of Variance.

	Degrees of freedom	Sum of Squares	Mean Square
Between groups	2	430·18	215·09
Within groups	124	4823·35	38·897
Total	126	5253·53	

$$F = \frac{215 \cdot 09}{38 \cdot 897} \qquad \nu_1 = 2 \qquad \nu_2 = 124$$

$$= 5 \cdot 5307 \quad \text{significant } p < \cdot 01$$

(p is ·01 when F = 4·7816)

1Vb.

i) T-test on difference between means of Neuroticism scores of H.S.A. and L.S.A. groups over all grades.

$$t = \frac{4{\cdot}1503}{\sqrt{38{\cdot}897 \times (\frac{1}{38} + \frac{1}{37})}}$$

$$= 2{\cdot}88 \quad \text{significant} \quad p < {\cdot}01$$

$$(p = {\cdot}01 \text{ when } t = 2{\cdot}62)$$

ii) T-test on difference between means of Neuroticism scores of M.S.A. and L.S.A.

$$t = \frac{3{\cdot}972}{\sqrt{38{\cdot}897 \times (\frac{1}{52} + \frac{1}{37})}}$$

$$= 2{\cdot}961 \quad \text{significant} \quad p < {\cdot}01$$

IVc. Analysis of Variance between mean Anxiety scores of H.S.A., M.S.A. and L.S.A. groups.

H.S.A. (Raw scores)	M.S.A. (Raw scores)	L.S.A. (Raw scores)
25	30	44
33	30	44
33	32	34
34	25	29
28	37	34
32	27	31
25	25	37
30	30	26
30	27	31
27	31	29
41	30	29
25	23	29
29	31	25
31	30	27
31	24	39
21	29	39
28	30	39
24	24	38
22	29	35
32	28	32
23	23	39
19	28	35

H.S.A. (Raw scores)	M.S.A. (Raw scores)	L.S.A. (Raw scores) (contd.)
32	40	32
33	30	27
32	38	27
19	28	32
23	22	34
40	30	30
21	30	33
23	37	38
27	21	42
29	26	38
24	25	31
32	31	32
27	23	43
29	32	36
	34	18
	36	
	22	
	35	
	24	
	22	
	37	
	41	
	29	
	34 31	
	42 35	
	38 32	

	H.S.A.	M.S.A.	L.S.A.
N =	38	52	37
$\bar{x}$ =	28·19	29·97	33·46
Σx^2 =	31139	47968	42627
T =	1071	1559	1238

Results of preliminary calculations to be used in an analysis of the variance among the scores on P.156 and P.157.

Table of Variance

		Sums of Squares	Degrees of freedom	Mean Square
Between groups		541.6	2	270.8
Within groups		3385.9	124	27.3056
Total	121734 -	117806.5	126	

$$F = \frac{270.8}{27.31} \qquad \nu_1 = 2 \qquad \nu_2 = 124$$

= 9.9157 significant p .01

(p = .01 when F = 4.7816)

lVd. i T-test on the difference between mean Anxiety scores of H.S.A. and L.S.A. groups.

$$t = \frac{5 \cdot 27}{\sqrt{27 \cdot 3056 \left(\frac{1}{38} + \frac{1}{37} \right)}}$$

$t = 3 \cdot 69$ significant at $p < \cdot 01$

($p = \cdot 01$ when $t = 2 \cdot 62$

ii T-test on the difference between mean Anxiety scores of M.S.A. and L.S.A. groups.

$$t = \frac{3 \cdot 49}{\sqrt{27 \cdot 3056 \left(\frac{1}{52} + \frac{1}{37} \right)}}$$

$= 3 \cdot 104$ significant at $p < \cdot 01$

($p = \cdot 01$ when $t = 2 \cdot 62$)

IV e

Analysis of Variance on the mean Total Change Scores for H.S.A., M.S.A. and L.S.A. groups.

H.S.A.	H^2	M.S.A.	M^2	L.S.A.	L^2
4	16	9	81	21	441
7	49	8	64	15	225
10	100	18	324	19	361
6	36	9	81	14	196
12	144	11	121	20	400
6	36	15	225	14	196
6	36	15	225	13	169
10	100	15	225	11	121
9	81	13	169	11	121
15	225	9	81	15	225
8	64	7	49	8	64
4	16	17	289	17	289
6	36	5	25	13	169
5	25	11	121	19	361
5	25	12	144	18	324
12	144	10	100	11	121
5	25	10	100	15	225
6	36	7	49	12	144
7	49	13	169	21	441
6	36	8	64	16	256
8	64	10	100	19	361
9	81	14	196	22	484
17	289	16	256	18	324
11	121	14	196	15	225
13	169	14	196	16	256
17	289	11	121	15	225
14	196	12	144	17	289
13	169	16	256	16	256
15	225	8	64	11	121
12	144	8	64	17	289
9	81	13	169	13	169

IV e cont.

H.S.A.	H^2	M.S.A.	M^2	L.S.A.	L^2
9	81	10	100	12	144
11	121	8	64	12	144
13	169	9	81	14	196
6	36	16	256	15	225
12	144	15	225	14	196
9	81	10	100	13	169
10	100	15	225		
		6	36		
		20	400		
		14	196		
		12	144		
		26	676		
		13	169		
		16	256		
		10	100		
		11	121		
		10	100		
		14	196		
		25	625		
		10	100		
		14	196		

	H.S.A.	M.S.A.	L.S.A.
n =	38	52	37
$\bar{x}$ =	9·39	12·35	15·19
Σx^2 =	3839	8834	8932
T =	357	642	562

Table of Variance.

	Sums of Squares	Degrees of freedom	Mean Squares
Between groups	629·7	2	314·85
Within groups	1788·53	124	14·4236
Total	2418·23	126	

$$F = \frac{314 \cdot 85}{14 \cdot 4236} \qquad \nu_1 = 2 \qquad \nu_2 = 124$$

$$= 21 \cdot 829 \quad \text{significant} \quad p < \cdot 01$$

$$(p = \cdot 01 \quad \text{if} \quad F = 4 \cdot 7816)$$

lVf. i T-test on the difference between mean Total change scores of H.S.A. and M.S.A. groups. over all grades.

$$t = \frac{2 \cdot 96}{\sqrt{14 \cdot 4236 \left(\frac{1}{38} + \frac{1}{52} \right)}}$$

$$= 3 \cdot 654 \quad \text{significant at } p < \cdot 01$$

$$(p =< \cdot 01 \text{ if } t = 2 \cdot 62)$$

ii T-test on the difference between mean Total change scores of M.S.A. and L.S.A. groups. over all grades.

$$t = \frac{2 \cdot 84}{\sqrt{14 \cdot 4236 \left(\frac{1}{52} + \frac{1}{37} \right)}}$$

$$= 3 \cdot 4761 \quad \text{significant at } p < \cdot 01$$

$$(p = \cdot 01 \text{ if } t = 2 \cdot 62)$$

IV g.

i. To test the significance of the differences between the proportions of children scoring in the top quartile of self acceptance scores in Grade II Grade III.

	Grade II	Grade III	
number scoring > 21	32	17	49
" " < 22	14	20	34
	46	37	83

$$x^2 = \frac{(32 \times 20 - 17 \times 14)^2 \, 83}{49 \times 34 \times 46 \times 37}$$

$= 4.7303$ sig. $p < .05$

Using Yate's correction, $x^2 = 3.8041$ escaping significance at $p < .05$ as x^2 does not exceed 3.84.

ii. To test the significance of the difference between the proportions of children scoring in the top quartile of self acceptance scores in Grade IV and Grade VI.

	Grade IV	Grade VI	
number scoring > 21	9	4	13
" " < 22	10	21	31
	19	25	44

Using Yates correction for small numbers,

$$x^2 = \frac{\left([9 \times 21 - 4 \times 10] - \frac{44}{2}\right)^2 44}{13 \times 31 \times 19 \times 25}$$

$x^2 = 3.7073$ Not sig. at $p < .05$ as x^2 does not exceed 3.84

iii. To test the significance of the difference between the proportions of children scoring in the top quartile of self acceptance scores in Grade II and Grade VI.

	Grade II	Grade VI	
No scoring $\frac{21}{28}$	32	4	36
	14	21	35
	46	25	71

Using Yates correction for small numbers.

$$\chi^2 = \frac{\left([32 \times 21 - 4 \times 14] - \frac{71}{2}\right)^2 71}{46 \times 25 \times 35 \times 36}$$

$$= \frac{23925597.75}{1449000}$$

$$= 16.5 \quad \text{sig. } p < .001$$

App. IV h.

To test the significance of the difference between the proportions of children with high self acceptance who showed no change in uncertainty scores, and the proportion of children with low self acceptance who showed no change.

	H.S.A.	L.S.A.	
No. of children in S? group	15	5	20
	23	32	55
	38	37	75

Using Yates correction for small numbers

$$x^2 = \frac{\left([15 \times 32 - 5 \times 23] - \frac{75}{2}\right)^2 75}{38 \times 37 \times 55 \times 20}$$

$$x^2 = \frac{8044218.75}{1546600}$$

$$= 5.201 \text{ significant } p < .025$$