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LATE DEVELOPMENT BETWEEN THE AGES OF 11 AND 14.

An Enquiry into its Causes and  
Incidence, and its Implications for Selection  
for Secondary Education.

E.A. Hewitt, B.A.

A Thesis submitted for the  
Degree of Master of Education  
in the University of Durham

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The investigation could not have been carried out without the co-operation of the L.E.A. concerned, or without the assistance of one grammar school headmaster who generously made both his records and his time available whenever call was made upon them.

## Abstract.

The thesis is concerned with pupils who on the evidence available at 11+ are rightly refused entry to a grammar school, but subsequently prove capable of profiting academically from education in such a school.

Some recent researches are examined, and it is concluded that claims for highly successful prognosis at 11+ are not fully borne out by the evidence presented.

An investigation in a boys' grammar school is reported. Over three years, this school admitted 10% of the age group at 11+, and a further 4% from the 12+ - 14+ age groups. Selection at 11+ was made on the basis of three equally weighted Moray House tests, but were not used for final selection.

The failure rate for 11+ entrants, judged by third form results, is 25%, the same as for the late entrants. Among the latter were 32 who fell below the lower limit of a borderzone designed to include 95% of those whose true totals in the selection examination might have been equal to the pass mark. The failure rate for these sub-borderzone late entrants is also 25%, and some are judged to be potential university entrants. The successful sub-borderzone late entrants are numerically equal to 12% of the 11+ intake. Some of the most successful would still not have been admitted at 11+ even if the primary school assessments had been used in the selection procedure. This, with the average (uncorrected) 11+ - 14+ correlation for normal entrants of 0.355, emphasises the need for transfer facilities from secondary modern schools in the area.

It is suggested that in the area concerned a verbal weakness, later remedied, is a common cause of the failure at 11+ of pupils who subsequently succeed in the grammar school.

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## CHAPTER 1.

### A Definition of the term "Late Developer".

The term "late developer", as commonly used, has a number of different meanings. The headmaster of one grammar school <sup>(67)</sup> analyses the performances of 41 boys who were awarded special places after failing in the entrance examination, and concludes that "the fact that two of the most successful belonged to forms whose average age was nearly a year less than their own strengthens the belief that late development is a common cause of the discrepancies" (between selection examination results and later criteria of success). Here the term may imply steady development after a period of arrested or slow development, so that the "late developer" proceeds at the same average pace as his fellows, but a step or more behind. In two researches referred to in detail later, similar views may have been held by the authorities concerned, for in each case "over age" candidates were admitted to grammar schools in the same forms as normal entrants who were up to a year younger.

Burt,<sup>(5)</sup> writing in 1920, examined changes in the I.Qs of mental defectives, and referred to the effect

on the I.Q of a "happy change in home conditions", of "zeal, industry, goodwill, emotional stability, scholastic information, accident of social class or sex". He found five cases, however, where the change "must be connected to some deeper cause than mere accident or freak of nature. That appears to be an intrinsic irregularity of mental growth". In this connection, he referred to "late maturers", pupils who had not been selected for the L.C.C. secondary schools on the results of a first examination, but who entered the schools after a second, "instituted specifically for those who, in the current phrase, 'bloom late', and whose anticipated powers, therefore, do not ripen by the age of 10".

This is the line of thought which McClelland (36) appeared to follow when remarking upon the improvement in academic standing observed in one pupil. "At first we suspected that the remarkable improvement at the end of the first year might be due to late development, but the head teacher was of opinion that the change was on the side of personality rather than intellect - the boy seemed suddenly to acquire a sense of responsibility and then began to apply himself to his studies as he had never done before".



McMahon, in a paper read to the British Association in 1951, practically identified "late developers" with "selection mistakes",  
(61)  
whereas Watts looks on the "late developer" not as one whose abilities have been wrongly assessed, but as one whose abilities at the age of 11 can be fairly accurately measured, without however affording accurate prognosis of later success.

In this enquiry, the term "late developer" will be used to refer to those who at the end of their primary school career show little or no promise of success in a grammar school, but who in fact achieve it, or who - as far as can be judged - might well have done so had they been admitted to a grammar school. This definition is far from being a precise one, for whether or not a pupil is classed as a "late developer" in this sense will depend on the selection procedure at 11 plus, the grammar school to which he goes, or to which he might have gone, and the way in which success in that school is assessed. Some further limitation of the term will become apparent later - "late developer" will not be used in the same sense as "reject-success", for instance - but the

main purpose of this enquiry is not to formulate rules about the use of language, but to attempt to provide provisional answers to such questions as the following:-

To what extent can predictions of academic achievement be successfully made at the age of eleven: do some children develop academically, after that age, at a rate which has not been and cannot be anticipated; and if they do, what is the extent of the extra provision that must be made for them, in grammar schools or elsewhere, at the age of 12, 13, or even later? Today, universities in England are admitting students who left elementary schools at the age of 14, or who were transferred to grammar schools after the age of 11. In recent years one student, who was awarded a first class honours degree of the University of Durham, attended a grammar school for the first time when he entered the sixth form, having taken his School Certificate examination in a secondary modern school. To what extent are pupils of similar potentiality being excluded from our grammar schools, and from the universities, by current selection procedures at 11 plus?

Numerous isolated examples of children who have been inconspicuous at 11 plus, but who have

been academically successful some years later, have been reported during the last few years; some of them will be referred to later. One of the most recent occurs in a review by Pedley<sup>(41)</sup> of the fourteen comprehensive schools at present established in England. The first case is a girl with an IQ of 96 at eleven, who subsequently passed in six G.C.E. subjects at 'O' level, - after how long is not clear - added Latin after a further year's study, and eventually, having secured a pass at 'A' level in Botany, entered a training college. Superficially, the most striking case is that of a boy who came to a London comprehensive school during his fourth year in a secondary modern school. "His IQ was 80" - measured, as a note adds, by "an N.I.I.P. test at the beginning of the fifth year". At the end of that year he passed in five subjects at 'O' level, studied four subjects in the Vith form, and "is going to a training college". The head boy of the same comprehensive school "entered with the 'modern' label and an IQ of 92". Another head boy, who failed to obtain admission to a grammar school, eventually passed in eight G.C.E. subjects. Pedley concludes from these four cases and others "less striking" but uncited,

"that 10 plus is too early an age to decide that a child's subsequent education should have a bias - and that is what we do when we select children of that age for different types of school".

This is clearly an inadmissible conclusion from the evidence he presents, though none of the four eminent educationists who contribute critical essays on the review protests against it. Before we can accept Dr. Pedley's claim, we must be sure that the selection procedure in any given case is as efficient as it can be. The citing of IQs, derived from unspecified tests administered by unknown persons under conditions which are not described does not provide evidence of the shortcomings of well-designed intelligence tests, of complicated selection procedures, or of the success of the comprehensive schools in turning dullards into scholars.

The Ministry report on Early Leaving<sup>(71)</sup> gives more convincing figures: of a total sample of 219 who entered secondary modern schools in 1946 and were later transferred to maintained grammar schools, 47% either passed the School Certificate examination, or obtained five or more G.C.E. passes at 'O' level. The fact that the sample was a representative one, however, precludes

the possibility of any answer to the questions:-  
Are these mistakes due to poor methods of selection which can be improved, or are they inevitable with any selection system with any group of pupils? What proportion of the age group is admitted to a grammar school? Are the best available methods still inadequate because of the unpredictable nature of the child's scholastic progress? Can a practical distinction be made between an error in selection due to the methods used, and a mistake in prognosis resulting from unpredictable development?

CHAPTER 2.

Late Development or Faulty Selection?

Educationists have insisted for many years on the necessity for making provision for late development and selection mistakes, and have assumed that there is a clear distinction between the two. There has long been open admission of the difficulties of selecting pupils for what has become generally known since 1944 as a grammar school education. In the Report of the Board of Education for 1911-12, the view is expressed that no examination, written or oral, "can hope to be in itself a satisfactory test of ability. Its results need to be reviewed in the light of a long acquaintance with the individual candidates". The Departmental Committee on Scholarships and Free Places urged in 1920 that, although children should generally be transferred from elementary schools to secondary schools between the ages of 11 and 12, some provision should be made for the transfer of older pupils. The Consultative Committee, reporting in 1924 on "Psychological Tests of Educable Capacity", felt that any system of selection at 11 must be unreliable, though improvement might be secured through the use of interviews and intelligence tests.

So far the main emphasis appears to have been

on the inadequacy of tests and examinations. But the Consultative Committee, in the Hadow Report<sup>(68)</sup> of 1926, emphasised the need to ensure facility of transfer from both elementary and central schools after the age of 11 because "there is ample evidence to show that some boys and girls develop late, and may at the age of 12 or 13 display distinct aptitude for the type of education given in existing secondary schools", and "some children placed low in the examination rose rapidly after spending a few months in the Central School".

This emphasis on the speed with which the alleged development takes place cannot be regarded as accidental, for it is referred to again. Thus, "some pupils in central schools, on attaining the age of 12 plus or 13 plus, show a real capacity for studies leading up to the First School Examination". These misfits occur "even in those areas where the Free Place Examination is conducted with the greatest care", because "it is difficult to forecast how a child at the age of 11 will develop".

Twelve years later, in the Spens Report,<sup>(69)</sup> the Committee expressed the view that an examination at the age of 11 is "capable of selecting in a high proportion of cases those pupils who quite certainly have so much intelligence, and intelligence of such

a character, that they ought - - - to receive a secondary education of the grammar school type", and that these pupils should be allocated at once to grammar schools. The examination would also mark off a further group of candidates who could not benefit from a grammar school education, and a choice should be made from the intermediate group, not merely on the basis of the candidates' positions in the order-of-merit list, but according to the extent to which they possess certain "qualities which no written examination can test". Subsequently, there must be provision to correct "initial errors", and to transfer to grammar schools "pupils of later development". The latter are "the children who 'come on', and who have to be watched for the late appearance of general ability, or for the development of particular aptitudes". It was pointed out that "on the wider curriculum and in new surroundings, new strengths or unexpected weaknesses may appear in individual pupils, fresh aptitudes and tastes may become more clearly indicated."

Neither here nor in other reports of the Consultative Committee is any attempt made to define or illustrate "aptitudes" - though the Hadow Report refers to "an aptitude for the type of education



given in existing secondary schools" (see p. 9 above). We are left to speculate on whether the term is anything more than a hypostatisation; whether it is a short-hand equivalent for "doing well in particular subjects or groups of subjects", or for "doing well in subjects taught in a particular way", or for "the possibility (which may not be realised in certain circumstances) of doing well in particular fields".

The Secondary Schools Examination Council, in the Norwood Report<sup>(70)</sup> of 1943, made further suggestions for improving the selection procedure at 11 plus. It thought that a record, compiled by the primary school teachers, was "the best method at present available of discovering special aptitudes and interests, and general level of intelligence", and that the judgment of these teachers, "based upon observation of the classroom work, the general interest, and certain qualities, as, for example, power of sustained effort shown by the pupil," was the most important factor to be taken into consideration in allocating children to secondary schools.

The committee distinguishes "three rough groupings" of pupils, according to their "cast of mind", which depends on whether or not they possess

"special interests or skills". Within the three corresponding types of school, courses should be available according to a pupil's "abilities". In many instances, however, "special interests and abilities" would not be clearly revealed before the age of 13, and therefore there should be a lower school in which similar courses would be pursued in all types of secondary school, so as to facilitate transfer of pupils from one type of school to another as necessary. "Differentiation at 10 plus or 11 plus cannot be regarded as final", and "opportunity must be given for the rectifying of mistakes, and for dealing with cases of late development." This late development, however, appears not to depend purely on the late emergence of "special interests and abilities"; a high standard of scholarship in the grammar schools cannot be reached without "good native ability in pupils", and though the ability is said to be native, it cannot be assumed that it will not develop unexpectedly. This ability is presumably identical with "intelligence" which the primary school teachers are to assess. If this is the case, the members of the Spens and Norwood committees do not differ in their views about the nature of late development, though we are left with little

more than the assertion that a distinction can be drawn between selection mistakes and late developers.

The differences between the conceptions expressed by the two committees of the functions of the grammar school are well known and do not require elaboration here, though it may be remarked that where the functions are dissimilar, the "abilities" and "interests" demanded of prospective pupils are also likely to be different, and it may well be that the incidence of late development will vary in areas where the grammar schools make different demands upon their pupils. In an area served by a grammar school which imparts "systematic knowledge which is valued first for its own sake and later invoked to meet the needs of life"<sup>ø</sup> the conditions giving rise to late development may be quite different from those in an area whose grammar school thinks of its curriculum "in terms of activity and experience, rather than of knowledge to be acquired and facts to be stored"<sup>⌘</sup>.

It is clear that if the incidence of late development is high, and the inaccuracy of selection at 11 is necessarily as great as these reports suggest,

ø Norwood Report  
⌘ Spens Report

the whole conception of secondary education in this country rests on an unstable basis, for whereas it is commonly accepted that differences between children of 11 are marked enough to necessitate provision of different types of secondary education from that age onwards, the Consultative Committee, the Secondary Schools Examination Council, and the Ministry itself - in Pamphlet No. 2, "The New Secondary Education", - all insist that whatever the type of secondary school, a common course should be followed during the first two years "if only to facilitate the transfer to and from the schools of pupils who turn out to have been wrongly allocated at 11".<sup>†</sup> Though it appears that the main concessions to the demand for flexibility are the teaching of a foreign language to some secondary modern and technical school children<sup>ø</sup> (but to which of them?), and of "suitable parts of mensuration, algebra, geometry and trigonometry" to "all normal children",<sup>\*</sup> it can surely be urged that if selection at 11 is attended with such ill success, consideration should be given to the possibility of postponing it until

ø Spens Report

\* Hadow Report

† Pamphlet No. 2

the end of the 'lower school' course at 13. Some thought might be given to the possibility of retaining children for at least a further year in the primary school before the full effects of the 'bulge', due to the high birthrate in the immediate post-war years, are felt in the secondary schools. But it is far from certain that selection will be more successful at 12 or 13 than it is at 11. There are strong suggestions in the reports quoted above that late development occurs particularly after a change of school, and the work of Valentine<sup>(56)</sup> suggests that the greatest fall in correlation between examination results at 11 and success in the grammar school occurs during the first year - i.e. immediately after the change of school. McClelland<sup>(36)</sup> too shows how prediction of eventual success improves if it is made at the end of the first year in the senior secondary school (and incidentally at 13+) instead of at the qualifying stage. In both cases, however, it may be that change of course is more important than change of school. At present we have far too little knowledge of the sheer facts of late development and its opposite to be able to theorise purposefully, or even to be certain that the eventual success of individual late developers cannot be either predicted

or even viewed as a strong possibility by the time they have reached the age of 11.

### CHAPTER 3.

#### The Difficulties of Selection.

In recent years much criticism has been directed against the intelligence test as an instrument for selection. Experiments during the fourth decade of the century emphasised the variability of the IQ. Terman (52), speaking of results obtained with the Stanford revision of the Binet tests, had only claimed that 50% of children re-tested after from two to five years obtained scores within a range of + 6 or - 4 from their first scores. Other psychologists were not always as careful; as late as 1935 Hamley (27) wrote "Early in the testing movement it was shown that the intelligence quotient of an individual remains approximately constant during growth", and Thouless (55) urged that "the ratio of (a child's) mental age to his chronological age remains approximately constant", and "it is this fact of the constancy of the IQ that gives the intelligence test its predictive value". Within ten years, however, the vagaries of IQs of defectives, of infants, and of children over the whole school-age range had been emphasised, as had claims for the influence of the environment as against that of heredity. Phillips (43) in 1940 confirmed the earlier findings of Parker (40), which revealed

marked changes in IQ among subnormal children after the lapse of four years. Phillips concluded that the rate of decline is related to emotional instability, and though he did not appear to realise that the scholastic content of the intermediate and upper ranges of the Terman revision of the Binet tests might well result in lower IQs - Burt<sup>(7)</sup> and Stott<sup>(50)</sup> among others have shown that unstable children tend to be poor at arithmetic - the fact remained that levels of intelligence as commonly measured were subject to considerable variation from year to year. Many investigations during the '30s claiming to prove the dependence of infants' IQs on environmental changes were inadequate, as Goodenough<sup>(24)</sup> pointed out, because of the limitations of infant and pre-school tests, but Bayley<sup>(2)</sup> showed that when the same children were re-tested regularly for nine years, they revealed fairly consistent differences of pattern of mental growth. 8 of a total of 48 remained near the group mean, 8 showed a steadily developing tendency to fall below the rest of the group, and 8 more to rise above it. 16 revealed a relatively sudden change of rate of growth, while the remaining 8 showed no consistent pattern. While doubts about test validity, regression effects and selective placement in foster homes and



institutions led Goodenough<sup>(25)</sup> and others to question most of the findings on IQ variability in young children reported in the 39th Yearbook of the National Society for the Study of Education, later investigations by Goldfarb, reported by Bowlby,<sup>(4)</sup> appear to avoid these sources of error and establish the effect of early environmental influences on the IQ, measured at a later date. At 3 years of age, two groups of 15 children each, selected because they came from similar stock and social classes, showed an average difference of 28 points of IQ on a Stanford Binet test. The difference could be attributed to the fact that the children of one group had lived from the age of 3 months in an institution, the others in foster homes. Two groups of children, similarly selected, but varying in age from 10 to 14, showed an average difference on the Wechsler scale of 23 points, the difference being significant at the 1% level. At the same time, however, the small number of cases gives little opportunity for any errors in the assessment of stock and social class to cancel each other out, and Jones's plea<sup>(33)</sup> for "the placement of foster children on the basis of a planned experimental design rather than the study of children whose allocation has been determined by

uncontrolled and incompletely known factors" has not been met.

In any case, the environmental changes which have been investigated in researches of this type appear to be more profound than those which are likely to occur to the great majority of children who have been allocated to secondary schools, and to have taken place at a much more impressionable age. The Third Harvard Growth Study, as reported by Dearborn and Rothney,<sup>(12)</sup> is more relevant to the problem of selection for secondary education. It involved the regular testing of more than 3,000 children between the ages of 8 and 16. Superficially, the results seem to support Fleming's conclusions<sup>(23)</sup> based upon them, that "there is considerable variability" (in rate of mental growth) "in the life history of any one individual." It should be pointed out, however, that while the test results were given in standard scores, in order to remove the effects of different standard deviations for different tests, there is no reason to suppose that the factorial contents of the tests used in different years were identical, or that the same abilities were involved in the composition of children's test scores at different ages. As Anderson<sup>(1)</sup> had previously maintained, "when it is

assumed that tests measure the same function throughout a series of longitudinal observations, it is clear that the adequacy with which a particular test measures what it purports to measure has to be determined in terms of its correlation with tests at later ages before it can be used as an origin," and the same applies, not only to a single test covering a wide age range, but to group tests each covering a limited age range, of the type used in this investigation.

Dearborn and Rothney show the wildly erratic curves of development of five girls who reached a level of .5 sigma above the mean of 256 girls at age 16. At age 8, their scores had ranged from -1 to +2 sigma: at age 11, from - .5 to + 1.5 sigma: one girl showed a decline from +1.75 to +.5 sigma in the two years between 14 and 16. But if these latter two scores are taken to be exact indices of mental growth, then had she been tested at 14 and 16 by the 1937 revision of the Binet tests, at 14 years she would have had a mental age of 18 years and 7 months, as compared with one of only 16 years and two months at 16; at 16 she would have failed on 6 or 7 tests in the Superior Adult ranges that she had correctly answered at 14, and this would imply mental deterioration/ of a

of a severity which could hardly have passed unnoticed in the school.

Lack of information about the intercorrelations and reliabilities of the tests used renders this investigation of less value than has sometimes been supposed. If two verbal tests intercorrelate only to the extent of .8, say, and their standard deviations are corrected so that they are the same - say 15 points - then if the two tests are given to the same candidates with a year's interval between, in few cases will it be possible to assert with confidence that a change in rate of development has occurred. For the standard error of the score on the second test will be  $\sigma\sqrt{1-r}$  (21) or  $15\sqrt{.2}$ , which is 6.7, and before an apparent gain in IQ could be significant at the 5% level, the difference between an individual's scores would have to be  $6.7 \times 1.96$ , or just over 13 points, which is nearly .9 of a standard score. For a 1% level of significance, a difference of 17.3 points, equivalent to nearly 1.2 standard scores would be required. Not all the tests used were verbal tests, so that some of the test intercorrelations would be lower than .8.

While this illustrates the difficulty of demonstrating a change in the rate of development in individual cases, it does not invalidate the

conclusion that some individuals, and perhaps many, change their true standing in a group from year to year. That such changes do occur is suggested by the finding that correlations between initial test score and later score progressively decline with time. Thus, Dearborn and Rothney report that for a group of 135 boys tested over an eight year period, there is a steady decrease in correlations with initial status from .735 to .582; at age 10.4 their results give a correlation with terminal status at 16 of .744,<sup>ø</sup> rising to .79 at age 12.4. In the absence of any long-term fluctuations, we should expect succeeding correlations with initial status to vary in random fashion according to the tests used, unless we had been fortunate enough to administer the tests in an order corresponding to the relative sizes of their intercorrelations with the first test.

However, while we may not be in a position to

<sup>ø</sup> Considerably higher correlations than this have been reported by other investigators. Burt,<sup>(6)</sup> taking care to ensure a high degree of accuracy in the first testing of 800 children between the ages of 10 and 12 by using an individual test in all cases where group test results conflicted with teachers' assessments, found a correlation of .84 between first and second testings, with an interval of between 10 and 13 years. Jones<sup>(35)</sup> reports investigations by R.L. Thorndike and by Byrns and Henmon giving comparable correlations with intervals of between 2½ and 10 years.

determine to what extent the pattern of 'true' growth of most individuals varies, the fact that large variations occur in measured score is inescapable. Sandiford<sup>(48)</sup> claimed that short-term fluctuations were as large as long-term ones, and Watts<sup>(60)</sup> and Hammond<sup>(28)</sup> have shown recently the difficulty of obtaining a convincing test score for some pupils. Hammond, for instance, gives the successive scores of four girls on four Moray House intelligence tests over a period of six months. One girl obtained the same score on all four tests, another varied between 111 and 131; one appeared to gain 20 points in the course of 3 months, while another lost 7 points. Dempster<sup>(14)</sup> has reported cases of marked variation over the short term, and observes that in fact many of these children were in attendance at psychological clinics for other reasons.

Watts,<sup>(60)</sup> Peel,<sup>(42)</sup> Vernon, Wiseman and Dempster<sup>(59)</sup> have all recently investigated test gains as the result of coaching and practice first reported before the second World War, further exposing the limitations of the tests, though Emmett<sup>(18)</sup> has shown that "under the worst possible circumstances, where 50% are coached and the net coaching effect is 10 points of IQ, for a grammar school intake of 15% only 13.5 children out of 1,000 are favoured."

This is poor consolation for those who hope to secure justice for each individual however, and the findings of the research officers of The National Foundation for Educational Research<sup>(60)</sup> that teaching and the school curriculum both influence the scores in a Moray House test of intelligence has weakened the early claim that the inclusion of such a test in the selection examination would reduce the differential effect on the examination results of the differences in teaching between schools. Bosomworth,<sup>(3)</sup> however, has reported that in the 1950 examination in Northumberland, the relative weightings to give maximum prediction of success two years later were:-

Mental ability (verbal + non verbal)	.33
English ability	.34
Teachers' estimates (scaled)	.28
Arithmetic ability	.06

McMahon,<sup>(37)</sup> after listing a number of follow up investigations, concludes that verbal intelligence tests alone can predict to at least the extent of a correlation of .7 as far as School Certificate. At worst, it appears that even the single intelligence test gives valuable indications, though the intelligence test is not of course the sole index of mental ability. Tests of English and Arithmetic

yield relatively high correlations with intelligence tests, since they measure in part the same ability, and the fact that both McClelland and Watts found that intelligence test results added little to the validity of the predictions afforded by other measures is not a condemnation of the test, but is to be explained on the grounds that intelligence had been already adequately assessed by the other measures. As Emmett<sup>(17)</sup> has pointed out, the intelligence test used by McClelland<sup>(36)</sup> gave the highest single prediction of all the measures used. Similarly Watts<sup>(62)</sup> found that though the Moray House Intelligence test gave the best single prediction - among the 8 tests employed - of a complex criterion, the best combination of three tests, accounting for .39 of the variance, was not significantly improved by taking into consideration the intelligence test result.

One must conclude, therefore, that the recent decisions by two Local Education Authorities to abandon the intelligence test as an item in their selection procedure were not necessarily well

founded, nor has the distrust with which such tests have been viewed by the Consultative Committee and the Secondary Schools Examination Council been completely justified.



Standardised tests in use today for the most part give high test-retest correlations over the short-term period (Pilliner<sup>(44)</sup> gives figures of .940 for Moray House Intelligence Tests, and .961 for English and Arithmetic with intervals of over 40 days). Their long term reliability will certainly be lower, but changes in the relative standing of individuals may not be unrelated to changes which could in part, at least, be foreseen. Accordingly, in the Symposium on selection for secondary schools in the British Journal of Educational Psychology, Burt<sup>(8)</sup> asks for other information than that available from tests and assessments for general ability, aptitudes and attainments to be made available in considering the borderline cases - evidence of physical health, persistence and emotional stability, the cultural outlook of the parents, and the most likely choice of vocation. He finds the commonest cause of discrepancy between test results and teachers' estimates to be "temporary ill-health or nervousness," which is occasioned by the one-day examination which produces anxiety and strain in parents, teachers and children.

Burt, however, is the only one of the contributors to the Symposium to make specific reference to the

possibility of late development in the sense in which it is used at the end of Chapter 1 of this thesis, though Rodgers<sup>(46)</sup> makes a plea for "planned procrastination" in allocation, not necessarily because of the danger of making mistakes, but because, even at 15, it is difficult to detect special bents. The Symposium was largely concerned with selection at 11 for one of three types of schools, and the most pressing problem then seemed to be selection for the secondary technical school. But since in 1952<sup>(72)</sup> only 1.3% of the 12+ age group was in technical schools or technical streams, this special difficulty will be disregarded in this thesis.

McClelland found difficulty in using estimates of health, persistence and home background - corresponding to three of Burt's<sup>(8)</sup> four additional criteria for selection among the borderline cases - but he attempted to apply the extra information with all candidates; he might have been more successful if he had considered only those children who fell within a statistically determined borderzone.

Ormiston,<sup>(39)</sup> using the scholarship examination results at the beginning of the secondary school career and School Certificate results at the end of it, found that a factor, which like Alexander she interpreted as "attitude to work and persistence in character",

was more important in determining success at the end of the secondary school course than at the beginning of it, and Vernon<sup>(57)</sup> reports a research by MacArthur confirming the existence of "a strong persistence factor" among London secondary school boys, contributing to school achievement - though he found that the ratings of fellow pupils agreed better than those of teachers with the results of persistence tests.

Campbell,<sup>(10)</sup> using a method of assessment which was much more objective than McClelland's, showed that the number of reject-successes and admit-fails could both be reduced if children's interests and social activities, and the attitudes of their parents to education, were taken into account. Unfortunately, the techniques used would not be suitable for anything but experimental work, and Burt<sup>(9)</sup> himself, as well as other members of the Symposium referred to, felt that it was not practicable to use assessments of home background as a factor in allocation.

Vocational considerations are likely to affect allocation as between grammar schools and technical schools - Dempster<sup>(14)</sup> reports their use in Southampton - but may not help very much in deciding between the grammar and the modern school, and the high percentage of withdrawals from grammar schools does not necessarily

indicate a need to take into account at 11 plus the prospective length of stay in a secondary school, for it may well be that the premature leavers are on the whole those who tend to be least successful in the schools, and this lack of success may be attributable to other factors than choice of vocation. On the other hand, if an able child has gone to a secondary modern school only because he or his parents intended that he should leave at 15, and a change of intention occurs later, it might be desirable for him to be transferred.

It appears then that only assessments of character and health will prove practicable as additional guides in the choice between grammar and modern schools. But Eysenck<sup>(20)</sup> speaks of "the dearth of important findings of any general validity in the field of personality research", and Vernon<sup>(57)</sup> concludes that "the testing or assessment of human personality is fraught with so many difficulties - - - that even the application of the highest psychological skill and technical accomplishment cannot be expected to bring about rapid success". Burt's<sup>(6)</sup> hopes rest on the "long experience and - - sympathetic insight" of teachers - particularly headmistresses - who in his experience have "often become amazingly accurate judges of the

latent possibilities of the various boys and girls with whom they have to deal."

So much for the difficulties of selection. In the next chapter the degree of success claimed for selection methods in current use will be examined. Without reasonably accurate examination procedures, there is little hope of distinguishing between late developers and those who are the victims of examination mistakes.

CHAPTER 4.

The Degree of Success Achieved in Prediction

Valentine<sup>(56)</sup> showed in 1932 the shortcomings of the traditional type of selection examination paper, and his criticisms were reinforced by the work of Hartog and Rhodes.<sup>(31)</sup> But there are two major difficulties in judging the success of prediction at the end of the primary school period. Pupils in the secondary schools follow different courses, and correlations between selection examination results at 11 and grammar school success need to be corrected for range before they can be compared, and secondly there are no satisfactory methods of deciding if any pupils who have not been admitted to a grammar school would in fact have been successful if they had been allocated to one. In any case, of course, it would be wrong to assume that a pupil who succeeded in a particular grammar school would have been equally successful in another.

McClelland<sup>(36)</sup> appears to have been the first to investigate systematically the misfits resulting from a carefully devised method of selection for secondary education. He devised a comprehensive system of tests, examinations and assessments at the end of the primary stage, and compared the

results from the use of the best battery with the assessments at the end of three years in the secondary schools. The pupils in the senior secondary schools were not in fact admitted on the basis of the selection examination, and included a number who would not have been admitted if the available data had been employed, but who were in fact successful in the senior secondary schools. Nevertheless, the method of presentation of results somewhat obscures the fact that out of the 462 senior secondary school "successes", 142 pupils were actually in the junior, not the senior, secondary schools; if these 142 had gone to senior schools at the age of 12, it is by no means certain that they would all have proved successful. This kind of difficulty is usually unavoidable unless a large number of transfers are arranged for those pupils who are doing well in junior secondary and secondary modern schools.

Using as his principle of selection summed scores in a qualifying examination in English and Arithmetic, teachers' estimates scaled on these examinations, standardised tests in English and Arithmetic, together with an intelligence test, McClelland found that 21 pupils who reached the required standard (a 50% chance of success in the

Senior Leaving Certificate Examination if they stayed at school till the end of the course) would not have been admitted if the entry pass mark had been fixed to ensure the minimum number of misfits (admit-fails and reject-successes). 30% of the total age group comprising more than 3,000 pupils had the necessary ability and attainment for success in a secondary school course, and it was calculated that just over half, or 15.4%, would actually have been successful if the whole 30% had been admitted. The reject-successes, the potential late developers, number less than 0.7% of the age group. Doubtless most authorities would regard this as a very satisfactory figure, but to achieve it involves a 50% wastage in the senior secondary schools - a wastage that did not actually occur, since the number of pupils who entered the senior schools was only 452, as compared with 909 who would have been admitted with the suggested pass mark if they had all wished to do so. In any case, the 21 reject-successes were discovered among a group of pupils, 416 in number, who had applied for admission. There is no means of discovering, from the data supplied, how many reject-successes there would have been had a 30% allocation of the whole age group actually been made to the senior secondary schools.



McClelland's findings cannot be applied directly to England, for the standards prescribed for success in the secondary schools may be different, the admission to grammar schools is far below the 30% level (the average figure for England and Wales in 1952 was approximately 20%, and for England alone about 18% (72) ), and the number of reject-successes of course increases as the pass mark is raised.

McClelland's senior secondary school pupils would in 1936 have been a specially selected group even in the absence of a selection examination, for application for admission carried with it the implication that the parents were prepared to maintain their children at school for a period of five years irrespective of whether they obtained bursaries, at a time when the economic circumstances were not particularly favourable; it is to be expected, therefore, that on average the home background of these pupils would be more favourable to scholastic progress than it is in many areas in England today.

Of McClelland's 21 reject-successes, 2 can be avoided by the systematic use of supplementary principles in selection - careful adjustment of minimum marks and compensation for strength in one section of the examination. Of the 19 remaining,

13 are borderline cases, 9 of them because of uncertainty about the criterion of success, and 4 of them because of unreliability in the entrance examination. This leaves 6 clear cases. Three of them are explained by favourable home conditions, no satisfactory explanation was found for one, and allowances made for health and the possession of certain personal qualities would have eliminated the remaining two. It appears that in all five cases the factors accounting for success involved changes occurring after the selection examination.

Unfortunately there is no indication of the degree of success achieved by the reject-successes, apart from the nine who were doubtful successes in the senior secondary school. From the present point of view, perhaps the most illuminating finding relates to the extent to which the reject-successes failed in the selection examination. 18 out of 19 had qualifying totals below 0.8 sigma, and 2 who were not regarded as doubtful successes in the senior secondary school fell below the level of 0.4 sigma. When it is remembered, however, that the standard of success required in the senior secondary school was only a 50% chance of obtaining a Senior Leaving

Certificate, in the absence of any information to suggest that the original rejects turned out to be very capable pupils the method of selection employed compares very favourably indeed with others that have been reported; there is not much ground for a complaint that six acceptable candidates would have been refused admission out of a total of 416 applicants, provided that we do not have to reckon the loss to the individuals concerned, in terms of social prestige, subsequent employment and so on. In some areas in England today, such a loss may be considerable; in others, where secondary modern schools have established a good local reputation, or where a course leading to the G.C.E. is available, or where adequate facilities exist for later transfer to a grammar school, the consequences of mistakes in selection will be less serious, provided that the anxiety of parents, teachers and children is kept within reasonable bounds.<sup>ø</sup>

There can be little question, however, that with secondary education for all, selection is a more serious problem now than it was 20 years ago.

Since the publication of McClelland's results, some improvements have been made in selection procedure.

<sup>ø</sup> An article published in the Journal of Durham University Institute of Education<sup>(66)</sup> shows that the proviso is an important one.

The reliability of the tests used has been raised, and a number of authorities now administer at least two sets of tests of Intelligence, English and Arithmetic; more experience has been gained in the design and use of record cards, and some authorities issue very precise instructions on methods of recording assessments. Probably, however, the most important advance has been the definition of a borderzone, and the administering of supplementary tests to those pupils who fall within its limits. McClelland found that making consistent allowances for health, assessments for industry and marked personal qualities, and for home conditions, increased the total number of misfits. At the same time, more accurate or fuller information might have made for better prognosis, and assessments can be improved by training the assessors. In fact, McClelland found that of those admitted to the senior secondary school, 17% of the pupils for whom the primary school teachers predicted failure were successful; two out of 54 graded A for industry failed, as did two out of 54 graded A in the success forecast. But there is no indication of the length of the period over which these assessments were made, and it is possible that use of a record covering the whole

of the primary school period would have yielded better results.

In recent years a number of claims for highly successful prognosis have been made. Hammond, (28) writing on allocation in Brighton, states that "Year after year there is close agreement between the results as a whole of the transfer examination and the head teachers' order of merit, and after careful investigation of cases where there is a discrepancy, mistakes in allocation are few." Moore (38) has given an account of the quota system used in Walsall, where the number of grammar school places to be made available to each primary school is determined by the results of two intelligence tests, administered three weeks apart to all candidates. These places are then filled from an order of merit from each school, arrived at by combining the intelligence test results, the school order of merit drawn up by the school staff in consultation before the examinations, and the results of an internal examination, the details of which are determined by each school separately. The pre-test order of merit "takes into account not only school work during the year, but also such qualities as diligence and interest in work,

conscientiousness, trustworthiness, ambition and initiative". It is also supposed to take account of age differences between the candidates. In the internal examination there is an allowance of 1% of the maximum marks for each month below the maximum age. The whole system "fulfils its function better than any of the more usual methods which have previously been used in this area", and "the scheme has received practically unanimous support from the heads of all schools concerned, primary and secondary." It is disturbing to find that 5% of the pupils who by their intelligence test results influenced the allocation of grammar school places, did not themselves gain admission to a grammar school. No follow up of earlier examination results is reported, and it seems possible that the approval the scheme has received is due in part to the fact that it was worked out in consultation with the heads of all the schools concerned, that it does not involve any restriction of the primary school syllabus, and that it provides a simple method of taking into account the opinions of primary school teachers without the necessity for equating the standards of judgment of teachers in different schools. In effect, teachers' judgments are scaled on the intelligence test results; McClelland

found that scaling the primary school estimates upon the single intelligence test would have resulted in 61 misfits instead of 53 in his population of 416.

The Walsall method is interesting because it appears to involve an assessment of the whole child, rather than an averaging of a variety of assessments. At least two other systems for which emphatic claims have been made also make use of this principle of selection. Halliwell<sup>(26)</sup> has given some details of a method used for allocating 60 entrants annually to a Wiltshire grammar school from an age group of approximately 300 pupils. An order of merit list based on tests of Intelligence, English and Arithmetic, is used as a basis for a preliminary decision as to whether any candidate is a likely or unlikely choice for the grammar school. In the 1951 list, for example, the first 9 candidates are considered "highly likely". The next 24, grouped more closely, may include some not suitable, and the marks for the next 70 give no "sharp indication". It is considered unlikely that any suitable candidates would be found among the remaining 200. The next step is taken by three members of the grammar school staff, who interview primary school headmasters and discuss with them the suitability of "likely" candidates from each school. The primary school

heads decide whether each pupil is or is not suitable (with certain qualifications), and standardisation of these judgments is attempted on the basis of comparison with previous pupils who have passed from the primary school to the grammar school, the subsequent performance of those pupils being known in detail to at least one of the grammar school team, and by means of annual reports, to the primary school teachers. By this means, 23 pupils were admitted to grammar schools in the three years 1948-50 who would not have obtained a place had allocation depended entirely on examination results. It appears that 7 of these pupils were placed in the "bottom quarter of the group - - - immediately below the hypothetical pass mark" - i.e. roughly in the range of positions from 90th to 100th - and two of these pupils were eventually transferred to the A stream in the grammar school. Two of the 23 candidates appear to have been wrongly admitted; one spent two years in the same form, and one, after two years in the school, was at best a border-line case. No indication is given - nor can any calculation be made from the published figures - as to whether these 23 candidates fell within the limits of a statistically-determined borderzone at 11 plus, taking account of the reliability of the



tests used. Whether the method ensures the selection of almost all candidates who would succeed in the grammar school is not at all clear. There is a "considerably effective" right of appeal for a second attempt - apparently as over-age candidates at the age of 12 - and 24 of the 28 contributory schools, answering a questionnaire in March 1951, recalled only 9 cases spread over 7 years, where a candidate might have been wrongly refused entry to the grammar school. A follow up convinced Halliwell that in at least two but not more than four of these cases a wrong decision had been made. It is not clear whether the contributory schools were all-age schools, and if not, what opportunities they had for following up their unsuccessful candidates who would have been transferred to other schools. Halliwell claims that he has found it possible "to add a mark to an opinion and get an answer - - that is likely to have reliable forecasting value." But we are given no information about the number of successful and suitable over-age candidates and the number of failures in the grammar school, and in the absence of evidence of the number of misfits, the reliabilities of the tests, and follow-up correlations, judgment on his claim must be suspended. Meanwhile, if

the method is as successful as is claimed, it appears that very little unexpected development occurs in the pupils in this area, at least after the age of 12.

Happold,<sup>(29)</sup> the headmaster of Bishop Wordsworth's School - also in Wiltshire - claims that "experience has shown that it is possible to conduct the work of selection in such a way that a very high degree of accurate prognostication is secured", and that "it is possible, under certain circumstances, to attain a very high degree of reliability if one thinks in terms of admission to a particular school community." Happold differs from most other writers on selection problems in that his criterion of grammar school success is not predominantly an academic one. What his criteria are may be seen more readily from his essay "Survey of a Year".<sup>(30)</sup> Candidate LXI was 158th in the examination order of merit at 11, but 59th in the final order of merit; he was regarded as an average pupil by his primary school teachers, and recommended only with doubt for the grammar school. He left after four years without a School Certificate, but was given a final rating of B- because, though of "poor academic quality", he was "a useful member of the school". Happold's argument in effect is that such a candidate may be a more useful member

of the school than another candidate academically more suitable, and his selection procedure, involving such considerations as "staying power", "helpfulness and spirit of service", "sensitiveness to influence of school", is intended to ensure that such candidates should be chosen. He claims, without producing evidence, that the techniques he advocates lead to fewer admit-fails than does selection based on the examination order of merit. The complex nature of the success criterion makes this statement as difficult to refute as to support, but Happold admits that he has no means of determining how many reject-success the system fails to provide for.

The view that the use of new techniques leaves few reject-successes in the secondary modern schools is confirmed by Dempster.<sup>(13)</sup> He describes a method of combining test and examination results with teachers' estimates of ability so as to fill 260 out of 300 available grammar school places, and provide a borderzone containing 88 pupils from whom a further 40 must be chosen by a number of assessors who have at their disposal the school record cards of the pupils concerned, and the result of a test in written expression. He concludes that "judging by the opinions of both the junior schools from which the candidates were drawn and the secondary schools

of various types that received them, it has selected the right children." After further experience, he has expressed the view<sup>(14)</sup> that in dealing with pupils who show, by their performance in a modern school, that they merit transfer to a grammar school, we are concerned with "a few special cases" - so few that they can be dealt with at leisure, and there is no need to provide a transfer examination, which has repercussions on the secondary modern schools. However, he had supplied figures in 1953<sup>(15)</sup> which make it clear that Southampton has other methods of dealing with potential late developers. As many as 25% of the boys and 20% of the girls enter grammar schools at 11, and there is a small technical school which admits pupils at 13. In 1949, G.C.E. courses were set up in five modern schools, and 41 children, just over 25% of those who started on the course, took the examination in 1952. In 1953, 71 pupils, 45% of those who began the course, took the examination. Most of these pupils took papers in four or five subjects, and 22 of the 1953 group went on to grammar schools. Few of those successful in this course would have been regarded as borderline cases at 11 plus, and the four pupils who obtained passes in six subjects in the G.C.E.

examination had the following Moray House Test results at 11:-<sup>ø</sup>

<u>Pupils</u>	<u>English</u>	<u>Arithmetic</u>	<u>Intelligence</u>
A	117	104	111
B	108	99	102
C	106	94	108
D	123	110	111

There is no indication of the number of years of secondary schooling these pupils had had, though in view of the fact that some of them went on to grammar schools, presumably to take a course lasting a further two years, we can assume that some of them took the G.C.E. at Ordinary Level after 5 years in a secondary modern school.

It would certainly appear that the standard required before a pupil can secure transfer to a grammar school in Southampton is high, or that the secondary modern schools, with their own arrangements for taking the G.C.E. examination, do not make many recommendations, and that pupils and parents, perhaps wisely, rarely ask for transfer. In view of the fact that 22 modern school pupils, equal in numbers to 7% of the group for whom grammar school education was provided at 11, subsequently enter grammar school post-certificate forms, the claim that selection at

<sup>ø</sup> In a later article in The Schoolmaster,<sup>(16)</sup> Dempster refers to B and one other pupil as late developers, because of their low Moray House IQs at 11. No evidence is produced to show that the obtained quotients could be regarded as reasonably accurate.

11 is successful loses some of its strength. But these results are interesting because the selection procedure would appear to bear comparison with any used at present in this country, and a rough assessment is provided of the extent to which some of the reject-successes failed at 11 and of the extent to which they succeeded five years later.

More recently still, The National Foundation for Educational Research<sup>(64)</sup> has reported on a group of children who were allocated to secondary schools in a Middlesex borough in 1951. 243 children were allocated to grammar schools out of a total of 895. After two years, it was calculated that according to three alternative criteria of grammar school success, 36, 67, or 121 pupils had been wrongly allocated to secondary modern schools. The allocation was based on the results of three Moray House-type tests, which were used to fill directly 80% of the places available, the remaining 20% being filled by considering a combination of examination results, teachers' assessments, and in some cases, interviews. The reject-successes amount to 4%, 7% or 13.5% of the complete group, or to 15%, 27% or 50% of the total of grammar school places, according to the criterion of success adopted for the grammar school pupils. If a statistically determined borderzone

had been set up, as suggested by Pilliner and recommended by the Foundation's research officers, a large proportion of the reject-successes would at least have received further consideration at 11 plus, but those who would still have been rejected out of hand would have been equal in numbers to 6%, 15% or 30% of the children allocated to grammar schools, according to the success criterion employed. No details are available of the extent of rejection and success of these pupils. They are classed as successes on the basis of the judgments of the heads of the secondary modern schools and the results of tests of Intelligence, English and Arithmetic administered to the whole age group at 13 plus. The three criteria of grammar school success are the standardised scores in an intelligence test of pupils in the three grammar schools who are considered by their respective headmasters to be marginal successes. It is quite possible, therefore, that on even a slightly different curriculum, with different methods of teaching, stronger competition, and different surroundings, some of the secondary modern school children who are reckoned as 'grammar school successes' would not in fact have been successful, though some not reckoned as successes might have been. The second of the success criteria,

which gives the number of out-of-hand reject-successes as equal to 15% of the pupils allocated to grammar schools, or 4% of the complete group, is a minimum I.Q. at 13 of 116. The standard deviation of the test used is given as 15, so that roughly 15% of the national age group could be expected to exceed the level of 116. This is the same proportion as the Spens Report suggested as being suitable for grammar school education, and a proportion which has been widely accepted as reasonable. It is suggested, therefore, that the second criterion should be adopted in preference to either of the others.

The correlation between prediction and secondary school success is given as 0.92, though it is not clear whether this is the figure for the whole group or for a representative sample. In either case, as the research officers observe, this is a higher correlation than is usually reported in similar investigations - higher, for instance, than the correlation of 0.915 reported by Bosomworth<sup>(3)</sup> for Northumberland, where the selection procedure appears to be considerably more detailed and based on sounder assumptions about the definition of a border zone and the weighting given to the verbal intelligence test. On the other hand, the Foundation's



criterion of success may be more accurate than that used in Northumberland, and perhaps the Middlesex figure is boosted as the result of an over-age transfer at the age of 12. Whereas the size of the Middlesex sample is given in Memorandum No. 4 as 895, in the previous report the figure of 865 had been quoted; it seems that the extra 30 could only have come from a group of approximately 100 who returned to the primary schools for a year, the remaining 70 or so having left the borough before they were allocated to secondary schools, or before they reached the age of 13 plus, or having been allocated to secondary schools outside the borough.

The high correlations found throughout this investigation are attributed by the Foundation's research officers to the fact that their success criterion is based on performance after only two years (so is the Northumberland criterion), and to the fact that whereas other investigators have had to correct their correlations for range, in this case the correlations involve the whole age group. It would appear that two alternative or auxiliary explanations are tenable, however. In the first place, the population tested may be more homogeneous in respect of those factors which would tend to reduce correlations; facilities for doing homework, and parents' attitudes to schooling may vary less in a

suburban, largely residential area such as that in which the Foundation's officers were working, than say, in Huddersfield, where Emmett's work<sup>(17)</sup> was done, or over the whole county of Northumberland.

Secondly, the Foundation research does not, in fact, cover the whole age group. Whereas the size of the secondary school group is given as 895, the age group at 11-plus consisted of 1216 pupils (the total for whom selection examination categories are given in Table X is, however, only 1179), giving a wastage of over 300 children in two years. There is no method of estimating whether this wastage would have included an unduly large number of children who would have turned out to be misfits if they had remained in the schools in the borough. To what extent have children who were unsuccessful in the selection examination at 11 plus moved to independent schools, or to other schools outside the borough, and achieved success commensurate with that of those who secured free places in the borough grammar schools at 11-plus?

Whether or not the correlation of .92 is unduly high, it is still interesting to see that it is compatible in practice with the proportion of reject-successes found - it will be remembered that the severest criterion gave 36, or 4% of the whole <sup>age</sup> group,

while the preferred criterion gave 67, or 7% of the group.

It appears that most of the methods of selection at 11 for which claims of adequacy are advanced involve an assessment of intelligence and of attainments in English and Arithmetic by means of standardised tests. The degree of importance to be attached to the intelligence test results appears to depend on the extent to which general ability has already been taken into account in other measures. The importance of the results of tests in Arithmetic varies more than one might expect from the published reliability figures for the Moray House tests. McMahon,<sup>(37)</sup> calculating one-year follow-up correlations with the 1947 selection tests in Cornwall, found that Mechanical Arithmetic came first in order of prediction; in the following year it was third, and in 1949 did not come in the first four - tests in Problem Arithmetic, Vocabulary, Essay-writing, and Non-verbal Intelligence all proving superior. Dempster<sup>(14)</sup> has reported unfavourably on the mechanical section of the Moray House tests, and Sutherland<sup>(51)</sup> has confirmed the superior prognostic power of the problem test.

The objective English test has been widely criticised on the ground that it does not test the power of continuous thought or of creative expression.

It has now been shown, particularly by Wiseman<sup>(65)</sup> and Finlayson,<sup>(22)</sup> that the marking of essays need not be so lacking in reliability as was formerly believed,<sup>ø</sup> and essays have recently been set for selection purposes in Northumberland, Devon, Southampton, and Wiltshire, at least.\* There appears to be no detailed evidence yet published to indicate the degree of improvement in selection resulting from the inclusion of an essay, though Pym<sup>(45)</sup> has stated that during four years of experimenting with "free writing" "there has been consistent evidence that a small but appreciable number of children show some quality in their writing though considerably below selection level in other ways." She believes that "the possibility of late development cannot be ruled out in some of these cases", and that "a maturity of sentence structure, unusual vocabulary, a sense of humour, an ability to generalise in candidates not distinguished otherwise are qualities well worth following up."

<sup>ø</sup> A summary of British researches on this topic is contained in articles on "The Measurement of Children's Ability in Composition" in the Scottish Educational Journal of Nov. 28th and Dec. 5th 1952.

\* According to the N.U.T. report on "Transfer from Primary to Secondary Schools"<sup>(73)</sup> 19 L.E.As appear to have been using the essay as evidence for selection purposes in 1946.

Teachers' estimates of attainment, suitably scaled, can be profitably used, though Sutherland<sup>(51)</sup> found that his arithmetic problems test gave better prediction of school success in all subjects in two and three year follow-ups than did the teachers' estimates in Arithmetic - though the estimates proved the better predictor of school success in Mathematics at the end of two years. McClelland,<sup>(36)</sup> Bosomworth<sup>(3)</sup> and Watts<sup>(63)</sup> have all shown that when teachers' estimates are scaled they can be successfully employed for selection.

On the results of objective tests, with or without the addition of teachers' scaled estimates, it appears that a proportion of the candidates can be readily allocated to grammar schools - Stephenson<sup>(49)</sup> suggests that half the available places can be filled in this way. But a large number of candidates from a borderzone must be considered more carefully, and it is in this borderzone that considerations of health and character will be most important.

Previous investigations such as those by Coombes<sup>(11)</sup> and Evans<sup>(19)</sup> have indicated the importance of careful investigation of doubtful cases. Evans, examining the careers of children who were accepted into grammar schools but who had not been recommended by the headmasters of their elementary schools, concluded

that while the heads' verdicts should carry some weight, the non-selected candidates should not be rejected out of hand, for "a few of the non-selected pupils developed in a way that was not anticipated either by the examination or by the head teachers. The head teachers in their selection make, as does the examination, serious errors."

Coombes investigated the careers of pupils who were successful in gaining admission to a grammar school at the second attempt. These "second shooters", who on average were nine months older than the successful "first shooters", were as a group considerably less successful in the grammar school than their fellow pupils. While he does not report on individual cases, he emphasises the importance of facilities for transfer, for those over-age candidates who were placed in the upper third of the entrance order of merit list achieved School Certificate results "almost equal to those of pupils entering the grammar school at the first attempt." There is no indication of the level of ability of the best of the "second shooters", and neither Coombes nor Evans gives any details of the selection methods used. As Evans worked on examination lists for the years 1926, 1927 and 1928, it can be fairly safely assumed that their discriminative value was

considerably lower than that of most of the procedures discussed in this chapter, and it is not possible to say how different the results might have been if the tests had been more stringent.

It may well be that the evidence presented to the Consultative Committee, and referred to in Chapter 2 above, was evidence as much of inadequate selection as of late development. It appears from this survey of some recent research that relatively simple selection techniques can sometimes produce satisfactory results, but that in both Wiltshire and Twickenham there may be a degree of stability in the performance of pupils from year to year that may not be found in all areas. It is clear that any investigation into late development immediately after the primary school stage must take account so far as is possible of the limitations of the 11+ selection procedure. In the attempt to isolate a group of possible late developers described in the following chapter, some allowance is made for the shortcomings of objective tests resulting from the fact that they are not completely reliable.

CHAPTER V.

A Sample of Possible Late Developers.

Since there is both evidence and weighty opinion to suggest that a change in curriculum and/or a new environment are important factors in determining whether a given pupil will succeed in the grammar school, it is probably best, when trying to discover what proportion of transfers from secondary modern to grammar school is desirable, to consider the achievements of children who have actually been admitted to the grammar school, or have succeeded in an academic course in the secondary modern school. The latter implies a five year interval between allocation and criterion if the criterion is to be one that is applicable also to grammar school pupils: the former method can only be employed where a considerable number of transfers have been made.

It was known that one L.E.A. made generous provision of this kind, and permission was obtained to make enquiries in its grammar schools about candidates who had failed in the selection examination at 11 plus, but who had been successful on a later occasion. Enquiries brought full replies from 14 of the 18 grammar schools approached, but four of them did not accept over-age pupils (hereafter referred to as 'late entrants'). The practice among



the remaining ten schools varied; some accepted a few late entrants as places became available through the withdrawal of other pupils; some accepted a complete form of late entrants occasionally, or every other year; three schools had much more adequate arrangements for transfer. Reports on the quality of pupils admitted at 12 plus or 13 plus varied from school to school. One head reported that the intakes were apt to alternate, a good one being succeeded by a poor one; another stated that the only satisfactory one immediately followed the issue of Circular 1654<sup>ø</sup>, which asked local authorities to extend grammar school facilities to children in secondary modern schools who wished to become teachers; some thought the 'Occasional Admission' examination

ø This is highly probable, for this particular age group was allocated at 11 plus solely on the basis of a Moray House Intelligence Test, so that a greater number of suitable candidates would have been overlooked than under the system employed more recently. Similarly Jeffery (32) reported very favourably on a group of late entrants of the same age group in a school under another Authority. Their superiority, as compared with late entrants in the same school today, can be accounted for by the fact that primary school estimates now play a part in 11 plus selection, improving its efficiency.

(the examination used for selecting late entrants) merely effected a further scraping of the barrel, and doubted whether the extension of grammar school education to some of those candidates who failed at 11 plus was justifiable. It should be mentioned here that at the time, selection was carried out on a divisional, not a county basis (though the same tests were used for all candidates), and that the percentage of grammar school awards varied from about 8% to 17% of the age group, according to area.

In view of these circumstances, it seemed unwise to try to deal with all the late entrants in the Authority's grammar schools, or even with a random sample of them, for it was likely that their grammar school careers would be determined to some extent by their reception in the schools, and the extent to which special provision was made for them in respect of teaching methods, curricula, and the severity of competition with other pupils who had already spent a year or more in a grammar school. Further, although the examination at 11 plus was uniform throughout the county - the pass mark alone varied from area to area - there was no uniform standard for the Occasional Admission examinations; each grammar school set and marked its own papers in English and Arithmetic, and there were thus no

means of knowing whether the initial standing of the late entrants to one grammar school was comparable with that of the late entrants to another.

Consequently the investigation was confined to one boys' grammar school with approximately 400 pupils, an annual intake at 11+ of approximately 65, or 10% of the age group, and a further annual intake of approximately 30 from the 12 plus - 14 plus age groups. The headmaster and his staff were keenly interested in the development of the late entrants, and this interest had been maintained over a number of years. Curricula and time tables have been adjusted with a view to closing the gap, occasioned by the differences between other grammar school and the secondary modern schools, in as short a time as possible. A boy entering the grammar school at 12 plus, for instance, can take both French and Latin in the external examination four years later, though the alterations made in this examination with the introduction of the G.C.E. in 1951 have made the position of the late entrant, as compared with the pupil who entered the school at 11 plus, less unfavourable than it was before that year.

It was known throughout the area served by the school that pupils who did not qualify for admission to the grammar school at 11 plus/would

would have further opportunities to do so, and the nature of the Occasional Admission examination was known, from past experience, to the head teachers of the secondary modern and other schools from which the late entrants were drawn. The candidates who were admitted to the school at 12 plus entered a second year class, 2c, to which were added those 'normal entry' pupils who at the end of their first year in the school were at the bottom of the first form order-of-merit. Thus the 12 plus late entrants competed with members of their own age group, but not directly with the most successful pupils from it. Candidates admitted to the school at 13 plus entered a third year class, 3c, to which were added the least successful pupils from the previous year's second forms. Whether they enter the school at 12 plus or at 13 plus, the late entrants are regraded at the end of their first year, and again later, and the best of them may eventually find themselves competing directly with the best of the 11 plus entrants. The small number of candidates who entered the school at 14 plus entered one of the fourth forms, and these were the only late entrants who were likely to face severe competition from their contemporaries in their first year in the grammar school. Late entry to the school made no difference to the age at which a pupil took the external

examination; thus a boy who entered at 14 plus would still sit for the School Certificate, or the G.C.E., after only two years in the school, though in these extreme cases no paper would be taken in a foreign language and the whole examination might well be weighted on the technical side by woodwork, metal work and machine drawing.

It would appear, then, that conditions in the grammar school favoured the detection and progress of late developers in the area served by the school. This area is part urban part rural. The chief industry is coal mining, and the headmaster estimates that roughly 70% of the fathers of his pupils are employed in the mining industry. The bulk of the population is grouped in small townships, some of which offer no employment other than mining. There are no large shopping centres in the area, and cultural facilities are restricted. A seaport with seaside suburbs is situated within a few miles of the school, and there are good bus services to the main centres of the county. There is no technical school in the area and no private school, though a handful of pupils of secondary school age attend one such school in the town already referred to. Roman Catholics are encouraged to send their children to a grammar school of their own denomination. To all intents and purposes, however, the choice for pupils in the area

lies between the single grammar school and the secondary modern schools, with a few remaining all-age schools.

At the time when the investigation began in 1953, there were 98 pupils in the school who had entered it after being successful in Occasional Admission examinations. Up to that year, some 170 late entrants had passed through the school; fifteen of them had entered universities and 24 had proceeded to training colleges. More than 20% of them thus continued with full-time education after the age of 18. In the School Certificate examination in July 1949, all the 17 late entrants were successful, and the second and third places in the whole entry of 65 candidates were occupied by late entrants. In the Higher School Certificate examination of that year, two late entrants were successful, the only failures out of a total entry of 22 being two normal-entry pupils. In 1950, 24 late entrants obtained the School Certificate and 1 failed. After this year Certificate requirements were modified while the pass standard was raised, but in 1951 six late entrants each passed in six or more subjects at Ordinary level.

Premature withdrawal is comparatively rare among the late entrants. Their examination results are not due to an extra year's schooling, as was the case with the over-age candidates investigated by Coombes,<sup>(11)</sup>

for they compete against members of their own age group throughout the school. In December 1950 there were late entrants in 14 of the 19 forms in the school. In the internal examinations at the end of term, late entrants headed the order of merit lists for six of these forms, and occupied 40% of the first five places in each of the fourteen forms, though the proportion of late entrants was less than one in four. In the corresponding examinations in December 1952, there were 98 late entrants, as compared with 319 normal entrants. First, second and third class awards were made to each candidate roughly on an examination mark percentage basis. The distribution of first and third class awards is shown in the following table:-

Table I

School Internal Examinations, Dec. 1952

	Normal entrants		Late entrants	
	No.	%	No.	%
1st class awards	39	12	8	8
3rd class awards	44	14	8	8

Although the late entrants gain a **smaller** percentage of first classes, they receive a smaller percentage of third class awards than do the normal entrants. Yet approximately half of those whom the headmaster

regarded as his most promising late entrants would not have been admitted to the school if the 11 plus entry had been extended to account for 15%, instead of 10% of the age group, and no provision had been made for late entrants. Of the 40 pupils in the VIth form intending to take up professional careers, 13 were late entrants.

The transfer policy is clearly justified, but no account has so far been given of the conditions which make transfer necessary, nor have any reasons been given for supposing that any of these late entrants were late developers as distinct from reject-successes, the price to be expected for an inefficient system of selection at 11 plus.

The headmasters who sent in replies to the enquiry referred to at the beginning of this chapter submitted the names of 356 late entrants to their schools. Only six of these pupils were thought to be late developers in the sense in which the term is used in the following extract from the reply of one of the headmasters, referring to the 32 late entrants in his school:-

"I do not consider any of the above as genuine late developers. They were all near the borderline at 11 plus, and were the ones who wanted to come to a grammar school sufficiently to work for admission, and to keep on working after admission in most cases."



All the heads were asked to give the names of any normal entrants whom they considered to be late developers - i.e. as explained in the letter accompanying the enquiry forms - "pupils - - who were admitted at 11 plus - - whose subsequent success could not have been predicted from early work in the school." Only one normal entrant was so named. Thus, of nearly 5,000 pupils, either normal or late entrants, only seven were regarded as 'late developers' by their headmasters or headmistresses. This of course does not necessarily mean that there were very few late developers, but that very few had come to the notice of the heads, who had only been asked to report cases "which readily come to mind." As was to be expected, there was difficulty sometimes in interpreting the term 'late developer' as applied to normal entrants. One head wrote "None whose outstanding progress can be said to be due to late development. We feel it is rather due to extra effort and hard work." It was clear, therefore, that recognition by the heads of schools could not be used alone as a criterion for identifying late developers, and the headmaster of the school where the main enquiry was made carefully avoided the use of the term.

One alternative was to use the 11 plus examination

marks of the 98 late entrants as an initial criterion, and degree of success after at least two years in the school as a final criterion. The later the final assessment is made, the more difficult it is to find means of comparing pupils who follow increasingly differentiated curricula.

The 11 plus examination in the relevant years was taken in two parts. Part 1, consisting of unstandardised papers in English and Arithmetic, set by the Authority's Inspectors, was taken by the whole age group in the candidates' own schools. In the area in question, rather less than the upper one third of these candidates, about three times as many candidates as there were places in the grammar school, took Part 2 of the examination in the grammar school some weeks later. Part 2 consisted of three Moray House tests in Intelligence, English and Arithmetic. The head teachers submitted estimates on a five point scale, with plus and minus signs according to taste, but these were taken into account only to the extent that any candidate with an estimate in the A class would proceed to Part 2 of the examination irrespective of whether he passed in Part 1. Allocation to the grammar school was made entirely on the basis of the total mark obtained in Part 2, the three tests carrying equal weight.

This system of allocation, compared with others described in previous chapters, is likely to prove inaccurate, though Rutter,<sup>(47)</sup> working on results in a mixed school under the same Authority and admitting the same percentage of the age group, found correlations of over 0.6 (uncorrected for selection) between the single intelligence test at 11 plus and combined equally weighted scores in School Certificate Mathematics, English and Geography. It is possible, of course, that selection from one point of view has improved this correlation; many of the misfits who would have been the 'admit-fails' after five years in the school may have left before taking the School Certificate examination while the probable successes remained at school. In any case, some of the 98 late entrants in the present investigation might well have been successful at the first attempt if the examination had been held on a different day, or if the reliability of the test battery had been higher.

Pilliner<sup>(44)</sup> has shown how the size of a borderzone may be determined when the percentage of passes, the pass level, and the test-retest reliabilities of each component of the test battery, together with their inter-correlations, are known, and has constructed a table showing the upper and lower limits of a borderzone that will include 95% of all the children whose true score, as distinct from their obtained

score, might be equal to the pass mark.

The 1951 11 plus examination list for the area shows that the pass mark, at which 10% of the age group was admitted, was 354. The 95% borderzone covers, according to Pilliner's table, those pupils whose scores fall below 366 but above 342. If the late entrants whose scores are above this lower limit are excluded, then the chances that any of those remaining would have a true score as high as the pass mark are less than one in twenty on the basis of the test-retest reliability of the tests used. This assumes that the age group in this area is normally distributed in respect of total scores on the three tests - an assumption that cannot be checked, since the complete age group has not been tested. It also assumes that these children are a representative sample of all those on whose results the Moray House test reliabilities have been calculated, and that the standard error of a score is constant throughout the range.

Unfortunately, the 11 plus results for the 31 late entrants in the Vth and Vith forms were not available, leaving 67 for whom the necessary data were recorded. When Pilliner's method was applied to the

since the remaining 5% whose true scores are as high as 354 will be drawn from those whose obtained scores are outside the limits  $354 \pm 11$ , i.e. from those above the passmark, as well as from those below it.

Table II

Record sheet for 21 Late Entrants to a Grammar School

Pupil No.	Entry Year & Age	11+ assessment & results					TM IQ	Gain (a)	Form. posn. & class awarded				
		Ass.	MHA	MHE	MHT	Tot.			Pos.	Dec. 1952	July 1953	Dec. 1953	Apr. 1954
1	'52 12	B+	125	104	109	338	115	+4	4 II	1 II	(b) 12 II	21 II	23 II
2	" "	A	124	111	107	342	115	+6	6 II	7 II	12 II	12 II	19 II
3	" "	A	122	100	101	323	120	+17	8 II	8 II	4 II	7 II	17 II
4	" "	B+	114	106	109	329	118	+7	11 II	11 II	24 II	21 II	24 II
5	" "	A	112	101	112	325	114	-	12 II	6 II	17 II	25 II	11 II
6	" "	A	125	107	109	341	129	+16	13 II	9 II	16 II	21 II	26 III
7	" "	B-	115	105	98	318	106	+7	15 II	18 III	9 II	20 II	25 III
8	'51 12	C	113	120	108	341	130L Av.		8 II	9 II	(b) 16 II	14 II	15 II
9	" "	B	120	111	109	340	135M +20		9 II	11 II	6 II	13 II	15 II
10	" "	B	115	106	117	338	132 +19		10 II	13 II	3 II	2 II	5 II
11	52 13	B-	131	99	107	337	108 -10	+10	1 I	1 II	3 II	1 I	3 II
12	51 12	B	119	105	112	336	119 +10		9 II	18 III	22 III	17 II	17 III
13	" "	C	112	103	105	320	115 +1		10 II	12 II	19 II	20 III	14 II
14	52 13	B-	105	108	118	331	122 +15		14 II	21 III	14 II	20 III	21 III
15	'51 12	C	110	110	112	332	123 +2	+8	16 II	19 III	14 II	4 II	7 II
16	" "	C	121	108	108	337	123 +8	+2	17 II	7 II	8 II	16 II	7 II
17	'50 12	B+	125	99	112	336	111 +2		20 II	abs.	Left before GCE		
18	'52 14	A-	115	109	122	347	115 +1	+1	1 I	1 II	GCE 7 passes		54
19	'51 13	B	108	105	110	323	122 -3	-3	8 II	6 II	GCE 4 passes		54
20	'52 14	B-	118	117	110	345	108 -3	+2	10 II	5 II	GCE 7 passes		54
21	'50 12	C	117	112	109	338	114 +2	+1	14 II	15 III	Left before GCE		

(a) after correcting for the difference in standard deviations.  
 (b) after promotion to the A stream.

Table IIA

Performance in O.A. examir  
21 candidates in 7

Pupil No.	Age	Year	Assessment
1	12+	1952	A
2	"	"	C+
3	"	"	C+
4	"	"	B-
5	"	"	A-
6	"	"	A-
7	"	"	A
8	"	1951	A
9	"	"	B
10	"	"	B+
11	{ " 13+	" 1952	A A-
12	12+	1951	B
13	"	"	C
14	{ " 13+	" 1952	C A-
15	12+	1951	B-
16	"	"	B-
17	"	1950	B-
18	{ 13+ 14+	1951 1952	A- B-
19	{ 12+ 13+	1950 1951	B B-
20	{ 12+ 13+ 14+	1950 1951 1952	C C C
21	12+	1950	B-

The number of candidates entering for  
these examinations was as follows:-

	<u>1950</u>	<u>1951</u>	<u>1952</u>
12+	156	111	115
13+	79	87	64
14+	29	34	41

11 plus lists for 1949, 1950 and 1951, there remained 21 pupils who, at 11 plus, obtained scores below the lower limit of the 95% borderzone.<sup>ø</sup> As will be shown later, there are reasons for supposing that there may still be in the secondary modern schools other pupils capable of work of grammar school standard.

These pupils were given a Terman Merrill test, and their form positions and class awards were recorded over a two year period. The results are shown in Table II, together with the standardised scores in tests of Intelligence, English and Arithmetic at 11 plus, and the rating of the primary school head teacher. Their performance in the Occasional Admission examinations is shown in Table IIA.

Before the Terman Merrill test was given, each candidate was interviewed. The purpose of the enquiry was explained fully; the interviewer was trying to find out why they had failed in the 11 plus examination, though it was now clear that they were capable of doing grammar school work, and if the reasons could be discovered, it might be possible to improve the examination in some way so that suitable pupils would not be overlooked; the real purpose behind the questioning was to help other candidates;

<sup>ø</sup> For some undiscovered reason, the 1949 pass mark was 362, as compared with 354 for the two years following.



nothing the pupils said would be reported to any member of the school staff, and it was perfectly safe to say anything that came into their minds. The following questions were then put to each boy, though not in stereotyped fashion or mechanical order, for often a boy's answer led to a question which did not appear next on the list:-

Could he give any reason why he was not successful at 11?

Did he want to go to the grammar school at 11?

Did his parents want him to?

Did he expect to pass at 11?

Did his teachers expect him to?

Had he changed schools between the ages of 7 and 11?

Did he think the primary school better than the secondary modern school, did he prefer the modern school, or was there no difference?

Had he any brothers and sisters?

If so, had any of them gone to a grammar school?

Did any of his primary school friends come to the grammar school before him?

Why was he eventually successful; had he improved?

What subjects did he like or dislike in the grammar school?

What did he like to do in his spare time?

Did he do any out-of-school reading, and if so, what did he read?

Had he thought yet about the kind of work he would like to do when he left school?

Brief notes were made of relevant answers to these questions, and form the substance of the case records in Appendix 1, together with notes on behaviour and attitude during the subsequent test. Later, a brief report was obtained on each boy from the headmaster of the grammar school, and the head teachers and members of staff of secondary modern schools from which some of the boys came were interviewed. Little detailed knowledge of the home background was obtained from these sources. There were doubts about the advisability of making a direct approach to the parents. Their feelings could have been readily discovered had there been a parent-teachers' association, but in the circumstances it seemed likely that enquiries in the boys' homes might result in some embarrassment both for the grammar school headmaster and for the L.E.A., and the latter was not asked for an authorisation which it might rightly have been reluctant to give.

The Terman Merrill test<sup>\*</sup> was administered, not in the hope that some indication would necessarily be afforded of intellectual development subsequent to

\* The test was given in accordance with the handbook instructions (53) except that each candidate was given all the items in the vocabulary test as Kennedy Fraser (34) has suggested, irrespective of the number of failures on successive items.

the 11 plus intelligence test, but simply in order to provide a measure of later intellectual standing. Pilliner (44) gives the average test-retest reliability of Moray House intelligence tests, calculated from tests given to over 5,000 candidates with an interval of between 40 and 280 days between first and second testings, as 0.940. With this reliability coefficient, 17% of the pupils tested might be expected to have test scores differing from their true scores by more than five points. Furthermore, we do not know the conditions under which these tests were taken - whether they were administered for selection purposes, and so exerting on the candidates a pressure which might be lacking if the tests were merely being tried out. And these 21 pupils do not constitute a normal sample; it could be argued that their subsequent careers in the grammar school suggest that their true 11 plus scores must have been higher than those they obtained, and that they have, in fact, been selected because of their relatively poor showing at 11 plus. There is no warrant for supposing that a correlation in excess of 0.9 would be secured between a Moray House test and the Terman Merrill test for the 11 plus age group, and as has already been shown, if the correlation were as low

as 0.8, the difference in scores on the two tests would have to exceed 17 points, even after correction had been made for the difference in standard deviation between the two tests (we do not know the s.d. of the Terman Merrill test for English children), before we reached the 1% level of confidence that the results showed a real difference in standing. Three of the group of selected late entrants - nos. 3, 8 and 9, - register differences as great as this, but because of the conditions under which the first test was taken, there are inadequate grounds for assuming that real improvement has been shown. The group makes an average gain of six points, but another group of 20 normal entrants selected from the third and fourth forms, all with initial IQs below 120, showed an average gain of four points when given the Terman Merrill test. Although this group of normal entrants was selected for low initial IQ the average was still higher than that of the late entrants, who, thus had more room to show improvement, supposing that their obtained scores at 11 were lower than their true scores.

While it is difficult, therefore, to show that a genuine improvement has taken place, it is quite wrong to assume that a single obtained score at 11 is necessarily a true index of ability at that or any

other time. Dempster,<sup>(15)</sup> referring to the four candidates whose success in the G.C.E. examination has already been discussed on page 47, writes "It is interesting that children of this calibre should do so well", when the only evidence of 'calibre' offered is their 11 plus scores. His plea that these children did so well (under teachers "who had before had little experience of this sort of work, and who in only very few cases hold university degrees") because being "at the upper end of a secondary modern school gave them more encouragement than children at the lower end of a grammar school would be likely to feel", might be countered by the claim that if their true ability were as high as their later success suggests, they might have been still more successful if they had been transferred at 13 to grammar schools which were able to deal with them appropriately. The Terman Merrill test results in Table II at least make it questionable if the true 11 plus intelligence test scores for many of the group were as low as their obtained scores indicate. One pupil, no. 7, has low scores in both intelligence tests, and neither the primary school assessment nor his career in the grammar school hold out much promise. On the other hand, if the true 11 plus scores of candidates 3, 6, 8, 9 and 13 were nearer to their Terman Merrill scores than to their actual 11 plus

scores their careers in the grammar school would occasion little surprise. Number 6 has in fact shown a marked falling-off in the 1954 school examinations, but we cannot comfort ourselves by the reflection that we could safely have predicted this from his low score in the 11 plus intelligence test.

Perhaps the most interesting fact emerging from a consideration of Table II is that 13 of the 21 late entrants appeared to suffer at 11 plus from weakness in both English and Intelligence as compared with Arithmetic, which suggests the possibility of a common verbal factor accounting for their overall poor showing. Two possible explanations of this peculiarity require examination. In the first place, it may be that the unstandardised Occasional Admission examinations tend to select candidates with poorer verbal than arithmetical achievement, through the common tendency to use a wider range of marks in examinations in Arithmetic than in those in English. The mark sheets for the relevant years were therefore examined, and the O.A. 12 plus examination in 1950 was found to favour candidates stronger in Arithmetic than in English. If the marks for each paper in this examination had been reduced to T scores - i.e. with a mean of 50 and a standard deviation of 10, and if

an age allowance equal to 1% of the maximum (say 150 for the two subjects) per month below the maximum age had been given, then candidate no. 21 (Table II) might not have been admitted - he would have tied with two others for the last two available places. The only other candidate in the group to succeed in the 12 plus examination in that year would still have been admitted. Candidate No. 20, who was not successful till two years later, would have entered the school in 1950 if the marks had been standardised as above.

In the other O.A. examinations for 1950, 1951 and 1952, the range of marks in the two subjects was nearly equal, though the English average mark was slightly the higher because more candidates had very low marks in Arithmetic. Over the three years, with the possible exception of candidate no. 21, the O.A. examinations did not tend to select candidates whose strength in Arithmetic compensated undue weakness in English.

The second possibility is that relatively better performance in Arithmetic is characteristic of the whole or part of the age group at 11 plus, and in no way distinguishes the 13 late entrants. Analysis of the 11 plus examination results for the three years 1949 - 1951 does in fact show a general tendency for

the Arithmetic quotients to be the highest. Table III shows the average standardised scores in each of the three tests for each year. (It will be remembered that approximately one third of the age group takes the Moray House tests). Figures for the six schools entering most candidates are given separately; the remaining candidates' averages appear in the row labelled "Misc." and the averages for all pupils are given in the last row.



Table III.

Average 11 plus scores:  
English and Intelligence  
different primary

School	1949			No. of cands.	1
	Ar.	Eng.	I.		
A	126	117	120	20	1
B	126	116	122	23	1
C	122	110	119	17	1
D	123	112	120	22	1
E	128	114	119	8	1
F	116	110	119	18	1
Misc.	120	111	116	81	1
Av. for all pupils	122	112	119	189	1

Though the extent of the difference  
in English and Arithmetic varies  
and from year to year, the bias  
throughout, and in only one school

three years, does the general rule of superiority in Arithmetic not hold. For the year 1951, where the difference is smallest, it is significant at the 1% level.

Table IV shows the percentage of the age group reaching the level of +1 sigma in Arithmetic, English and Intelligence respectively for the years 1949, 1950 and 1951.

Table IV.

	1949			1950			1951		
	Ar.	Eng.	Int.	Ar.	Eng.	Int.	Ar.	Eng.	Int.
%age of age gp. reaching +1 sigma	22	10	19	19	13	14	18	12	13

In 1950 14% of the age group reached the level of +1 sigma (on the national scale, taking sigma to be 42.8); in 1951 16% reached that level. The candidates in this area therefore are not greatly below national levels in terms of total scores, but their scores in Arithmetic are markedly superior to those in English and Intelligence. There is little reason for attaching importance to the fact that more than half the group of prospective late developers did better at 11 plus in Arithmetic than in both English and Intelligence.

It could still be urged that the differences are excessive, thirteen of the pupils in Table II having

scores in Arithmetic which exceed their next highest score by an amount ranging from 5 to 24 points. But among the top 70 candidates in 1949, 35 showed a similar superiority in Arithmetic; in 1950 31 of the first 70 showed the same superiority, ranging from 5 to 25 points, and in 1951 18 of the first 70 had scores in Arithmetic exceeding their next highest total by from 5 to 20 points. Details are shown below:-

Table V.

No. of pupils in the first 70 places whose 11 plus scores in Arithmetic exceed their next highest score by the amount shown:

Points difference	1949	1950	1951
5 - 9	14	16	8
10 - 14	14	6	6
15 - 19	7	8	3
20 or more	-	1	1
TOTALS	35	31	18

There remain no grounds for supposing that even a marked superiority in Arithmetic at 11 plus is a characteristic peculiar to this group of possible late developers.

At the same time, it is worth recording that of the seventeen pupils in Table II who achieve success in the grammar school, fifteen score irregularly in the 11 plus tests, and eleven of these either have English quotients at 11 plus below the average for the pupils taking Part II of the selection examination and coming from the same schools, or have low quotients and come from such small schools that an average would mean little. The details are given in the following table:-

Table VI

English quotients at 11+ of eleven late entrants, compared with the average for all pupils from the same primary school:

Pupil No.	11+ EQ.	No. of pupils from same school tested at 11+	Average EQ. for school
1	104	13	113
3	100	11	109
4	106	3	...
5	101	11	109
6	107	11	109
10	106	15	114
11	99	21	113
13	103	29	110
16	108	29	110
17	99	18	110
18	109	8	114

Of these pupils, none shows, at the end of the year in the grammar school third form, a marked weakness in English - and only one, No. 16, achieves outstanding results in the subject. No. 18, who was admitted

to the school at 14+, appeared to have remedied his comparative weakness in English by that time.

The reasons for the differences shown in Table III between the averages of the three tests are not clear. It might be that the I.E.A.'s Inspectors have forced the schools to a higher standard in Arithmetic; that the teaching in that subject is - in the absence of the foregoing reason - more effective than it is in English; that the teachers responsible for the final year groups in the primary schools believe that coaching in Arithmetic pays better dividends in the number of grammar school places obtained; or that the cultural background of the pupils hampers their verbal development. It may be that in this area a non-verbal intelligence test, or a combination of verbal and non-verbal tests, would afford a more satisfactory method for selection purposes, for some County Authorities - for instance Cornwall and Northumberland - have found that prediction is improved by the inclusion of a non-verbal test. Though Dempster<sup>(14)</sup> has argued against the use of the non-verbal test, and Vernon<sup>(58)</sup> has suggested that the V-Ed factor is the most important from the point of view of an academic education, there is no reason to suppose that pupils who have been handicapped in their early years by verbal training, cannot make

up leeway later under more favourable conditions. Where a considerable proportion of the children in a single secondary school have been so handicapped, it may be that the teaching of the predominantly verbal subjects adjusts itself to pupils' needs and at least reduces the initial differences between pupils, so that verbal tests at 11 plus are less accurate predictors than they are in other areas. There is no warrant for the assumption that selection techniques which have received general approval will be equally efficacious in all areas.

It is interesting to find that in the neighbouring county borough, where the complete age group was given Moray House tests in 1954, there is no relative weakness on the verbal side when the borough is considered as a whole, though the pupils from the primary school which is nearest to the main county area served by the grammar school under discussion do show a marked superiority in Arithmetic. The social and cultural conditions, however, appear to be so markedly different that it would be dangerous to draw any conclusions without a much more detailed examination.

Some further points arise from a general consideration of the results in Table II. Pupil no. 10, the only one of the group of late entrants to

register a decidedly lower score on the Terman Merrill test than on the 11 plus Moray House test, came from school F (Table III), the only school to achieve better results in the Intelligence test than in Arithmetic. The only other member of the group who came from this school, no. 17, shows no loss on second testing, but equally does not show the average gain registered by the whole group.

The primary school assessments may or may not be reliable. Table XXII in Appendix 2 shows how far they agree with the examination results. If these assessments had been taken into consideration for allocation purposes, a few mistakes among pupils below the lower limit of the borderzone might have been avoided. It is true that 5 of the 21 pupils were put in the A class, but four of these assessments are of doubtful validity, for the four pupils (nos. 2, 3, 5 and 6) all came from one school in the same year, and their headmaster had forecast 8 As, only two of whom were accepted, in the 37th and 64th positions in the final order of merit. Three of the four score low marks on two tests (English and Intelligence), while the other, no. 5, has no score higher than 112. The other candidate assessed at A, no. 18, has himself stated that he was slow in Arithmetic in the primary school, and did not expect

to succeed in the 11 plus examination. Of the 7 candidates assessed at B or B plus, 4 registered scores below 110 in at least two tests, and an assessment below B would not suggest that the primary school headmaster held out much hope of success. There can be little question but that candidates 8, 15, 16, 20 and 21 were rightly rejected at 11 plus on the evidence then available, though no. 8 has been promoted to the A stream since his entry to the grammar school; all five, except no. 21, who withdrew when his academic prospects were not very bright - his health may have been to some extent at least partly responsible - have achieved satisfactory results. The outstanding success in the group, no. 11, who failed at 11 and again at 12, but who is now regarded as the equal of anyone in his year, had low scores in both English and Intelligence tests at 11, and was assessed at only B- by his primary school headmaster.

Six of the group, (nos. 3, 5, 7, 13, 17 and 19) are so low in the 11 plus order of merit that their inclusion in a borderzone, supposing that only half the available 65 places were allotted immediately, would have involved the further detailed consideration of anything up to 130 candidates to fill the remaining 30-odd places.



Two of the group (nos. 9 and 11) are thought by their headmaster to be possible <sup>university</sup> entrants eventually, and five (nos. 8, 10, 16, 19 and 20) are hoping to go to training colleges.

Although the limitations of the evidence obtained in individual cases will be clear from an examination of the case records in Appendix I, some tentative conclusions can be drawn from them. There are at least three cases (nos. 1, 6 and 10) where the examination results at 11 very possibly did not indicate the pupil's true level. Five pupils (nos. 3, 6, 8, 9 and 13) register apparent gains in IQ over periods of up to 4 years of 15 points or more (after the Terman Merrill quotient has been corrected from the American figure to give a standard deviation of 15). Four pupils (nos. 3, 4, 15 and 17) were perhaps handicapped by unfavourable circumstances before the age of 11. Finally, there seems to be strong evidence of marked academic improvement in three cases - nos. 8, 9 and 11 - though for no. 8 the evidence is conflicting. For no. 9, there is some evidence of personality change, and for no. 11, clear evidence of strong motivation and marked application. It seems unlikely that any of the three could have been admitted to the grammar school, on the evidence of test results and primary school assessments, at the age of 11.

The following general conclusions can now safely be drawn. First, where three Moray House tests are used for selection purposes, the delimitation of a borderzone as suggested by Pilliner (44) may still exclude from further consideration candidates who subsequently show high ability - high enough for them to be considered as potential university entrants. Secondly, where the primary school assessments are taken into consideration with the Moray House tests, potentially highly successful candidates may still be overlooked. Thirdly, some of the mistakes made in selection may go far beyond injustice to the individuals concerned and involve a serious wastage for the community as a whole. These conclusions do not necessarily apply to other methods of selection, or to other areas than the one under consideration, though they are not out of keeping with conclusions that can be drawn from reports on selection in other areas, considered in Chapter 4.

If it is admitted that four pupils, (nos. 7, 12, 14 and 21) have not justified their admission to the grammar school, there still remain 17, equal in number to approximately 9% of the pupils who were admitted at 11 plus, many of whom were unsuccessful. And this figure is arrived at only on the basis of those secondary modern school pupils who fell below

the lower limit of a 95% borderzone at 11 plus, but who were subsequently admitted to the grammar school. An attempt will be made in Chapter VII to show that it is by no means certain that even this grammar school, with its generous provisions for late entrants, succeeds in catering for all the pupils of potential grammar school ability in the area.

CHAPTER VI

A complete sample from three successive age groups

Other pupils besides the 21 in Table II also fell below the lower limit of the 95% borderzone in the selection examinations for the 1949, 1950, or 1951 11 plus age groups, and yet ultimately entered the grammar school. The subsequent histories of these 21 show that they were not all rightly selected as over age candidates. Further, it would be possible for the standard of work demanded in a particular grammar school to be so low that even with a high correlation between the 11 plus results and success in the grammar school, a large proportion of children from below a 95% borderzone might succeed in the grammar school if given the chance: if, for instance, 10% of the age group are admitted to the grammar school and all are rated successes, the fact that some of the rejects who, though not in the first 15% in the 11 plus order of merit, yet prove capable of succeeding in the grammar school, might imply that the percentage intake was too low, rather than that the system of selection was faulty. These three points will be dealt with in reverse order.

The criterion of success in the grammar school in which this enquiry was pursued is the receipt of at

least a second class award, which the headmaster estimates will in general lead to not less than 5 passes at O level in the G.C.E. examination. The 1951 age group had only reached the third forms by the summer of 1954, so to ensure comparable standards for judging all three age groups we must use school results at the end of the year in the third form. Table VII shows the awards of all normal and late entrants, in the course of three years, for whom results were available.

Table VII

1st, 2nd and 3rd class awards in Third Forms to normal (11+) and late entrants.

11+ Age Group	Year & Form	Normal Entrants				Late Entrants				Grand Total
		1	2	3	Tot.	1	2	3	Tot.	
1949	1952 3A	5	21	1	27	-	2	-	2	29
	3B	-	11	6	17	-	7	1	8	25
	3C	-	1	9	10	-	11	5	16	26
1950	1953 3A	1	27	1	29	-	-	-	-	29
	3B	-	10	12	22	-	6	-	6	28
	3C	-	3	-	3	-	13	7	20	23
1951	1954 3A	2	22	5	29	-	1	-	1	30
	3B	-	18	4	22	-	7	1	8	30
	3C	-	9	8	17	1	7	5	13	30
Totals.		8	122	46	176	1	54	19	74	250
Percentages		4½	69½	26	100	1⅓	73	25⅔	100	

The standard of success in this grammar school, therefore, is set so that given an intake of 10% of the age group at 11 plus, 26% of them are adjudged to be failures at the end of the third year. A similar proportion of the late entrants also fail.<sup>δ</sup>

Of the group of twenty-one selected late entrants in Table II, nos. 7, 12 and 14 are judged to be failures on this criterion, and the headmaster's opinion (see Appendix I) supports this judgment. Though no. 17 left before taking G.C.E. he was considered a possible success at that level by the headmaster. No. 21 is a difficult case, for he suffered from ill-health, and absences from school did not improve his chances. The headmaster did not anticipate success for him if he stayed on at school, and accordingly, though the O.A. selection procedure cannot be blamed for his admission, he is reckoned a failure, so that only seventeen of the original twenty-one are deemed to have justified their selection.

The first point made at the beginning of the chapter may now be taken up. The original twenty-one late entrants were selected from pupils already in the school in January 1953 for whom 11 plus results were available. Table II includes late entrants in the 2nd, 3rd and 4th forms.

<sup>δ</sup> Those who enter at 14+ are excluded from the above figures, but they are few in number.

Table VIII.

Record Sheet for a Further 11 Late Entrants to a Grammar School.

Pupils No.	Entry Year and Age	11+ assessment & results						Pos.	Position & class awarded July 1954	Headmaster's judgment
		Ass. MHA	MHE	MHT	Tot.					
1. #	54	14	C	107	112	115	334	129	-	Failure
2. #	"	"	C	111	97	107	315	177	-	"
3. #	"	"	B	109	114	106	329	138	-	Success
4. #	"	"	C	118	109	109	336	123	-	Failure
5.	53	"	B+	119	112	110	341	101	1	Success
6.	"	"	B	114	96	105	315	157	15	"
7.	"	13	B-	117	108	109	334	129	26	Failure
8.	"	"	A-	116	100	105	321	165	23	"
9.	"	"	B-	108	104	113	325	149	7	Success
10.	"	"	C	115	105	113	333	133	3	"
11.	"	"	B	127	102	110	339	114	1	"

\* These pupils entered the school in September 1954, and judgment of success or failure is based on only one term's work and the examination at the end of it.

The remaining seven pupils have spent four terms in the school; nos. 7 and 8 have failed consistently.

from the 1949, 1950 and 1951 eleven-plus age groups, but since late entrants are admitted at 12+, 13+ and 14+, only the first year, 1949, has its full quota of late entrants in Table II, which does not include the 14+ late entrants from the 1950 group, or the 13+ and 14+ late entrants from the 1951 group. Table VIII shows that there are a further eleven pupils to be considered.

The first four, who entered the school in the fourth form at 14+ have spent only one term in the school (up to December 1954) and the headmaster holds out little hope for three of them. He anticipates success for both the 14+ entries to the fourth form in the previous year, and for three of the five who entered at 13+ in that year. Altogether, six of the eleven are regarded as successes, and with those from Table II we have a total of 23 boys over the three years. All fell below the 95% borderzone at eleven-plus. The lowest 11+ total score for a pupil who is judged to be a success in the grammar school is 315, 39 points below the pass mark for a ten per cent admission, and nearly seven times the standard error of the battery, as given by Pilliner (44).

Over the three year period, during which 10% of the 11+ age group was selected annually, 189 boys were admitted at 11+, and approximately 25% of the 176 for whom data are



available fail. Among the late entrants from the corresponding age groups the same proportion fails, and 23, numerically the equivalent of 12% of the normal entrants, are successful despite the fact that at 11+ they fell below the 95% borderzone in the selection examination. Of the 32 sub-borderzone pupils admitted, again approximately 25% fail.

Four of the six successes in Table VIII showed at 11+ the marked weakness in English which was found among the pupils in Table II and Table VI. Three of these four come from the 1951 age group where, as was shown in Table III, the differences between the averages for the three tests are smaller, and the difference between the averages for the English and Intelligence tests is one of two points only. In fact, of the ten sub-borderzone pupils from this age group who are successful in the grammar school, eight showed marked weakness in the Moray House English test. In only one case, that of pupil no. 1 in Tables II and IIA, was the weakness still perceptible in the summer of 1954; a similar weakness is reflected in his French, but this is accounted for to some extent by the fact that he has spent a year less at this subject than the rest of his form - in Latin, which all pupils in his form began at the same time, he makes a good showing. It is difficult

to avoid the conclusion that weakness in English at 11, whatever its causes, plays a considerable part in the rejection, at that age, of pupils who subsequently do well in the grammar school. Some further evidence bearing on this point will be offered in Chapter 8.

CHAPTER VII

Unsuccessful Over-age candidates potentially of Grammar School calibre.

The grammar school headmaster, on the basis of work submitted in the O.A. examinations and the subsequent performance of successful candidates, believes that he cannot accept more late entrants than he already does, even if accommodation were available for them. He is justified in fearing that increasing the intake would bring diminishing returns and result in an increase in the proportion of pupils who eventually turn out to be failures, for the same rule applies at all levels of admission; the proportion of failures increases as the percentage intake is increased. But there may be some pupils who would have succeeded as late entrants had they been given the chance, though there may be no ready means of distinguishing them at 12 or 13 from those who would have failed.

Places are awarded to late entrants on the results of an examination consisting of unstandardised papers in Arithmetic and English. The candidates, whose ages may vary from 12 to 14, take similar papers. For each age group there is an age allowance of 1% of the maximum per month below the age limit for each group. The number of applicants is always greatly in excess

of the number of available places, so that the examination is highly competitive, and those influences which upset performance in the single examination at 11 plus may be expected to be operating also in the O.A. examinations.

The predictive value of the O.A. examination by itself may not be very high, but other factors are at work. The uninterested parents of a child who failed to gain admission at 11 have often decided in the course of the next year or two not to re-apply for the child's admission; others will have been discouraged by progress reports from the secondary modern schools; still others will have decided to remove their children from school at the age of 15 so that they can begin to augment the family income at least a year earlier than they could readily do if they were transferred to the grammar school. The average late entrant is likely to be more persevering, more fully aware of the necessity for steady effort, and to be under stronger pressure from his home - whatever the result of that pressure may be - than the average 11 plus entrants. Table VII shows that in spite of having spent at least one year less in the grammar school, and being on the evidence of their 11+ marks less able than the normal entrants, the late entrants, at the end of their year in the third forms,

obtain about the same proportion of 3rd class awards as the normal entrants who survive till then - for a few of them ~~some~~ are returned to the secondary modern schools each year. Some parents of 11 plus entrants are satisfied that their children, by merely entering the grammar school, have climbed one step up the social ladder, and they and their offspring are content to rest on their laurels, especially where older children of the family have failed to gain admission to a grammar school. In his annual report for the year 1954, the headmaster was reported in the press to have complained of parents who, when their boys reach 15 and want to leave school, are not strong enough to insist that they remain at school, and of pupils who receive too much pocket money, get too much of their own way at home, and spend too much time in dance halls, cinemas and snooker saloons. (Even so, the school obtained more county major scholarships than any other in the county).

On the other hand, the 11 plus failure whose parents, siblings or cousins gained admission will be under strong pressure to enter for, and succeed in, the O.A. examinations, and to be successful if he enters the grammar school, and where other members of the family have been successful, this may indicate that home circumstances are better than average. Thus the O.A.

examinations might well provide proportionately fewer misfits than the 11 plus examination, and the success of late entrants in this school may not be due to the emergence of aptitudes, or the development of ability, which could not be foreseen at 11.

But in the absence of any evidence to show that the one-day unstandardised O.A. examinations achieve by themselves a higher degree of discrimination than similar examinations at 11, the wisdom of ignoring the secondary modern school assessments seems doubtful. There is considerable discrepancy between the examination results and these assessments, which are provided for each candidate. In the 1951 12 plus examination, for instance, there were 111 candidates. Eight of them, assessed at A, occupied positions from 6th to 64th; twelve B plus pupils were placed from 8th to 43rd, twenty five B pupils from 1st to 96th, thirteen B-pupils from 10th to 106th, and 53 pupils assessed at C or lower were placed from 3rd to 111th.

Some of the discrepancy is due to variations in the standard of assessment between schools. Thus, in the 1951 12 plus examination, pupils who occupied the 1st, 2nd and 7th positions came from one school and were assessed at B, while the pupils in the 3rd and 6th positions came from another school and were assessed at A. A typical example of discrepancy

between the examination results and assessments within a single school is shown below:-

Table IX

Assessments and O.A. Examination Positions for pupils from one Secondary Modern School.

Year	Age Group	Assess.		Posns.	Age Group	Assess.		Posns.
		Grade	No.			Grade	No.	
1950	12+ (Total entry 156)	A	2	13, 18	13+	B	1	36
		B+	1	109		B+	1	55
		B	1	62		C	3	26, 34
		C+	2	30, 33				42
		C	13	16 to 112		D	3	49, 60
		D	5	28 to 117				65.
1951	12+ (Total entry 111)	A	1	39	13+	A	2	22, 50
		B	1	66		B	1	46
		B-	2	66, 102		B-	1	35
		C	10	50 to 106		C	2	25, 46

The examination results are at variance with the headmaster's assessment for three of the six whom he believes to be his best candidates. In the 1950 12 plus group, one of the pupils assessed at A is placed lower than one C pupil; the B pupil in the 1950 13 plus group is placed below two C pupils, and one A pupil in the 1951 13 plus group is lower than the two C candidates.

With the narrower range of ability in the secondary modern school as compared with that in the primary school, one might expect that the secondary modern school assessments would be less reliable, but

there seem to be inadequate grounds for denying any validity to the assessments. Though the head of a secondary modern school may not be in a position to say whether a given pupil is capable of doing satisfactory work in a grammar school, it is likely that he will be able to rank his pupils in order of suitability, if only on the basis of present performance.

In 1950, the fifteen successful candidates in the 12 plus examination came from five schools. The following table shows the number of unsuccessful candidates from each school who, in the opinion of their headmaster, were as good as, or better than, some of the successful pupils from their own school:-



Table X.

Unsuccessful O.A. candidates whose assessments were as high as those of successful candidates from the same school.

School	Positions of successful candidates	Head's assessment.	No. of unsuccessful pupils with similar or better assessments in each school.
I	1st	A	1 ( assessed at A )
II	2nd 7th	B- B	5 { 1 " " A } 2 " " B+ } 1 " " B } 1 " " B- }
III	6th 13th	C+ A	3 { 1 " " A } 1 " " B+ } 1 " " B }
IV	3rd 5th 7th 12th 14th 15th	C+ B B B- A- C	7* { 3 " " B- } 3 " " B } 1 " " B+ }
V	4th 9th 10th 11th	B B+ A B	4 ( all " " B )
Total			20

\* There are a further six candidates assessed at C, occupying the 44th, 56th, 70th, 72nd, 85th and 91st positions. It is assumed that the pupil whose assessment is given as C in column 3 was very fortunate, or that his assessment was wrong, and these six further candidates are not included in the table.

Thus in the 1950 examination for the 12 plus age group there were twenty unsuccessful candidates who in the opinion of their headmasters were at least as suitable as some of the successful candidates. The claims of the unsuccessful candidates will be further examined later (p.114). Meanwhile, it should be pointed out that Table X does not take into account the unsuccessful candidates who were well thought of by the headmasters of schools which had no successful candidates.

Table XI shows the number of unsuccessful, but apparently suitable, candidates (using the same criterion as for Table X - viz. that other pupils from the same school, with no better assessments, had been successful) who sat for the O.A. examinations in 1950 and 1951. The fact that there are in both years fewer unsuccessful but apparently suitable candidates at 13 plus than at 12 plus perhaps suggests that the headmasters' assessments may be more reliable after the boys have been in the secondary modern schools for 18 months than when they have been there for only 6 months. (The assessments have to be made early in May). On the other hand the total number of candidates is smaller for the 13 plus group than for the 12 plus group, partly because some of the suitable candidates have already been admitted at 12 plus, partly because some will have become

resigned after two failures, and partly because some of the unsuccessful 12 plus candidates will in any case have decided to leave school at 15.

Table XI

Unsuccessful O.A. candidates who were apparently suitable.

Year	Age Group	Total No. of candidates	No. of successful candidates	No. of unsuccessful candidates with comparable assessments
1950	12+	156	15	20
	13+	79	13	9
1951	12+	111	15	13 *
	13+	87	12	6
		Totals:-	55	46

\* One candidate, who occupied the 3rd place, was rated at C, and the seven other candidates from the same school, all rated at C and all unsuccessful in the examination, are not included in this table.

In order to see whether the difference in numbers of unsuccessful/suitable candidates between the two age groups was due in part at least to an improvement in the assessments as the result of the pupils spending a further year in the school, bi-serial r between examination marks and assessments was calculated for the 1951 12 plus and 13 plus groups separately; it was assumed that an assessment of B- or above indicated

possible success and that a lower assessment predicted failure. The overlapping between the success and fail categories is clear in the following tables:-

Table XII

1951 12 plus examination marks and assessments.

Exam. marks	No. of candidates assessed B- or higher	No. of candidates assessed C+ or less
142 - 150	1	
133 - 141	2	1
124 - 132	2	
115 - 123	3	
106 - 114	7	
97 - 105	6	
88 - 96	9	4
79 - 87	5	1
70 - 78	7	9
61 - 69	7	11
52 - 60	2	7
43 - 51	3	8
34 - 42	3	7
25 - 33	1	4
16 - 24		1

$$\underline{r_{bis} = 0.25, \quad s.e. 0.11}$$

Table XIII

1951 13 plus examination marks and assessments.

Exam. marks	No. of candidates assessed B- or higher	No. of candidates assessed C+ or lower
145 - 153	1	
136 - 144		
127 - 135	4	
118 - 126	5	
109 - 117	4	1
100 - 108	6	3
91 - 99	2	2
82 - 90	7	1
73 - 81	3	5
64 - 72	7	7
55 - 63	4	8
46 - 54	4	3
Below 54	-	10

$r_{\text{bis}} = + 0.27, \text{ s.e. } 0.13.$

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The difference between the two correlations is not significant. This does not justify a conclusion that the judgment of the headmasters does not improve as the result of longer acquaintance with the pupils, for in effect two separate examinations have been taken as a common standard for assessing the value of the heads' assessments, and it is by no means certain that the ranges of ability of the two sets of candidates are equivalent. The only conclusion to be drawn is that there is no evidence to show that assessment of the 13 year olds is more accurate than that of the 12 year olds. It is, however, apparent that there is a high measure of agreement between examination results and assessments for the first twenty or so candidates in each list, and for the bottom ten candidates in the 13 plus list. The standard of assessment varies a great deal, however, from school to school. One school, which at the time was a "senior" school receiving pupils from the junior department at 9 plus, retaining till the end of their schooling those pupils who were not selected for the grammar school, rarely gave a rating above B to its O.A. candidates, presumably because the headmaster consciously or otherwise was measuring them against the successful 11 plus candidates of their own age group a year or two before. Yet pupils from this

school have had good records in the O.A. examinations. Other schools which have no opportunity of comparing their O.A. candidates with successful 11 plus pupils are almost always more generous in their assessments.

The conclusion that the assessments confirm the examination results for the first twenty or so candidates in Tables XII+ and XIII is of limited value; it means only that the examination does not select candidates whom the secondary school headmasters believe to be quite unsuitable - if it is assumed that a rating below B- indicates unsuitability. In an attempt to equate the standards of assessment between schools, the following procedure was adopted. The entries from each school in turn were scrutinised, to determine, on the internal evidence of the assessments, whether the head was actually predicting success or failure for any candidate placed by the examination in the first fifteen positions in each age group in each year. Thus in one school with two 12 plus successes in 1950 there were 17 candidates placed in six categories, A, B+, B, B-, C+ and C. One pupil with a B rating came 7th in the examination, and it is concluded that the headmaster probably reckoned him as a possible success. The other successful candidate, however, was assessed at B-; five of the seventeen candidates from the school were rated above him, though only one was successful,

and in view of the range of assessments it is concluded that the head did not regard him as a likely success. In another school on the other hand, the highest assessment for eighteen candidates was B; four of them were successful, and a forecast of B- for another successful candidate is taken to mean that in his case the head thought success was a possibility. Thus, of two ratings at B- by different headmasters, one is taken to predict failure, the other success. There is a large subjective element in this procedure, but with the small numbers involved in most schools, the usual scaling methods cannot be employed. The procedure followed gives the results shown in Table XIV.

Table XIV

Correspondence between O.A. examination results and assessments.

Age Group	Year	No. of cases	Number of cases where assessment		
			(a) confirms exam. result.	(b) perhaps confirms exam. result.	(c) does not confirm exam. result
12+	1950	15	10	1	4
	1951	15	11	3	1
	Totals	30	21	4	5
13+	1950	15	14	1	-
	1951	15	12	2	1
	Totals	30	26	3	1



Thus over two years there are five cases among the top fifteen 12-plus candidates where the head's assessment appears to be at variance with the examination results, as compared with one such case in the 13 plus groups. This offers some slight confirmation of the view that assessments may be more accurate with the older pupils. Subsequent progress in the grammar school showed that the head was right, and the examination wrong, in one of the 12-plus cases; in three cases the examination result was confirmed. The other two cases, one at 12-plus and the sole 13-plus case, remain open, for the pupils did not in fact enter the grammar school.

It would be as well, therefore, to regard the numbers of unsuccessful/suitable candidates in the 12 plus groups in Table VIII as being inflated by reason of the heads' short period of acquaintance with the candidates. The extent of the inflation, if it exists at all, cannot be determined, but for reasons already given, we should expect that the 12 plus groups would supply a larger number of suitable candidates than the 13 plus groups.

There are reasons for supposing that the disparity between the numbers of unsuccessful/suitable candidates at 12 plus and 13 plus shown in Table XI has been emphasised by the distribution of grammar school places

among the competing schools. In the 1951 12-plus examination, for instance, 11 of the places were awarded to pupils from two schools each entering a comparatively large number of candidates, so that bracketing of pupils within the same assessment classes was inevitable, and would help to account for eight of the thirteen unsuccessful/suitables in the final column of Table XI. On the other hand, in the 13-plus group for the same year, nine of the successful candidates came from the same school, which entered only fourteen pupils. Only one of the five failures from this school was rated equal to one of the successes, and the chances of the other schools raising the numbers in the final column of Table VIII were reduced because they had between them few successes against whom potential unsuccessful/suitables could be measured. It may be, then, that the figures given for the numbers of unsuccessful/suitables in the 13-plus groups are unduly low.

The claims of the twenty unsuccessful/suitables in the 1950 12-plus group (Tables X and XI) can now be further investigated. Table XV gives details of their earlier and subsequent history.

Table XV

The record of 20 unsuccessful/suitable candidates in the 1950 12 plus examination.

School	Pupil No.	11+ assessment and total, if available *	Assessment & Position		1951 res-ult.	1952 res-ult.
			1950	1951		
A	1	B 343	A- 60	B+ 10	Pass	-
B	1	(Did not take	B 60	C 56	F	-
	2	(Part II	B- 82	- -	-	-
	3	A 354	A 58	B- 16	F	-
	4	A 346	B+ 32	C- 78	F	-
	5	B 345	B+ 82	C 39	F	-
C	1	No Part II	B+ 109	- -	-	-
	2	A- 352	A 18	A 22	F	Pass
	3	A 344	B 62	A 50	F	-
D	1	C 359	B 26	B+ 13	F	Pass
	2	B 355	B+ 29	A- 11	Pass	-
	3	C 346	B- 48	- -	-	-
	4	B 345	B 24	A- 28	F	-
	5	No part II	B- 41	- -	-	-
	6	C 355	B 21	B+ 34	F	-
	7	B 342	B- 48	B- 14	F	-
E	1	No Part II	B 30	- -	-	-
	2	C 329	B 117	- -	-	-
	3	B 343	B 19	- -	-	-
	4	B 347	B 76	B+ 29	F	-

\* 5 candidates, as shown, did not take Part II of the 11+ examination in 1949.

It will be recalled that these twenty were chosen as potential successes in the grammar school because they were rated by their headmasters to be at least the equals of some fellow pupils in the same school who did in fact obtain admission to the grammar school. The claims of these twenty pupils must depend in the long run on the degree of success subsequently achieved by their fellows in the grammar school. With two exceptions, the successful candidates made good in the grammar school during the two years following their admission. The two exceptions, both from school B in Table XV assessed at B and B- respectively by the head of their secondary modern school, make it extremely doubtful whether candidates B1 and B2 in Table XV should be regarded as even possible successes if they had been admitted to the grammar school, and the total is therefore reduced from 20 to 18.

It will be seen that two of the 1950 failures were successful in 1951, and a further two, who failed both in 1950 and in 1951, were admitted - exceptionally - in 1952, owing to places becoming available in the grammar school IVth forms. All four pupils have subsequently proved their worth - the two 1952 admissions, C2 and D1, intend (December 1954) to train as teachers - but their success reduces the number of possibly suitable

pupils who are prevented from entering the grammar school to 14, as compared with the original 20. Of the remaining 14, one's sympathies go to candidates B3 and C3, who were fairly consistently well thought of by their headmasters, but who not surprisingly gave up after three consecutive failures. The pertinacity of C2 and D1 is remarkable.

Three of the candidates who took the O.A. examination for the second time in 1951 had lower assessments in that year than in the previous year, but this does not necessarily indicate that their 12-plus assessments were wrong, for a real decline in the standard of work done by these three pupils may conceivably have resulted from the successive failures at 11-plus and 12-plus. If the records of the 14 candidates who did not get to the grammar school invite the comment that they were rightly excluded, it must be re-emphasised that they appear in Tables X and XV because other pupils from the same schools who were no better thought of by their secondary modern school heads were in fact successful in the grammar school when they eventually got there. The eventual success of candidate no. 20 in Table II, who was rated B- at 11-plus, and never higher than C during his three years in the secondary modern school, but who obtained 7 passes in G.C.E. after only two years in the grammar school, exemplifies the extent to which modest achievement in the first

two or even three years in a secondary modern school may mislead. The record of candidate D1 in Table XV is equally noteworthy, and candidate no. 13 in Table II, assessed as C at 11-plus and 12-plus by the heads of his primary and secondary modern schools respectively, has nevertheless made satisfactory progress, having made amends for a falling-off in the middle of his third year in the grammar school.

An estimate of the number of unsuccessful/suitable candidates cannot be obtained by adding the figures in the last column of Table XI (p.108) for this would result in including some candidates twice if they took the examination more than once and were on each occasion inferior in performance to successful candidates from the same school who received equal or lower assessments. Further, some of the unsuccessful/suitables in one year are successful later, as the analysis in Table XV has shown. An estimate is needed for the three age groups from which the pupils in Table II are drawn, and this can be obtained in the following way. In the 1949 age group, of the unsuccessful/suitables who take the O.A. examination at 12-plus, 14 do not reach the grammar school, as the analysis of Table XV has shown. To those are added the unsuccessful/suitables from the 13-plus examination of the following year, who are not already included in Table XV.

The same criteria are used throughout as in Table XV, viz. a candidate must be as well thought of by his own secondary modern school headmaster as a successful candidate from the same school, and freak cases, such as those instanced in the footnote to Table XI, are avoided. Not all the successful candidates, of course, make good in the grammar school; as Table VI shows, though the late entrants are somewhat unfavourably presented there, for their percentage of first class awards rises as they proceed up the school, as they settle down and as they reduce the leeway which is the consequence of their late entry. One late entrant, who headed the O.A. 12+ list one year, played truant, tampered with his school reports, obtained money from his mother to attend fictitious birthday parties, frequented the local snooker hall, and finally left with two passes at G.C.E. 'O' level. Yet one could not entirely rule out the possibility of the success of any unsuccessful/suitable selected because their secondary modern school assessments were the same as this candidate's. The rejection of candidates B1 and B2 in Table XV is exceptional, but is justifiable because of their low assessments in relation to other candidates from the same school, their subsequent performance in the secondary modern school, and the absence of any evidence of standing at 11+.

A further six boys are found from the 13+ group, bringing the tally for the 1949 age group to twenty. Two more are found among the 14+plus candidates in the following year, and this exhausts the possibilities, since no transfers are made to the grammar school after this age. The same procedure is followed for the 1950 and 1951 11-plus age groups, and the details are shown in Table XVI. Columns 4 and 5 show the number of unsuccessful/suitables who fell above or below the lower limit of the 95% borderzone in the 11-plus examination. The difference between the sum of these two columns and the total in column 3 gives the number who did not take Part II of the 11 plus examination.

Table XVI

Number of unsuccessful/suitables from three successive 11-plus age groups who took O.A. examinations in the years indicated.

11- plus age group	O.A. examination	Number of unsuccessful/suitables			
		Total	Above lower limit of borderzone	Below lower limit of borderzone	Total per age group
1949	12+ 1950	14	2	9	22
	13+ 1951	6	0	4	
	14+ 1952	2	0	2	
1950	12+ 1951	9	1	5	12
	13+ 1952	3	0	1	
	14+ 1953	0	0	0	
1951	12+ 1952	10	1	6	18
	13+ 1953	7	0	6	
	14+ 1954	1	0	0	
Totals		52	4	33	



There are thus 52 pupils from three successive age groups who might have succeeded in the grammar school but who were not admitted. 33 of them fall below the statistically determined 95% borderzone at 11-plus, while a further 15 did not take Part II of the 11-plus examination. These totals do not include candidates who might have turned out well if they had been admitted to the grammar school but who came from secondary modern schools which presented no successful candidates.

Many candidates in this area do not fulfil their promise; doubtless some of these pupils in Table XVI, even if really suitable at the time they presented themselves for the O.A. examination, would have failed in the grammar school if admitted. But there is some evidence to support the belief that the selected group of late entrants in Tables II and VIII is smaller than it might well have been if there were more accommodation in the grammar school and more adequate means of discriminating between doubtful cases for admission. The L.E.A. has presumably come to the same conclusion, for it has now authorised some of the secondary modern schools to present candidates in the G.C.E. examinations.

CHAPTER VIII.

The 11+ Selection Procedure.

Consideration of the success of late entrants, as reported in Chapter 5, leads one to doubt whether 11-plus selection in the area, based on the results of three Moray House tests, is as high as the work of other investigators, working in other parts of the country, has suggested. McMahon,<sup>(37)</sup> reviewing a number of researches, concludes "that"verbal intelligence tests alone can predict to the extent of at least .7 correlation over the short term and as far as School Certificate". In most of the researches on which this conclusion is based, the correlations had been corrected for the effect of selection, and in any case, a correlation of .7 indicates a forecasting efficiency, as compared with pure chance, of only 28.6%. Rutter,<sup>(47)</sup> however, working on the results achieved by pupils in a mixed grammar school under the same Authority as the school where the present enquiry has been conducted, and admitting the same proportion of the age group (10%) from an area which would not appear to provide a markedly different background for the pupils, obtained correlations (uncorrected) above .6 between the single Moray House intelligence test at 11-plus and summed, equally weighted, marks in English, Mathematics and Geography

in the School Certificate examination five years later.

With the new G.C.E. examination system it is difficult to validate the 11-plus selection by comparison with results five years later, for the weaker pupils, now officially discouraged from offering a subject if there is little likelihood of their passing in it - at a higher level than was demanded before 1951 - are likely to be examined in a narrower range of subjects, and moreover may have specialised during the year preceding the examination to a greater extent than was usual under the old regime. Thus their marks in any given subject may be unduly high, relative to the marks of more able pupils, because of the greater proportion of time spent in preparing for the examination in that subject. Further, some of the best pupils, who intend to go to universities, may not take any examination at the end of the fifth year.

In the grammar school with which this enquiry has been concerned, it is not possible to find a satisfactory criterion with which to compare 11-plus results later than the end of the third year, for such provision is made for individuals' choice of subjects that even in the fourth year, comparison between the pupils in the four streams could be made only in two subjects - English and Mathematics. In

the third year, however, all pupils take examinations in English, History, Geography, Mathematics and Science, and since the headmaster uses the examination results as a basis for judging the suitability of the various fourth year courses for individual pupils, he has emphasised to his staff the importance of ensuring that marks awarded in any subject are comparable between the three third form streams. This examination cannot be regarded as an entirely satisfactory criterion; there remains the possibility that the marks may not be comparable throughout the three streams, and the late entrants benefit in so far as their inevitable weakness in foreign languages is not taken into account, but it is difficult to believe that an improved criterion could be obtained by asking the headmaster and his staff to place in an order of merit up to 90 pupils, some of whom had spent less than 12 months in the school and had been at no time in direct competition with the more able 11-plus and 12-plus entrants.

By the beginning of the third year, approximately 14% of the age group has been admitted to the grammar school - 10% at the age of 11, together with late entrants at 12 and 13. The late entrants have not, of course, been selected on their 11-plus results, and many pupils of equal standing at 11-plus with the

late entrants have not been admitted to the grammar school, where they might have failed. We should expect, therefore, that the inclusion of late entrants would lower the correlation that could be obtained without them, though it will increase the standard deviation of the 11+ scores. Table XVII, a scattergram giving total standardised scores (equally weighted) at 11-plus in 1951, and totals in five subjects (the maximum is 100 in each case) in 1954 shows that this is so. The total number of pupils is lower than was anticipated, for some pupils had been transferred from other grammar schools and 11-plus results were not available, while some of the late entrants had not taken Part II of the 11-plus examination. There are 78 pupils for whom complete results are available, and 17 of them are late entrants who were rejected at 11-plus. The correlation for the complete group of 78 pupils is 0.332, which is significant at the 1% level (Lindquist<sup>(35)</sup> Table 13). If the late entrants are excluded, the correlation rises to 0.457, again significant at the 1% level. This is the best estimate, based on the 10% of the age group admitted to the grammar school, of the correlation between 11-plus total standardised scores and examination results in five subjects after three years. This figure of 0.457 cannot with any confidence

Table XVII

Correlation between 11+ totals in 1951 and examination results three years later.

11+ Totals 1951	Examination Marks 1954													Totals		
	120	143	166	189	212	235	258	281	304	327	350	373	396		418	
409-415															1	1
402-408				1						1						1
395-401					1											1
388-394						1										1
381-387							1									1
374-380								1								1
367-373	1			1												1
360-366		1			1											1
353-359	1															1
346-352		1														1
339-345					1											1
332-338					1											1
325-331					1											1
318-324					1											1
Totals	3	3	4	12	13	14	11	8	4	1	3	1	1		78	

For the whole group,  $r = 0.332$ ; excluding late entrants,  $r = 0.457$ . Both correlations are significant at the 1% level.

be corrected for the effects of selection, since there are no data for the rest of the age group either at 11-plus or at 14-plus, but if it is assumed that the standard deviation for the whole 11-plus group is the same as the calculated standard deviation for the nation, i.e. 42.8 (Pilliner<sup>(44)</sup>), then use can be made of the formula given in Thomson<sup>(54)</sup>

p.172:-  $r = \frac{R - q_i q_j}{p_i p_j}$  or transposing,  $R = r p_i p_j + q_i q_j$ ,

where  $r$  is the correlation for the sample,  $R$  that for the population,  $q_i$  the shrinkage in 11+ scores,  $q_j$  that in the 14+ totals, and  $p_i$  and  $p_j$  the ratio of the standard deviations in the sample and the population for 11+ and 14+ totals respectively. With  $r = .457$  and  $p_i = \frac{14.78}{42.8}$ ,  $R = .830$ .

The uncorrected figure of 0.457 compares unfavourably with Rutter's findings with a slightly smaller number of pupils. The difference in size of the correlations can be accounted for, perhaps, by the fact that the school in his investigation was a mixed one; by the fact that he used raw scores instead of standardised scores at 11+, which not only avoids spurious correlations, but ignores the age difference, which would have little significance by the age of 16; by the possibility that the correlation of 0.457 would improve with time through the withdrawal of some unsuccessful pupils who had high 11+ totals; by the possibility that marks are not truly comparable

in the three forms in the present investigation; and by the further possibility that the school examinations may be less carefully marked than the School Certificate papers in Rutter's investigation. There is no direct evidence on the last two points, though it was found that the rank correlations for form positions in the first and third terms of the third year were only of the order of 0.6. Form positions in both terms are based partly on work done during the term, and partly on examination results, so that this low correlation does not reflect directly on the reliability of the examinations, and in any case it may be due to the fact that pupils who have been transferred from one stream to another have not settled down completely by the end of the first term. On the other hand, similar correlations for the third forms of the previous year are 0.90 for form 3A, 0.75 for form 3B, and 0.64 for form 3C. The lower correlation for the C form is doubtless due in part to the fact that the 13-plus late entrants have not settled in by the end of the first term, but it may also be due to the smaller range of ability in the form, which makes interchange of position more liable to occur, through random errors in marking, and sampling in the examination questions.

When the 11+ - 14+ correlations are worked out for the separate forms, the results appear as in Table XVIII below.



Table XVIII

Correlations between 11+ scores and 14+ examination totals for the 3rd forms in 1954 (late entrants excluded)

Form	3A	3B	3C	Over-all
r	+ .507	+ .113	- .063	+ .457
s.d.(11+)	17.38	10.86	9.33	14.78
s.d.(14+)	58.5	37.76	41.20	59.25
Nos.	24	22	15	61.

The fact that the correlation for Form 3A is comparable with that for the whole sample while the two standard deviations are similar, suggests that the criterion (the examination marks at 14+) may hold good for the three forms; if it did not, the most probable result would be that the boys at the bottom of form 3A would be awarded lower marks than boys of equal ability in the other two forms. This would certainly reduce the overall correlation for the 61 normal entrants, and the correlation for form 3A alone would be higher than the overall correlation, given equal standard deviations for the 'population' and the 'sample'.

The correlation between 11-plus scores and 14-plus examination results for the previous age group, which sat for the 11-plus examination in 1950, gives less cause for satisfaction, as will be clear from the scattergram in Table XIX. The correlation for the normal entrants alone

is only .278, and this time the inclusion of the late entrants raises it, contrary to expectations, to .284. The poor correlation is due largely to the poor showing at 14+plus of three pupils who had 11+plus totals in excess of 380. In the third year in the school these three found themselves in the B form, and two of them occupied the bottom places in that form. Twelve of the twenty eight pupils in the form received third class awards at the end of the year (this appears to be the main reason for the bi-modal distribution), while six of the previous year's late entrants were in the first nine places. The 11+ - 14+ correlation for the form is  $-.252$ , with standard deviations at 11 and 14 respectively of 11.6 and 34.25, as compared with s.ds for the complete group of normal entrants of 13.64 and 61.99. The criterion may be at fault, but one might expect to find in this form pupils who were not greatly concerned about their work, experiencing little sense of rivalry, and settling down to a minimum standard, which would account for the low s.d. of the 14+plus marks. The C form is above suspicion, since it contains only three normal entrants, who are located in the middle of the scattergram in Table XIX.

Table XIX.

Correlation between 11+ totals in 1950 and examination results three years later.

11+ Totals 1950	Examination Marks 1953.													Totals	
	110	131	152	173	194	215	236	257	278	299	320	341	362		383
407-413				1						1		1			2
400-406															1
393-399															0
386-392				1										1	3
379-385														1	4
372-378				1											8
365-371															4
358-364			1												11
351-357															9
344-350															9
337-343	1														9
330-336															3
323-329															0
316-322															1
Totals	1	0	1	4	8	19	3	10	6	11	2	3	2	4	74

Entries underlined refer to late entrants.  
 For the whole group,  $r = .284$ ; excluding late entrants,  $r = .278$ .  
 The latter is not significant at the 5% level.

Table XX

Correlation between 11+ totals in 1949 and examination results three years later.

Examination Marks 1952.

11+ totals 1949	Examination Marks 1952																Totals
	150	169	188	207	226	244	263	282	301	320	339	359	378	397	416	434	
412-418																	3
405-411																	1
398-404																	3
391-397																	4
384-390																	5
377-383	1																9
370-376	1																12
363-369		1															11
356-362			1														8
349-355				2													7
342-348				1													2
335-341				1													2
328-334			1														0
321-327																	1
Totals	2	3	6	6	7	6	10	5	7	4	4	4	4	2	1	1	68

For the whole group,  $r = 0.367$ ; excluding late entrants,  $r = 0.268$ .  
 Entries underlined refer to late entrants.  
 The latter is not significant at the 5% level.

The 11-plus examination in 1949 gives a correlation with examination marks for normal entrants three years later of 0.268, and again the correlation improves when the late entrants are included. The scattergram for this year is shown in Table XX. When the original scattergram was plotted with different colours for pupils from different forms, it was clear that the correlation within the A form was only slightly positive, and within the B form markedly negative, as was the case in the following year. A negative correlation is likely to be found in this form, for it appears that regularly pupils of considerable promise at 11-plus fail to realise it & are relegated to the B stream, where they suffer by comparison with pupils of lower initial ability who subsequently do well.

The correlations for normal entrants over the three years, together with the standard deviations of both distributions, are given in Table XXI.

Table XXI

Correlations between 11+ totals and 14+ examination marks over the three year period.

Age group	r	s.d.(11+)	s.d.(14+)
1949	+ .268	14.45	66.92
1950	+ .278	13.64	61.99
1951	+ .457	14.78	59.25

The average correlation for the three years, using weighted averages of  $\bar{r}$  as in Lindquist<sup>(35)</sup> p. 219, is .355. The scattergrams show that high ability at 11 does not necessarily imply good performance three years later, while relatively poor performance at 11 does not consistently indicate low standing in the school at 14. Since success in the grammar school must depend to a considerable extent on work done at home - which plays little part in success in the primary school - we should not expect a high correlation between examination results at the end of the primary school period and those in the grammar school unless either the home background correlates well with academic standing at 11-plus, or the home background is sufficiently homogeneous for superior intellectual ability to function as the main cause of progress. In this area, where only a small proportion of the parents have themselves attended a grammar school and know what such attendance entails, it might well be that an experimental comprehensive school would have been the best answer to the selection problem. The present transfer system suffers from the defects of its generous provision, for as can be seen from Table XI, there must be large numbers of dissatisfied pupils in the secondary mode#n schools, and as Table XV shows, some of these will have been disappointed on at

least three separate occasions. The decision referred to on p. 121 to allow the secondary modern schools to present candidates for the G.C.E. means in effect the end of the transfer system, for pupils who have undertaken to stay on the extra year will not be allowed to transfer to the grammar school, which will henceforth accept a three-stream entry at 11.

Analysis of the contributions made by each of the 11+ tests in each of the three years reveals a shifting pattern, as shown in Table XXII, which gives the correlations of EQ, IQ and AQ with the criterion three years later, for normal entrants only.

Table XXII.

Correlations between separate 11+ tests and grammar school achievement three years later.

11+ Age Group	MHE		MHT		MHA		Nos.
	r	s.d.	r.	s.d.	r.	s.d.	
1949	+0.062	8.505	+0.260	5.136	+0.271	7.089	50
1950	+0.339	7.014	+0.169	6.812	-0.020	6.780	51
1951	+0.212	7.686	+0.388	6.561	+0.323	7.260	61

Yet as Table XXIII shows, the correlation between MHE and English marks three years later remains reasonably constant for normal entrants. So does the correlation for late entrants!

Table XXIII

Correlations between 11+ English quotients and English marks three years later, for normal entrants and late entrants separately.

11+ Age Group	Normal entrants				Late entrants			
	r	s.d. (11+)	s.d. (14+)	N	r	s.d. (11+)	s.d. (14+)	N
1949	.349	8.505	9.999	50	+.055	5.305	10.680	16
1950	.407	7.014	8.568	51	-.075	5.271	8.463	23
1951	.417	7.686	7.632	61	-.050	5.419	6.671	17

The standard deviations of the Moray House English test are smaller for late entrants than for normal entrants, while the standard deviations for the two groups at 14+ plus are comparable. The average correlation for normal entrants over the three years (using weighted averages) is .393. Taking the average correlation for the late entrants to be zero, the difference is .415779. The standard error of this difference is  $\sqrt{\frac{1}{159} + \frac{1}{53}} = .1586$ , and the difference is 2.6 times its standard error, and significant at the 1% level. The MHE test at 11+ therefore does not appear to predict standing in English after three years so successfully for late entrants as for normal entrants and even with the latter, there is plenty of room for variation. This is consistent with the view expressed at the end of chapter 6, that weakness in English at 11 is a reason for the rejection at that age of pupils who subsequently



do well in the grammar school. It does not necessarily confirm that view, for the late entrants' English quotients may not reflect their true standing.

There is no reason, however, to suspect the English test particularly. In each year, the Arithmetic test was given first, and thus acted as shock absorber. All the evidence suggests, on balance, that many of the late entrants, including some from below the borderzone at 11-plus, do overcome a considerable handicap in English.

## CHAPTER IX.

### Conclusions.

The data are now available for a summary of the degree of success attending the 11+ selection procedure adopted for one boys' grammar school in the three-year period 1949 - 1951.

10% of the age group from a predominantly mining area, whose pupils are probably somewhat below the national average in terms of combined totals on three Moray House Tests of Intelligence, English and Arithmetic used for selection, are admitted to the grammar school at 11+. By the end of the third year in this school one quarter of the pupils so admitted fail to reach a standard which is judged to be roughly the equivalent of a minimum of five - certainly not less than four - passes at O level in the G.C.E. examination two years later.

The highest correlation obtained between total standardised scores on the three tests and internal examination results in five subjects three years later is 0.457, which might rise to 0.830 if data were available for the whole age group. The average (Uncorrected) correlation for the three years, however, is only 0.355.

A further 4% of the age group is transferred

to the grammar school after pupils have spent one, two or three years in secondary modern schools, and about one quarter of these late entrants fail - the same proportion as for the normal entrants.

Of the successful late entrants, a number equal to 12% of the 11+ intake have totals on the three 11+ tests which place them below the lower limit of a statistically determined borderzone which is designed to include 95% of all the candidates whose true scores might be as high as the pass-mark for admission to the grammar school.

If the practice were followed of giving further consideration only to the pupils in this borderzone, in order to fill a proportion of the places available in the grammar school at 11+, none of the above pupils would be reconsidered unless attention were paid to primary school assessments, in which case a number of late entrants amounting to 6% of the 11+ intake would still possibly not be reconsidered. The evidence provided by 11+ examination results, primary school assessments, and case histories, does not indicate at 11+ any high probability of success in the grammar school, even for the most successful of the sub-borderzone late entrants.

Some - the numbers are too small for percentages to be safely estimated - of these sub-borderzone rejects at 11+ subsequently prove themselves capable of achieving seven passes at O level in the G.C.E. examination, and there is a possibility of development occurring to such an extent that a university degree may not be ultimately beyond the reach of some; of 32 sub-borderzone late entrants admitted over the three year period, the headmaster has high hopes for at least two, and at least a further five are considered to have good prospects of gaining admission to a training college.

There are some grounds for the belief that other sub-borderzone candidates who have not been admitted to the grammar school might have been successful if they had been admitted.

A marked weakness, comparatively speaking, in those aspects of English which are sampled in Moray House tests at 11+ is found to be characteristic of many of the normal entrants to the grammar school, and is a common cause of the low standing at 11+ of sub-borderzone late entrants.

This weakness may be a consequence of the cultural background. It is found in most schools in the area, though its severity appears to be decreasing. Among the sub-borderzone late entrants to the grammar school, it appears to be considerably alleviated after some

three years' secondary schooling, and among the late entrants as a whole, the Moray House English test at 11 is no index to later standing in English. It is suggested that the linguistic background of the pupils in this area is such that the inclusion of a non-verbal intelligence test in the selection procedure might result in better prognosis. This is a matter for further research.

Of the 17 sub-borderzone late entrants who were successful in the grammar school and whose cases were examined closely, five showed a discrepancy of more than 15 points between the 11 plus MHT quotient and the Terman Merrill IQ between two and four years later. Three of the seventeen may have been examination mistakes, three were perhaps adversely affected by their primary schooling, and in four cases there appears to have been considerable application to study after admission to the grammar school. Two, whose transfer to the grammar school appears to have occasioned surprise in their secondary modern schools, showed themselves capable of a higher standard of work, when circumstances demanded it, than they had offered previously. In three cases, the effect of the success of an older brother is apparent, though in only one case is it beneficial

to the younger one. The individual case histories also suggest that in some cases transfer from primary to secondary modern school may have resulted in a changed attitude to work.

Finally, though the provisions for transfer appeared to make the area eminently suitable for the study of late development, the nature of the 11-plus selection procedure and the limitations of the evidence secured preclude the drawing of conclusions which would provide clear answers to the questions posed in Chapter 1. It is only possible to say that this investigation offers some confirmation of the view that unless opportunities for transfer from secondary modern to grammar schools are available, wastage of talent may occur which is not only an injustice to the pupils concerned, but is a loss to the community as a whole.

Appendix I.

Brief case histories of 21 late entrants  
to a Grammar School.

Pupil No. 1      Father's occupation: Miner.

A well-turned-out boy. Rather nervous, and admitted so at various points during the interview. Words flowed copiously, though not fluently. Contradicted himself or confused his account, usually apparently without realising it. Some suggestion of chip on shoulder, but far from aggressive - rather nervously defensive and perhaps anxious to give good impression. Low vocabulary score (18). Had a good deal of difficulty in accepting Terman-Merrill instructions, as though he needed assurance that he was on right track. Muddled by words, happier with numbers. Restless.

Says he was nervous when taking the 11 plus examination in the grammar school, but didn't mind Part 1 in his own school. He did not know how the time was going, and was worried by this. He thinks his English was the most affected, and his score confirms this. He was nearly always in the first ten in his primary school, and he says that he regularly beat those from his school who were successful at 11. Thinks his English improved in SM school.

His headmasters' assessments at 11 and 12 were B+ and A respectively, and appear from internal evidence to be reasonable. He received one of the 4 highest estimates (B+) from his primary school. The other 3 pupils with the same rating came 17th, 32nd and 39th in the 11+ order, and two candidates assessed at B also passed. His TM IQ at age 14.0 was 115, compared with the Moray House score of 109. In both 11 plus and 12 plus examinations his English was considerably weaker than his Arithmetic, though his marks in the grammar school show no grave weakness in English. At the end of his first year in the grammar school he was promoted to the A stream, and though the strain appears to be telling, he has obtained second class awards throughout.

The headmaster regards him as a very good pupil, with plenty of initiative, drive and self-confidence.

Conclusion:\* Very probably an examination mistake, though it appears that comparative weakness in English has been largely remedied.



Pupil No. 2

Father's occupation: Miner.

Somewhat shy - lacking in self-confidence. Speech ungrammatical and not very free. One of the least co-operative of these candidates in the interview. Uses a non-committal monotone.

Chicken pox and tonsils at "about 10". Says he was always better than one of the two pupils from the same school who passed at 11 plus, and that he was nervous in the examination. He expresses a strong preference for the secondary modern school as compared with the primary school on the grounds that (a) the primary school teachers were nearly all women, (b) he was made to work in the secondary school, which was 'stricter', and (c) the latter school had its own field, there were more games, and it was "altogether more pleasant".

Writes left-handed; bats and bowls right-handed, and kicks with his right foot. Saws and planes with either hand. Not taught to use right hand at any time except for ornamental lettering with a special nib in the primary school.

Primary school assessment is probably too high. He and candidates 3, 5 and 6 all came from the same school, which forecast eight As, of which only two were accepted, in the 37th and 64th places. All four pupils show marked weakness in English at 11 plus, and all four appear to have remedied it at 12 plus. His secondary school assessment (C+) is probably slightly harsh. His TM IQ at 14.0 was 115, as compared with Moray House 107 at 11 plus. He is not a distinguished pupil.

The headmaster describes him as an average pupil who would have escaped notice if he had entered the school with his own age group at 11 plus.

Conclusion: He looks like a possible at 11 plus; two short illnesses in the primary school, some shortcomings in English, and perhaps examination nervousness could account for his failure at 11 plus. Any improvement that took place in the secondary modern school could have resulted from a changed attitude to school.

Pupil No. 3      Father's occupation:    Hospital worker.

Mobile face - talks very freely and rather loudly. Laughs easily when he realises his form of expression is inadequate. Very clear about what he does not know. One of the few to answer TM A.A.3.

Has no explanation for his 11 plus failure. Father and mother are separated, the boy living with the mother. After coming from London, he had pneumonia when he was five years old. He suffered from kidney trouble when he was seven (by this time he was in Kent) and missed 18 months' schooling. He does little out-of-school reading.

The primary school estimate (A) is probably too high, and the secondary school assessment C+ too low. There is a 19-point difference between the TM IQ (at 14.6) of 120 and the Moray House score of 101 at 11 plus. There is the weakness at 11 plus in English, common to the four O.A. candidates from the same school in the same year, but this is not apparent in the 12 plus examination or in his work in the grammar school.

G.S. Headmaster describes him as a bright and pleasant boy, rather better than no. 2.

Conclusion: In view of his early life, it is more difficult to explain his satisfactory mark in Arithmetic at 11 plus than his poor results in the English and Intelligence tests. But the evidence of development during his year in the secondary modern school is not very impressive in view of the fact that the primary school assessment is so much superior to that from the secondary school.

Pupil No. 4      Father's occupation: Responsible position with large firm of builders' merchants in neighbouring town.

Almost enthusiastic during interview and test. Easily approachable, and talks sensibly. Verbally he is able; he seemed at first confident and mature. Sentence structure good, vocabulary a little limited by comparison. In response to TM S.A.II (a) says with surprise "I'd never thought of that". While answering (b) rambles on inconsequentially, forgetting the main point of question. Chatters to himself while working problems. Slow, and takes practically maximum available time. Seems convinced that he isn't bright. Nervous? - hand wagging, snuffling, tics? Continually moves position of arms, clasped round knees. While working the codes, asks for scrap paper immediately, but doesn't use it. Fingers jerk furiously while working the code - seems to see the code principle, but is slow with the alphabet - or suspects a trap.

His brother was at the time the head boy of the school, and was going on to university. No. 4 complained that his brother's achievement is always being held up as a model for him. Grammar school headmaster confirms this.

Blames primary school for his 11 plus failure - "spent too much time making paper models and that sort of thing instead of doing English and Arithmetic". (Reflection of parental view?) He attended a private school from 5 to 8, when the family moved back from a large town to the village where they originally lived.

Grammar school headmaster reports an impediment in speech - not noticeable during interview - and long absences during primary school life. He thinks no. 4 is rather below average for the grammar school, but is the type of boy who should be encouraged.

Conclusion:      A not particularly able boy who was perhaps handicapped by his primary education and by tension in the family.

Pupil No. 5.      Father's occupation: Miner.

During the TM vocabulary test showed high degree of fluency; in other items, frequently gave a quick response, sometimes admitting too readily or too quickly that he did not know the answer. The interview yielded little of any consequence, except that he preferred the modern school to the primary school because at the former all the teachers were men and he did some woodwork. His interests (at age 14.5) were football, swimming, stamp collecting and reading adventure stories. He likes woodwork, art and geography in the grammar school, and though he was good at arithmetic in the primary school, does not get on very well now in mathematics.

The headmaster regards him as a poor type - "lifeless and half starved" - but says his work is average for the school.

There is no emphatic and consistent weakness in any subject, nor is he outstanding in any one. The primary school assessment was probably somewhat extravagant, though he was assessed at A- in his first and only year in the secondary modern school. The indication of weakness in English at 11 plus receives little confirmation from his 12 plus score or achievement in the grammar school. The TM IQ does not disagree with the MHT quotient of 110.

Conclusion: Probably not more than a borderline possibility at 11 plus. A possible defect in English may have been remedied. Since he regularly achieves better marks for homework than in examinations, steady application possibly accounts for his success.

Pupil No. 6. Father's occupation: School caretaker.

A well dressed boy who gives the impression of coming from a better-than-average home. Has two older sisters, both married, neither of whom went to a grammar school. There is some indication that parental hopes were centred on this boy. He says he was nervous at the 11 plus examination, though he always worries about examinations. He had had "a lot of advice" from his mother. The parents hoped, both before and after the examination, that he might be awarded a special place in a boarding school which offers a number of places to candidates from this L.E.A..

He reads books from the school and county libraries, and is interested in model-making and games. He names gymnastics, French and swimming as features of school life that he enjoys most.

The headmaster regards him as an average pupil - "not an outstanding performer, but worth a grammar school place".

The primary school assessment is perhaps unreliable. One of the two successful candidates both rated at A from the same school was relegated to the C form at the end of the first year, while the other just achieved 2nd class awards in the B form. The TM IQ at age 13.10 is 20 points above the MHT score at age 10.11, and only two of the group of 21 have a higher TM IQ. He had two third class awards in the third form - in the two terms when examinations are held - and does worse in examinations than his term marks would lead one to expect. In examinations, he achieves satisfactory results in languages, though the indications are that at 11 plus his main weakness was in English.

Conclusion: A poor performer under examination conditions, but at no time does he achieve the results that might be expected from his superior mental ability.

Pupil No. 7.

Father's occupation: Miner.

This boy thought he did not do very well in English in the selection examination, and that he was only moderate in the primary school. Before the examination he thought that he might do badly in English. His mother wanted him to go to the grammar school, but his father expected him to fail and thought it was a waste of time for him to sit for the examination. Questioned about differences between the primary and secondary modern schools, he said that he didn't see any, and that he didn't do any fresh subjects. It was subsequently discovered that he had attended an unreorganised school. He stated that he was given individual attention in English after his 11 plus failure and that his teacher gave him "work off verbs and adjectives".

The primary school estimate is probably generous - the highest candidate with a B- assessment from this school occupied the 129th position in the 11 plus order of merit. The senior department of the school felt he was a strong candidate, assessed him at A, and felt he was more likely to succeed than candidate no. 9 - a cousin. His young teacher, however, admitted lack of experience and possibility of error in judgment. The boy was, however, a conscientious worker.

The grammar school headmaster described him as an indifferent performer in academic work, with a negative personality. During the TM test he deliberated for long periods, saying nothing. He appears lifeless, and has no apparent strong interests.

Conclusion: The TM result (at 13.10) confirms the low MHT score. A boy of below average ability for the grammar school; he is barely keeping his head above water in the C stream. His success at 12 plus probably due to special coaching.

Pupil No. 8.    Father's occupation:    Miner.

A talkative boy who spoke well. He explained that he did not want to go to the grammar school at 11, and that he was not really interested in Part II of the examination. Yet when questioned about the attitude of his parents, he said he did his best to please them and succeed in the examinations. Later in the interview he claimed that he was ill before the 11 plus examination, but when pressed for details could announce nothing more serious than a sore throat. He said he was never interested in the primary school, and professed an over-riding passion for music, dating from the age of 7 when he began playing the 'front-room organ'. He said he preferred the secondary modern school - but only on the grounds that some of the periods lasted for 1½ hours, instead of for half an hour as in the primary school. He thought he was never below 3rd in his form in the modern school, and he became more interested when he realised that the grammar school 'offered better opportunities'. He claimed to have "relations" in the grammar school (one older brother, now a trained graduate teacher, had attended this grammar school.) He thought he was never good at arithmetic or mathematics, and found the latter was now his most difficult subject.

In the TM test (at 14.7) he had a score of 30 for vocabulary. His digit memory was good, but his arithmetic poor. He seemed to be easily discouraged in the face of felt difficulties. His answers to purely verbal questions were almost always very quickly given, and they were often just on the right side of the borderline. One felt that the quality of his answers was not quite what one would expect from a pupil of IQ 130. Accordingly, after a ten weeks' interval he was retested with Form M, and with no vocabulary test, he registered an IQ of 135. On this occasion he spoke enthusiastically of his progress in piano playing, and of the examinations he had passed, and confided that he was not really interested in anything else at school.

The older brother was subsequently approached, and told a different story. Two older children, brother and sister, had been under strong parental pressure to succeed in the primary school and gain admission to the grammar school. Both had failed. Then the pressure on him, the third member of the family, was relaxed, and he passed. Pressure was then exerted on the fourth (pupil no. 8) and his

failure in the examination was a consequence of this. The brother did not confirm the professed flair for music. As confirmation of the view that his brother was putting up an elaborate defence he related how no. 8 had told the family that he was second in his form, though it was afterwards discovered that he was 7th. When charged with deceit, no. 8 had said that he was ashamed to let the family down by admitting that he was 7th. He had also tried to make capital out of the fact that he was the only one of the selected late entrants to be tested twice.

The headmaster disapproves of him, regarding him as untrustworthy - see note on pupil no. 15. Yet the boy has achieved a measure of success in so far as he is one of the very few late entrants to be promoted to the A stream. This means that he is taking two foreign languages, having begun one of them a year late, and this, with his weakness in mathematics, may account for the fact that he is now only just keeping in the range of second class awards.

His primary school assessment was probably harsh, for of the ten candidates from the same school, four were assessed at B and the rest at C. Two of the Bs and one of the Cs were successful, in the 17th, 37th and 55th places respectively. No. 8's was the fourth highest total among the ten candidates. After six months in the secondary modern school he was assessed at A and was fifth in the O.A. examination.

Conclusion: The primary school assessment of C is the main objection to the brother's view that no. 8 was a good candidate who suffered from family pressure and examination nerves. This view is consistent with observations made during the TM test and with his indifferent performance since he has faced strong competition in the A stream. The 20-odd point difference between Moray House and TM IQs, however, is not explained, especially as he obtained a reasonable score (113) in arithmetic, at 11 plus, though this appears to be his weakest subject, on his own evidence and that of the O.A. examination mark. The possibility that his 11 plus scores had been entered in the wrong columns on the mark sheet was investigated, but no error had been made.

Note: Possibility of invidious comparison in primary school, where successful brother's record was known. This could not occur in the secondary modern school, where only the eldest brother had attended. This might help to account for the failure at 11+ and success at 12+.



Pupil no. 9.

Father's occupation: Miner.

A well built, slow, thoughtful boy. Not very talkative, but certainly not withdrawn. He said that he wanted 'badly' to come to the grammar school, and that his parents wanted him to. He was sure that the school expected him to pass at 11, and that some boys succeeded who were below him in the primary school. (All those who passed from this school had higher assessments, with the exception of one boy also assessed at B who occupied the 55th position. Of the three assessed at B plus who failed, one occupied a lower position in the 11 plus order of merit than pupil no. 9. Though the boy was clearly wrong - his teacher in the course of discussion said that his failure at 11 came as no surprise - he seemed to be under a genuine misapprehension).

He comes from a large family, and experienced difficulty in doing his homework. One sister had just left a grammar school and was waiting to enter college. Unlike no. 7, he was able to explain the nature of the unreorganised school he had attended.

His teacher at this school said that "he always had it in him", but was apt to be erratic. He thought that at first he did not care to work, but a marked change occurred after the 11 plus examination, and he became a serious scholar.

The grammar school headmaster described him as a "nice lad, steady and capable". He thought a training college course might well be within his compass, and that he might make degree standard.

Conclusion: In spite of the 23-point discrepancy between TM and MHT IQs (nearly four years elapsed between the two testings)- his teacher's explanation of his progress seems adequate, and insouciance at 11 may have been related to the confidence suggested in para. 1.

Pupil no. 10. Father's occupation: Emergency-trained schoolteacher.

A cheerful, lively, short and sturdy boy, who looks very fit and alert.

He wanted to come to the grammar school, but found the 11 plus examination 'hard'. If he had not passed eventually, he would have attended evening classes. His father, who was an instructor in a remand home, went to an emergency training college while the boy was in his last year in the primary school. When he returned, he coached the boy in English and Mathematics, and he passed the O.A. examination at 12 plus.

He did not like the women teachers in the primary school and preferred the stricter discipline in the modern school, where he said more work was done.

He has an older brother who was not interested in going to the grammar school - he was interested in mechanical things, (so, apparently, were no. 10 and his father).

One pupil with the same primary school assessment (B) was admitted at 11 plus from the same school, in the 60th position. All five candidates assessed at A were admitted, and the assessments as a whole are reasonably consistent with the examination results. There is no evidence to suggest that the B assessment from the secondary modern school was inaccurate.

The boy dropped 12 points on the TM test as compared with MHT results three years eight months before. He failed on verbal tests demanding a high level of abstraction (e.g. XIV 6, AA8, SA 5 & 6) and his vocabulary score (18) was low. His memory for sentences was inferior to that for industry and concentration, and an empirical rather than a calculating approach. There was no organised attack, apart from turning up in advance all the design blocks - and this took him 45 seconds in one of the last 3 sub-tests. He checked results carefully at the end of the cube instruction test. On Alexander's norms, his P.A.R. was 109.

The grammar school headmaster states that the boy is 'useless' at examinations, but shows up well where marks are based largely on homework. A scrutiny of his record does not altogether confirm this view, but there is little doubt that he receives a good deal of help at home, and this is reinforced by determination to do well - he wants to enter college and become a teacher.

Conclusion: Steady application is responsible for any improvement shown.

Pupil no. 11. Father's occupation: Miner.

An impressive candidate - critical, careful, alert; sense of humour; seems to regard the TM test as a challenge, and is reluctant to admit defeat on any item. Persistent: lips move as he thinks. Distinguished from other pupils not so much by score, as by the quality of his answers. In the vocabulary test, slow and pedantically precise. Thus, an orange is "a citrous fruit"; straw, "the dried stem of a cereal"; Mars, "the fourth planet from the centre"; limpet, "a shell-like creature - like a clam - about  $1\frac{1}{2}$  inches in diameter".

He did not think he was very good in the primary school. He used to read a lot of books, but couldn't read "out loud", and thought he failed in the examinations at 11 plus and 12 plus because of his English. (He did). He preferred the primary school to the modern school because there were more games in the former, and he received more encouragement from the teachers. He thought he tried harder in the modern school, and improved most in neatness.

He has three brothers, two of them older. The second one went to a grammar school, and he wanted to emulate him. He was absent from school for three months around the age of eight through congestion of the lungs.

The secondary modern school head and teacher did not regard him as an outstanding candidate for the O.A. examinations, though he was assessed at A-. They thought he was a nervous boy who might not do his best under examination conditions. When asked if they could explain his weakness in English in the 11 plus and 12 plus examinations, they said that he was not weak - at least in comparison with other pupils in the school. They thought him a conscientious pupil, and remembered with some regret his prowess as a runner.

The grammar school headmaster said that he is as good as anyone in his year. He had hopes that he would eventually enter the Vith and perhaps a university, but a recent conversation with the mother revealed the fact that he often works from tea time until 12 or 1 in the morning, and the parents, though they would like him to stay on at school after he has taken G.C.E. are reluctant to submit him to prolonged strain, especially in view of the fact that the boy wants to leave.

Conclusion: There is no doubt that the boy has ability, and<sup>no</sup> doubt that he has developed after the age of 11, for the primary school estimate has all the marks of reliability. There is no reason to suppose, however, that intellectual development was a cause, rather than a consequence. His TM IQ of 119 at age 14.3, as compared with the MHT score of 107, might well result from his reading and his application to work - and the increase is not large enough to be statistically convincing, especially in view of the conditions under which the MHT was taken, and the secondary modern school teacher's comment.

Pupil no. 12.

Father's occupation: Miner.

Not impressive. Very slow and deliberate with most of the test items. A cheerful looking boy who gives the impression that he does not care a great deal about school work.

He said he was nervous in the 11+ examination. (He did not appear to be during the interview). He said his teacher told him there was a chance of his passing the examination, and he himself thought he made "silly" mistakes in the arithmetic paper. (His arithmetic quotient of 119 was his highest).

His TM IQ (at 14.7) of 115 tallies with the MHT quotient of 112. His B assessment at 11 seems to hold out little promise of success, for twelve candidates from the same school were rated above him and only seven were successful.

The grammar school headmaster regards him as below average - see comments on 12 and 13.

Conclusion: The only evidence for development is his success in the O.A. examination at 12+ and one year's performance in the grammar school. The school from which he came to the grammar school is particularly interested in its tally of successful O.A. pupils, and it is not unlikely that intensive work before the O.A. examination led to his temporary success. He must be reckoned a failure in the grammar school on the evidence so far available.

Pupil no. 13.      Father's occupation: Refuse  
   collector.  
   (Stepfather)

Puffed face, swollen under eyes; worn clothes, black (?) tie; speech rough.

When he took the 11+ examination - "rushed at it" - "not neat". He wanted to come to the grammar school - "saw boys with caps and blazers"; his father wanted him to come - "to get a better job". The boy's mother died of cancer, after two years' illness, when he was 10. At the time of the selection examination the stepfather had "been off work a bit" through illness. At this time the youngest child, a girl, was 4 years old.

He reads "a lot" and instances Biggles and books about aircraft. He likes games (instances basket ball, running and chapel sports.) He meets the old scholars of his secondary modern school regularly "to play darts and that".

He did not expect to pass the O.A. examination, because he was 17th in his class. (He has never raised higher expectations than would be suggested by a C assessment).

His TM IQ of 122 at 14.5 is 17 points above the MHT score. There was less spread than in the case of most of the others in the group (AA - 5 items out of 8; SA1, 4/6; SA2, 1/6; SA3 - 1/6). He was one of the few able to distinguish between 'character' and 'reputation' (AA3C).

The grammar school headmaster judges him to be a moderate performer - a little better than no. 12.

Conclusion: Home circumstances will probably account adequately for his failure at 11. On the other hand, the fact that all three scores at 11 were low, in conjunction with the C assessment, suggests that there has been a considerable change in IQ, which may not be unconnected with the necessity, when he found himself, by accident, in the grammar school, to work at higher pressure than he had done before. His secondary modern school teachers confirm that his 12+ success was a surprise. He was 18th in a class of 35; and a locally designed record card reports "lacks concentration". He was rated C for 'self control' and 'orderliness'.



Pupil no. 15.

Clean, carefully dressed; multi-coloured socks - pullover border matches blazer; Plausible? Offers hand at end of interview. Senior master disapproves - 'fop', 'unreliable', 'untrustworthy'.

The boy's father is dead; the mother remarried and lives in another part of the county, while the boy, an only child, lives with his grandparents "to avoid changing schools". His grandfather is due to retire from the pit soon.

He always wanted to go to the grammar school - his uncles, who had not been to one themselves, told him that he could not get a "good job" otherwise. He wanted to be a journalist. (This was in January 1953, and his ambition is unchanged after two more years). He knows a free-lance journalist who has helped him with his English.

Two months before the 11+ examination he was knocked down by a car, spent a week in hospital with concussion, and a further week in bed at home. He had headaches for several months afterwards, and finally was sent for a holiday with funds provided by a Methodist Church organisation.

He preferred the secondary modern to the primary school because the teachers in the former "understood you better" and "encouraged you if you were good at anything". School interests in Art and English.

His secondary modern school teacher thinks of him as "in some respects a brilliant boy", and refers specifically to Literature and Art. He had thought of him as a promising pupil, but now (December 1954) lapsing under the combined weight of home circumstances and adolescent difficulties, including attachments to various girls in the neighbourhood.

The grammar school headmaster (July 1954) was non-committal, though commending the boy for his work in English and Art, and referred uneasily to a homosexual phase with pupil no. 8.

Conclusion: Low 11+ scores possibly due in part to accident, but the primary school assessment is low, though two other candidates with the same rating (C) from the same school were successful in the 31st and 47th positions, and one rated C plus was 28th. If genuine improvement has taken place, (TM at 15.1 is 11 points above MHT) it may be the consequence of his special interest in English.



Pupil no. 16.      Father's occupation: Miner.

Solemn, upright, nervous; every answer prefaced by "please sir". Hair oiled but on end; no turn-ups, expensive watch, v. worn tie. Not wary, but urgently attentive.

An older brother has passed through the grammar school. There are two younger sisters and one elder. He thought he would pass at 11, though he had "been off" a good deal before the examination. (Further questions narrowed this down to a fortnight through 'sickness' and 'a few days here and there'.) He said he was always near the top of the primary school. (The list of entries from this school showed 18 pupils with a higher assessment). He wanted to pass at 11 because his parents wanted him to. He says he is nervous about examinations - worries in case he does badly. He wants to enter the Customs - but does not know how to set about it yet (at age 15.3).

Reads a good deal - adventure. Likes football, cricket, radio plays and the weekly programmes (no real conviction about what he likes). Gives general impression of being capable of absorbing instruction, but this may be due to lack of confidence in an unusual situation.

He was not remembered at his secondary modern school - where he spent only one year, and where several members of staff, including the headmaster, are new. A search for records revealed that he was tenth in his form, was assessed at A- for industry and C+ for punctuality.

The grammar school headmaster reports good average academic ability - introspective and wanders about on his own - takes things very seriously - intends (age 15.9) to enter training college.

Conclusion: TM IQ of 111 at 15.3 shows only a three point increase. During the last two years he has been at the top of his form in English while he has fallen away in mathematics, though the main 11+ weakness was on the verbal side. The undoubted all-round improvement is possibly due to serious application.

Note: Peculiar TM responses, AA5 (Proverbs)

- (a) Burnt child - "If you start off bad in life you don't like going back to where you were born at".

- (b) Nut & kernel - "You should be on the same level before you try to do anything to anybody".

SA,II-5

- (a) Bird & bush - "Better to have something than to say you are going to have something".
- (b) Silk purse - "No good trying to do something which can't be done - isn't the right thing".

Pupil no. 17. Father's occupation: Male nurse.

Seemed cheerful and genuine, though not very sure of himself when interviewed at 15.6. Intense concentration during the TM test.

He attended two primary schools, and the change involved a new style of handwriting. He was always good at Arithmetic, was nervous when he took the examination at 11, and thought he would have passed otherwise. His teacher, however, was doubtful about his English (doubts that were justified by his 11+ (MHE - 99) and 12+ examination results). He preferred the secondary modern to the primary school because he was interested in science.

He has three older brothers, one of whom attended the grammar school and is now engaged in aircraft research. The boy wants to be an aeronautical engineer.

The grammar school headmaster reported (July 1953) that the boy was handicapped by poor home circumstances. He intended going to a technical college in due course, but was so dreading the G.C.E. examination that he was not expected to stay the grammar school course. (In the event he left school before taking G.C.E., though the headmaster was optimistic about his chances).

Conclusion: Severely handicapped in English, though he gained promotion to the B stream at the end of his first year in the grammar school, and by the end of his second year was up to the form average in the subject. In the TM test at 15.6, however, three of his four correct responses in SA I, II and III were concerned with numbers. The primary school from which he came is the only one in the area consistently turning out pupils with lower Moray House scores in English and Arithmetic than is to be expected from the average IQ level (see Table III). His subsequent progress was therefore possibly due in some measure to improved instruction.

Pupil no. 18.      Father's occupation: Miner.

Though naturally more reserved than some of the younger boys in the group, he gives an impression of quiet confidence.

He thinks he was slow in arithmetic in the primary school and that his spelling was bad. He felt that he would not have much chance at 11, and when he failed gave up hope. He had not read much till then, but afterwards began to borrow books from the public library. One of his friends was successful at 11 and he himself gradually became interested. He "got higher up the class", gradually found the work easier and "therefore" more interesting. He did not sit for the O.A. examination at 12+, but was advised by his teacher to try the following year.

He has three older brothers - none went to a grammar school and all are "in the mines" - and one younger.

Grammar school headmaster's report: Real power of leadership - still a little shy: good footballer - School XI - thoroughly approved of.

July 1954 - 7 passes in G.C.E. - left school intending to become a naval draughtsman.

(at 15.4)

Conclusion: TM test/ confirms MHT score (122) and suggests that he did not come up to expectations in examinations - though his assessment for the year in which he was successful at 14+ fell from A- to B-. He was top of his form at the end of his first term in the grammar school, but appears to have been a potential winner at any time from 11 onwards. A more favourable linguistic background might have put him in the grammar school at 11.

Pupil no. 19. Father's occupation: Quantity Surveyor.

The boy attended an all-age school - which has since been reorganised. He thought his teachers hoped he would pass at 11, though he did not want to (but he says later that he was nervous about the examination). Six months' absence from school at "about 7" - injured stomach while playing football.

He liked the all-age school; none of his friends came to the grammar school. The headmaster suggested he should try again at 12 and 13. The youngest of five brothers, none of whom went to a grammar school, he wants to teach. His main interests (15.1) seem to be in games.

Grammar school headmaster's report: A decent home; good average progress. School football XI. Intends (July 1954) to enter training college.

July 1954 - 4 G.C.E. passes with 83 in history, but failure (34) in English language.

Conclusions: TM IQ 108 (at age 15.1) two points lower than MHT. The 11+ and 13+ (but not 12+) examinations indicate weakness in English confirmed by G.C.E. result. Only three boys had lower marks in English in the three third forms in the grammar school. His assessments from the all-age school are steady over the three years, but the 11+ assessment of B looks unreliable, since each of the four candidates from the school had the same rating, and none came higher than 142nd in the list of 189 candidates for the area.

A candidate of moderate ability who was perhaps fortunate, on purely academic considerations, to get into the grammar school.

pill no. 20. Father's occupation: Miner.

He thought he would pass at 11 - the examination "seemed easy". He was disappointed when he found he was going to the modern school, then "found it was a good school - more interesting - made new friends - some of the teachers made work seem more interesting".

Both parents wanted him to take the O.A. examinations, and his 11 year old sister went to a grammar school in the year in which he was successful.

His primary school assessment of B- suggests that he may have been unfortunate, since of the ten successful candidates from the school, two were rated at C+. Though he received only a C assessment at 12+, he failed narrowly, and if the English and Arithmetic marks had been standardised, he would have been admitted to the grammar school then. The school rating did not improve, and he was not finally successful until two years later, at 14+. After only two years in the grammar school he obtained 7 G.C.E. passes - five at 60 or higher, but a bare pass only in English language.

At 15.4 he said he wanted to become a teacher. He thought he had always been weak at Arithmetic. He was ill with pneumonia when he was five years old, and had bronchitis and chest troubles till he was 8 or 9. Short-sighted - has worn glasses for last two years.

Grammar school headmaster's report (when boy was top of the poorest section of the Vth form, after one year in the school): - "not sure about his character" - "hidden current of insolence?".

Conclusion: Difficulty in assessing him seems to have been a common experience. Thus, in the 1950 12+ examination he was rated C, yet two boys from the same school, rated at A, were 13th and 18th respectively, while this boy was 19th. In the following year, though 25th, he was rated C, while two As from the same school came 22nd and 50th. TM IQ of 114 (at 15.4) supports MHT 110, and in this case MHA of 118 and MHE of 117 represent respectable achievement for this area. A boy whose moderate talent has been consistently under-assessed, and who, with a definite goal (G.C.E.) was able to pull something out of the bag.

Pupil no. 21.

He did not expect to pass at 11 because there were plenty of better boys in his own school. For the same reason, he did not expect to pass at 12.

The secondary modern school was "a better school" - freer, more subjects, such as music, drama, geom. drawing, study of pond life; and some choice was offered. In the primary school "just English, Arithmetic, History etc."

One boy from his school with the same rating was successful at 11, and was still a success at the end of his third year in the grammar school. His TM IQ of 112 at 15.7 together with his 11+ scores and his assessments suggest that he was never better than a possible, and never completely out of the running. His secondary modern school teacher thought he had some ability which remained undeveloped because of ill-health. During the year at the school he fainted once and suffered from biliousness and frequent colds, and from trouble with the cervical glands. He had himself spoken of a month's absence from the primary school in his next to last year there through some infection of the leg. He was also absent on occasion from the grammar school, and missed one complete set of examinations in the third form. In the following term he was at the bottom of the form.

He left the grammar school before the headmaster was asked for a report, but he had previously expressed the opinion that the boy would not make the grade.

Conclusion: The boy had marginal ability, and illness, and perhaps lack of confidence, prevented him from capitalising it.

Appendix II

Some Details of the 11+ Selection  
Examinations for the years 1949, 1950, 1951.



Table XXIV

No. of pupils taking	1949	1950	1951
Part I	620	597	626
Part II	189	165	189
No. of pupils admitted to grammar school at 11+	62	62	65
Tests employed in Part II.			
MHT	40	41	44
MHE	18	19	20
MHA	18	19	20

Table XXV

The percentage of grammar school places awarded to pupils at 11+ grouped according to the primary school assessment.

Year	Primary school Assessment	% age of pupils in each category who were successful at 11+	% age of total no. of places available awarded to pupils in each category.
1949	A	69	45 } 60
	A-	71	15 }
	B+	57	12½ } 34
	B	20	18½ }
	B-	14	3 }
	C+	12	3 } 6
1950	A	76	33 } 41
	A-	83	8 }
	B+	52	18 } 51
	B	30	24 }
	B-	50	9 }
	C+	19	4 } 8
1951	A	59	43 } 54
	A-	58	11 }
	B+	73	16 } 42
	B	31	25 }
	B-	7	1 }
	C+	10	3 } 4
1951	C	5	1 }

A candidate is reckoned successful if he occupies one of the first 65 places.

The 1951 'A' % ages (col. 3) are spoiled by four small schools whose assessments appear to be ridiculously high. Between them they contributed 9 unsuccessful As, and without them the %age of As successful would have been 74 instead of 59.

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