All these subjects had been selected because they had long normal after-effects (at least 15 sec), and there should have been time in all subjects for an after-effect to appear after termination of pressure blindness, if pressure blindness were not influencing the duration of the effect in some of them. The mean duration of pressure was 10·7 sec.

(2) After stimulating one eye for 30 sec, the subject pressure blinded that eye while observing with the opposite eye. All 14 subjects saw an after-effect, the mean length of which on the first trial was 9·9 sec. Control observations on the duration of pressure needed for loss of vision in each subject indicated that 11 of 14 subjects should have produced pressure blindness in a time shorter than the length of their after-effect on the first trial.

After observing the after-effect in the opposite eye, subjects covered that eye and released the pressure blind eye. Eleven of the subjects saw a further after-effect in the stimulated eye, which lasted for 13·9 sec mean duration. Even without pressure blindness the after-effect may be observed for a longer period with the stimulated eye; it was seen by all 14 subjects and said to be more marked than when observing with the opposite eye.

These observations might be explained by supposing that the effect of pressure is to terminate observation of the adaptation caused by movement and in some cases to cancel it, depending perhaps on the degree of pressure applied. Release of pressure should then permit further observation of the after-effect in the unstimulated eye also.

(3) This trial resembled the preceding one up to the point where the after-effect came to an end in the opposite eye. The subject then released the pressure on the stimulated eye and covered it. In 7 of the 12 subjects tested, the after-effect reappeared in the opposite eye when pressure had been released, for a further mean length of 10·9 sec.

This would seem to indicate that the after-effect is dependent on the state of the stimulated retina. It also requires the supposition that in certain conditions the subject must be willing to ascribe to either eye an after-effect originating in one eye. There is independent evidence which supports this assumption[6].

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Future Open Scholars

EACH year since 1958, a variety of mental tests has been given to samples of fifth- and lower-sixth-form boys at English public and grammar schools[1]. The oldest of these boys have now left school, and the majority—147 out of 195—has proceeded to a university. Thus it is possible to compare those who have achieved academic distinction in reaching university with those who have not. For this purpose, the sample of 195 is divided into four groups: (*a*) boys gaining open scholarships and exhibitions at Oxford or Cambridge; (*b*) those gaining places at Oxford or Cambridge; (*c*) those gaining places at other universities; (*d*) those who have not gone to a university.

Table 1 sets out the scores of the four groups on a test of high-grade intelligence (*A.H.5*). The scores are graded from *A* to *E*, in the proportions 1 : 2 : 4 : 2 : 1, *A* representing the top 10 per cent of the sample in question and *E* the bottom 10 per cent. Table 1 shows that there is scarcely any relation between scores on the intelligence test and winning an open scholarship or exhibition. This holds true for arts and science subjects alike. Admittedly 6 of the 9 scholars and exhibitioners with low grades are arts specialists (history, English literature, modern languages), one is a classicist, and only two are scientists. However, this preponderance of arts scholars with low scores merely reflects a general arts/science difference on this type of intelligence test. Moreover, the two scientists with poor grades are not isolated exceptions: of 16 scholars and exhibitioners in mathematics and physical science, 6 had grades of *C* or lower.

Table 1. INTELLIGENCE TEST SCORES OF FUTURE OPEN SCHOLARS AND EXHIBITIONERS AT OXFORD AND CAMBRIDGE COMPARED WITH THOSE OF THEIR LESS SUCCESSFUL FORM-MATES

(Age when tested, 15–17; n = 195)

	Intelligence test scores					
	E	*D*	*C*	*B*	*A*	*n*
Scholars and exhibitioners	3	6	12	13	3	37
Commoners at Oxford and Cambridge	1	11	15	7	6	40
Other universities	7	13	26	15	9	70
No university	10	10	19	6	3	48

The pattern of scores shown in Table 1 holds good for a number of other tests and measures: verbal intelligence, numerical intelligence, diagrammatic intelligence, vocabulary, general knowledge, and various indices of accuracy. The vocabulary test differentiated the most clearly among these, but even here the superiority of future scholars and exhibitioners was far from marked ($P < 0{\cdot}005$; χ^2 test with Yates's correction). Easily the best predictor of success in scholarship examinations was a measure of candidates' interests outside the curriculum. Boys who later gained scholarships and exhibitions, especially in arts subjects, tended to be much more widely read than those who did not. They were interested both in literature ($P < 0{\cdot}001$), and in current affairs ($P < 0{\cdot}01$). Seventeen of the 37 scholars and exhibitioners were interested in literature, compared with only 24 out of 158 in the rest of the sample. Also, as one might expect, most future scholars and exhibitioners were judged by their form-mates to be more than usually hard working ($P < 0{\cdot}001$).

Thus, although intelligence tests can be used to predict which subjects a boy will choose to study in the sixth form[2,3], they give relatively little indication of how he will prosper. So far as intelligence test scores are concerned, the future open scholar is virtually indistinguishable at the age of 15–17 from the rest of his form-mates. He seems to differ, in other words, not in terms of his intellectual gifts, but rather in terms of the use he makes of them.

This result agrees with the recent American discovery that surprisingly large numbers of eminent mathematicians, scientists, architects and writers possess relatively low intelligence quotients[4]. Both findings cast doubt on the use of intelligence tests in educational selection. The range of intelligence test scores in Table 1 corresponds quite closely, for example, to the range of scores among grammar school boys as a whole. Not all the boys in the present sample took intelligence tests at the age of 11. The range of intelligence quotients among those that did extends from 110 to 139, the maximum score on the Moray House test in question being 140, and the cut-off score for grammar school selection usually being placed in the region of 110–115. It may be that a correlation exists between intelligence test scores and academic ability up as far as this cut-off point, but not above it—and that 11-plus selection is not, therefore, so wasteful of talent as the present results make it seem. On the other hand, such discontinuities are not often met with in psychology, least of all at points where they are administratively convenient.

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