Letters

Aptitude Tests

Chauncey and Hilton (4 June, p. 1297) raise the question, "Are aptitude tests valid for the highly able?" I believe that two other questions, not treated in their article, may be raised with respect to the validity of aptitude tests.

First: it would be most surprising if tests specifically contrived to measure some phase of scholastic aptitude such as mathematical ability did not show a positive correlation with scholastic success in the subject. However, is the correlation between the test results and naked ability as close as the correlation with some of the other commonly used indicators, such as the number of Ph.D. degrees earned by the students? That is, is there no possibility that the tests themselves influence the subsequent scholastic career of the student? Parents, teachers, even employers tend to encourage and place confidence in students who have attained high scores in the tests. Actions which would seem banal or stupid in a student with a low score are interpreted by parents and teachers as profound or at least interestingly eccentric when seen in a student previously labeled as a genius because of a high score in a test labeled aptitude or intelligence. Praise and acceptance in turn build up the student's self-confidence. To be truly valid it would seem to me that test results should be kept confidential from students, parents, and teachers; if the tests are to be scientific they cannot be put to practical use in classifying students or determining college admissions. Furthermore, for a rigorous correlation the student and all those in a position to influence his career should have no knowledge of the results of any tests which can in turn be correlated with the tests being studied. If this seems an impossible condition in this country, where children are subjected to aptitude tests from kindergarten on up, perhaps virgin territory for proving the validity of the tests can be found in one of the newly emerging countries.

Second: even if we assume that the self-reinforcing effect is negligible, are the tests valid as the sole or principal criteria for the selection of students for higher education? The tables in the article show that a substantial number of eminent individuals come from among those having relatively low scores. Can society afford to rely on tests which would discourage a substantial number of the most capable?

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Foreign Trade in Scientific Instruments

In his letter on "Balance of payments and government policies" (14 May, p. 894), Leonard F. Herzog takes as an example one particular instrument, a mass spectrometer from Japan, to make a case for further government restrictions on the purchase of foreign-made scientific instruments. I suggest that figures on the trade in scientific instruments between Japan and the U.S. would show the exchange to be in the favor of the U.S. At least, I have seen many more U.S.-made instruments in Japanese chemical laboratories than I have seen Japanese-made instruments in U.S. laboratories.

With respect to the trade between the United States and Sweden, I have more facts. In 1961, Sweden's purchase of scientific instruments from the U.S. was five times as high as Sweden's export of such instruments to the U.S. If industrial controllers and recorders, centrifuges, and similar equipment are counted, the balance in favor of the American manufacturers is still higher. I would not be surprised if American dominance in the instrument field is quite pronounced in most European countries. In some of these countries American corporations have started their own manufacturing subsidiaries; the profits from these subsidiaries flow or should flow back to the parent companies.

Instruments imported into the U.S. are subject to duties of between 12.5 and 50 percent of the F.O.B. export price (with some exceptions where the duty is calculated on the domestic list price in the country of origin). The Swedish import duty on instruments is 10 percent of the C.I.F. prices. However, there exists a UNESCO convention, to which Sweden, like most European countries, has agreed, which provides that instruments for scientific research and education for which no domestic equivalent is available shall be exempt from import duty, provided the purchaser is a nonprofit scientific institute or school. Therefore, the majority of the American-made instruments imported into Sweden are duty exempt. In addition, it is possible in general to obtain exemption from the general sales tax. With a few exceptions, the United States does not apply this UNESCO convention.

Herzog mentions the 15-percent surtax in Great Britain. This surtax has now been reduced to 10 percent, and it does not apply to cases exempted under the provision of the UNESCO convention. The French 35-percent "value-added" tax, which he also mentions, applies to home-produced as well as imported goods and thus does not discriminate against imported equipment. Further, a large percentage of scientific instrument imports to France go through a state purchasing organization (CNRS) which imports scientific instruments for most of the universities and governmental research institutes duty and tax exempt.

There is one additional factor that assists U.S. manufacturers in their competition with European manufacturers. Wages and salaries rise much faster in Europe than in the U.S., and subsequently the gap between manufacturing costs diminishes rapidly. The U.S. manufacturers further have the benefit of a large home market, which many European manufacturers do not have. In conclusion, one may say that the U.S. instrument industry already is in a favored position relative to foreign manufacturers.

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