CREATIVITY

Testing for the spark

Identifying the truly creative mind is a task that finds existing testing techniques wanting

by Patricia McBroom

The almighty I.Q. still controls the fate of most college-bound American students, but its strength has been seriously undermined as the study of creativity gains in sophistication.

Those doing the undermining have been studying creativity for the past 15 years; they claim that intelligence beyond a certain minimum level bears little or no relation to creative accomplishment in fields from science to art.

"It simply is not true that the more intelligent person is necessarily the more creative one," says Dr. Donald W. MacKinnon, director of Berkeley's Institute of Personality Assessment and Research at the University of California. A frontrunner in the creative studies, Dr. MacKinnon's institute has over the years sampled top architects, mathematicians and research scientists, judged for their creativity by colleagues.

"The findings are clear," says Dr. MacKinnon. Careers in such demanding fields as architecture, mathematics and scientific research seem to require an I.Q. level approaching 120. Beyond that, he says, intelligence and creative adult work show essentially zero correlations. The less creative men and women studied at Berkeley covered the same I.Q. range—from about 118 to 154—as their outstanding colleagues.

Another investigator in the field puts the necessary I.Q. minimum below 120—a level common to college students. "It must be lower than the devil," says Dr. John L. Holland, vice president for research at the American College Testing Program. "If you look at any talented performance, one of the most important traits is persistence." Add to that originality and courage. Yet, "most psychologists have been acting as if intelligence is the only important thing in the world," says Dr. Holland.

Actually, attempts to set a minimum I.Q. level for creative performance are largely playful quibbling. The Berkeley institute and ACT are mainly interested in getting across to the academic and intellectual world one central theme: Intelligence bears some relation to creative performance, but explains very little of it. Work done by outstanding adults or by students who excel in scientific or artistic activity does not correlate with various I.Q. levels. Academic grades show the same lack of relevance to creative achievement.

People have subjective impressions of intelligence which probably cover many talents, including creativity. But in the United States, intelligence also has concrete, objective meaning—it is, in fact, the score earned on one or several standard mental tests. A child receiving high scores is called gifted. Most colleges and universities select their students on the basis of intelligence scores and high school grades. The two are related. Mental tests seem quite good at predicting academic potential. But according to a large body of data, neither the tests nor the grades will predict high level accomplishment beyond school.

"Academic potential appears to be only one of several relatively independent dimensions of talent," warns Dr. Holland, "and should be used with discrimination rather than as a panacea."

Good grades lead to more good grades; creative work leads to more creative work. "It's a case of psychologists catching up to the mothers of the world."

What will predict adult achievement, insofar as it can be predicted? Records of extracurricular achievement, says Dr. Holland—perhaps an award in a science fair or debate; excellence in art, music, literature, theater or leadership, accomplished by the student on his own outside the classroom.

ACT has by now studied half a million students selected through its nationwide testing program, the only one of the nation's three big testing operations to stress records of nonacademic work. Results support the Berkeley data: There is weak correlation between intelligence and human performance which is judged by others to be outstanding, or in other words, creative.

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In one sense, the creativity studies only corroborate what humans know intuitively. Good grades lead to more good grades and creative work leads to more creative work. "It's a case of psychologists catching up with the mothers of the world," says Dr. Holland. But what is less well known is the extent to which intelligence measures are apparently locked into the academic cycle.

The creativity people would like to take some of the pressure off intelligence as the mark of giftedness. In this effort, they have not been too successful.

"Faculty people don't want to believe their grades are not very relevant to creative accomplishment," says Dr. Holland. And those who have been promoting intelligence tests through the years "cannot now say they are not so important."

But in addition, creative human performance is sufficiently complex that depending on a scientist's definition and analytic methods, the conclusions are quite different.

Dr. Stephen Klein, a research psychologist with the Educational Testing Service challenges the MacKinnon data on this basis. All the people studied at

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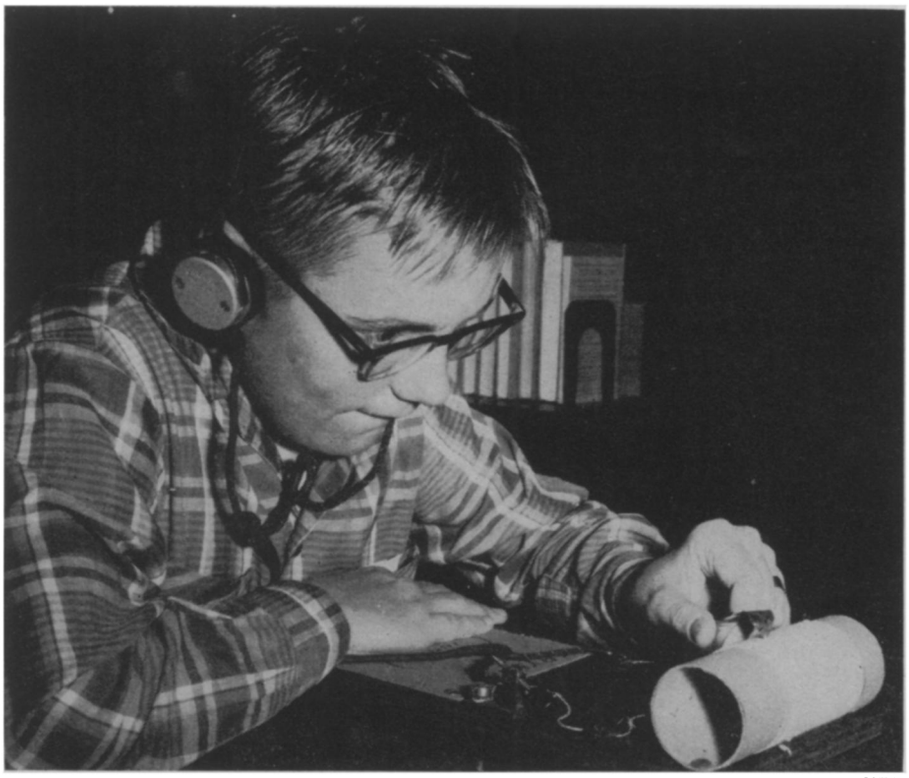
Berkeley were creative and also quite intelligent, he points out. Consequently, Dr. Klein believes the zero correlations found there between creativity and intelligence are open to question.

He says he thinks the man with an I.Q. of 180 has a better chance of being creative than the man at 120, in contrast to Dr. MacKinnon's conclusion. In his own investigation of creativity, Dr. Klein has found that creative science students—those winning the Westinghouse Science Talent Search, for example—show a combination of three factors predicting their success: intelligence, personal drive and family background. But he also includes extracurricular achievement in his catalogue of predictors.

"It looks like creativity is a function of many things, with intelligence playing a moderate role," says Dr. Klein.

But he sweeps everyone out of the room when he says, "The single best predictor of creativity is asking the student himself . . . just about every creativity study shows that."

Even those protecting intelligence measures now admit that their relevance to creative performance is not very high. In Dr. Holland's opinion, the cor-



NEA

Is there a relationship between intelligence and creative talent?

relation is so low as to be virtually unimportant.

The National Merit Scholarship program pinpointed a small group of people with very high intelligence, he says. But these were not the people who in college were world-beaters. Rather, the most promising people did not have such high scores.

Musical talent, Dr. Holland adds, even shows a slightly negative correlation with intelligence and persistently so.

"There must be at least seven different dimensions of talent," including both mental and emotional factors.

Some of those emotional factors have been isolated by the Berkeley work. They include a healthy narcissism, a penchant for independence, originality and persistence.

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The creative person is marked by a preference for richness and complexity of experience; he likes disorder and asymmetry, apparently because they challenge his drive to impose the most far-reaching and difficult ordering. Possibly because of this greater openness to multiplicity, inner experience and disorder, creative groups are likely to score higher than normal in psychopathology.

Many of the Berkeley subjects showed rather clear evidence of psychopathology—but also the means to control it, says Dr. MacKinnon.

Similarly the creative men scored higher on femininity measures than their less creative colleagues. This was no indication of sexual deviance, Dr. MacKinnon emphasizes, but further signs of the creative individual's openness to experience, wide-ranging interests, and self-awareness.

There is a danger that once society and academia stop doing homage to the I.Q., they may begin worshiping tests of original or divergent thinking. Such tests have been developed—incorporating such demands as thinking up novel uses for brick—but their relevance to actual creative achievement is a long way from confirmation.

It seems sure, however, that a variety of new tests unlike the old intelligence measures will emerge and possibly gain importance, but not again as single measures like an I.Q.

"I don't doubt that such tests may get at some quality relevant to creativity," says Dr. MacKinnon, "but they can't get at the motivational factors."

There seems no appeal from the fact that if colleges wish to nurture outstanding and creative people, they will have to look at prior nonacademic achievement. Once the I.Q. dam breaks, comes a flood of mental-emotional qualities, best expressed through talented performance and only poorly reflected, if at all, in a test.