Mainstream Science on Intelligence

Since the publication of "The Bell Curve," many commentators have offered opinions about human intelligence that manage to confuse, inflame, and divide. Some conclusions dismissed in the media as discredited are actually firmly supported.

This statement outlines conclusions regarding individual and group differences in intelligence. It presents an updated version of the vexing phenomenon that the research has revealed in recent years. The following conclusions are fully described in the major textbooks, professional journals and encyclopedias on intelligence.

The Meaning and Measurement of Intelligence

1. Intelligence is a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broad and flexible capacity to adapt our understanding of our surroundings—"catching on," "making sense" of things, or "figuring out" what to do.

2. Intelligence, so defined, can be measured, and intelligence tests measure it well. They are among the most accurate (in technical terms, the "validity") of all psychological tests and assessments. They do not measure creativity, character, personality, or other important differences among individuals, nor are they intended to.

3. While there are different types of intelligence tests, they all measure the same intelligence. Some use words or numbers and require specific cultural knowledge (like vocabulary). Others do not, and instead use shapes or designs and require knowledge of only simple, universal concepts (many/few, open/closed, up/down).

4. The spread of people along the IQ continuum, from low to high, can be represented with the bell curve (in statistical jargon, the "normal curve"). Most people cluster around the average IQ (100). Few are either very bright or very dull: About 25% of the people are above the curve (we often considered the threshold for "giftedness"), with about the same percentage below IQ 70 (IQ 70-75 often being considered the threshold for "dumbness").

5. Intelligence tests are not culturally biased against American blacks or other native-born, English-speaking peoples in the U.S. Rather, IQ scores predict equally accurately for all such Americans, regardless of race and social class. Individuals who do not understand English well can be given either a nonverbal test or one in their native language.

6. The brain processes underlying intelligence are complex. Current research looks, for example, at speed of neural transmission, glucose (energy) uptake, and electrical activity of the brain.

Group Differences

In general, all racial-ethnic groups can be found at every IQ level. The bell curves of different groups overlap considerably, but groups often differ in where the members fall along the IQ line. The bell curves for some groups (Jews and East Asians) are centered somewhat higher than for whites in general. Other groups (blacks and Hispanics) are centered somewhat lower than non-Hispanic whites.

8. The bell curve for whites is centered around an IQ of 100. This curve is for American blacks roughly around 85; and those for different subgroups of Hispanics roughly midway between those for whites and blacks. Both of these distributions are derived for exactly where above IQ 100 the bell curves for Jews and Asians are centered.

Practical Importance

9. IQ is strongly related, probably more so than any other single measurable human trait, to many important educational, occupational, economic, and social outcomes. Its relation to the welfare and performance of individuals is very strong in some arenas in life (education, military training), moderate but robust in others (social competence), and modest but con-

do not differ as much in IQ, as in graduate school (or special education), other influences on performance loom larger in comp-

13. Certain personality traits, special aptitudes, physical capabilities, experience, and the like are important for success in specific domains successful performance in many jobs, but they have narrower (or unknown) applicability or transferability across tasks and set-

14. Individuals differ in intelligence due to differences in both environments and genetic heritage. Heritability esti-

mates range from 0.4 to 0.8 (on a scale from 0 to 1), mostly indicating that genetics plays a bigger role than environment in creating IQ differences among individuals. (Heritability is the proportion of phenotypic variance that is due to genetic variance.) If all environments were to become equal for everyone, heritability would rise to 100% because all remaining variance would be heritable. IQ in the U.S. would be no more heritable than in any other IQ.

15. Members of the same family also tend to differ substantially in intelligence (by an average of about 12 IQ points) for both genetic and environmental reasons. They differ genetically because biological relatives share at least half their genes with each parent and, on the average, only half with each other. They also differ in IQ because they experience different environments within the same family.

16. That IQ may be highly heritable does not mean that it is not affected by the environment. Individuals born with fixed, unchangeable levels of intelligence (no one claims they are), IQs do gradually stabilize during childhood, however, and generally change little thereafter.

17. Although the environment is important in creating IQ differences, we do not know yet how to manipulate it to raise low IQs permanently. Whether recent attempts to show promise is still a matter of considerable scientific debate.

18. Generally speaking, IQ differences are not necessarily irredeemable (consider diabetes, poor vision, and phalen ketonuria), nor are environmentally caused IQ differences (consideracreducible damaged brains, injuries, poisons, severe neglect, and some diseases). Both may be preventable to some extent.

19. There is no persuasive evidence that the IQ bell curves for different racial-ethnic groups are converging. Surveys in some years now that gaps in academic achievement have narrowed a bit for some races, ages, school subjects and skill levels, but this picture seems too mixed to reflect a general shift in IQ levels themselves.

20. Racial-ethnic differences in IQ bell curves are essentially the same when youngsters leave high school as when they enter high school because blacks and young students learn faster than slow learners, these same IQ differences lead to growing disparities in amount learned as young people move up in educational ranks. As large national surveys continue to show, black 17-year-olds perform, on the average, more like white 13-year-olds in reading, math, and science, with Hispanics in between.

21. The reasons that blacks differ among themselves in intelligence appear to be based largely on those for why whites (or Asians or Hispanics) differ among themselves. Both environment and genetic heredity are involved.

22. The definitive answer to why IQ bell curves differ across racial-ethnic groups. The reasons for these IQ differences between groups may be marked differently from the reasons for why individuals differ among themselves within any particular group (whites or blacks or Asians). In fact, it is wrong to assume, as many do, that the reason why some individuals in a population have high IQs but others have low IQs must be the same reason why some individuals contain a mix of high (or low) IQ individuals than others. Most experts believe that environment is important in pushing the bell curve, but that genetics could be involved too.

23. Racial-ethnic differences are somewhat smaller but still substantial for individuals from the same socioeconomic backgrounds. To illustrate, black students from prosperous families tend to score higher in IQ than blacks from poor families, but they score no higher, on average, than whites from poor families.

24. Almost all Americans who identify themselves as black have white ancestors—the white admixture is about 25%, on average—and many self-designated whites, Hispanics, and others likewise have admixtures. Research on how intelligence relies on self-classification into distinct racial categories, as does most other social-science research, shows how its findings echo to some unclear mixture of social and biological distinctions among groups (no one claims otherwise).

Implications for Social Policy

25. The research findings neither dictate nor indicate social policy, because they can never determine our goals. They can, however, help us estimate the trade-offs of pursuing those goals through different means.

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