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# Mainstream Science on Intelligence

Since the publication of "The Bell Curve," many commentators have offered opinions about human intelligence that misstate current scientific evidence. Some conclusions dismissed in the media as discredited are actually firmly supported.

This statement outlines conclusions regarded as mainstream among researchers on intelligence, in particular, on the nature, origins, and practical consequences of individual and group differences in intelligence. Its aim is to promote more reasoned discussion of the vexing phenomenon that the research has revealed in recent decades. The following conclusions are fully described in the major textbooks, professional journals and encyclopedias in 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 broader and deeper capability for comprehending 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, reliable and valid) 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 well by 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 3% of Americans score above IQ 130 (often considered the threshold for "giftedness"), with about the same percentage below IQ 70 (IQ 70-75 often being considered the threshold for mental retardation).

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 still little understood. Current research looks, for example, at speed of neural transmission, glucose (energy) uptake, and electrical activity of the brain.

## Group Differences

7. Members of 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 their members tend to cluster 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 roughly around IQ 100; the bell curve for American blacks roughly around 85; and those for different subgroups of Hispanics roughly midway between those for whites and blacks. The evidence is less definitive 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 comparison.

13. Certain personality traits, special talents, aptitudes, physical capabilities, experience, and the like are important (sometimes essential) for successful performance in many jobs, but they have narrower (or unknown) applicability or "transferability" across tasks and settings compared with general intelligence. Some scholars choose to refer to these other human traits as other "intelligences."

## Source and Stability of Within-Group Differences

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

IQs permanently. Whether recent attempts show promise is still a matter of considerable scientific debate.

18. Genetically caused differences are not necessarily irremediable (consider diabetes, poor vision, and phenal ketonuria), nor are environmentally caused ones necessarily remediable (consider injuries, poisons, severe neglect, and some diseases). Both may be preventable to some extent.

## Source and Stability of Between-Group Differences

19. There is no persuasive evidence that the IQ bell curves for different racial-ethnic groups are converging. Surveys in some years show 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 first grade. However, because bright youngsters learn faster than slow learners, these same IQ differences lead to growing disparities in amount learned as youngsters progress from grades one to 12. 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 basically the same as those for why whites (or Asians or Hispanics) differ among themselves. Both environment and genetic heredity are involved.

22. There is no definitive answer to why IQ bell curves differ across racial-ethnic groups. The reasons for these IQ differences between groups may be markedly different 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 populations contain more such high (or low) IQ individuals than others. Most experts believe that environment is important in pushing the bell curves apart, 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 20%, on average—and many self-designated whites, Hispanics, and others likewise have mixed ancestry. Because research on intelligence relies on self-classification into distinct racial categories, as does most other social-science research, its findings likewise relate 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 preclude any particular social policy, because they can never determine our goals. They can, however, help us estimate the likely success and side-effects of pursuing those goals via different means.

## The following professors—all experts in intelligence and allied fields—have signed this statement:

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| Richard D. Arvey, University of Minnesota                      | Nadeen L. Kaufman, California School of Professional Psychology at San Diego                |
| Thomas J. Bouchard, Jr., University of Minnesota               | Timothy Z. Keith, Alfred University   |
| John B. Carroll, Un. of North Carolina at Chapel Hill          | Nadine Lambert, University of California at Berkeley  |
| Raymond B. Cattell, University of Hawaii                       | John C. Loeblin, University of Texas at Austin  |
| David B. Cohen, University of Texas at Austin                  | David Lubinski, Iowa State University   |
| Rene V. Dawis, University of Minnesota                         | David T. Lykken, University of Minnesota  |
| Douglas K. Detterman, Case Western Reserve Un.                 | Richard Lynn, University of Ulster at Coleraine   |
| Margvin Dunnette, University of Minnesota                      | Paul E. Meehl, University of Minnesota  |
| Hans Eysenck, University of London                             | R. Travis Osborne, University of Georgia  |
| Jack Feldman, Georgia Institute of Technology                  | Robert Perloff, University of Pittsburgh  |
| Edwin A. Fleishman, George Mason University                    | Robert Plomin, Institute of Psychiatry, London  |
| Grover C. Gilmore, Case Western Reserve University             | Cecil R. Reynolds, Texas A & M University   |
| Robert A. Gordon, Johns Hopkins University                     | James C. Rowe, University of Arizona  |
| Linda S. Gottfredson, University of Delaware                   | J. Philippe Rushton, Un. of Western Ontario   |
| Robert L. Greene, Case Western Reserve University              | Vincent Sarich, University of California at Berkeley  |
| Richard J. Haier, University of California at Irvine           | Sandra Scarr, University of Virginia  |
| Garrett Hargdin, University of California at Berkeley          | Frank L. Schmidt, University of Iowa  |
| Robert Hogan, University of Tulsa                              | Lyle F. Schoenfeldt, Texas A & M University   |
| Joseph M. Horn, University of Texas at Austin                  | James C. Sharf, George Washington University  |
| Lloyd G. Humphreys, University of Illinois at Urbana-Champaign | Herman Spitz, former director E.R. Johnstone Training and Research Center, Bordertown, N.J. |
| John E. Hunter, Michigan State University                      | Julian C. Stanley, Johns Hopkins University   |
| Seymour W. Itzkoff, Smith College                              | Del Thiessen, University of Texas at Austin   |
| Douglas N. Jackson, Un. of Western Ontario                     | Lee A. Thompson, Case Western Reserve University  |
| James J. Jenkins, University of South Florida                  | Robert M. Thorndike, Western Washington Un.   |
| Arthur R. Jensen, University of California at Berkeley         | Philip Anthony Vernon, Un. of Western Ontario   |
| Alan S. Kaufman, University of Alabama                         | Lee Willerman, University of Texas at Austin  |

sistent in others (law-abidingness). What-ever IQ tests measure, it is of great practical and social importance.

10. A high IQ is an advantage in life because virtually all activities require some reasoning and decision-making. Conversely, a low IQ is often a disadvantage, especially in disorganized environments. Of course, a high IQ no more guarantees success than a low IQ guarantees failure in life. There are many exceptions, but the odds for success in our society greatly favor individuals with higher IQs.

11. The practical advantages of having a higher IQ increase as life settings become more complex (novel, ambiguous, changing, unpredictable, or multifaceted). For example, a high IQ is generally necessary to perform well in highly complex or fluid jobs (the professions, management); it is a considerable advantage in moderately complex jobs (crafts, clerical and police work); but it provides less advantage in settings that require only routine decision making or simple problem solving (unskilled work).

12. Differences in intelligence certainly are not the only factor affecting performance in education, training, and highly complex jobs (no one claims they are), but intelligence is often the most important. When individuals have already been selected for high (or low) intelligence and so

mates range from 0.4 to 0.8 (on a scale from 0 to 1), most thereby indicating that genetics plays a bigger role than does environment in creating IQ differences among individuals. (Heritability is the squared correlation of phenotype with genotype.) If all environments were to become equal for everyone, heritability would rise to 100% because all remaining differences in IQ would necessarily be genetic in origin.

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 brothers and sisters share exactly 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 are not 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