Intelligence: Knowns and Unknowns

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Background

In the fall of 1994, the publication of Hernstein and Muray's book *The Bell Curve* sparked a new round of debate about the meaning of intelligence test scores and the nature of intelligence. Reviewing the intelligence debate at its meeting of November 1994, the Board of Scientific Affairs (BSA) of the APA concluded that there was urgent need for an authoritative report on the many issues raised. Acting by unanimous vote, BSA established a Task Force charged with preparing such a report. Hernstein and Murray (and many of their critics) have gone well beyond the scientific findings, making explicit recommendations on various aspects of public policy. The concern here, however, is with science rather than policy. The charge to the Task Force was to prepare a dispassionate survey of the state of the art: to make clear what has been scientifically established, what is presently in dispute, and what is still unknown. In fulfilling that charge, the only recommendations made were for further research and calmer debate.

Findings

Because there are many ways to be intelligent, there are also many conceptualizations of intelligence. The most influential approach, and the one that has generated the most systematic research, is based on psychometric testing.

Summary of findings:

1. Differences in genetic endowment contribute substantially to individual differences in (psychometric) intelligence, but the pathway by which genes produce their effects is still unknown. The impact of genetic differences appears to increase with age, but the task force does not know why.
2. Environmental factors also contribute substantially to the development of intelligence, but the task force does not clearly understand what those factors are or how they work. Attendance at school is clearly important, for example, but the task force does not know what aspects of schooling are critical.
3. The role of nutrition in intelligence remains obscure. Severe childhood malnutrition has clear negative effects, but the hypothesis that particular "micronutrients" may affect intelligence in otherwise adequately-fed populations has not yet been convincingly demonstrated.
4. There are significant correlations between measures of information-processing speed and psychometric intelligence, but the overall pattern of these findings yields no easy theoretical interpretation.
5. Mean scores on intelligence tests are rising steadily. They have gone up a full standard deviation in the last 50 years or so, and the rate of gain may be increasing. No one is sure why these gains are happening or what they mean.
6. The differential between the mean intelligence test scores of Blacks and Whites (about one standard deviation, although it may be diminishing) did not result from any obvious biases in test construction and administration, nor does it simply reflect differences in socioeconomic status. Explanations based on factors of caste and culture may be appropriate, but so far have little direct empirical support. There is certainly no such support for a genetic interpretation. At present, no one knows what causes this differential.

7. It is widely agreed that standardized tests do not sample all forms of intelligence. Obvious examples include creativity, wisdom, practical sense, and social sensitivity; there are surely others. Despite the importance of these abilities, researchers know very little about them: how they develop, what factors influence that development, how they are related to more traditional measures.

In a field where so many issues are unresolved and so many questions unanswered, the confident tone that has characterized most of the debate on these topics is clearly out of place. The study of intelligence does not need politicized assertions and recriminations; it needs self-restraint, reflection, and a great deal more research. The questions that remain are socially as well as scientifically important. There is no reason to think them unanswerable, but finding the answers will require a shared and sustained effort as well as the commitment of substantial scientific resources.