Name _____ Date _____ Class _____

CHAPTER

9

READING

INTELLIGENCE

In 1905, French psychologist Alfred Binet published his first battery of tests intended to measure intelligence. Binet introduced the term *intelligence quotient,* or *IQ,* for a score representing an individual's intelligence as measured against a standard. In the countries that have administered tests to measure intelligence, IQ scores have soared dramatically since their introduction.

Explaining the cause of the sharp rise in IQ scores has captured the interest of many people. In April 1996, psychologist Ulrich Neisser of Emory University in Atlanta, Georgia, invited 16 researchers—including James R. Flynn, a political philosopher at the University of Otago in New Zealand, who stumbled upon the phenomenon, and psychologists Wendy Williams of Yale University and Patricia Greenfield of UCLA—to meet to discuss the issues that surround the consistently rising IQ scores. The following excerpt is from an article written about discussions at that meeting. The article is by journalist Sharon Begley and first appeared in the May 6, 1996, issue of *Newsweek.*

> To some veterans of the "Bell Curve" debate, the sharp rise in IQ bolsters the argument that intelligence must be determined more by nurture than by nature. Nature, in the form of the prevalence of "smart" genes in a population, does not change at anything like the speed with which IQ has risen, goes the argument. "The gene pool cannot change so much, so fast," says John Boli of Emory University. But the Flynn effect might in fact be "consistent with either a high or a low heritability of intelligence," argues psychologist Stephen Ceci of Cornell University. He draws an analogy to height. Stature is strongly heritable: short parents have shorter children than tall parents do. Yet height, like IQ, has been rising for decades, not because tallness genes are suddenly more common but because of better nutrition. Similarly, intelligence may have a genetic basis yet still be subject to environmental influences. These influences would shape the form that intelligence takes in a particular society. They would also allow more children to attain their maximum intellectual potential—or keep them from doing so.
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> On a recent [1996] April weekend in Atlanta, psychologist Ulrich Neisser of Emory assembled 16 researchers to discuss these intriguing issues. Could rising living standards explain the IQ gain? Of the 20-odd-point rise, socioeconomic factors account for perhaps 5 points, Flynn calculates. Better schools? The greatest IQ gains have come on nonverbal intelligence tests—those that are heavy on mazes and puzzles. Yet these are the very tests that are designed to be free of such cultural influences as education. On tests of "acquired intelligence" (vocabulary or arithmetic or facts such as where turpentine comes from), which are expected to mirror acquired knowledge such as that from schooling, the gains are much smaller.
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> Might better nutrition and a more stimulating environment of museums and zoos, Legos and Transformers account for the IQ rise? Both can raise IQ scores, but only because they raise true intelligence by, say, giving the Legomaniac a better grasp of spatial relationships. And there is no evidence that real-world intelligence—an ability to learn faster or make creative leaps or do any of the other things that "intelligence" connotes—is rising at anything like the rate of IQ scores. (If it were,

remember, the average American of 1918 couldn't have understood baseball.) Flynn calls this "the broken link" between IQ and intelligence.

At the Emory conference, Yale's Williams, an expert on the development of children's intelligence, pointed out that much of the IQ gain may simply reflect the greater familiarity that today's kids have with the sorts of questions posed on the tests. Taking her data from wherever she can find it, Williams has been collecting kids' cereal boxes and fast-food bags. Both are covered with mazes and puzzles remarkably similar to what IQ tests ask. "In the 1930s a kid may never have seen a maze before finding one on his IQ test," says Williams. "It seems clear that the tests are not for measuring innate, immutable intelligence, but a type of practiced learning and familiarity with the test questions."

But part of the IQ gain may reflect something far more meaningful, Williams suggested. Several studies indicate that a more permissive parenting style gives children a greater facility with language. "If the child is leading the parent, rather than always being directed, language skills develop faster," says Williams. "And language is closely linked to overall cognitive capacity. So while test-taking practice and a culture awash in mazes and puzzles would raise IQ scores without increasing intelligence in any meaningful way, parenting style may produce a true increase in intelligence and also in IQ."

Of all the explanations offered for the Flynn effect, Flynn himself is most taken with the idea that every generation comes of age in a world starkly different from their parents'. "Technological development has been going on in all the Flynn-effect countries," points out psychologist Patricia Greenfield of UCLA. And in some places formal schooling was greatly expanded during the same period. Whatever schools teach, they rely on the basic structure of test questions and answers. "The test question is the most basic convention on an intelligence test," says Greenfield. Children who have not had formal schooling would be unfamiliar with this format and therefore might do worse on standard IQ tests for reasons having nothing to do with their innate intelligence. More recently, Greenfield argues, wave upon wave of other cultural forces has lapped onto children's mental shores. Radio and TV drove up basic vocabulary. Videogames like Tetris enhanced such abilities as assembling a puzzle, a common IQ-test question. Action-packed videogames typically demand navigation through a two-dimensional representation of a 3-D space; mental paper folding, a prominent feature of the Stanford-Binet IQ test, demands the same skill. The spread of these image-intense technologies, says Greenfield, could explain the "spurt [in IQ scores] in the U.S. between 1972 and 1989."

QUESTIONS

1. According to this article, would you expect children with no formal schooling to do well on a standard IQ test? Why or why not?
2. What strategies prepare a student for an IQ test?
3. Do you think IQ tests test intelligence? Why or why not?