

Questionnaire

Smarter than ever?

Over the past century, the average IQ in industrialized countries has risen to keep pace with the complexity of modern life. IQ researcher James Flynn discusses why those gains have occurred and whether they are likely to continue.

BY LEA WINERMAN
Monitor staff

Over the past 100 years, Americans' mean IQ has been on a slow but steady climb. Between 1900 and 2012, it rose nearly 30 points, which means that the average person of 2012 had a higher IQ than 95 percent of the population had in 1900.

Political scientist James Flynn, PhD, of the University of Otago in New Zealand, first discovered those astonishing IQ gains nearly 30 years ago. Since then, the steady rise in IQ scores in the United States and throughout the developed world has been dubbed the "Flynn effect."

In his new book "Are We Getting Smarter?" Flynn discusses the origins of his eponymous effect and muses on its implications for the economic prospects of the developing world, how we nurture our children and even its impact on death-row inmates.

Flynn spoke to the *Monitor* about his work.

How did you first discover that IQs were rising?

I started investigating IQ scores in the 1980s. I was interested in the correlation between U.S. military intelligence tests and mainline IQ tests. But when I looked at the scoring manuals I noticed something striking. Often, to make sure that the correlation co-efficients were the same between, let's say, the

Wechsler Intelligence Scale for Children, published in 1949, and the revised version published in 1974, researchers would give the same group of subjects both tests. And it turned out that in every instance, the earlier tests gave the subjects higher IQs than the later tests.

That was the first tipoff that IQs were rising because you can't get a higher score on the earlier test unless the IQ for the standardization sample was lower 20 years ago than it is today. It's like qualifying for the Olympic high jump: You might be able to do it easily by the standards of 20 years ago, but not by the standards of today.

After I published an article on that finding in 1984, psychologist Arthur Jensen wrote me and said, "I bet you won't find the same on culturally reduced tests" [tests that emphasize problem-solving abilities rather than culturally specific knowledge], like Raven's Progressive Matrices [an intelligence test in which people complete abstract visual patterns]. He and others thought that the gains just showed that kids are responding to schooling.

So, then I sampled the world over and I found that in 14 nations, IQs had risen the most on the culturally reduced tests, which was quite a shock.

We now have data for about 30 countries, and it falls into the pattern that the gains are greatest — perhaps something like six points a decade — on the culturally reduced tests like Raven's.

Next in line are usually the Wechsler performance tests — they go up at about four points a decade — and then finally the verbal tests rise at about two or three points a decade.

What has caused these changes?

Well, everything about the modern world has changed since 1900, as you can imagine.

The three things that stand out are: first, formal schooling. That clearly has to be involved in the huge gains in vocabulary and general information we see in America since 1950 — vocabulary subtests of the IQ tests have risen by 17 points over those 50 years. If you project that back to 1900, a period for which we don't have adequate data, that would be 34 points, or two standard deviations. So that's a lot of vocabulary. It means that people today on average know enough vocabulary to mimic the speech of only the cultural elite of 1900.

The second factor is what Alexander Luria discovered when he tested rural Russian peasants in the 1930s. He discovered that pre-scientific people can't take the hypothetical seriously. That is, if you pose to them questions like, "There is snow at the North Pole; where there is snow, bears are white; what color are bears at the North Pole?" they would say, "Well, I've only seen brown bears. And only if a person came from the North Pole with

testimony would I believe that the bears there are white."

They were addicted to the concrete world, not the world of hypotheticals. And that of course has a big impact on a whole range of tests. If you look at Raven's, where the gains have been so huge, the test consists of all hypothetical questions about symbols that are well removed from concrete reality.

Luria also asked his subjects about classification, such as, "What do dogs and rabbits have in common?" In 1900, a person would say, "You use dogs to hunt rabbits." Today you say, "They're both mammals." And that gets the question right.

In the past, people's minds were utilitarian. They weren't interested in hypotheticals or in classifying things together. But today people have "donned scientific spectacles," they have scientific habits of mind.

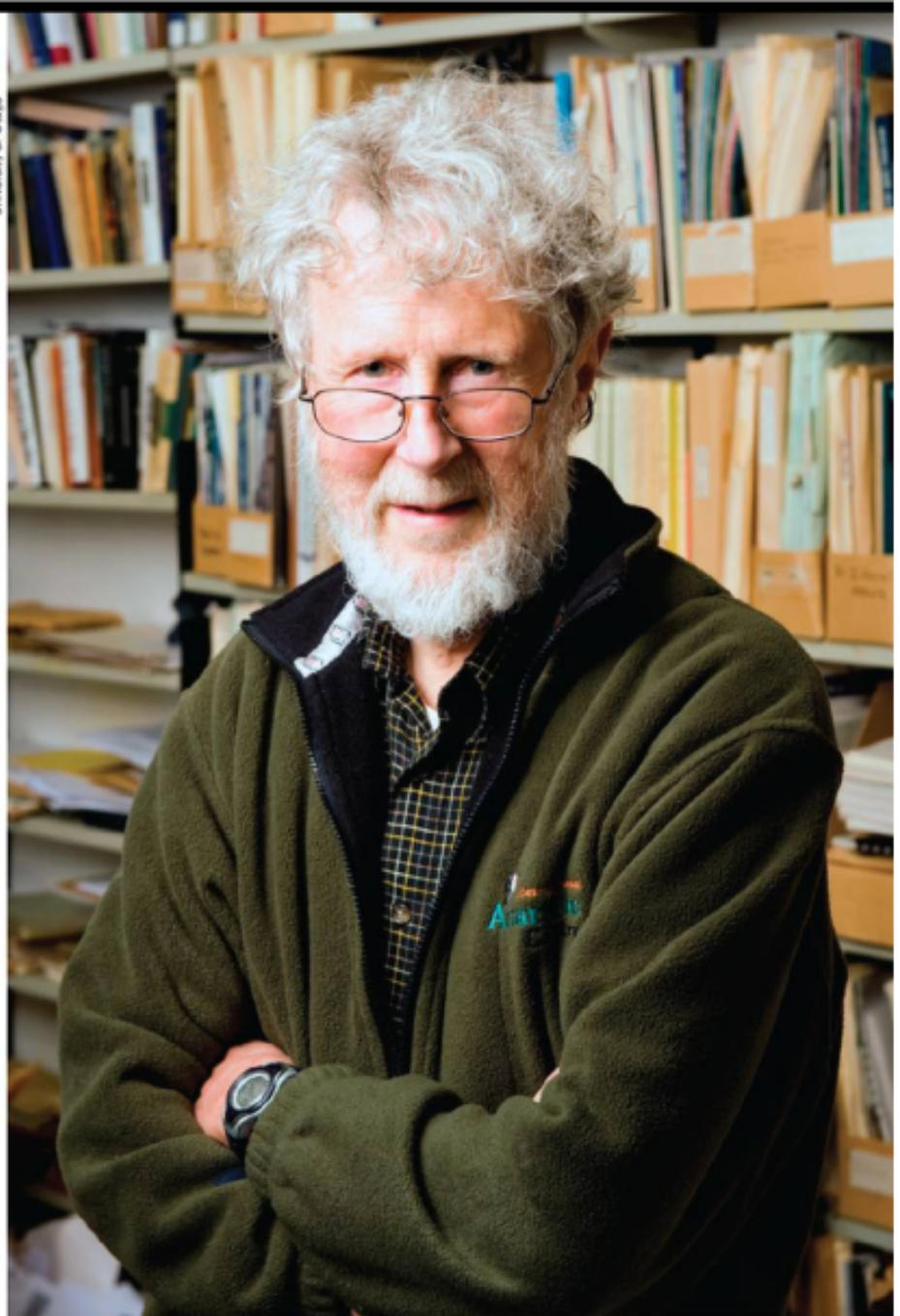
Finally, there's the wealth of visual images in the modern world. I think that is responsible for improvements in mapping skills and improvements in looking at three-dimensional figures and how they rotate.

Do these rising IQ scores actually mean that people are getting smarter?

That depends what you mean by smarter. It really breaks down into four questions:

Do we have better genetically engineered brains than we did in 1900? Of course not. Genes don't select like that in four generations. So, if by "intelligence" you mean a brain engineered to accomplish greater things, then we've made no progress at all.

But if you mean: Is our ability to attack a wider range of conceptual problems improved? Then yes, we have



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gained in intelligence. The average person can do creative work today that they couldn't do in 1900.

If you mean, on the other hand, something like: Were people just as adapted to their circumstances in 1900 as they are today? Well, of course they were. They were able to do factory work, to hunt. They could cope with the world as it existed then. They had an average IQ of 70, but they weren't all mentally

retarded. So in that respect there's been no gain in intelligence.

But finally, if you mean: Are people today mentally adapted to a far more complicated world? Then yes, there has been a gain.

Do you expect these gains to continue through the 21st century?

Who knows? In 1900, 25 percent of

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people in the United States had less than four years of education. Between then and 1950, you had the high school revolution. And then, since 1950, we've gone from 12 percent of Americans exposed to tertiary education to 52 percent. You might say that this progress has to level off. Unless we're going to have 50 percent of people over the next half century going to graduate school, it may stop.

But then there is this new creative class: 35 percent of people continually refine their skills and self-educate after tertiary education. Will that make a difference or not? It's ambiguous at present.

And then there's the question of whether we're as stuffed full of visual imagery as we can get at this point. It may be that that shows diminishing returns.

Another thing that's important is the nurturing of children by their parents — children receive more nurturing as family size decreases. I think that is important. But you can always say that today kids are nurtured practically until it's running out of their ears, there isn't much more nurturing that can be done.

So, it's a strange situation. I had predicted that the gains might well have stopped in the Western world by now, but I've been shaken by data that show that they have continued for vocabulary, and for the WISC test.

What's happening in other parts of the world?

The developing world is a different kettle of fish. They're taking off in the way we did 100 years ago. Remember that in America and Britain in 1900, the mean IQ was 70. And then we introduced a bit of formal education, and our IQ went up, and that IQ advance meant that people pursue more formal education. So, it's like going up a ladder one step

at a time. I have no reason to think that the people of the developing world have genes that prevent them from responding to modernity. And indeed there have been huge IQ gains recently in places like Kenya.

Whether those nations grow to rival ours economically I think does not depend on IQ. It depends on other circumstances. Turkey has had very few interruptions, and I suspect that within 20 or 30 years, it will have the economic output of France.

But take the island of Dominica. It's had IQ gains, but the island is besieged by terrible things: volcanoes, mudslides, hurricanes. And I suspect that their economic development will be slowed, not because of IQ, but because of those circumstances.

Your work has surprising implications in the criminal justice system. What are they?

In 2000, the Supreme Court decided that it was cruel and unusual punishment under the U.S. Constitution to execute someone who was lacking moral competence, and that one of the standards for doing this was low IQ scores on Wechsler and Stanford Binet and other tests. And I thought, well look here, there are going to be people on death row who took a test that was 10 or 20 years out of date, and whose IQs have been inflated by three or six or nine points.

Let's say there's a guy on death row, and at school he was tested on the old WISC, which was normed back in 1947 and 1948. If he was tested in 1972, just before the new test came out, then the test would inflate his IQ by seven points. And a person who normally had an IQ of 68 would have 75, and would now be eligible for execution. So I've been very active in

trying to educate the judicial community.

Initially, it was very tough going. People had the notion that an IQ score was fixed. It just told you what the person's IQ was — they don't realize that it's a relative score and that sometimes people are being compared with the previous generation.

How big a problem is this? How often are tests renormed?

Well, thanks to my work, they've been renormed a lot quicker. Between the WISC and the WISC-R, there were 24 years. My research came out in 1984, and they renormed it in 1989 and then again in 2002. For the Wechsler Adult

Intelligence Scale, the last test was renormed after 11 years. But even that doesn't cure the problem. When these tests are normed, it takes a couple of years to publish. So, you still can have a gap of 13 years and that's worth four IQ points.

So I've suggested a formula. Over the period that the IQ tests have been given to these defendants on death row, IQ gain has been pretty steady at about three-tenths of a point per year. So, for any Wechsler or Stanford-Binet test, I suggest judges should deduct three-tenths of a point for every year between the year that the test was last normed and the year the defendant took the test.

Are courts beginning to take this into consideration?

Most U.S. courts of appeal don't require you to apply the Flynn effect, but they say that it's permissible to do so. And that's having an influence on cases.

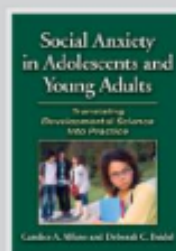
I went to testify in a Texas court about a year and a half ago. You know, Texas executes about 40 percent of the people on death row in the United States. In January, a Texas judge for the first time held that in a case I testified in, that the convicted murderer's IQ had been inflated by IQ gains over time, and he was spared a death sentence. Now, the prosecution may appeal to higher courts, but it's an important step. ■

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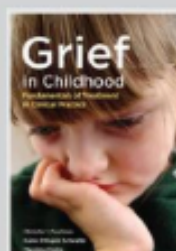
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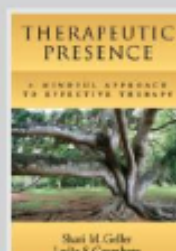
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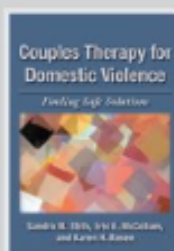
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