**A Five-Minute Intelligence Test for Kids** ☆☆☆☆☆

**Sunday, August 30, 2009 4:25 PM**
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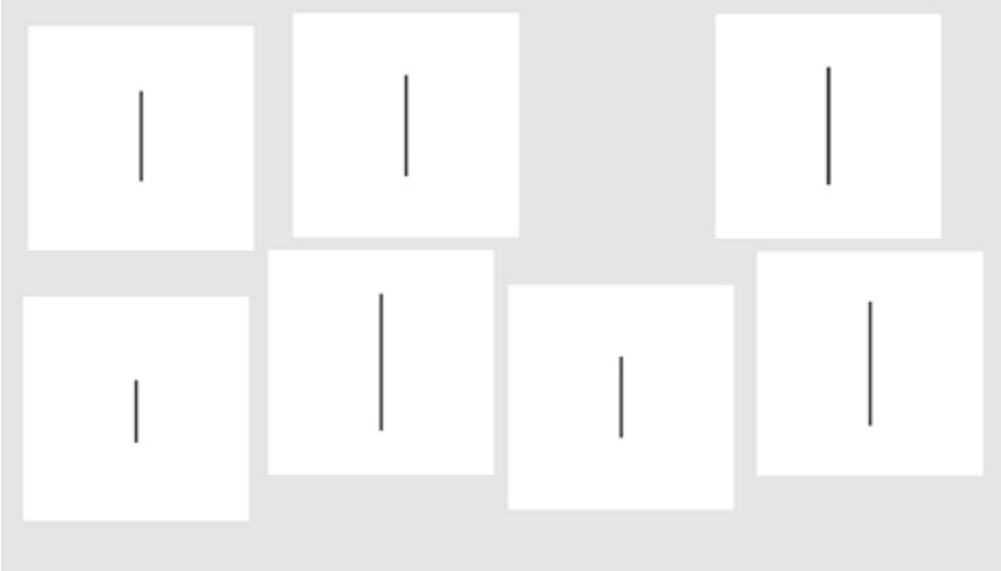
Newsweek

Give me five minutes of your time.

Imagine seven cards laid out on a table in front of you, each card two inches square, with vertical lines of different lengths in the middle of each card. Something approximately like this (though to make the image fit onscreen, these are smaller):



Your task is to move the cards around and put them in order so that the longest line is on the left, and the shortest is on the right. If you do this fairly well, getting a majority in the right order, I'll ask you to repeat the task with another set of seven cards, this time with lines even more similar in length.

Now I hand you three discs, each the exact same size but somewhat different in weight—more or less the weight of a tennis ball. You need to arrange them in order, heaviest to lightest. Again, if you sort them correctly, I'll hand you three weights with less discernible differences.

In less than five minutes, we're done.

Now what if I told you I wanted to use this simple test—and only this test—to screen all 5-year-olds and 6-year-olds to determine whether they should be enrolled in gifted programs or admitted to fancy private schools. Once into these programs, the kids would get to stay there through eighth grade.

You would think I was absolutely crazy. If it was your own child I was testing, you would probably be offended. Comparing line lengths and sorting weights into rank order seems an absurd test of giftedness or intelligence. Proper intelligence testing, you would insist, can't be done in five minutes, and certainly not with mundane tasks like this one.

But the two tasks I've described are a real test for children, developed in Switzerland. They are phenomenally accurate at predicting full-scale intelligence scores. On 5- and 6-year-old kids, this simple test is virtually

synonymous with a 90-minute intelligence test of their full cognitive capacities; the two tests have a 99 percent correlation. It turns out that kindergartners who are really good at sorting line length and relative weight are the same kids who score highly on tests of conceptual reasoning, memory, and attention. Whatever the neurobiological advantage is, it's driving performance on both tests—at least at that age.

This shines a bright light on testing of children's intelligence, and I'm of two minds about it—two minds that I can't reconcile. On one hand, it reveals just how premature it is to screen 5- and 6-year-olds for entrance to private schools and gifted programs. If the line-length test is absurd to use on its face, then a full-range intelligence test must also be absurd to use, since the two tests produce the same results. If proper intelligence testing can't be done in five minutes, then it also can't be done in a mere hour or 90 minutes. We simply can't accurately sort kids into gifted and nongifted at an age when their brains are so raw.



On the other hand, it's potentially the beginning of a really fascinating line of inquiry. Why does the line-length task (and weight task) work so darn well? And what does that teach us about the basic ingredients of childhood intelligence?

Hoping for answers, I interviewed Christine Meyer and Alexander Grob of the University of Basel, Switzerland, who created the test and are studying its validity. They don't yet completely understand why the simple test works so incredibly well. But to do the tasks correctly, your brain is fundamentally making a series of comparisons, incorporating visual and haptic sensory information. The key here is that the white space of the cards prevents you from putting the two lines exactly next to each other. Your eyes flip back and forth between lines, and the lines are just far enough apart that your brain has to make a figural representation of one line, store that in short-term working memory, bring that mental image over to a real line, and then compare the line in memory against the line on the card, discriminating the difference.

What does that have to do with reasoning? Well, reasoning too is fundamentally a matter of noticing pattern differences, holding things temporarily in your mind, and making comparisons—just that the complexity becomes multidimensional.

When a child is asked on an IQ test, "Chalk is to a chalkboard as a pencil is to _____?," she'll answer "paper" if she sees the pattern and understands the comparative relationship to make sure the pattern is equivalent. Then her parents will call her a little genius. When a grown-up financial analyst is asked, "What's a better investment, Honda Motor Co. or Ford Motor Co.?," she has to make that same type of mental calculation, but on a hundred dimensions, many of them abstractly represented by numbers, then see patterns within the patterns. If she's good at it and doesn't miss the fine, telling differences, investors will call her a genius.

OK, I hear my other mind crying out to get back in on this discussion, before anyone is too convinced. Because while there is a fundamental similarity between sorting line lengths and financial analysis, the two challenges are not remotely equal.

Not every 5-year-old who can answer "paper" will turn into a financial analyst who puts a buy rating on Honda at $25, or have the mental skills to do so. Not every brain scales up to handle the ever-increasing orders of complexity demanded by truly challenging adult work. The odds of a child who has been labeled "gifted" at 5 still testing as "gifted" even a couple of years later are surprisingly poor. Work by the two scholars here, Meyer and Grob—along with their colleague Priska Hagmann-von Arx—demonstrates this problem perfectly.

The team wanted to evaluate several intelligence tests, including their own. So they recruited 77 gifted children through the Parents' Association for Gifted Children in Switzerland. A previous intelligence test, taken about a year and a half previously, had won the children entrance to gifted primary schools. So how many still classified

as gifted just 18 months later? Only half, no matter what test was used. (And that was using a relaxed cutoff line, to account for standard deviations in testing.)

My conclusion: the tests work for measuring current intelligence. But it's a bad bet, and a bad investment, if we're counting on any test to predict a young child's future.