

## *Notes & Briefs*

Science Education, Wikipedia's Accuracy, Mozart's Skull, etc.

In response to last summer's international assessment tests in math and the sciences, the media went into yet another panic attack about the state of American education—decrying the results as a new Sputnik, portending a perilous Asian ascendancy and American decline. Tom Friedman, in a typical offering, traveled to Singapore to visit its schools, and he watched as teachers mercilessly drilled 14-year-olds. “Message to America,” he grimly warned: “They are not racing us to the bottom. They are racing us to the top.”

Now, in time for 2006, various institutes and think tanks—ranging from the Business Roundtable to the National Academy of Sciences—have published another round of reports. The most interesting came from the American Institutes for Research (AIR), which released a November 2005 report called “Reassessing U.S. International Mathematics Performance.” It challenges the only good news from the recent assessment tests. AIR reexamined data from the two main international surveys that try to measure mathematics achievement—the Trends in

International Mathematics and Science Study (TIMSS), which looks at students in fourth and eighth grades, and the Program for International Student Assessment (PISA), which assessed 15-year-olds—and found that American students consistently performed below average, ranking eighth or ninth out of twelve.

Although we're not convinced that the situation is as bad, nor the consequences as dire, as much of the media handwringing suggests, we are pleased by the national dialogue these reports have begun, and we hope they provide a sober wake-up call for those segments of American education that are failing so dramatically.

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A widely-reported scandal has led Wikipedia—the free, online, user-edited encyclopedia—to change some of its basic practices. When John Siegenthaler, Sr., a respected American journalist in his seventies, recently came across his biographical entry on the Wikipedia site, he was shocked to read in it that he was suspected of involvement in the assassinations of John and Robert Kennedy, and that he

had supposedly lived for years in the Soviet Union. Siegenthaler complained to Wikipedia and the traducements were quickly deleted. He then wrote an op-ed in *USA Today* calling Wikipedia a “flawed and irresponsible research tool.” In response to the controversy, which received considerable press attention, Wikipedia changed its user policy so that anonymous contributors could no longer create or alter entries. (It was eventually revealed that the man who fiddled with Siegenthaler’s biography did it as a prank to shock a coworker.)

Despite that change, anyone who uses Wikipedia will continue to find infelicities and idiosyncrasies from time to time. But the quality of the information presented in Wikipedia is actually remarkably high in some subject areas—like the site’s articles on scientific subjects. The prestigious journal *Nature* conducted a side-by-side study of a number of entries on scientific subjects in Wikipedia and in *Encyclopædia Britannica*. “The exercise revealed numerous errors in both encyclopedias, but among 42 entries tested, the difference in accuracy was not particularly great: the average science entry in Wikipedia contained around four inaccuracies; *Britannica*, about three,” according to the journal. “Only eight serious errors, such as misinterpretations of important concepts, were detected in the pairs of articles reviewed, four from each encyclopedia. But reviewers also found many factual errors, omissions, or misleading statements: 162 and 123 in Wikipedia and

*Britannica*, respectively.” The *Britannica* camp used the *Nature* study to criticize Wikipedia (“They need a good editor,” a *Britannica* spokesman said), and the Wikipedia crowd expressed some satisfaction (“I’m pleased,” said Wikipedia cofounder Jimmy Wales). Wikipedia quickly began fixing the erroneous entries; it’s harder to tell what *Britannica*, working behind closed doors, is doing to fix the mistakes in its pages.

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The discipline of psychotherapy—the treatment of mental disorders by methods involving conversation between a trained therapist and a patient—is at a crossroads, with many practitioners worried that their field has no future unless it adopts more scientifically testable standards and practices. Some 9,000 psychotherapists recently gathered in Anaheim, California, to discuss their discipline, with a general clash between those wishing to turn psychotherapy into a more scientific pursuit and those hoping to hold on to the sort of vague theories that characterized its past. This has long been a challenge for psychotherapy, which has always been both a science and an art—but it’s an especially urgent matter now as traditional psychotherapy is losing ground to drug-prescribing psychiatry, and as the older generation of psychotherapy’s leading lights heads toward retirement.

An account of the meeting that appeared in the *New York Times* also makes clear that some aging psycho-

therapists are still desperately clinging to the sort of social activism that defined their hippie youths. Especially noteworthy was the speech by Hunter “Patch” Adams, the therapist played by Robin Williams in the movie *Patch Adams*. Adams was apparently so overcome by his call for a “‘last stand of loving care’ to prevail over the misery of the world, its wars and our ‘fascistic government’” that he “fell to the floor of the stage in tears.” As touching as that moment must have been to witness, we can’t help but wonder whether this is really the sort of person who ought to be counseling others on emotional health and stability.

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Several recent stories have highlighted some of the unintended consequences of the many new technologies—from cell phones to video games—that are supposed to make our lives easier and more entertaining. Take video games, for example. Although they are becoming so mainstream that colleges and universities are now offering coursework and degrees in game design, we have not yet adequately grappled with some of gaming’s negative consequences on our health and behavior. Gaming addiction is one example: the Associated Press reported recently that a 28-year-old South Korean gamer collapsed and died after spending 50 hours playing online video games. As the AP story noted, “the rise in addiction to multiplayer online gaming is alarming psychologists” in South Korea, and that country’s government reported that the number of addicted gamers seeking counseling

has quadrupled in recent years.

Closer to home, wire news services reported in December that a 14-year-old girl in Iowa had to be rushed to the emergency room with seizures after spending five hours straight playing one of her favorite video games, *True Crime: New York City*, which includes strobe-like lighting that doctors suspect triggered the seizures. The news story closed with the unintentionally disturbing note that the girl “now only plays one to two hours at a time and then takes a break.” A similar story about a 9-year-old California boy surfaced in January, describing how he suffered “uncontrollable head jerking movements” after playing video games “constantly” during the holiday break from school; according to the story, the boy will now stay away from video games—“for at least the next month.”

Although technologies such as the cell phone have made life more convenient, that convenience, not surprisingly, has also helped criminals as well as law-abiding citizens. Recently, a “cell phone bandit” terrorized suburban Washington, D.C., hitting numerous banks and always with the same unusual *modus operandi*: During each robbery, the bandit, a woman, spoke to someone on her cell phone. When police apprehended her later, they learned that she was using the phone to keep in touch with her accomplice, who was stationed in a getaway car just outside each bank.

Fans of text messaging have also sometimes crossed the line in their communications: A high school stu-

dent in California was recently arrested after sending text messages to a 13-year old girl's cell phone, threatening to kill her and her friends. And text messaging inadvertently caused the death of a bicyclist in Colorado recently. A 17-year-old driver struck and killed the cyclist; the subsequent police investigation determined that he had been text-messaging on his cell phone while driving.

But new technologies have also saved lives, as countless news stories of stranded hikers and boaters using their cell phones to summon help attest. The Associated Press recently reported the story of a woman in California, whose sons, one in Norway and another in the Philippines, were able to summon help from across the globe when she collapsed within range of her "webcam." When they saw her lying unconscious they called for an ambulance and the woman, a diabetic, survived. "I thank the camera and my sons for my life," she told reporters. In December, a boy in Bangor, Maine, sent an instant message to a friend asking him to call the police after three robbers forced their way into his home—although unfortunately the police did not arrive for more than ten minutes and the robbers escaped.

New communications technologies have even served as a medium for criminal confession. Law enforcement officials in Tavares, Florida, arrested and charged an 18-year-old blogger with DUI manslaughter after he confessed to causing an accident that killed one of his friends and seriously injured another. He admitted to pulling the

steering wheel of the car, causing the driver to lose control and crash the car. "It was me who caused it. I turned the wheel," he wrote on his blog. He faces up to five years in prison.

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Irish researchers reported in November 2005 that standard medical needles are often too short to reach the buttock muscles in severely obese patients. But as the *Washington Post* has pointed out, the needle problem is just one of many facing doctors treating an increasingly overweight clientele: "Because of this country's expanding heft, blood-pressure cuffs now come in 'large adult X long' for arms that don't fit smaller circumferences. Patient gowns can be ordered in size 5X, providing 'comfortable, comprehensive coverage,' according to the ad for one product. There are wheelchairs with seats up to four feet wide, scales that measure many hundreds of pounds, and hospital beds built sturdy enough to handle excessive loads."

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With the help of an intensely powerful X-ray technique, scientists working at the U.S. Department of Energy's Argonne National Laboratory recently reported finding toxic amounts of lead in skull fragments and hair known to have come from Ludwig van Beethoven. The finding provided new evidence for the claim that lead poisoning caused the chronic debilitating illness that plagued the composer throughout his adult life—symptoms of which were bad digestion, abdominal pain, irrita-

bility, and depression. No one knows how Beethoven could have ingested that much lead, although some historians think it might have been in his medicine or might have been picked up from liquids carried in lead cups or containers. It isn't clear whether the lead poisoning was in any way connected to his famous deafness.

Meanwhile, the purported skull of another great composer—Wolfgang Amadeus Mozart, the semiquincentennial of whose birth is 2006—was also recently the subject of scientific scrutiny. A joint team of Austrian and American scientists spent months comparing genetic material from a skull believed to be Mozart's with bones purportedly from the composer's grandmother and niece, only to announce in early January 2006 that it was impossible to prove with current evidence that the skull was indeed the composer's.

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The new book *Inbreeding, Incest, and the Incest Taboo*, edited by Arthur P. Wolf and William H. Durham, brings together essays first presented at a 2000 Stanford conference about incest and inbreeding. Several of the essays touch on recent evidence for the theories of Edward Westermarck, a Finnish sociologist who argued that children raised together will naturally

be disinclined to be sexually attracted to one another. Westermarck's theory, proposed in the 1930s, ran counter to the prevailing anthropological interpretations of incest, including Freud's understanding (that the incest taboo is a social construct erected to prevent the dangerous inbreeding that would result from siblings' supposed natural sexual attraction to one another) and a social theory put forth by Claude Lévi-Strauss and others (that the incest taboo strengthens and stabilizes society, since marriages outside the immediate family serve to bind families together into "a network of alliances").

Of particular interest is the book's final essay, a contribution by Larry Arnhart, the Northern Illinois University political scientist who seeks to unite moral philosophy and evolutionary psychology. Arnhart sees Westermarck as an ally, one who thought "the general character of ethics [is] rooted in the moral emotions of the human animal as shaped by natural selection in evolutionary history." While there is plenty of reason to be skeptical of Arnhart's labors to ground a moral *ought* in a biological *is*, he at least tries to bring some philosophical seriousness into scientific discussions and to inject some science into philosophical abstraction.