



**GEORGE RYAN**

In Illinois, we're no longer shocked when a sitting governor lies. But it's the ballsy regularity with which Ryan betrayed the trust of citizens that is most appalling. For example: He consistently steered millions of dollars in contracts to friends in exchange for cash and vacations, lied about it to the FBI and then accepted more freebie getaways. (The disgraced guy's fave hot spot? Jamaica.) The nadir of his dishonesty was the licenses-for-bribes scandal, which occurred while Ryan was Secretary of State. When Ryan learned that bribes were being paid for truck drivers' licenses (including one for a driver who killed a family's six kids on a Wisconsin highway), rather than ending the illegal practice, he tried to halt the investigation that uncovered it. Convicted on multiple counts of corruption in 2006, Ryan was sentenced to prison until 2013. —RO

# ELECTRODE avenue

A new form of lie detection from a small lab at Northwestern University could stop crimes before they happen.

By Nicole Frehsee Photograph by Jimmy Fishbein

With its weathered blue sofa, textbook-littered desks and corkboard plastered with postcards from spring-break spots like Florida and Hilton Head, Room 202 in Northwestern University's Cresap Hall could easily belong to a frat brother. But no keg parties or *Guitar Hero* marathons have taken place within its yellowing walls. It's a laboratory where psychologist and professor Peter Rosenfeld is working to read minds—by building the ultimate lie detector.

Rosenfeld isn't tinkering with knob-covered polygraph machines like the ones seen on cop shows. Instead, the burly 72-year-old is strapping electrodes to people's heads and grilling each subject with questions designed to activate brain waves called P300s, which are triggered when a person recognizes a stimulus, like a picture or a word. For example, if you show a jewel thief a picture of a diamond he stole, he'll most likely emit a P300 signal. (P stands for positive, and 300 is the minimum number of milliseconds it takes for the person to recognize the image.) Rosenfeld's claim: Besides helping pinpoint whodunit, P300s can be used to predict and prevent future crimes by plucking essential information from the brains of would-be perpetrators.

With his thinning gray hair and a New York accent that's survived four decades in Chicago, Rosenfeld has been studying deception detection at Northwestern since the early '80s. But after September 11, he started to

think about his research in a new light. "I realized the government would be interested in an antiterror scenario," he says. Last June, he published the findings of an unprecedented mock terrorism study in the scientific journal *Psychophysiology*.

Researchers split 29 Northwestern students into two groups, instructing one to plan a vacation; the other, a terrorist attack. Then, subjects were outfitted with swim-cap-like hats covered in electrodes that would, essentially, read their minds. The lab's aging PCs flashed hundreds of dates and pictures of cities; the "terrorists' P300s shot up when relevant images or words—like Houston, the site of the attack, or July, the month—appeared. When researchers knew some of the attack's details beforehand (comparable to the CIA having limited intelligence on a potential threat), they nabbed 12 out of 12 terrorists. When they didn't, they identified ten of 12.

"We don't claim we're revealing lies; we're revealing recognition," Rosenfeld says. "But if you can show that someone recognizes something they verbally deny, you can infer deception with a high probability of accuracy."

The method isn't perfect. If a subject has an innocent mental link to something suspicious, his or her P300s will still spike at levels indistinguishable from the guilty suspects. (In the case above, that means anyone who happened to be planning a vacay to Houston in July may

have been flagged as a terrorist threat.) Of course, the more details available about a crime, the less probable such coincidences would be. But what happens when you don't have that crucial intel? When interrogating a terrorism suspect, you can name all major U.S. cities pretty quickly to see if one is a trigger. But when grilling a potential bank robber, it would be near impossible to name every bank in the country to determine his or her target.

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According to Rosenfeld and his disciples, even with these flaws, P300 exams are superior to the polygraph tests favored by U.S. government and law-enforcement agencies. "You can be taught how to beat a poly in ten minutes," says Mike Winograd, a 25-year-old Ph.D. candidate who's been studying with Rosenfeld for five



**BRAINSTORM** Professor Rosenfeld, left, and Ph.D. candidate Winograd, far right, perform a brain wave-based lie-detection test on a subject in their Northwestern lab.

# Love the way you lie

Become a better fibber with the help of Northwestern's lie-studying lab.

**Stare 'em down.** Though the Northwestern lab is out to convince courtrooms that when it comes to lying, it's what's on the inside (brain waves) that counts, you can prey on some common deception misconceptions to con people, says Ph.D. candidate Mike Winograd. One: that most fibbers flake on eye contact. The truth is that while telling any story—falsehood or fact—we tend to glance up and to the left, likely because the sky holds few distractions, which frees our brains to recount more details, Winograd says. But because people *think* eye contact matters in the battle between truth and lie, Winograd suggests locking onto their peepers to establish trust.

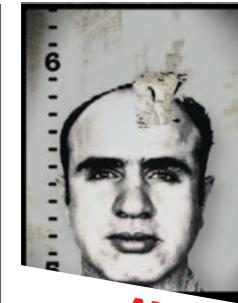
**Chronology counts.**

Forget all we've learned from early-'90s rap: Don't jump around, at least when trying to tell a whopper. Though truthful stories are rarely told chronologically—"We tend to jump back in time and fill in details,"

Winograd says—people who smell a rat may see your "Oh right, I didn't mention Jeff had joined us at the bar" as suspect. Iron out the details before you start speaking and motor through, he says.

**Drop that phone.**

Don't rely on e-mail, text or even a call to tell your sig o you can't meet Thursday because you, um, have a cousin in town. When psychologists in England conducted two interviews—one true, one laden with lies—with the same person, subjects correctly picked which interview was B.S. about three-quarters of the time when both aired on the radio and about 64 percent of the time when they ran in print, but only half the time when they aired on TV. Gestures may make arguments appear more compelling, the study found. However, if you're trying to master the art of lying to your girlfriend, may we suggest telling yourself the truth and ending it?—NF



**AL CAPONE**

The larger-than-life crime figure wasn't necessarily lying when he told reporters, "I am just a businessman, giving the people what they want." No doubt, there was a healthy demand for his prostitution, gambling and bootlegging rings in Prohibition-era Chicago. But to encourage the law to turn a blind eye to his illegal enterprises, the brutal gangster maintained a respectable outward appearance that was less than forthright: The man known as Scarface lived with his family in a modest house in a middle-class South Side neighborhood and peddled a business card claiming he sold "second-hand furniture." Eventually, it was Capone's fibs to Uncle Sam that got him tossed in Alcatraz when he was convicted of tax evasion in 1931. And ultimately, it was the lie he told himself—the one about not having syphilis—that led to his death in 1947. —RO