



Bodyguards shielded President Mikheil Saakashvili of Georgia on Monday as a Russian jet flew over the city of Gori.

Russia Steps Up Its Push; West Faces Tough Choices

Calling Shots, Putin Salves Old Wounds

By ELLEN BARRY

MOSCOW — Vladimir V. Putin, who came to office brooding over the wounds of a humiliated Russia, this week offered proof of its resurgence. So far, the West has been unable to check his thrust into Georgia. He is making decisions that could redraw the map of the Caucasus in Russia's favor — or destroy relationships with Western powers that Russia once sought as strategic partners.

“Georgia, in a way, is suffering for all that happened to Russia in the last 20 years,” said Alexander Rahr, a leading German foreign-policy scholar and a biographer of Mr. Putin’s.

With Russian troops poised on two fronts in Georgia, speculation abounds on what Mr. Putin really wants to do. He faces a range of options.

Russia could settle for annexing the enclaves of Abkhazia and South Ossetia — something its forces have largely accomplished. Kremlin authorities have also spoken of bringing Mikheil Saakashvili, Georgia’s president, to a war crimes tribunal for what they say were attacks on civilians in Tskhinvali last week.

A further push might permanently disable the Georgian military. The most extreme option would be occupying Georgia, a country with a population of 4.4 million and a centuries-old dis-

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Bush Faults Advance Into Georgia — NATO to Meet

By HELENE COOPER

WASHINGTON—Russian troops stepped up their advance into Georgian territory on Monday, attempting to turn back the clock to the days when Moscow held uncontested sway over what it considers its “near abroad,” and arousing increasing alarm among Western leaders.

Even as they prepared to convene an emergency meeting of NATO on Tuesday and President Bush denounced the Russian actions in the strongest terms to date, the United States and its European allies faced tough choices over how to push back. They seemed uncertain how to adjust to a new geopolitical game that threatened to undermine two decades of democratic gains in countries that once were part of the Soviet sphere.

Russian troops briefly seized a Georgian military base and took up positions close to the Georgian city of Gori on Monday, raising Georgian fears of a full-scale invasion or an attempt to oust the country’s pro-Western president, Mikheil Saakashvili. President Bush, little more than an hour after returning to Washington from the Olympic Games in Beijing, bluntly warned Russia that its military operations were damaging its reputation and were “unacceptable in the 21st century.”

“Russia’s actions this week have raised serious questions about its intent in Georgia and the region,” he said. “These actions have substantially damaged Russia’s standing in the world, and these actions jeopardize relations with the United States and Europe.”

Administration officials said military options were almost certainly off the table, but the United States did airlift Georgian troops stationed in Iraq back home, answering a plea from the Georgian government and prompting a sharp response from Russia. Washington could also press to ostracize Moscow on the international stage, perhaps by kicking it out of the Group of 8 industrialized nations.

Yet there was no immediate indication that Western powers could exercise much leverage over Russia if it chooses to ignore their warnings. The country is enjoying windfall profits from oil exports and seems determined to reassert influence over Georgia.

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A Global Trail That Revealed A Cyber-Ring

By BRAD STONE

As an international ring of thieves plundered the credit card numbers of millions of Americans, investigators struggled to figure out who was orchestrating the crimes in the United States.

When prosecutors unveiled indictments last week, they made a stunning admission: the culprit was, they said, their very own informant.

Albert Gonzalez, 27, appeared to be a reformed hacker. To avoid prison time after being arrested in 2003, he had been helping federal agents identify his former cohorts in the online underworld where credit and debit card numbers are stolen, bought and sold.

But on the sly, federal officials now say, Mr. Gonzalez was connecting with those same cohorts and continuing to ply his trade, using online pseudonyms — including “soupnazi” — that would be his undoing. As they tell it, Mr. Gonzalez had a central role in a loosely organized online crime syndicate that obtained tens of millions of credit and debit card

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An Indiana Democrat Offers Risks and Rewards

By CARL HULSE

WASHINGTON — As the Senate debate on the use of force against Iraq neared its climax in October 2002, Senator John McCain turned on the floor to Senator Evan Bayh to ask what had led him to take such “a visible, as well as important” role in seeking Congressional consent for military action.

Mr. Bayh, a cautious Indiana Democrat, acknowledged it had not been an easy decision.

“There is reluctance in my heart, as I know there is in the other senators, to contemplate the use of force,” Mr. Bayh said, adding that he concluded “we were simply left with no other credible alternative to protect the safety and well-being of the American people.”

Six years later, Mr. Bayh is one of the leading candidates to be the running mate of the presumed Democratic presidential nominee, Senator Barack Obama, associates of Mr. Obama say. But Mr. Bayh’s advocacy for the war could complicate his prospects for getting on the ticket.

Mr. Bayh, 52, is a telegenic moderate Democrat, a father of twins entering their teens, an experienced politician who in 2006 briefly flirted with a presidential

THE PROSPECTS

Evan Bayh

run before endorsing Senator Hillary Rodham Clinton. The son of a senator, Mr. Bayh was a popular two-term governor who could make Indiana, typically rock-solid Republican in presidential contests, a competitive state and appeal to blue-collar Democrats who have been slow to embrace Mr. Obama.

Mr. Bayh’s support of authorizing force in Iraq stands in sharp contrast to Mr. Obama’s oft-stated view that he showed the good judgment to oppose the conflict from the start. After his vote, Mr. Bayh in early 2003 joined Mr. Mc-

Cain as an honorary co-chairman of the Committee for the Liberation of Iraq, which made regime change in Iraq its central cause.

“He was not only wrong, he was aggressively wrong,” said Tom Andrews, national director of the Win Without War coalition, referring to Mr. Bayh. “In my view, he would contradict if not undermine the Obama message of change, turning a new page on foreign policy and national security.”

Mr. Bayh was unavailable for an interview, but his spokesman, Eric Kleiman, contrasted his evolution on the war with the position of Mr. McCain, saying that Mr. McCain has said he would cast the same vote again. “Sen-

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Experts Hired to Shed Light Can Leave U.S. Courts in Dark

By ADAM LIPTAK

Judge Denver D. Dillard was trying to decide whether a slow-witted Iowa man accused of acting as a drug mule was competent to stand trial. But the conclusions of the two psychologists who gave expert testimony in the case, Judge Dillard said, were “polar opposites.”

One expert, who had been testifying for defendants for 20 years, said the accused, Timothy M. Wilkins, was mentally retarded, had a verbal I.Q. of 58 and did not understand the proceedings.

The prosecution expert, who had testified for the state more than 200 times, said that Mr. Wilkins’s verbal I.Q. was 88, far above the usual cutoffs for mental retardation, and that he was competent to stand trial.

Judge Dillard, of the Johnson County District Court in Iowa

AMERICAN EXCEPTION The Price of Advocacy

City, did what American judges and juries often do after hearing from dueling experts: he threw up his hands. The two experts were biased in favor of the parties who employed them, the judge said, and they had given predictable testimony.

“The two sides have canceled each other out,” the judge wrote in 2005, refusing either expert’s conclusion and complaining that “no funding mechanism” existed for him to appoint an expert.

In most of the rest of the world, expert witnesses are selected by judges and are meant to be neutral and independent. Many foreign lawyers have long questioned the American practice of

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ADAM PRETTY/GETTY IMAGES

With new suits and a deeper pool, swimmers set as many world records in three days of competition in Beijing as they did in the entire 2004 Olympics. More coverage at nytimes.com/olympics.

As Records Fall, Technology Muddies the Water

By JERÉ LONGMAN and GINA KOLATA

BEIJING — He swam so improbably fast, making up so much ground in a foaming, desperate attempt to reach the wall first in the 4x100-meter relay, that Jason Lezak not only won a gold medal for the United States on Monday, but he also helped to shatter the world record by nearly four seconds.

That race alone would have

provided an astonishing day of swimming at the Summer Olympics, but it was the third world record of the morning and the seventh in three days of competition. An eighth record was set during preliminary races later Monday, matching the total number broken at the 2004 Athens Games and threatening to eventually surpass the 14 established at the 2000 Sydney Olympics. Not only are world marks tumbling, but some are being lowered by staggering margins.

Advances in training techniques, pool design and swimsuit technology have contributed to the increases in speed for swimmers, who also enjoy financial incentives that allow them to remain in the sport longer than they would have two decades ago, when the Olympics were restricted to amateurs. If Michael Phelps breaks the record of seven swimming gold medals won by Mark Spitz at the 1972 Munich Olympics, he will receive a \$1 mil-

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Russians Seize Base

Russian armored columns entered the western Georgian city of Senaki and briefly seized a Georgian military base after issuing an ultimatum to Georgia to disarm its troops along the boundary with the separatist territory of Abkhazia. PAGE A8

Georgian Leader Is Tested

The Georgian president, Mikheil Saakashvili, has won praise abroad for wielding soft power to respond to Russian actions. Yet many in Georgia view him as headstrong and reckless. PAGE A9

Civilians Step Up

As swaths of Georgia fell to Russian troops, regular citizens rose to its defense, as part of a Georgian tradition that stretches back to medieval times. PAGE A10

Spotlight on McCain

The warfare in Georgia has put a new focus on the hard line that Senator John McCain has taken against Russia. PAGE A19

INTERNATIONAL A6-14

Contractors in Iraq Cost Billions

The United States has spent some \$100 billion on contractors in Iraq since 2003, or one of every five dollars spent on the war, according to a government report due out Tuesday. Employees of private contractors outnumber American troops in the war zone. PAGE A13

NATIONAL A15-19

Raid on Katrina Agency

Federal investigators raided the offices of a nonprofit agency in New Orleans that is accused of abusing a program created to clean up houses damaged by Hurricane Katrina. PAGE A15

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OBITUARIES C9

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METRO A20-21

Security Plan for Trade Center

The New York Police Department’s latest security proposal for the World Trade Center site entails heavy restrictions including an underground bomb screening center and guard booths. Some critics say the plan may create an inhospitable atmosphere. PAGE A20

Missing A Picasso?

The F.B.I. has art, some stolen, left by a Manhattan eccentric, and is seeking its rightful owners. PAGE A20

SPORTS TUESDAY C11-18

Collapses Catching Up to Mets

The bullpen cost the Mets another win as five relievers combined to lose a four-run lead against the Pirates. PAGE C18

SCIENCE TIMES D1-8

Glitches in Perception

A team of scientists and magicians describes how the brain operates. PAGE D1

ONLINE

New York’s Greenmarket

Michael Hurwitz, director of the program, answers readers’ questions. nytimes.com/cityroom

ARTS B1-8

Never Seemed So Good

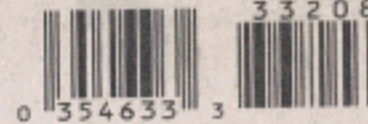
Four decades into his career, Neil Diamond can chalk up a No. 1 album and fill arenas on his world tour. PAGE B1

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FOR HOME DELIVERY CALL 1-800-NYTIMES



PAGE B1

The New York Times

Handle With Care



ANN CUTTING

By CORNELIA DEAN

Last year, a private company proposed "fertilizing" parts of the ocean with iron, in hopes of encouraging carbon-absorbing blooms of plankton. Meanwhile, researchers elsewhere are talking about injecting chemicals into the atmosphere, launching sun-reflecting mirrors into stationary orbit above the earth or taking other steps to reset the thermostat of a warming planet.

This technology might be useful, even life-saving. But it would inevitably

produce environmental effects impossible to predict and impossible to undo. So a growing number of experts say it is time for broad discussion of how and by whom it should be used, or if it should be tried at all.

Similar questions are being raised about nanotechnology, robotics and other powerful emerging technologies. There are even those who suggest humanity should collectively decide to turn away from some new technologies as inherently dangerous.

"The complexity of newly engineered

'Geoengineering' might head off planetary disaster. But at what cost? And who gets to make the decisions?

systems coupled with their potential impact on lives, the environment, etc., raise a set of ethical issues that engineers had not been thinking about," said William A. Wulf, a computer scientist who until last year headed the National Academy of Engineering. As one of his official last acts, he established the Center for Engineering, Ethics, and Society there.

Rachelle Hollander, a philosopher who directs the center, said the new technologies were so powerful that "our saving grace, our inability to affect

things at a planetary level, is being lost to us," as human-induced climate change is demonstrating.

Engineers, scientists, philosophers, ethicists and lawyers are taking up the issue in scholarly journals, online discussions and conferences in the United States and abroad. "It's a hot topic," said Ronald C. Arkin, a computer scientist at Georgia Tech who advises the Army on robot weapons. "We need at least to think about what we are doing

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THE PHILADELPHIA MUSEUM OF ART/ART RESOURCE

While a Magician Works, The Mind Does the Tricks

By BENEDICT CAREY

A decent backyard magic show is often an exercise in deliberate chaos. Cards whipped through the air. Glasses crashing to the ground. Gasps, hand-waving, loud abracadabras. Something's bound to catch fire, too, if the performer is ambitious enough — or needs cover.

"Back in the early days, I always had a little smoke and fire, not only for misdirection but to emphasize that something magic had just happened," said The Great Raguzi, a magician based in Southern California who has performed professionally for more than 35 years, in venues around the world. "But as the magic and magician mature, you see that you don't need the bigger props." Eye-grabbing distractions — to mask

a palmed card or coin, say — are only the crudest ways to exploit brain processes that allow for more subtle manipulations, good magicians learn.

In a paper published last week in the

Scientists hope magic can accelerate research into perception.

journal Nature Reviews Neuroscience, a team of brain scientists and prominent magicians described how magic tricks, both simple and spectacular, take advantage of glitches in how the brain

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FINDINGS | John Tierney

Let the Games Be Doped

Once upon a time, the lords of the Olympic Games believed that the only true champion was an amateur, a gentleman hobbyist untainted by commerce. Today they enforce a different ideal. The winners of the gold medals are supposed to be natural athletes, untainted by technology. After enough "scandals," the amateur myth eventually died of its own absurdity. The natural myth is still alive in Beijing, but it's becoming so far-fetched — and potentially dangerous — that some scientists and ethicists would like to abandon it, too.

What if we let athletes do whatever they wanted to excel?

Before you dismiss this notion, consider what we're stuck with today. The system is ostensibly designed to



VIKTOR KIDEN

create a level playing field, protect athletes' health and set an example for children, but it fails on all counts.

The journal Nature, in an editorial in the current issue, complains that "antidoping authorities have fostered a sporting culture of suspicion, secrecy and fear" by relying on unscientifically calibrated tests, like the unre-

liable test for synthetic testosterone that cost Floyd Landis his 2006 Tour de France victory. Even if the authorities manage to correct their tests, they can't possibly keep up with the accelerating advances in biology. Some athletes are already consider-

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JOHN W. M. BUSH AND MORRIS FLYNN

Science

PORTA-BUBBLE

Water insects that carry their own external air supply.

KENNETH CHANG PAGE 3

PAGING HARRY POTTER

Advances in light science could lead to an invisibility cloak.

KENNETH CHANG PAGE 4

Health

TOO MUCH INFORMATION

Well: In prostate screening, the results can mislead.

TARA PARKER-POPE PAGE 5

PERSONAL HEALTH: DISEASE

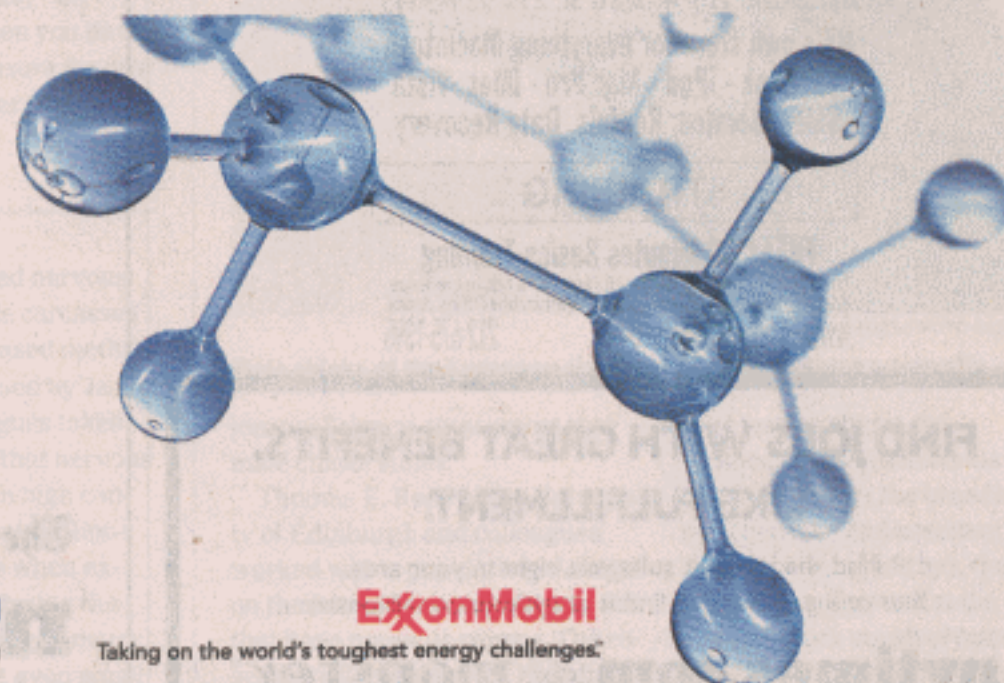
Tailored therapy offers hope on rheumatoid arthritis.

JANE E. BRODY PAGE 7

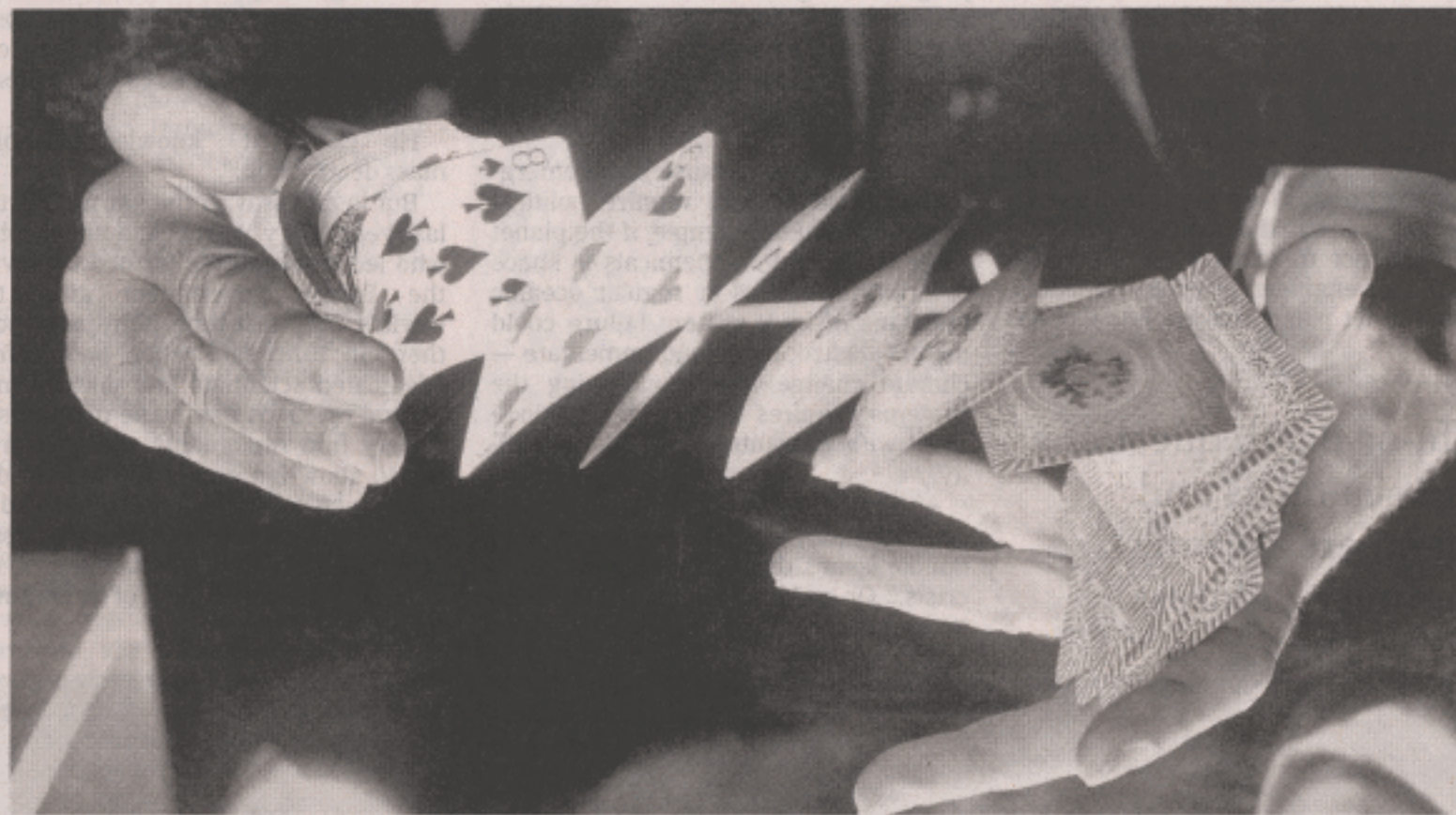
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While a Magician Works, the Mind Does the Most Spectacular Tricks



ARCHIVE HOLDINGS

From First Science Page

constructs a model of the outside world from moment to moment, or what we think of as objective reality.

For the magicians, including The Great Tomsoni (John Thompson), Mac King, James Randi, and Teller of Penn and Teller, the collaboration provided scientific validation, as well as a few new ideas.

For the scientists, Susana Martinez-Conde and Stephen Macknik of the Barrow Neurological Institute in Phoenix, it raised hope that magic could accelerate research into perception. "Here's this art form going back perhaps to ancient Egypt, and basically the neuroscience community had been unaware" of its direct application to the study of percep-

tion, Dr. Martinez-Conde said.

"It's a marvelous paper," Michael Bach, a vision scientist at Freiburg University in Germany who was not involved in the work, said in an e-mail message. Magicians alter what the brain perceives by manipulating how it interprets scenes, Dr. Bach said, "and a distant goal of cognitive psychology would be to numerically predict this."

One theory of perception, for instance, holds that the brain builds representations of the world, moment to moment, using the senses to provide clues that are fleshed out into a mental picture based on experience and context. The brain uses neural tricks to do this: approximating, cutting corners, instantaneously and subconsciously choosing what to "see" and what to let

pass, neuroscientists say. Magic exposes the inseams, the neural stitching in the perceptual curtain.

Some simple magical illusions are due to relatively straightforward biological limitations. Consider spoon bending. Any 7-year-old can fool her younger brother by holding the neck of a spoon and rapidly tilting it back and forth, like a mini teeter-totter gone haywire. The spoon appears curved, because of cells in the visual cortex called end-stopped neurons, which perceive both motion and the boundaries of objects, the authors write. The end-stopped neurons respond differently from other motion-sensing cells, and this slight differential warps the estimation of where the edges of the spoon are.

The visual cortex is attentive to sud-

den changes in the environment, both when something new appears and when something disappears, Dr. Martinez-Conde said. A sudden disappearance causes what neuroscientists call an after-discharge: a ghostly image of the object lingers for a moment.

This illusion is behind a spectacular trick by the Great Tomsoni. The magician has an assistant appear on stage in a white dress and tells the audience he will magically change the color of her dress to red. He first does this by shining a red light on her, an obvious ploy that he turns into a joke. Then the red light flicks off, the house lights go on and the woman is unmistakably dressed in red. The secret: In the split-second after the red light goes off, the red image lingers in the audience's brains for about 100 milliseconds, covering the image of the woman. It's just enough time for the woman's white dress to be stripped away, revealing a red one underneath.

In a conference last summer, hosted by Dr. Martinez and Dr. Macknik, a Las Vegas pickpocket performer and co-author named Apollo Robbins took advantage of a similar effect on the sensory nerves on the wrist. He had a man in the audience come up on stage and, while bantering with him, swiped the man's wallet, watch and several other things. Just before slipping off the timepiece, Mr. Robbins clutched the man's wrist while doing a coin trick — thereby lowering the sensory threshold on the wrist. The paper, with links to video of Mr. Robbins' performance, is at <http://www.nature.com/nrn/journal/vaop/ncurrent/full/nrn2473.html>.

"That was really neat, and new to me," said Dr. Bach, who was in the audience. The grasp, he said, left "a sort of somatosensory afterimage, so that the loss of the watch stays subthreshold" in the victim. The visual cortex resolves clearly only what is at the center of vision; the periphery is blurred, and this is likely one reason that the eyes are always in motion, to gather snapshots to construct a wider, coherent picture.

A similar process holds for cognition. The brain focuses conscious attention on one thing at a time, at the expense of others, regardless of where the eyes are pointing. In imaging studies, neurosci-

entists have found evidence that the brain suppresses activity in surrounding visual areas when concentrating on a specific task. Thus preoccupied, the brain may not consciously register actions witnessed by the eyes.

Magicians exploit this property in a variety of ways. Jokes, stagecraft and drama can hold and direct thoughts and attention away from sleights of hand and other moves, performers say.

But small, apparently trivial movements can also mask maneuvers that produce breathtaking effects. In a telephone interview, Teller explained how a magician might get rid of a card palmed in his right hand, by quickly searching his pockets for a pencil. "I pat both pockets, find a pencil, reach out and hand it to someone, and the whole act becomes incidental; if the audience is made to read intention — getting the pencil, in this case — then that action

A team of scientists and entertainers describe how the brain operates.

disappears, and no one remembers you put your hand in your pocket," the magician said. "You don't really see it, because it's not a figure anymore, it has become part of the background."

The magician's skill is in framing relevant maneuvers as trivial. When it's done poorly, Teller said, "the actions immediately become suspicious, and you instantly click that something's wrong."

David Blaine, a New York magician and performance artist, said he started doing magic at age 4 and quickly learned that he did not need any drama or special effects. "A strong and effective way to distract somebody is to directly engage the person," with eye contact or other interaction, Mr. Blaine said. "That can act on the subconscious like a subtle form of hypnosis."

Not that there's anything wrong with a dove, a plume of smoke or a burst of fire. As long as it doesn't break magic's unwritten code: First, do no harm. Frightening neighborhood parents, however, is allowed.