

Mind Full

"Multitasking, when it comes to paying attention, is a myth."

—JOHN MEDINA, MOLECULAR BIOLOGIST

Recent brain research offers intriguing insights into leadership and decision-making.

BY JAIME RALL

In statehouses across the country, legislators are making difficult decisions that directly affect the people they serve. Every year, lawmakers consider thousands of bills, plus countless choices about leadership, ethics and how to strengthen the legislative institution.

Meanwhile, in very different institutions, researchers in cognitive psychology, neuroscience and other disciplines are making exciting discoveries about the science of human decision-making. These intriguing, often surprising findings offer legislators and other high-stakes decision-makers practical insight into what they can do to perform at their best.

"One of the overarching discoveries about the brain is that a lot of our intuitive assumptions about how we make decisions are just wrong," says David Rock, director of the NeuroLeadership Institute, a global initiative that applies neuroscience to the art of leadership.

"If you're involved in governing," Rock says, "it's good to stay close to what we're learning about human nature."

The Myth of Multitasking

Today, many of us assume multitasking—being able to do several things at the same time—is a skill to be proud of, one that helps us accomplish more.

Think again, researchers suggest. They have found that the brain actually appears to have been designed to focus on only one thing at a time—and to ignore the rest. In a now-classic experiment, for example, researchers asked people to watch a short video of two teams

passing a basketball and silently count how many times one of the teams passed the ball. While they watched, a gorilla strolled into the scene, faced the camera and thumped its chest before walking on through. About half the viewers, however, were so focused on counting that they never even noticed the gorilla in the film.

How could people miss something so obvious? At any given time, we are bombarded by countless sights, sounds and smells. To deal with this, researchers believe, our brains are designed to filter out whatever information seems unnecessary for the task at hand.

As a result, says molecular biologist John Medina, "multitasking, when it comes to paying attention, is a myth." Research indicates that when we try to think about two things at once (writing an email while listening to a colleague, for example), we're actually switching our attention back and forth—not dividing it equally—between them. This takes more time and mental energy, and we miss things. "If you try to do two things in the laboratory, it takes you 50 percent longer to finish the tasks—and you make three times more errors while you're trying to do them."

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If you think you're a talented multitasker who can beat these odds, you might want to reconsider. A recent University of Utah study confirmed that people who multitask the most actually tend to be the worst at it, even though they "harbor the illusion they are better than average," notes senior author and psychologist David Strayer.

Other new research suggests that you don't have to be actively multitasking to be distracted. Just being able to see a cell phone was enough to interfere with cognitive performance and social interactions in experimental studies.

Digital Distractions on Overdrive

For legislators, who must keep several balls in the air at once, this may not be good news. Lawmakers and their staffs handle hundreds of emails a day, plus phone calls, impromptu meetings, streams of unexpected visitors and, increasingly, the demands of social media sites like Facebook and Twitter.

"I think people think that, because of all our mobile devices, we can get so much

more done and work so much more efficiently," says Wyoming House Majority Leader Rosie Berger (R). "But I have to disagree. I think you have to take time to really study issues, really have some quiet in your life in order to make good decisions."

At least 36 states limit or ban the use of technology in legislative chambers. The rules, generally meant to preserve decorum and tradition, can be contentious—after all, many modern legislators appreciate being able to quickly access information and communicate with constituents from their phones or other devices with them on the floor.

At the same time, Vermont Senator Richard Mazza (D), whose chamber has banned not only using electronic devices but also reading newspapers during legislative debate, believes such restrictions can help the decision-making process.



House Majority Leader
Rosie Berger
Wyoming



Senator
Richard Mazza
Vermont

Putting Brain Research to Work

As researchers unravel the mysteries of the mind, legislators can draw valuable lessons from their findings.

1. Avoid multitasking: Your complete attention is always better than your divided attention.

2. Hide the phone: Place your mobile device or other electronic gadgets out of sight when a task requires full attention.

3. Think twice: Before making an impulsive, split-second decision, check your intuitions against another trustworthy source.

4. Share your story: By trading personal experiences with colleagues across the aisle, you can get to know them better and gain insight that helps you do your job.

5. Take a lap: A short walk during the workday will stimulate both body and mind.

6. Tune out, turn in: Getting a good night's sleep is a great way to stay at your best.

7. Make time for yourself: Much of a legislator's work involves helping others. Finding time to do the things you love lowers stress.

—Zita N. Toth, NCSL intern

"There's a time for everything," Mazza says. "But when you're trying to multitask and go online during live discussion, I don't know how you could focus on both. One, or both, is not getting the attention it needs."

Trusting Your Gut?

"To a politician," writes Marty Linsky, former Massachusetts legislator and longtime leadership expert, "intuition is a resource." But when can we trust our gut?

One of the most startling revelations of recent research is the way beliefs and behavior are shaped by information and ideas we don't even know we have. Imaging studies have illustrated how different regions of the brain are unconsciously involved in emotional and cognitive tasks.

"A tremendous amount of how we make decisions and solve problems is driven by unconscious processing deep in the brain," says Rock. "There's just so

Big Strides in Brain Science

For centuries, researchers have been intrigued by the human brain—an amazingly complex organ made up of some 200 billion nerve cells and more synapses than a thousand galaxies' worth of stars. To understand it, scientists have studied animals, observed the effects of brain damage, explored real-world behavior, tested healthy people, examined nerve cells, measured the brain's electrical activity and much more.

But a great deal of our knowledge about the brain has emerged in just the last few decades. New advances in neurogenetics, brain cell stimulation and high-quality imaging techniques—in concert with developments in experimental psychology and other fields—are revealing more than ever about how healthy brains function, as well as what can go awry. Indeed, Richard Restak, neurologist and best-selling author, estimates that we have learned more about the brain in the last 20 years than in the previous five centuries.

much more going on behind the scenes than it appears.”

All that unconscious work leads to important intuitive insights. “Intuition is how we use our experience to size up situations and make decisions. So intuition is essential to decision-making,” says research psychologist Gary Klein, a pioneer in studying how people make real-life decisions. “Research shows that brain damage that disconnects patients from their intuition, but doesn't affect their IQ or reasoning ability, devastates their decision-making and their lives.”

“Respecting the power of the unconscious for problem-solving is something we could all do better,” advises Rock. “Let the unconscious be heard. When the unconscious is solving a problem, the solution will not rise to the surface if you're anxious and you don't leave time and space for the signal to come through. You literally need a quieted mind.”

But the unconscious can also lead us astray. “You can trust your gut when you

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have great experience and expertise, like a chess grand master,” says University of Washington professor Tony Greenwald, a leading researcher of unconscious attitudes and beliefs. “It's not an advantage in many, and perhaps most, other circumstances.” One danger, Greenwald says, is that the unconscious harbors hidden biases. For decades, Greenwald has co-lead Project Implicit, a research collaborative whose simple online tests have revealed widespread, unconscious biases that can influence our behavior.

“If you have a brain, you're biased,” says Rock. “In many instances, these biases work against us, and we don't know that we're making a decision based on incorrect reading and data.” And, Greenwald warns, knowledge of these blind spots “is not sufficient to protect against them.” Worse, the brain tricks us with a false sense of certainty, leading us to accept ideas we should be questioning.

To make our best possible decisions, researchers suggest, we shouldn't ignore our hunches, but we shouldn't blindly accept them, either. Checks and balances are key. “Intuitions, valuable as they are, can mislead us,” says Klein. “We should always try to assess whether intuitions are plausible. That said, we should never trust analyses either, because these can

also mislead us. Analyses need to be double-checked, the same as intuitions.” For legislators, this can mean checking their intuitions against nonpartisan research, testimony and other data, appreciating what each has to tell them.

Gaining Perspective

Lawmakers do well, experts agree, at gathering diverse perspectives in the decision-making process, which can help broaden and double-check their thinking. Klein notes that legislators are “usually very good at checking with a variety of constituencies and stakeholders.”

Rock says, however, that the brain struggles to take in opposing viewpoints. “When you speak with someone whose goals you perceive as competing with yours, you process anything they say or do in quite a shallow way, compared to someone you think has similar goals,” he warns. “In the brain, there's minimal processing of the other's ideas.” Bias is also a barrier. “We see that the same policies, stated in the same words, are reacted to differently when attributed to a liberal versus a conservative,” says Greenwald.

If you really want to consider other perspectives, Rock says, shared experiences can help. Medina agrees: The more policymakers “get to know each other, the better they

are able to work as a loyal opposition.”

State legislators across the country are investing in these relationships. For example, as part of its work to create a culture of discourse and collaboration in state legislatures, the Next Generation project of the National Institute for Civil Discourse facilitates workshops in which legislators get to know colleagues across the aisle by sharing personal stories. “How you listen to each other starts to be affected by an understanding of where others have come from,” says project founder and former Ohio Representative Ted Celeste. “One of the things that happens is that you’re less likely to judge and you’re more likely to listen, so that being able to have a meaningful conversation is enhanced.”

Healthy Body, Healthy Mind

Of course, science is also giving us deeper insights into things we already know: We think better when we’re healthy, and worse when we’re stressed. But these effects may be even more dramatic than we realize.

Exercise, for example, doesn’t just help us feel refreshed. It actually changes how the brain works. “We tend to make decisions best when we are physically fit,” says Medina.

Physical activity increases blood flow to the brain, which receives more of the glucose and oxygen it needs to do its work. Exercise also stimulates powerful proteins that help repair and grow brain cells. People who exercise do better on just about every mental test possible, including reasoning, problem-solving and quick thinking. Happily, cognitive skills can improve dramatically after just a few months of aerobic exercise, Medina says, “even if you’ve sat on your butt most of your life.”

Sleep is also critical. “Sleep loss cripples thinking in just about every way you can measure thinking,” Medina writes in his 2008 book “Brain Rules.” At least a third of Americans don’t get enough good sleep on a regular basis, according to the Centers for Disease Control and Prevention.

It also turns out that stress and anxiety don’t just distract us from our best thinking—they can literally cause brain damage. While a little pressure can help us stay alert and motivated in the short term, brain studies on both animals and humans have

Executive Function

“Every legislator on the planet ought to know about a cognitive gadget called ‘executive function.’ It plays a huge role in how we make decisions,” says John Medina, molecular biologist and author of “Brain Rules.”

He doesn’t mean a gadget like a phone or other device. Rather, executive function refers to a set of skills that include filtering distractions, remembering and using information, planning ahead, adjusting, resisting temptation, delaying gratification and persevering toward long-term goals.

Executive function is essential to teamwork, leadership, organizational skills and critical thinking—all at the heart of legislative life. A well-documented way to improve executive function, in children and adults alike, is aerobic exercise. A 2013 study of research in *Psychonomic Bulletin and Review* concludes that “regular engagement in aerobic exercise can provide a simple means for healthy people to optimize a range of executive functions.”

In older adults, aerobic training boosts cognitive skills, including working memory, that typically decline with age, and increases brain volume in areas associated with executive function—yet more great reasons to stay fit.

found that chronic overexposure to stress hormones can disconnect and even destroy brain cells.

“Stress hormones can do some truly nasty things to your brain,” warns Medina in “Brain Rules.” The hippocampus, a part of the brain that is critical to learning, memory and problem-solving, seems especially susceptible. “Quite literally,” Medina writes, “severe stress can cause brain damage in the very tissues most likely to help you succeed in life.”

For legislators and other leaders in high-pressure situations, it’s essential to find ways to minimize stress. “Many years ago, I learned how to handle stress because I realized that stress and worry are counterproductive to problem-solving and living a healthy and productive life,” New Jersey Assemblywoman Sheila Oliver (D) says.

For Berger, the friendships she’s built with legislators, staff and others help her handle stress. Those relationships, she says, are what get her through “the tough times.”

A Word of Caution

So, how much should we allow these discoveries about the brain to transform how we lead, live and work? “It’s good to be cautious,” Rock says, when applying science to real life. For one thing, although brain science discoveries have skyrocketed in recent decades, a huge amount remains to be uncovered. “Our scientific understanding of the human brain is fluid,

always on the move,” neuroscientist Ken Paller writes in “The Brain Advantage.”

Experts advise focusing on areas of research where there’s wide consensus and deep evidence. Even then, it’s not always clear what the data might mean for daily life. “The research itself is solid,” Rock says. But “the extrapolations and implications of the research are complicated.”

Further, the very cognitive biases scientists are unveiling can affect how their research is understood. People are more likely to look for information that confirms what they already believe, for example, and to ignore what doesn’t fit. It also seems that, at least under some circumstances, brain science may be a little too seductive: In a 2008 study, people found poor explanations of psychological research more satisfying when they included neuroscientific jargon, even though those details were irrelevant.

Finally, Paller warns, “Ethics may not always come along for the ride when we learn about all the ways in which we might use our brains better and improve our talents.” Fortunately, lawmakers have a lot of practice in thinking about ethics and how people can better serve one another.

As researchers continue to explore the mysteries of the mind, legislators can draw valuable lessons from their findings. Innovation, team-building, conflict, empathy, memory and more are under the microscope. “Research is continuing to generate valuable discoveries,” Klein says. And scientists may just be the newest, most surprising allies in the quest for great governance. ■



Assemblywoman
Sheila Oliver
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