

The Inner Workings of the Executive Brain

New Research Shows the Best Business Minds Make Decisions Very Differently Than We Thought

By Andrew Blackman
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Take much of what you know about how the best executives make decisions. Now, forget it.

For instance, we all "know" that tight deadlines lead to inspiration. Except they often don't. Instead, they typically are counterproductive—making people less creative precisely when they need to be. Or most of us assume that when we try to solve problems, we're drawing on the logical parts of our brains. But, in fact, great strategists seem to draw on the emotional and intuitive parts of their brain much more.

These are some of the insights coming from the world of neuroimaging, where scientists use sophisticated machines to map what's going on inside the brain when people do jobs or ponder problems. The work is still in its early stages, but even now it offers an extraordinary opportunity that wasn't possible before.

Researchers can now see how people's brains react to a situation—a process that, obviously, the subjects themselves can't see, let alone explain. That promises to provide a much clearer view of how leaders make good choices, and how other people can learn to follow their example.

Here's a closer look at some of the discoveries researchers have made.

Want Innovation? Be Wary of Deadlines

We often think a deadline can help us shake off inertia and focus on getting a job done. But the brain research suggests precisely the opposite is true. A deadline, instead, more often limits our thinking and can lead to much worse decision making.

Mental Accounting

Conscious decision making and its limits

1

Number of calculations that
the conscious brain can work on
at any one time

Billions

Number of calculations that
the unconscious parts of the brain
can work on at any one time

40

Number of hours per week
that companies expect people to
be strong decision-makers

3 to 5

Average number of peak
decision-making hours per week
that people report

10%

Share of people who do their
best thinking at work

39%

Share of people who do their
best thinking at home

Source: David Rock, NeuroLeadership Institute
The Wall Street Journal

Richard Boyatzis—along with colleague Anthony Jack and others—has found that a tight deadline increases people's urgency and stress levels. These people show more activity in the brain's "task positive" network, which we use for problem solving. But it's not the part of the brain that comes up with original ideas.

"The research shows us that the more stressful a deadline is, the less open you are to other ways of approaching the problem," says Dr. Boyatzis, a professor in the departments of organizational behavior, psychology and cognitive science at Case Western Reserve University. "The very moments when in organizations we want people to think outside the box, they can't even see the box."

For example, an IT manager being pushed to launch a new software product quickly might rush to get all the bugs fixed. With less pressure, he or she might have taken a step back, asked why

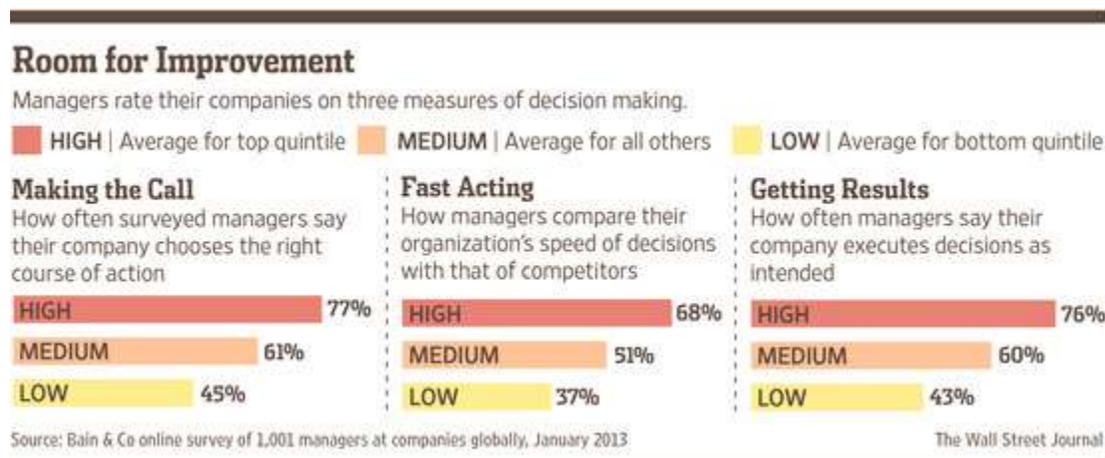
all those problems were cropping up in the first place, and come up with a completely different approach to writing the code that worked more smoothly and didn't produce the glitches.

Does that mean companies should get rid of deadlines? In most cases, that's not realistic. So Srin Pillay, an assistant clinical professor at Harvard Medical School and founder of the coaching firm NeuroBusiness Group, suggests that companies help employees reduce stress and access the creative parts of the brain even when they're under pressure.

One such technique is learning to let the mind wander, with exercises like meditation. In that mental state, the creative part of the brain tends to be active. "When people hit a wall in their thinking, in general they start thinking harder," says Dr. Pillay. "What the neuroscience research tells us is that it's more important to think differently."

Big Unknowns Lead to Bad Choices

The ticking clock of a deadline isn't the only kind of pressure that makes for bad decisions. So does uncertainty, such as feeling that your job or your company's future is under threat.



Dr. Pillay cites a study that discovered that feelings of uncertainty activated brain centers associated with anxiety and disgust, and that such concerns naturally lead to certain kinds of decisions. "In times of uncertainty," he says, "you start acting out of that sense of doom and gloom."

The problem, he says, is that the study also showed that 75% of people in uncertain situations erroneously predicted that bad things would happen. So the reactions and decisions that were made based on fear and anxiety could turn out to be exactly the wrong moves.

Let's say a company is having a rough time navigating the weak economy. A manager who's mired in doom-and-gloom thinking might be too pessimistic to hire new staff or invest in new equipment. But those might be exactly the moves the company needs to gain ground on competitors.

Given that uncertainty is a hallmark of many modern workplaces, the solution lies not in trying to avoid it, but in learning to accept it. "It's important to be aware that your response is likely to be an exaggeration," Dr. Pillay says.

Dr. Pillay recently coached executives at a large energy company on making decisions amid uncertainty, and focused on helping them understand that no decision is final—if circumstances change, you can always re-evaluate it later. That can take the pressure off, he says, and free people to act. Simply being aware of your tendency to embrace doom-and-gloom thinking in uncertain situations, and consciously countering it by reframing an issue in more positive terms, can also be effective.

Good Thinkers Look Past Facts

Everybody is aware of the classic—and revered—image of the hardheaded decision maker, who cuts through nonessentials and goes after cold facts. But researchers are finding the truth is much more complex: The best leaders seem to lean on their emotions much more than logic.

Roderick Gilkey, a professor of management and associate professor of psychiatry at Emory University, conducted a study with colleagues to look at what happens when executives are making strategic decisions. They gave a group of midcareer executives a set of management scenarios and asked for their analysis and recommendations, then scanned their brains using functional magnetic resonance imaging while they completed the tasks.

They expected to see a lot of activity in the prefrontal cortex, the area of the brain known for its involvement in things like planning and logical reasoning. There was activity there, but different areas of the brain were dominant—those involved in social and emotional thinking. And the more adept strategic thinkers in the group displayed much higher levels of activity in these areas.

"The potential conclusion is that people who are good at strategy are better at sensing or feeling their way through strategies, rather than relying only on logic and being rational," says David Rock, director of the research organization NeuroLeadership Institute.

For example, the average manager tasked with improving a business's profit margins might embark on a cost-cutting program including layoffs, and would dismiss any emotional reaction as weakness. A good strategic thinker would pay attention to those emotions and think through the full, long-term impact of the cuts on things like employee morale, retention and productivity. The result might be a different way of improving profitability.

The research ties in with findings from other neuroimaging studies, showing that social and analytical thinking make use of very different areas of the brain, and that social thinking plays a more important role than previously thought. In other words, having a good capacity to look at a problem through other people's eyes is just as important as being able to analyze the facts.

An average leader, for instance, trying to execute a controversial new strategy might assume that it's enough to tell the team what needs to happen, without recognizing that they may feel their status has been attacked by being left out of the discussions. An exceptional leader would instinctively recognize the need to get everyone on board and not simply present a fiat.

"When you're making a decision in an organization, you also need to think about people and their reactions," says Dr. Rock. "A lot of the strategies that go wrong are because managers haven't thought through what happens when this hits people."

The problem is that most people don't switch very effectively between the social and analytical modes of thinking. "Our brain is certainly capable of switching back and forth, but we don't actually do it that much. When we get into a particular mind-set, it tends to be reinforcing," says Matthew Lieberman, professor of psychology at the University of California, Los Angeles.

He says that simple reminders can help. If you're in a meeting, for example, and know that you tend to get caught up in numbers and analysis, you could have prompts in your notes reminding you to take the social temperature of the room at regular intervals.

Leaders Should Stay Positive

Another area of research goes beyond decision making and looks at how good leaders inspire others—from looking at both the leaders and those they are leading. The secret seems to be the carrot rather than the stick.

Dr. Boyatzis and others have done brain scans looking at what happens when people recall their interactions with an effective leader. The patterns were very similar to those found in another study in which people were given positive coaching. Areas of the brain involved in social thinking were activated, along with areas associated with positive emotions.

The best leaders, it seems, are good at motivating people with things like encouragement, praise and rewards—thereby creating a strong emotional bond and sense of purpose among employees.

"We still have this lingering thought that you have to be negative and tough to get things done, when the data says that's just not true at a very basic human level," Dr. Boyatzis says. "It's not to do with gender or cultural differences or anything else. It has to do with how your brain is wired."

Meanwhile, other researchers are investigating the inner workings of the leaders themselves. David Waldman, a management professor at Arizona State University, has worked with Pierre Balthazard and other colleagues to do brain-imaging studies on corporate executives, entrepreneurs and army officers. Their aim is to find out how electrical brain functioning differs in effective and not-so-effective leaders.

One of their findings has to do with inspirational leadership—the ability to articulate a vision that inspires people and makes them buy into your strategy. Not only can these people see the big picture, but they can put that picture into clear words and impart it to others.

Crucially, researchers have found that those abilities are closely tied to connections between certain parts of the brain. Good leaders seem to make those connections naturally, while less effective ones don't.

Now Dr. Waldman and his colleagues are trying to apply that knowledge by training people to access those regions of the brain. The process involves neurofeedback, a technique that trains the brain to learn new processes. A computer monitors people's brain patterns as they observe activity on a screen, such as a movie. Then the computer gives people positive or negative reinforcement.

If the people aren't displaying the desired brain patterns, for example, the screen they're watching may go fuzzy. When they do display the right brain patterns, it becomes sharp again. Gradually, people's brains learn to follow the patterns that are positively reinforced.

The theory is that by the end of the training, people's brains will access those visionary-leadership areas naturally—and, with any luck, make it easier for them to inspire people more easily.

"We are right on the cusp of being able to assist leaders to rewire their own brains through neurofeedback," says Dr. Waldman. "It's based on a lot of research, and the idea is to identify patterns of brain activity that are reflective of a better leader, then give direct computer training to help people develop those patterns for themselves."

He says the technique is already being used in other fields, such as treating attention-deficit disorder. But neurofeedback still needs more research before researchers can be sure it will work in developing leadership ability. Even if it does, it will most likely need to be used in conjunction with more traditional techniques, such as coaching.

"We think this could be something that becomes an important part of the arsenal of techniques in leadership development," he says.

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