

Using Science to Benefit Science, One Decision at a Time

Is There Such a Thing as Brain Bias?

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All of us show bias when it comes to what information we take in. We typically focus on anything that agrees with the outcome we want. — Noreena Hertz, Ph.D., Economist and Author

Leading scientists rely on their ability to pose good questions, dig deep for insightful data and rely on objective, educated decision making to shape a greater understanding of the world around us. A problem, however, is that the growing field of neuroscience tells us that all decisions are essentially emotionally-based decisions, driven towards a reward, or away from a fear. And this decision-making process is heavily susceptible to bias.

SLAC National Accelerator Laboratory is one of 17 Department of Energy (DOE) National Laboratories, and operated by Stanford University on behalf of the DOE. SLAC develops and operates some of the world's premier science facilities including the first hard X-ray free-electron laser. Research at SLAC explores the structure and function of matter and the properties of energy, space and time, at the smallest and largest scales, all with the goal of solving problems facing society and advancing human knowledge. SLAC is also undergoing a change in how it makes decisions about its employees, and that change is being fueled by lessons from behavioral and neurosciences.

Knowing that research indicates diverse groups of people provoke more thinking and creativity, and can even lead to higher quality scientific research, SLAC made an honest assessment of its diversity practices in the summer of 2014; despite good intentions, there were no productive results. Like many organizations across the country, and highlighted by its high-tech industry neighbors in Silicon Valley, SLAC's diversity numbers were not where they could be. Knowing the culture had to evolve while taking a "build it and they will come" approach, a thoughtful culture change practice was set at the lab. And, knowing that an organization's culture is defined by the decisions it makes, awareness of our decision-making process related to employees had to be highlighted.

I Will Survive

Our brains are naturally predisposed to make decisions based on the inherent reward or fear an opportunity or event brings. At the most basic survival instinct level, it is "Can I eat it or procreate with it?" (reward) or "Will it eat me?" (fear). This simple equa-

tion serves to keep the organism alive. And, despite our thousands of years of evolution, this equation still drives our behavior. Our "fast and slow brain processes" drive this activity.

Our fast thinking brain, which is responsible for bias in our decision making, is managed by the amygdala, an almond-shaped structure buried in our brain. It is a primitive brain structure that processes fear and is heavily involved in the fight or flight response. And, importantly, it need not be a physical threat that ignites the process. Our amygdala cannot distinguish between physical and psychological threats, and anything perceived as "different," and therefore threatening, sets off our fast thinking. It is our early warning system, which happens in milliseconds, that signals something needing caution.



The amygdala is also very energy efficient: we push the routine, and our regular thinking patterns, to this part of the brain. Ever drive somewhere familiar and not remember exactly what you saw on the way there? This is your routine autopilot. Our lives would be unmanageable if we had to stop and think about every action we take, and it would also put us in danger. Do you stop and think about needing to hit the brakes quickly? This is your fast brain in action.

Friend or Foe

Bias, a fast brain function, derives from our need to distinguish friend or foe quickly. It supports our survival; we are safer assuming danger first. Bias does not implicate bad intentions. Bias is an error in decision making, a cognitive shortcut. Biases left unchecked can have cultural consequences in organizations.

Our prefrontal cortex, by contrast, is a much slower processing center – but also much more accurate in perceiving the world around you. This fast thinking ability is also very energy taxing and can use up a significant portion of our glucose. This is why after a day of learning something new, or heavy emotional processing, you can feel so depleted. It is also why our brain uses its fast thinking ability – it protects our energy reserves.

Engaging the prefrontal cortex, our conscious, logical, reasoning part of the brain, is the best way to short circuit fast thinking bias.

It allows us to pay attention to important information at a particular time for greater comprehension, understanding and decision making. The prefrontal cortex is then the conscious inhibitory part of our brain that stops us from acting on basic impulses from the amygdala and can be used to mitigate bias in decision making.

Fast thinking habits of the mind become biases. Biases left unchecked become stereotypes. Stereotypes blur the norms we use to assess people.

And when people in organizations use poorly defined norms, they can discount hiring and promoting people who are different from them. To break this pattern, focus must be placed on slowing down the decision-making process during the hiring, developing, evaluating, compensating, and promotion processes. If you change your decisions, you change your culture.

Beating Brain Bias

SLAC has taken steps to do just that. Thoughtful checkpoints used during decision-making inflection points ensure the criteria used to evaluate individuals

are the same for everyone. Questions of potential bias surface when making decisions that impact our culture. To ensure habit thinking does not make decisions for us, time has been spent educating senior leaders first on how our brains and bias play into our practices and culture. The Clayman Institute at Stanford calls this “moving from understanding bias as a cognitive function to seeing how it plays out as an organizational function.” There has been little, if any, resistance to this thinking. In fact, it provides a safe platform for self-evaluation, creating awareness and breaking the tendency for cognitive shortcuts.

We do not, however, stop at increasing awareness. We are also building in ongoing education and interventions at each stage of the talent cycle, holding each other accountable for translating awareness into action. The awareness building and education process continues throughout the lab with managers and employees receiving information “just in time.” For example, hiring managers and members of selection panels receive training on bias and bias mitigating practices at the start of selection processes. Throughout performance evaluation and merit planning our human resource business partners play a role in surfacing consistent criteria for evaluation and decision making during management-leveling meetings. And, when assessing our employee talent and determining development planning, a focus has been brought to our women and underrepresented minorities to ensure their contributions and capabilities are considered in the same light as their white male counterparts.

While all our historical practices have not been overcome, we have found a valid, accepted path forward to make change. Through this practice, we have seen increased numbers of women and underrepresented minorities make their way into nominated leadership development programs and onto short lists for key science hires, as well as an increase in women managers and equitable pay practices. We know we still have work to be done. A journey of culture change is still ahead. The culture, and who represents it, is being changed one decision at a time, and our science stands to benefit from it. ✪

Paul Chiames has 25 years of extensive experience in large-scale culture change, leadership development, executive coaching, workforce and talent planning, team development, human resources strategy and change efforts. His executive experience includes serving as the chief human resources officer for an internationally recognized research laboratory; head of global leadership and talent management for a \$60B+, 60,000-employee global media company; head of global leadership and organization development for a 10,000-employee global film, television, sports and digital media company; and head of leadership and organization development for a 10,000-employee aerospace satellite company. He is also a faculty member of the Society for Human Resource Management (SHRM).