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Understanding bias in decision-making

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A bat and a ball cost $1.10.
The bat costs one dollar more than the ball.
How much is the bat?

The first time I saw this problem, I quickly answered, "One dollar." That's the same answer half of a group of Harvard students offered when asked the same question. The correct answer is $1.05, but what's fascinating about this question is why most of us get it wrong.

We tend to rely on "fast thinking" to navigate our world. Fast thinking is on and operating whenever we're awake. It's a nearly automatic thought process based upon intuition and pattern recognition. Fast thinking enables us to determine where sounds are coming from, helps detect hostility in someone's voice, allows us to read billboards, do basic math, understand simple sentences and drive a car on a familiar road.

Also called System 1 thinking in Daniel Kahneman's book, "Thinking, Fast and Slow," fast thinking is our highly efficient standard mental operating system. By contrast, System 2 thinking is slow and deliberate. It demands focused attention and a lot of calories.

An amusing test of System 2 thinking is "The Invisible Gorilla" developed by Christopher Chabris and Daniel Simons in 2010. Participants are asked to watch a short film with two basketball teams – one dressed in white shirts, the other in black shirts – and count the number of passes between people wearing the white shirts. Both teams pass multiple balls and weave between other players. Counting passes among only the white-shirted team requires focused concentration.

Halfway through the video, someone wearing a gorilla suit walks onto the court, thumps his chest several times, and continues off the court.

Several thousand people have watched the video. Nearly half report never seeing the gorilla. They are so focused on the task of counting passes that even something as out of place as a person in a gorilla suit walking across the court is invisible.

The focused, deliberate thinking of System 2 takes time and energy, which is why it's reserved for big projects and ignored during simple processing tasks. After a day of slow thinking – like doing strategic planning or driving on the other side of the road in a foreign city – you feel brain dead. Because you are. System 2 thinking is hard work.

System 1 and System 2 thinking easily coexist, but System 1 is usually running the show. System 2 is lying low, available when called upon. All of this works very well most of the time. But, **we run into trouble when System 1 creeps in and takes over where System 2 thinking would be more useful.** It's the reason most of us get that math question about the bat and the ball wrong – we use fast thinking for what seems like a simple question, and fail to engage System 2 thinking when it's needed.

"We see things not as they are, but as we are."
-Anonymous[1]

1 You'd think this quote was attributable to someone, but no… http://quoteinvestigator.com/2014/03/09/as-we-are/

Organizations like the CIA and Department of Defense have been studying System 1 and System 2 thinking for decades. In part, their work focuses on how System 1 thinking relies on built-in biases that can impede solid decision-making. And, for them, the stakes are high – basing actions on false conclusions because of bias or misplaced System 1 thinking may result in deaths or war.

In 1974, the Department of Defense supported groundbreaking work that was published by Kahneman and his research partner Amos Tversky in Science magazine. "Judgement under Uncertainty: Heuristics and Biases" demonstrated three types of bias, and how those biases impact judgment. **Representativeness, availability, and anchoring are three System 1 shortcuts our brains use,** when System 2 thinking might be more useful.

Representativeness

Representativeness is a mental shortcut that substitutes one "close enough" answer in place of another answer – possibly the right answer – that might take more time. **Representativeness is your brain likening unfamiliar ideas to familiar circumstances. Simply put, it's a form of stereotyping.**

Consider this example:

Steve is a randomly selected individual. He is described by a neighbor as very shy and withdrawn, invariably helpful but with little interest in people or in the world of reality. A meek and tidy soul, Steve has a need for order and structure, and a passion for detail. Tversky and Kahneman ask, "Is Steve more likely to be a librarian or a farmer?"

Most of us respond that Steve is more likely to be a librarian because his attributes match our stereotype of librarians. What we ignore on the way to our conclusion is that the ratio of male farmers to male librarians is 20:1. Steve is far more likely to be a farmer.

How does representativeness sneak into every day decisions within a public entity pooling environment?

- When you are hiring a new person to replace a successful, long-term pool employee, you may look for someone with the same background, credentials, and personality as the employee who is leaving. Hiring someone with different skills and expertise might present you with a candidate who is able to meet the future challenges and needs of your pool.
- When you decide to expand underwriting to a new member group – like schools or special districts, for instance – you might equate the scope of risk as being relatively similar to your current member entities of cities and towns. In truth, the underlying operations of these new groups, their culture, and their risk profiles may prove substantially different than your existing membership.
- When you evaluate a new claims system, you probably assume your workflow and work processes will remain stable over time. What about trends toward remote employees, automated data feeds, and third party data resources? Your assessment about today's operating environment and business processes may not hold true into the future.

What is a heuristic? What is a bias?

This *Intelligence* publication talks about System 1 and System 2 thinking, mental models, and "bias."

I've used bias definitions with some liberty for ease of conversation, but if you're interested to know the difffference between a bias and a heuristic, here's a bit more detail:

A **heuristic** is a mental shortcut used to solve a particular problem. It is a quick, informal, and intuitive algorithm your brain uses to generate an approximate answer to a reasoning question. For the most part, heuristics are helpful because they allow us to quickly make sense of a complex environment. However, there are times when they fail at making a correct assessment of the world.

When our heuristics fail to produce a correct judgement, it can sometimes result in a **cognitive bias**, which is the tendency to draw an incorrect conclusion in a certain circumstance based on cognitive factors.

Source: Andrea Zvinakis, B.A. in Psychology from Berkeley University

Availability

Availability is another mental shortcut, one that causes us to rely on information that's easily available in our recollection rather than the whole universe of information. This is why we go to the same restaurants again and again, even if there are better restaurants to try. It's why Nike and Doritos and other consumer brands spend billions of dollars advertising to children – they want to be in the small universe of available brands in our kids' developing brains.

In a transcript titled, "Availability Heuristic: Examples and Definition," psychologist Sarah Lavoie asks:

"What is more likely to kill you, your dog or your couch?"

Most people answer "my dog" because of availability. We've all seen stories of a dog attack. But you've probably never seen a news story about someone falling off her couch to her death.

Lavoie continues:

"In actuality, you are nearly 30 times more likely to die from falling off furniture in your own house than you are to be killed by a dog! This may seem unrealistic, but statistics show this is true."

Availability is similar to representativeness, but is based upon your own personal experience and the ease with which you can recall a specific circumstance and assume it will be repeated.

Consider ways this might appear within your public entity pooling experience:

- When the media focuses on an issue, like a teacher caught on video pulling a student out of her desk by her hair, members may overestimate their own, similar risk exposure because the video has gone viral and everyone is talking about it.
- You could face a litigated claim similar to ones your legal team has successfully defended in the past – say a case for which you've traditionally enjoyed a strong governmental immunities defense. Even though trends and case outcomes elsewhere suggest immunities are eroding as a successful defense measure, your legal team bases their chance of success upon their own past experiences at trial.

Anchoring

Many leaders agree it's impossible to base decisions on "perfect information." Instead, we rely on the best information we have, which is often limited by the time we have to dedicate to the project, accessibility to good resources, and other factors. The limited nature of information and our automated mental shortcuts cause us to anchor data and adjust from that singular point for decision-making, rather than considering the full spectrum of available options and pathways.

At four years old, a child is reading fluently. What is her grade point average in college?

If you're like most people, you anchor your answer for the college student based upon her accomplishment as a child, adjusting along the same trajectory of success. But the college student may have a C average for a variety of reasons, many of which having nothing to do with her ability to read at age four.

We all tend to do this. **We anchor our projection on the first piece of data available and then adjust up or down without stopping to consider whether the anchor is even really relevant to the question at hand.**

Anchoring and adjustment bias is a constant concern for public entity pools because of the nature of assessing and assigning risk among members.

- Pool underwriting practices might anchor renewal rates based upon modest adjustments to previous rates, even if the risk profile of a member entity has changed significantly or prior rates proved to be off the mark.
- Pool executives and Boards might anchor financial performance using year-over-year metrics without fully appreciating unique aspects that influence the current year's results, like a benefit or regulatory change, new membership, or revised actuarial results.
- The anchor for a member's loss control commitment might be how many training sessions the member's employees attend, rather than its actual loss performance.

The examples in each area of bias – representativeness, availability, and anchoring – have been specific to a pooling activity or function. Consider, too, the impact these mental shortcuts have on a pool's strategic planning process. We are biased to assume that tomorrow will be like today. **Be sure to engage System 2 thinking in any strategic effort and question your assumptions at every step of the process.**

When System 1 thinking is allowed to use the mental shortcuts of representativeness, availability, or anchoring, we will likely reach conclusions that we wouldn't if System 2 thinking was used. For pool leaders, recognizing the difference between fast and slow thinking, and considering whether System 2 thinking is necessary for the task, is key to assuring a healthy decision-making environment and a healthy pool, overall.

Practical tips for overcoming bias tendencies

It's hard to hear the word "bias" without assigning value judgment, but in truth bias is a natural inclination and something we all deal with in daily decision-making. Bias can be as simple as preferring crunchy peanut butter over creamy, but it can also be a complex and dangerous dynamic. In all cases, bias limits our ability to see an issue fully, so it's a good idea to find meaningful and practical ways to overcome natural bias tendencies.

Focus on fact, not opinion.

At AGRiP's 2016 CEO and Senior Staff Institute, 125 pool executives were asked to brainstorm trends affecting their pools in the areas of Society, Technology, Economy, Environment, and Politics. About 40 minutes later, hundreds of trends were written on Post-It notes.

Small groups were then asked to go back through those trends and decide which were opinions and which were honest-to-goodness trends, meaning there was data to back up the trends as factual.

At the conclusion of the exercise almost half of the identified "trends" were recast as "opinion."

If pooling executives don't take the time and expend the effort to sort opinions from trends – to engage System 2 thinking instead of System 1 — many opinions might be treated as facts. And building a strategy based on opinions rather than facts is dangerous practice.

Embrace your agitators. Imagine you're in a meeting that is about to wrap up when the person next to you says, "I want to go back for a minute to our Board recommendation about the investment policy." You can't help but roll your eyes and a small involuntary sigh escapes you. The team has fully vetted the changes. You've talked about new investment language at three meetings. The Board memo is written and the agenda is ready to go. Your coworker just won't let go of the concerns he has and move on to the next project.

We've all been there, either as the person who wants to revisit an item or as the person rolling her eyes. But listening to concerns or hearing the perspective of someone who wants to discuss a different approach can present an opportunity to check for bias. Some organizations have known agitators and some have people I like to refer to as "weirdos" – those people who routinely come at an issue from someplace completely out of left field. You need agitators and weirdos in your pools, and in your life, to keep you from getting too comfortable and complacent.

Sign up for news from groups that tend to argue the other side. No matter what issue you are pondering, getting perspective from the other side of it is useful. Consider the news sources you prefer and read regularly, then sign up for a couple of the ones you ordinarily avoid. If you are working on a legal advocacy matter, seek out email newsletters of the groups that typically oppose your arguments. Find a pool who operates fundamentally differently than you do – if you're in a competitive environment, find a pool who is not – and begin trading newsletters, annual reports, and Board materials to be sure you have perspective from an entirely different vantage point.

Look outside your normal feedback loop. Most people have their go-to resources, and you likely do, too. When I'm working on a new project or conceptualizing a new idea, I ask my go-to team to act as a sounding board. I trust them to give honest insight and input, and even to tell me if I'm missing the mark in some way. But is this trust fairly placed? Probably not.

We tend to surround ourselves with people who think like we do and who have somewhat similar value systems, even if they occasionally arrive at different conclusions. Sometimes you need to go looking for input from outside your normal circles. Find people who don't know you, how you think, or the conclusions you're likely to derive. Ask them to share their reaction to your thoughts and ideas. You might be surprised by what you learn in the process.

And if you can't seek outside opinions for whatever it is you're working on, try an exercise in building perspective. Assign each person a role and perspective. One person can represent a small member's view, another can think as a large member would. One can try to frame the issue from a regulator's perspective while another looks at the issue as a reporter. Or, try another technique. After a large group meeting, ask the person who was seated furthest away from you, or the newest and most inexperienced person who was in the room, for his thoughts and opinions.

Don't underestimate the power of your own authority or creditablity. I had someone tell me that the chair of executive director was the loneliest place he had ever been. The tough reality is this: the more authority you hold and the more credibility you have, the harder it is to find people willing to bust you on your biases. This isn't about your leadership style or persona. It's simply the virtue of your position and knowledge. What does this mean? If you're in a leadership role at your pool, you have to work even harder to embrace your agitators, look for alternate opinion sources, and seek input outside your normal sources.

About the Author

Rebecca Ryan is AGRiP's Resident Futurist. She taught strategic foresight and how to overcome confirmation bias at the CEO and Senior Staff Institute in Coronado, CA in 2016 and is working with AGRiP SuperForecasters. Learn more about Rebecca at rebeccaryan.com.