



DECISION MAKING

# Outsmart Your Own Biases

by [Jack B. Soll](#), [Katherine L. Milkman](#) and [John W. Payne](#)

From the May 2015 Issue

**S**uppose you're evaluating a job candidate to lead a new office in a different country. On paper this is by far the most qualified person you've seen. Her responses to your interview questions are flawless. She has impeccable social skills. Still, something doesn't feel right. You can't put your finger on what—you just have a sense. How do you decide whether to hire her?

You might trust your intuition, which has guided you well in the past, and send her on her way. That's what most executives say they'd do when we pose this scenario in our classes on managerial decision making. The problem is, unless you occasionally go against your gut, you haven't put your intuition to the test. You can't really know it's helping you make good choices if you've never seen what happens when you ignore it.

---

## FURTHER READING

### **The Five Traps of High-Stakes Decision Making**

Magazine Article by Michael C. Mankins

It can be dangerous to rely too heavily on what experts call System 1 thinking—automatic judgments that stem from

associations stored in memory—instead of logically working through the information that’s available. No doubt, System 1 is critical to survival. It’s what makes you swerve to avoid a car accident. But as the psychologist Daniel Kahneman has shown, it’s also a common source of bias that can result in poor decision making, because our intuitions frequently lead us astray. Other sources of bias involve flawed System 2 thinking—essentially, deliberate reasoning gone awry. Cognitive limitations or laziness, for example, might cause people to focus intently on the wrong things or fail to seek out relevant information.

We are all susceptible to such biases, especially when we’re fatigued, stressed, or multitasking. Just think of a CEO who’s negotiating a merger while also under pressure from lawyers to decide on a plant closing and from colleagues to manage layoffs. In situations like this, we’re far from decision-ready—we’re mentally, emotionally, and physically spent. We cope by relying even more heavily on intuitive, System 1 judgments and less on careful reasoning. Decision making becomes faster and simpler, but quality often suffers.

**Most of us tend to be overconfident in our estimates. It’s important to allow for uncertainty.**

One solution is to delegate and to fight bias at the organizational level, using choice architecture to modify the environment in which decisions are made. (See “Leaders as Decision Architects,” in this issue.) Much of the time, though, delegation isn’t appropriate, and it’s all on you, the manager, to decide. When that’s the case, you can outsmart your own biases. You start by understanding where they’re coming from: excessive reliance on intuition, defective reasoning, or both. In this article, we describe some of the most stubborn biases out there: tunnel vision about future scenarios, about objectives, and about options. But awareness alone isn’t enough, as Kahneman, reflecting on his own experiences, has pointed out. So we also provide strategies for overcoming biases, gleaned from the latest research on the psychology of judgment and decision making.

First, though, let's return to that candidate you're considering. Perhaps your misgivings aren't really about her but about bigger issues you haven't yet articulated. What if the business environment in the new region isn't as promising as forecast? What if employees have problems collaborating across borders or coordinating with the main office? Answers to such questions will shape decisions to scale back or manage continued growth, depending on how the future unfolds. So you should think through contingencies now, when deciding whom to hire.

But asking those bigger, tougher questions does not come naturally. We're cognitive misers—we don't like to spend our mental energy entertaining uncertainties. It's easier to seek closure, so we do. This hems in our thinking, leading us to focus on *one possible future* (in this case, an office that performs as projected), *one objective* (hiring someone who can manage it under those circumstances), and *one option in isolation* (the candidate in front of us). When this narrow thinking weaves a compelling story, System 1 kicks in: Intuition tells us, prematurely, that we're ready to decide, and we venture forth with great, unfounded confidence. To “debias” our decisions, it's essential to broaden our perspective on all three fronts.

---

## TEST YOURSELF

### Are You Being Tricked by Intuition?

Quiz by John Beshears, Shane Frederick, and Francesca

Gino

Answer three questions to see what your “default” mode is for judgments and decisions.

## Thinking About the Future

Nearly everyone thinks too narrowly about possible outcomes. Some people make one best guess and stop there (“If we build this factory, we will sell 100,000 more cars a year”). Others at least try to hedge their bets (“There is an 80% chance we will sell between 90,000 and 110,000 more cars”).

Unfortunately, most hedging is woefully inadequate. When researchers asked hundreds of chief financial officers from a variety of industries to forecast yearly returns for the S&P 500 over a nine-year horizon, their 80% ranges were right only one-third of the time. That's a terribly low rate of accuracy for a group of executives with presumably vast knowledge of the U.S. economy. Projections are even further off the mark when

people assess their own plans, partly because their desire to succeed skews their interpretation of the data. (As former Goldman Sachs CFO David Viniar once put it, “The lesson you always learn is that your definition of extreme is not extreme enough.”)

Because most of us tend to be highly overconfident in our estimates, it’s important to “nudge” ourselves to allow for risk and uncertainty. The following methods are especially useful.

### **Make three estimates.**

What will be the price of crude oil in January 2017? How many new homes will be built in the United States next year? How many memory chips will your customers order next month? Such forecasts shape decisions about whether to enter a new market, how many people to hire, and how many units to produce. To improve your accuracy, work up at least three estimates—low, medium, and high—instead of just stating a range. People give wider ranges when they think about their low and high estimates separately, and coming up with three numbers prompts you to do that.

Your low and high guesses should be unlikely but still within the realm of possibility. For example, on the low end, you might say, “There’s a 10% chance that we’ll sell fewer than 10,000 memory chips next month.” And on the high end, you might foresee a 10% chance that sales will exceed 50,000. With this approach, you’re less likely to get blindsided by events at either extreme—and you can plan for them. (How will you ramp up production if demand is much higher than anticipated? If it’s lower, how will you deal with excess inventory and keep the cash flowing?) Chances are, your middle estimate will bring you closer to reality than a two-number range would.

### **Think twice.**

A related exercise is to make two forecasts and take the average. For instance, participants in one study made their best guesses about dates in history, such as the year the cotton gin was invented. Then, asked to assume that their first answer was wrong, they guessed again. Although one guess was generally no closer than the other, people could harness the “wisdom of the inner crowd” by averaging their guesses; this strategy was more accurate than relying on either estimate alone. Research also shows that when people think more than once about a problem, they often come at it with a different perspective, adding valuable information. So tap your own inner crowd and

allow time for reconsideration: Project an outcome, take a break (sleep on it if you can), and then come back and project another. Don't refer to your previous estimate—you'll only anchor yourself and limit your ability to achieve new insights. If you can't avoid thinking about your previous estimate, then assume it was wrong and consider reasons that support a different guess.

---

#### FURTHER READING

##### **Before You Make That Big Decision...**

**Magazine Article** by Daniel Kahneman, Dan Lovallo, and

Olivier Sibony

Unearth and neutralize problems in your teams' thinking.

---

#### **Use premortems.**

In a postmortem, the task is typically to understand the cause of a past failure. In a *premortem*, you imagine a future failure and then explain the cause. This technique, also called *prospective hindsight*, helps you identify potential problems that ordinary foresight won't bring to mind. If you're a manager at an international retailer, you

might say: "Let's assume it's 2025, and our Chinese outlets have lost money every year since 2015. Why has that happened?"

Thinking in this way has several benefits. First, it tempers optimism, encouraging a more realistic assessment of risk. Second, it helps you prepare backup plans and exit strategies. Third, it can highlight factors that will influence success or failure, which may increase your ability to control the results.

Perhaps Home Depot would have benefited from a premortem before deciding to enter China. By some accounts, the company was forced to close up shop there because it learned too late that China isn't a do-it-yourself market. Apparently, given how cheap labor is, middle-class Chinese consumers prefer to contract out their repairs. Imagining low demand in advance might have led to additional market research (asking Chinese consumers how they solve their home-repair problems) and a shift from do-it-yourself products to services.

#### **Take an outside view.**

Now let's say you're in charge of a new-product development team. You've carefully devised a six-month plan—about which you are very confident—for initial design, consumer testing, and prototyping. And you've carefully worked out what you'll need

to manage the team optimally and why you expect to succeed. This is what Dan Lovallo and Daniel Kahneman call taking an “inside view” of the project, which typically results in excessive optimism. You need to complement this perspective with an outside view—one that considers what’s happened with similar ventures and what advice you’d give someone else if you weren’t involved in the endeavor. Analysis might show, for instance, that only 30% of new products in your industry have turned a profit within five years. Would you advise a colleague or a friend to accept a 70% chance of failure? If not, don’t proceed unless you’ve got evidence that your chances of success are substantially better than everyone else’s.

An outside view also prevents the “planning fallacy”—spinning a narrative of total success and managing for that, even though your odds of failure are actually pretty high. If you take a cold, hard look at the costs and the time required to develop new products in your market, you might see that they far outstrip your optimistic forecast, which in turn might lead you to change or scrap your plan.

## **Thinking About Objectives**

It’s important to have an expansive mindset about your objectives, too. This will help you focus when it’s time to pick your most suitable options. Most people unwittingly limit themselves by allowing only a subset of worthy goals to guide them, simply because they’re unaware of the full range of possibilities.

That’s a trap the senior management team at Seagate Technology sought to avoid in the early 1990s, when the company was the world’s largest manufacturer of disk drives. After acquiring a number of firms, Seagate approached the decision analyst Ralph Keeney for help in figuring out how to integrate them into a single organization. Keeney conducted individual interviews with 12 of Seagate’s top executives, including the CEO, to elicit the firm’s goals. By synthesizing their responses, he identified eight general objectives (such as creating the best software organization and providing value to customers) and 39 specific ones (such as developing better product standards and reducing customer costs). Tellingly, each executive named, on average, only about a third of the specific objectives, and only one person cited more than half. But with all the objectives mapped out, senior managers had a more comprehensive view and a

shared framework for deciding which opportunities to pursue. If they hadn't systematically reflected on their goals, some of those prospects might have gone undetected.

Early in the decision-making process, you want to generate many objectives. Later you can sort out which ones matter most. Seagate, for example, placed a high priority on improving products because that would lead to more satisfied customers, more sales, and ultimately greater profits. Of course, there are other paths to greater profits, such as developing a leaner, more efficient workforce. Articulating, documenting, and organizing your goals helps you see those paths clearly so that you can choose the one that makes the most sense in light of probable outcomes.

Take these steps to ensure that you're reaching high—and far—enough with your objectives.

### **Seek advice.**

Round out your perspective by looking to others for ideas. In one study, researchers asked MBA students to list all their objectives for an internship. Most mentioned seven or eight things, such as “improve my attractiveness for full-time job offers” and “develop my leadership skills.” Then they were shown a master list of everyone's objectives and asked which ones they considered personally relevant. Their own lists doubled in size as a result—and when participants ranked their goals afterward, those generated by others scored as high as those they had come up with themselves.

Outline objectives on your own before seeking advice so that you don't get “anchored” by what others say. And don't anchor your advisers by leading with what you already believe (“I think our new CFO needs to have experience with acquisitions—what do you think?”). If you are making a decision jointly with others, have people list their goals independently and then combine the lists, as Keeney did at Seagate.

### **Cycle through your objectives.**

Drawing on his consulting work and lab experiments, Keeney has found that looking at objectives one by one rather than all at once helps people come up with more alternatives. Seeking a solution that checks off every single box is too difficult—it paralyzes the decision maker.

---

THIS ARTICLE ALSO APPEARS IN:



**HBR's 10 Must Reads 2016**

Book

\$24.95

[View Details](#)

So, when considering your goals for, say, an off-site retreat, tackle one at a time. If you want people to exchange lessons from the past year, develop certain leadership skills, and deepen their understanding of strategic priorities, thinking about these aims separately can help you achieve them more effectively. You might envision multiple sessions or even different events, from

having expert facilitators lead brainstorming sessions to attending a leadership seminar at a top business school. Next, move on to combinations of objectives. To develop leadership skills and entertain accompanying family members, you might consider an Outward Bound–type experience. Even if you don't initially like an idea, write it down—it may spark additional ideas that satisfy even more objectives.

## Thinking About Options

Although you need a critical mass of options to make sound decisions, you also need to find strong contenders—at least two but ideally three to five. Of course, it's easy to give in to the tug of System 1 thinking and generate a false choice to rationalize your intuitively favorite option (like a parent who asks an energetic toddler, “Would you like one nap or two today?”). But then you're just duping yourself. A decision can be no better than the best option under consideration. Even System 2 thinking is often too narrow. Analyzing the pros and cons of several options won't do you any good if you've failed to identify the best ones.

Unfortunately, people rarely consider more than one at a time. Managers tend to frame decisions as yes-or-no questions instead of generating alternatives. They might ask, for instance, “Should we expand our retail furniture business into Brazil?” without questioning whether expansion is even a good idea and whether Brazil is the best place to go.

Yes-no framing is just one way we narrow our options. Others include focusing on one type of solution to a problem (what psychologists call functional fixedness) and being constrained by our assumptions about what works and what doesn't. All these are signs



of cognitive rigidity, which gets amplified when we feel threatened by time pressure, negative emotions, exhaustion, and other stressors. We devote mental energy to figuring out how to avoid a loss rather than developing new possibilities to explore.

### **Use joint evaluation.**

The problem with evaluating options in isolation is that you can't ensure the best outcomes. Take this scenario from a well-known study: A company is looking for a software engineer to write programs in a new computer language. There are two applicants, recent graduates of the same esteemed university. One has written 70 programs in the new language and has a 3.0 (out of 5.0) grade point average. The other has written 10 programs and has a 4.9 GPA. Who gets the higher offer?

The answer will probably depend on whether you look at both candidates side by side or just one. In the study, most people who considered the two programmers at the same time—in joint evaluation mode—wanted to pay more money to the more prolific recruit, despite his lower GPA. However, when other groups of people were asked about only one programmer each, proposed salaries were higher for the one with the better GPA. It is hard to know whether 70 programs is a lot or a little when you have no point of comparison. In separate evaluation mode, people pay attention to what they can easily evaluate—in this case, academic success—and ignore what they can't. They make a decision without considering all the relevant facts.

A proven way to snap into joint evaluation mode is to consider what you'll be missing if you make a certain choice. That forces you to search for other possibilities. In a study at Yale, 75% of respondents said yes when asked, "Would you buy a copy of an entertaining movie for \$14.99?" But only 55% said yes when explicitly told they could either buy the movie or keep the money for other purchases. That simple shift to joint evaluation highlights what economists call the opportunity cost—what you give up when you pursue something else.

### **Try the "vanishing options" test.**

Once people have a solid option, they usually want to move on, so they fail to explore alternatives that may be superior. To address this problem, the decision experts Chip Heath and Dan Heath recommend a mental trick: Assume you can't choose any of the options you're weighing and ask, "What else could I do?" This question will trigger an

exploration of alternatives. You could use it to open up your thinking about expanding your furniture business to Brazil: “What if we *couldn't* invest in South America? What else could we do with our resources?” That might prompt you to consider investing in another region instead, making improvements in your current location, or giving the online store a major upgrade. If more than one idea looked promising, you might split the difference: for instance, test the waters in Brazil by leasing stores instead of building them, and use the surplus for improvements at home.




## **Fighting Motivated Bias**

All these cognitive biases—narrow thinking about the future, about objectives, and about options—are said to be “motivated” when driven by an intense psychological need, such as a strong emotional attachment or investment. Motivated biases are especially difficult to overcome. You know this if you’ve ever poured countless hours and resources into developing an idea, only to discover months later that someone has beaten you to it. You should move on, but your desire to avoid a loss is so great that it distorts your perception of benefits and risks. And so you feel an overwhelming urge to forge ahead—to prove that your idea is somehow bigger or better.

Our misguided faith in our own judgment makes matters worse. We’re overconfident for two reasons: We give the information we do have too much weight (see the sidebar “How to Prevent Misweighting”). And because we don’t know what we can’t see, we have trouble imagining other ways of framing the problem or working toward a solution.

## How to Prevent Misweighting

When we give too much or too little significance to the information we have, our decisions may suffer. It's a problem with all types of bias, but these tactics can help.

	UTILITY	EXAMPLES
 <b>BLINDING</b>	Improve judgment by eliminating the influence of stereotypes, idiosyncratic associations, and irrelevant factors.	<ul style="list-style-type: none"><li>• Orchestras have players audition behind a screen to prevent gender bias. After this became standard practice, female membership skyrocketed from 5% in 1970 to nearly 40% today.</li><li>• Many professors ensure fair grading by covering up names (or asking an assistant to do so) before evaluating papers and other assignments.</li></ul>
 <b>CHECKLISTS</b>	Reduce errors due to forgetfulness and other memory distortions by directing our attention to what's most relevant.	<ul style="list-style-type: none"><li>• Venture capitalists often use a set list of criteria to vet entrepreneurial pitches.</li><li>• Savvy hiring managers assess candidates by conducting structured interviews (they're much more accurate predictors of performance than open-ended interviews). Because there's a standard way to rate responses, people can be easily compared on various dimensions.</li></ul>
 <b>ALGORITHMS</b>	Ensure consistency by predetermining how much emphasis each piece of information will get.*	<ul style="list-style-type: none"><li>• Banks and other lenders use scoring algorithms to predict consumers' creditworthiness.</li><li>• Taking a page from professional baseball, employers are starting to use algorithms in hiring. One study showed that a simple equation for evaluating applicants outperformed human judgment by at least 25%.</li></ul>

\*Since algorithms reflect the biases of the experts who build them, it's best to combine them with other debiasing tools.

**SOURCE** JACK B. SOLL, KATHERINE L. MILKMAN, AND JOHN W. PAYNE  
**FROM** "OUTSMART YOUR OWN BIASES," MAY 2015

© HBR.ORG

But we can preempt some motivated biases, such as the tendency to doggedly pursue a course of action we desperately want to take, by using a “trip wire” to redirect ourselves to a more logical path. That’s what many expedition guides do when leading clients up Mount Everest: They announce a deadline in advance. If the group fails to reach the summit by then, it must head back to camp—and depending on weather conditions, it may have to give up on the expedition entirely. From a rational perspective, the months of training and preparation amount to sunk costs and should be disregarded. When removed from the situation, nearly everyone would agree that ignoring the turnaround time would put lives at stake and be too risky. However, loss aversion is a powerful psychological force. Without a trip wire, many climbers do push ahead, unwilling to give up their dream of conquering the mountain. Their tendency to act on emotion is even stronger because System 2 thinking is incapacitated by low oxygen levels at high altitudes. As they climb higher, they become less decision-ready—and in greater need of a trip wire.

In business, trip wires can make people less vulnerable to “present bias”—the tendency to focus on immediate preferences and ignore long-term aims and consequences. For instance, if you publicly say *when* you’ll seek the coaching that your boss wants you to get (and that you’ve been putting off even though you know it’s good for you), you’ll be more apt to follow through. Make your trip wire precise (name a date) so that you’ll find it harder to disregard later, and share it with people who will hold you accountable.

## **Cognitive rigidity gets amplified by time pressure, negative emotions, exhaustion, and other stressors.**

Another important use of trip wires is in competitive bidding situations, where the time and effort already invested in a negotiation may feel like a loss if no deal is reached. Executives often try to avoid that loss by escalating their commitment, overpaying by millions or even billions of dollars. The thing is, preferences often change over the course of a negotiation (for example, new information that comes to light may justify paying a higher price). So in this sort of situation, consider setting a *decision point*—a kind of trip wire that’s less binding because it triggers thinking instead of a certain action. If the deal price escalates beyond your trigger value, take a break and reassess your objectives and options. Decision points provide greater flexibility than “hard” trip wires, but because they allow for multiple courses of action, they also increase your risk of making short-term, emotion-based decisions.

Although narrow thinking can plague us at any time, we’re especially susceptible to it when faced with one-off decisions, because we can’t learn from experience. So tactics that broaden our perspective on possible futures, objectives, and options are particularly valuable in these situations. Some tools, such as checklists and algorithms, can improve decision readiness by reducing the burden on our memory or attention; others, such as trip wires, ensure our focus on a critical event when it happens.

As a rule of thumb, it’s good to anticipate three possible futures, establish three key objectives, and generate three viable options for each decision scenario. We can always do more, of course, but this general approach will keep us from feeling overwhelmed by endless possibilities—which can be every bit as debilitating as seeing too few.

Even the smartest people exhibit biases in their judgments and choices. It's foolhardy to think we can overcome them through sheer will. But we *can* anticipate and outsmart them by nudging ourselves in the right direction when it's time to make a call.

A version of this article appeared in the May 2015 issue (pp.64–71) of *Harvard Business Review*.

---

**Jack B. Soll** is an associate professor of management at Duke University's Fuqua School of Business. He is a coauthor of "A User's Guide to Debiasing," a chapter in *The Wiley Blackwell Handbook of Judgment and Decision Making*, forthcoming in 2015.

---



**Katherine L. Milkman** is the James G. Campbell Jr. Assistant Professor of Operations and Information Management at the University of Pennsylvania's Wharton School. She is a coauthor of "A User's Guide to Debiasing," a chapter in *The Wiley Blackwell Handbook of Judgment and Decision Making*, forthcoming in 2015.

---

**John W. Payne** is the Joseph J. Ruvane Jr. Professor of Business Administration at Fuqua. He is a coauthor of "A User's Guide to Debiasing," a chapter in *The Wiley Blackwell Handbook of Judgment and Decision Making*, forthcoming in 2015.

---

## This article is about **DECISION MAKING**

 Follow This Topic

Related Topics: [Forecasting](#) | [Managing Uncertainty](#) | [Psychology](#)

## Comments

Leave a Comment

Post Comment

**9 COMMENTS**



---

Ivan Petrov 3 years ago

“The lesson you always learn is that your definition of extreme is not extreme enough.” - can't be more clear than this

Intuition against facts :) ...no way ... always put your bet on facts no matter what your internal voice says . This is the main reason we call it test period , if the candidate match the criteria then no reasons to send him back ...if you don't have better one in your pocket. Simple logic is best logic, this is the reality and we are not some extraterrestrial beings. Wake up Dorothy We're Not in Kansas Anymore... skills are irrelevant because time is not a constant and the world around is not just a static picture....

 Reply

0  0 

[!\[\]\(950a62bbddad88d64435fd35607dfc42\_img.jpg\) Join The Conversation](#)

---

#### **POSTING GUIDELINES**

We hope the conversations that take place on HBR.org will be energetic, constructive, and thought-provoking. To comment, readers must sign in or register. And to ensure the quality of the discussion, our moderating team will review all comments and may edit them for clarity, length, and relevance. Comments that are overly promotional, mean-spirited, or off-topic may be deleted per the moderators' judgment. All postings become the property of Harvard Business Publishing.