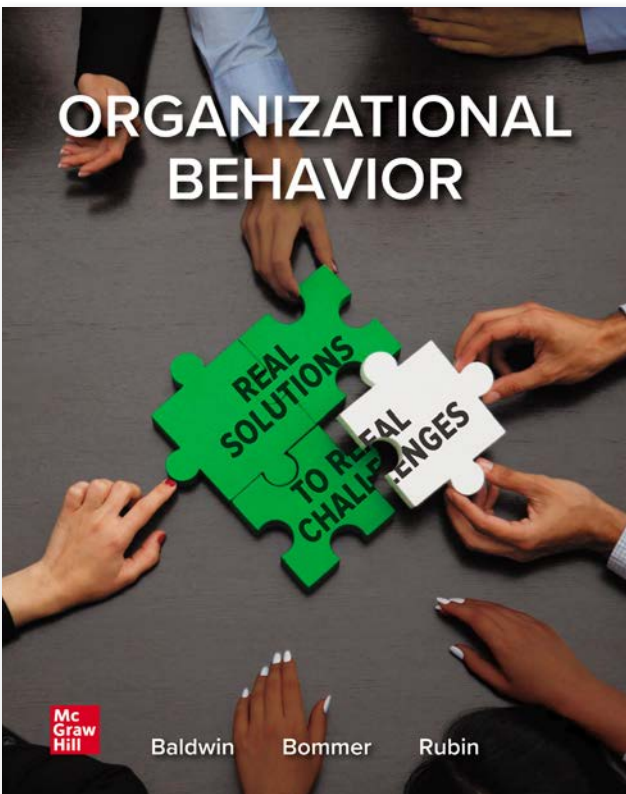# McGraw Hill

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Organizational Behavior,
1st edition

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A New OB product for A New Student Reality - Time to Get Real

Meet the Authors

TIMOTHY (Tim) T. BALDWIN is the Tobias Distinguished Chair of Leadership & Professor of Management at the Indiana University Kelley School of Business. Professor Baldwin holds a Ph.D. in organizational behavior and an MBA from Michigan State University. He has published his research work in leading academic and professional outlets, and has twice been the recipient of the Richard A. Swanson Excellence in Research Award presented by the American Society for Training & Development (ASTD).

In his time at Indiana University, Tim has been recognized frequently for teaching excellence, including winning the Eli Lilly Alumni Teaching Award and the FACET All-University Teaching Award. His background includes consultation with a variety of organizations in both the public and private sectors and he currently serves on the Board of Directors of Cripe Architects & Engineers and World Arts, Inc.

WILLIAM (Bill) H. BOMMER is a Professor of Management and the Director of Craig International Programs in the Craig School of Business at California State University, Fresno. Prior to his move to California, Bill served as faculty at Bowling Green State University, Southern Illinois University at Edwardsville, Georgia State University, and Cleveland State University. He earned his master's degree in organizational development from Bowling Green State University, and his Ph.D. in organizational behavior from Indiana University.

Bill has published widely in the management area and his current research interests include transformational leadership and organizational change processes. Bill is an award-winning teacher and has designed and led numerous executive education programs including a twenty-year relationship with the Centers for Disease Control (CDC) where he has designed and delivered numerous training programs for the leadership of that organization.

ROBERT (Bob) S. RUBIN is a Professor of Management and Associate Dean for Graduate and Professional Education in the Driehaus College of Business at DePaul University. He earned his Ph.D. from Saint Louis university and is a former Associate Editor of the Academy of Management Learning & Education Journal. Professor Rubin is an award-winning teacher and scholar specializing in the areas of organizational behavior, human resource management, and management education.

His current research examines leadership assessment and development, organizational citizenship behavior and graduate management education. In addition to his academic work, Bob is an active human resources and organization development consultant to a variety of organizations and his consulting work spans human capital management, leadership assessment and development and organization development. Bob also maintains a coaching practice for purposes of managerial skill development and support.

Note from the Authors

We're excited to launch **Organizational Behavior: Real Solutions to Real Challenges**. This new kind of OB product came from our increasing recognition of the challenges faced by former students working in contemporary organizations today. Those graduates tell us that they are ultimately challenged most by the "people problems" in their work. So, we wanted our current students to understand that reality and to exposure them to the best current evidence and thinking about how informed people attack those challenges. Our charge was to create a product that focused on real solutions to real challenges in the real world. We have drawn on many sources including the Management & Organizational Behavior Teaching Society (MOBTS) and the Teaching and Learning Conference (TLC) of the Academy of Management.

Our OB product differs from others in three fundamental ways:

1. **Application & Tools – Not Just Concepts and Definitions**
   Almost every existing OB textbook has a decidedly description orientation. **Our goal was to get beyond description to skill development and making real decisions.** For example, not just what defines a good group, but how one might make a group function better. Not just a model of motivation but how one might coach someone who is performing poorly. Our goal was to translate descriptions to decisions – from OB concepts to personal action.

2. **Hearing the Voice of the Student – Not Just Covering the Topics of the Discipline**
   We purposively did not start by looking at all the accumulated knowledge about OB topics. We began with the key questions, problems, and challenges people face today, and then turned to the existing evidence to build chapters around those problems. **Our goal was to include materials and evidence that might be labeled "mission critical." The product is relatively short to keep students' attention, rather than attempt to superficially cover the waterfront.** Similar to editors of *Consumer Reports Magazine*, we tested assumptions about what students *really read* and *consume*, and what instructors *really use*.

3. **Contemporary Examples & Cases**
   Our guiding objective was to present cases and examples that today's students would view as:
   • **Just in Time**
   • **Just Enough**
   • **Just for Me**

   That is, students respond best to materials that are timely and not dated, short and to the point, and targeted and relevant to them in their current life. So, we sought cases and illustrations that are drawn from organizations and contexts that would strike the imagination of today's students and have a clear linkage between what they see in their day-to-day lives and what they encounter with our product.

In short, we believe the time is now for a skills-based, decision-oriented approach that challenges students to develop real solutions to real challenges. Together, we can redefine OB teaching and foster healthier and more product workplaces.

Sincerely,
Tim Baldwin, Bill Bommer, and Bob Rubin

Organizational Behavior, 1st edition

By Timothy Baldwin, William Bommer, and Robert Rubin

Table of Contents

OB Skills Challenges

Those challenges consist of fundamental and specific questions related to the skill focus of that chapter and help students get beyond just knowing pricinpes to be able to apply their learnig to the most common organizational challenges they will face. The answers to those challenges are included in the instructor's manual. The specific challenges presented include:

1.1 Thinking Beyond Your First Job
2.1 Making the Hard Case for Soft Skills
2.2 Prioritizing Your Time
2.3 Addressing Counter-Productive Work Behavior
3.1 Dealing With a Difficult Co-Worker
3.2 Enhancing Your Self-Awareness
4.1 Minimizing Your Chances of Choking in a Pressure Situation
4.2 Lowering Stress but Not Performance
5.1 Addressing a Challenging Problem
5.2 Recognizing Common Decision Traps- Testing Your Judgment
6.1 Considering the Broad Range of Ethical Dilemmas
6.2 Making a Difficult Ethical Decision
6.3 Creating a Culture That People View as Fair
7.1 The Elevator Pitch: Making Your Case in a Very Short Time
7.2 Giving Feedback That Will Be Heard and Will Change Behavior
8.1 Dealing with the Unmotivated Person
8.2 Enriching the Boring Job
9.1 Diagnosing a Conflict
9.2 Choosing a Conflict Management Approach
9.3 Conducting a Win-Win Negotiation

9.4 Mediating a Difficult Conflict
10.1 Building Power Through a Professional Network
10.2 Leading a Team of Peers
10.3 Influencing Upward in the Organization
11.1 Building Effective Relationships With Others
11.2 Providing Effective Rewards
11.3 Establishing High Leadership Expectations
12.1 Helping the Highly Cohesive but Low Performing Team
12.2 Getting a Team Started – Leading the First Meeting
12.3 Dealing with a Problem Team Member
13.1 Determining Your Person-Organizational Fit
13.2 Building a High-Performance Culture
14.1 Clarifying Job Expectations
14.2 Choosing the Most Effective Organizational Structure
14.3 Aligning an Organizational Unit
15.1 Converting an Organizational Problem into an Achievable Change Initiative
15.2 Creating Urgency for a Change
15.3 Dealing with Change Resisters

OB BUZZ: This feature is designed to highlight the most vivid and engaging illustrations we could find to bring concepts to life. Learning theorists use the term "stickiness" to describe learning stimuli that stay with us. We want students to recall specific cases and examples long after they have forgotten lectures and reading.

OB MYTHS: The great humorist Will Rogers famously noted that *"It is not what we don't know that gets us in trouble. It is what we know that just ain't so."* That is, success is often as much about recognizing misconceptions, and avoiding what *not* to do, as it is about expertly pursuing a prescribed course of action. Unfortunately, there are so many unsubstantiated claims and faddish ideas surfacing on social media and elsewhere these days, it is challenging for even experienced people to distinguish between fact and fiction. So recognizing that reality, and in an effort to help distinguish truth and half-truth from myth in this text, we include multiple **OB Myths** per chapter to address commonly held beliefs that are not generally supported by OB evidence.

OB PLAYBOOKS: An irrefutable aspect of applying skills is to have a good set of tools. So throughout the chapters we have embedded OB Playbooks – which are essentially tool kits – to give students what they need to become more skilled in the practice of organizational behavior into each chapter. This is just a sampling of the OB Playbooks.

1.1 A Framework for Making More Evidence-Based OB Decisions
2.2 How to Retain High Performers
3.2 Getting the Feedback You Need
4.2 Making Effective To-Do Lists
5.2 After Action Review (AAR)
6.2 The Last Resort: How to Blow the Whistle on Unethical Behavior
7.1 Making E-Messages Reader Friendly
8.1 Steps to Effective Positive Reinforcement
9.1 Diagnosing the Conflict Source
10.2 Essential Actions to Influence Up
11.3 The Leadership Development Plan
12.1 How to Build Team Cohesiveness
12.3 How to Run an Effective Meeting
13.2 Diagnosing a Company's Diversity & Inclusion
14.2 Is Your Reward System Doing Its Job?
15.2 Communicating to Avoid Clutter

OB IN ACTION CASES: Some of the "hottest" companies are, in fact, wonderful exemplars of the best of OB practice. We expressly sought firms that would strike students imagination and show a clear linkage between what they are reading in the text and the application of those concepts in the most progressive and admired of today's organizations. Each chapter concludes with a case designed to satisfy student desire for examples that are (a) authentic and real world and (b) current and relevant.

1. Google: Project Oxygen
2. Pals Sudden-Service Fast Food Chain
3. E-Harmony
4. NetFlix
5. Threadless
6. Tom's Shoes
7. Asana
8. Uber
9. Spitz International Inc.
10. Linked-In
11. IBM and Proctor & Gamble
12. Google: Project Aristotle
13. Microsoft
14. Zappos
15. Amazon

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Asset Alignment with Bloom's Taxonomy

Baldwin/Bommer/Rubin:
Organizational Behavior, 1e

We Take Students Higher

As a learning science company, we create content that supports higher order thinking skills.
Within McGraw-Hill Connect®, we tag content accordingly so you can filter your search, assign it, and receive reporting on it. These content asset types can be associated with one or more levels of Bloom's.

The chart below shows a few of the key assignable business assets with Connect aligned with Bloom's Taxonomy. Take your students higher by assigning a variety of applications, moving them from simple memorization to concept application.

	SmartBook® 2.0	McGraw-Hill eBook & ReadAnywhere app	Click & Drag Exercises	iSeeIt! Animated Video Cases	Self-Assessments	Case Analyses and Video Cases	Manager's Hot Seat Videos	Application-Based Activities
CREATE								
EVALUATE						✓	✓	✓
ANALYZE					✓	✓	✓	✓
APPLY			✓	✓	✓	✓	✓	✓
UNDERSTAND	✓	✓	✓	✓	✓	✓	✓	✓
REMEMBER	✓	✓	✓	✓	✓	✓	✓	✓

Higher Order Thinking Skills

Lower Order Thinking Skills

SmartBook 2.0

Smartbook 2.0 is an adaptive learning solution that provides personalized learning to individual student needs, continually adapts to pinpoint knowledge gaps and focuses learning on concepts requiring additional study. It fosters more productive learning, takes the guesswork out of what to study, and helps students better prepare for class.

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Click & Drag Exercises

These activities help make the connection between theory and application through matching, ranking, or grouping activities.

iSeeIt! Animated Video Cases

Brief, contemporary and engaging animated videos offer dynamic, student-centered introductions, illustrations, and animations to guide students through challenging concepts. Ideal for before class as an introduction, during class to launch or clarify a topic, or after class for formative assessment.

Self-Assessments

Designed to promote student self-awareness and reflection, these research-based surveys contain detailed feedback for students.

Case Analyses and Video Cases

Our assortment of written and video cases challenge students to analyze concepts as they manifest in scenarios related to a real-life product or company, fostering their ability to think critically in lecture and beyond. Thought-provoking questions check the students' ability to apply the course material and develop their workplace-readiness skills.

Manager's Hot Seat Videos

These videos allow students to assume the role of a manager as they immerse themselves in video-based scenarios. These videos enable students to see how managers in realistic situations deal with employees and complex issues. Students will use their critical thinking skills to apply, analyze, and evaluate these managerial challenges, while learning from the manager's mistakes.

Application-Based Activities

These highly interactive, application- and analysis-based exercises allow students to take on specific roles to complete management-related tasks within a real-world context. These tasks often involve multiple decision-making paths, and students can see the consequences of their actions with feedback throughout. These automatically graded exercises provide students a safe space to practice using problem-solving skills to apply their knowledge to realistic scenarios.

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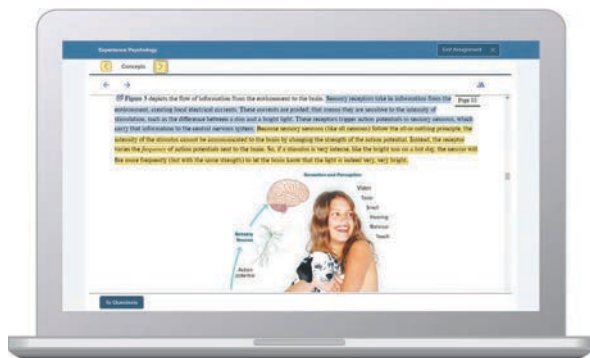
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- Jordan Cunningham, Eastern Washington University

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"

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ORGANIZATIONAL BEHAVIOR

REAL SOLUTIONS

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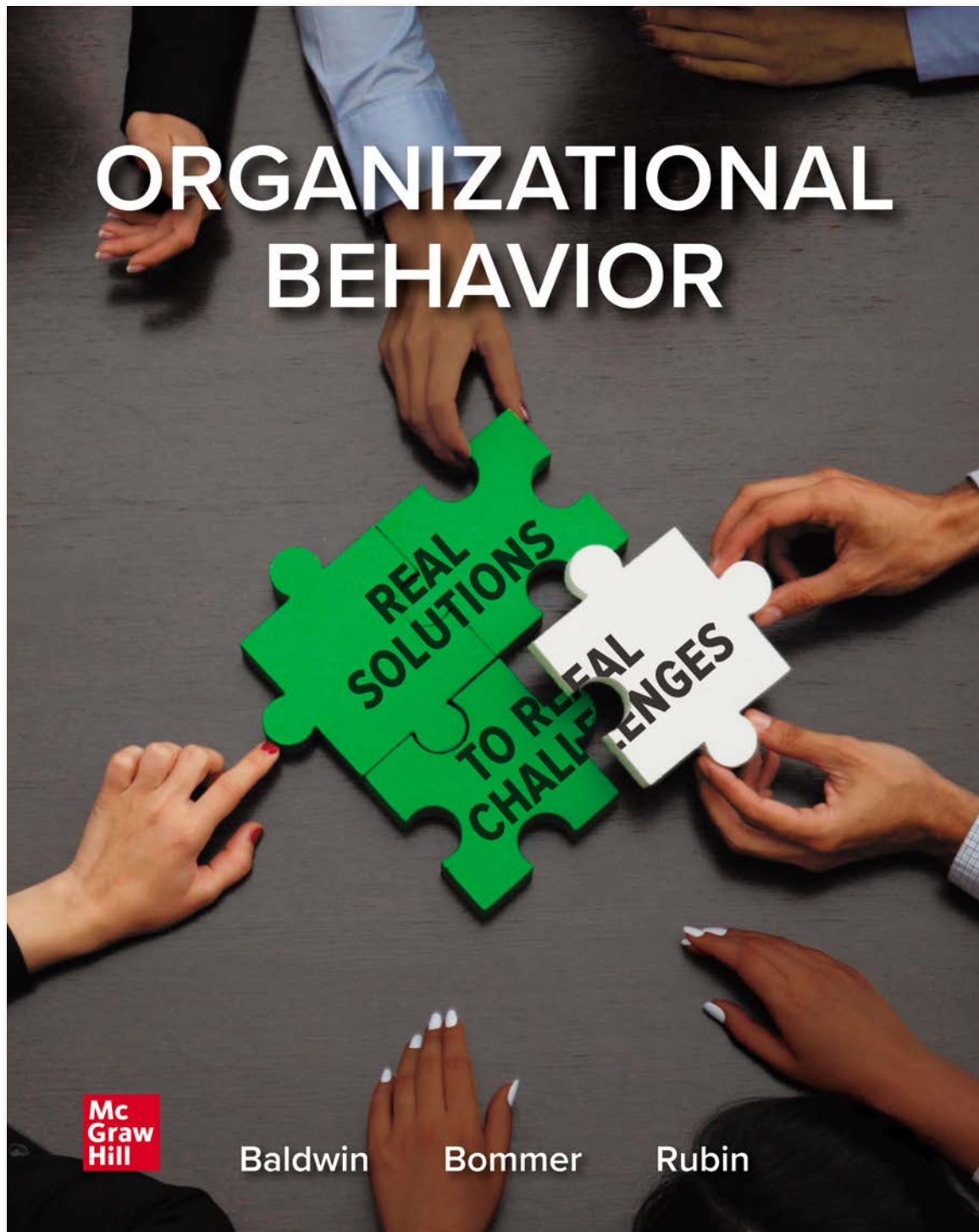
**Preview Chapter 5: Problem Solving
for the NEW Organizational Behavior, 1e**

5 PROBLEM SOLVING

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Learning Objectives

After reading this chapter, you should be able to:

LO5.1 Describe the key steps in the PADIL framework for solving problems.

LO5.2 Apply problem-structuring tools to reframe or define a given problem.

LO5.3 Identify evidence-based methods for increasing the number of possible solutions to a problem.

LO5.4 Apply methods for effectively narrowing problem solutions.

LO5.5 Define intuition and its role in problem solving.

LO5.6 Explain the major ways in which people make judgment errors.

LO5.7 Identify ways to avoid problem-solving biases.
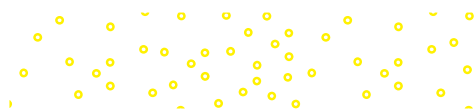
Solving Problems Effectively

Of the skills covered in this book, problem solving may well be the most complex—and one of the most important to your day-to-day work life. Most problem-solving frameworks are simple and similar in form and concept; however, what may be simple in form can be challenging to execute well because of numerous and common judgment traps. This chapter focuses on how to solve problems by applying a systematic approach. At the same time, it highlights the prevalent ways in which well-intentioned professionals can make mistakes along the way.

In thinking about an effective model for attacking problems, we should make two points at the outset. First, there is a difference between the process of solving problems and achieving a desired *outcome.* That is, you can never fully control the outcomes of problems you are trying to solve. What you can control is the choice of process you will use to reach a decision, and that is the importance of understanding a framework and having the discipline to use it.

Second, there is no such thing as a perfect decision. As humans, we will always be subject to **bounded rationality.**[1] In other words, our brains' limitations constrain our thinking and reasoning ability, and thus it is impossible to consider simultaneously all the information that is relevant to any decision or problem.[2] Bounded rationality may lead people to engage in what is known as **satisficing,** or choosing an acceptable solution to a problem rather than an optimal one. Nonetheless, adhering to a problem-solving model has been shown to improve decision quality, and a number of proven tools and techniques are worth using in different situations. In the following section we outline a process known as the **rational decision-making model,** which is a step-by-step approach to solving problems.[3] The model consists of five major steps, abbreviated by the acronym **PADIL** (pronounced "paddle"), which stands for problem (understand the issue), alternatives (generate possible solutions), decide (identify the best solution), implement (follow a plan to execute the solution), and learn (assess the effectiveness of the solution). See Figure 5.1.

Figure 5.1

The PADIL Problem-Solving Framework
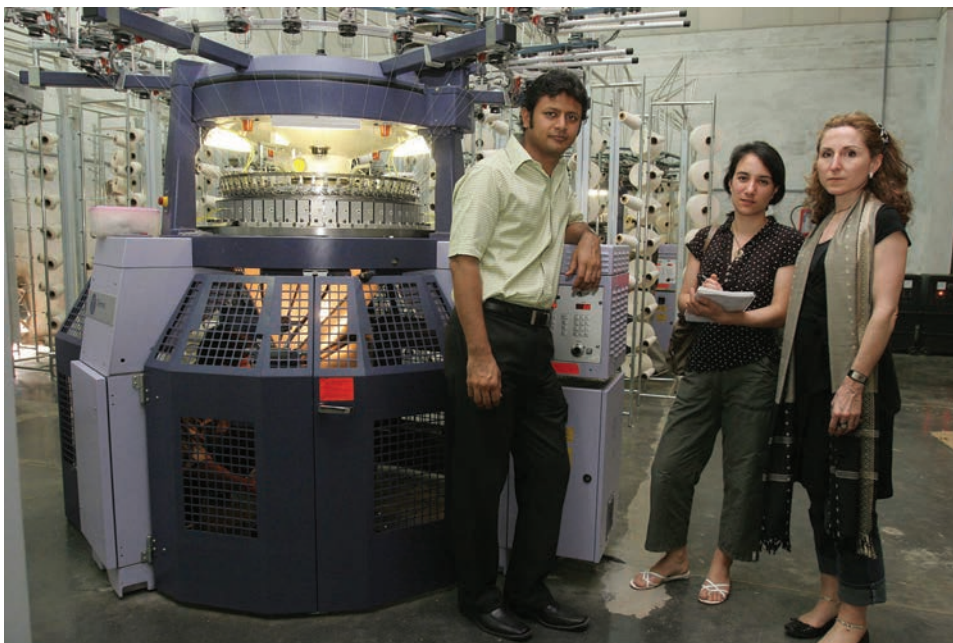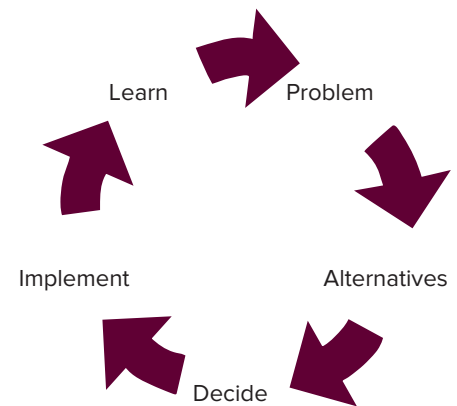
Companies like IDEO focus on solving complicated design problems for a wide variety of clients.

SIMON ISABELLE/SIPA/Newscom

A Problem-Solving Framework: PADIL

STEP 1: DEFINE AND STRUCTURE THE PROBLEM

The first step in any good problem-solving process is to define and structure the problem. Put another way, you want to be sure you are working on the *correct* problem. One way we often work with the wrong problem is that we start with the *solution*, not the problem. For example, take the common lament "In my company, there is a serious lack of training." Training employees is a solution. What is the problem? If the problem is employee skill deficiency, then training may be a terrific solution, but, if the problem is employee motivation or the availability of resources, training may not be the right solution. The temptation to jump to a solution is very powerful and leads to what problem-solving expert Ian Mitroff calls "solving the wrong problem precisely"[4]— that is, finding a great solution to a different problem!

Framing a Problem.   Before you begin to solve any problem, you must learn to frame the problem correctly. This is the essence of solving the right problem precisely. Evidence suggests that the way in which a problem is constructed (stated) can have an impact, positive or negative, on the solutions generated.[5] Consider the following scenarios, from a classic research study in which one group of randomly assigned participants read the first scenario and another group read the second.[6]

1. The government is preparing to combat a rare disease expected to take 600 lives. Two alternative programs to combat the disease have been proposed, each of which, scientists believe, will have certain consequences. Program A will save 200 people if adopted. Program B has a one-third chance of saving all 600 but a two-thirds chance of saving no one. Which program do you prefer?

2. The government is preparing to combat a rare disease expected to take 600 lives. Two alternative programs to combat the disease have been proposed, each of which, scientists believe, will have certain consequences. Through Program A, 400 people would die if adopted. For Program B, there is a one-third chance that no one would die but a two-thirds chance that all 600 would die. Which program do you prefer?

Both scenarios are the same; that is, they are logically equivalent. In scenario 1 the problem is framed in terms of *lives saved,* whereas in scenario 2 the problem is framed in terms of *lives lost.* This simple change leads participants to avoid risk and heavily endorse Program A (72 percent) in the "lives saved" frame and largely seek risk by

OB SKILLS CHALLENGE 5.1

Addressing a Challenging Problem

You are an assistant manager in a call center, and the third-quarter customer service figures have been posted. Although your numbers look good, you quickly notice that compared to other call centers in the company, your ratings for customer service are below average. Given that part of your own bonus is tied to these figures, you are obviously concerned and very motivated to fix the problem. You call your counterparts in other call centers to see what they've been doing recently and to generate some ideas that might influence customer service. One assistant manager said she instituted a new game called "Doughnuts for Delight," where the top 10 customer service representatives get to take off a morning with gift certificates for coffee and doughnuts. Another manager in a successful call center has increased his monitoring of reps on the phone and is intervening immediately when a rep doesn't perform well. A third manager hasn't done much of anything innovative and said, "I guess my customers are easier to handle than yours." You sit back in your chair, perplexed to say the least. How would you solve the problem of your lagging customer service quality rating?
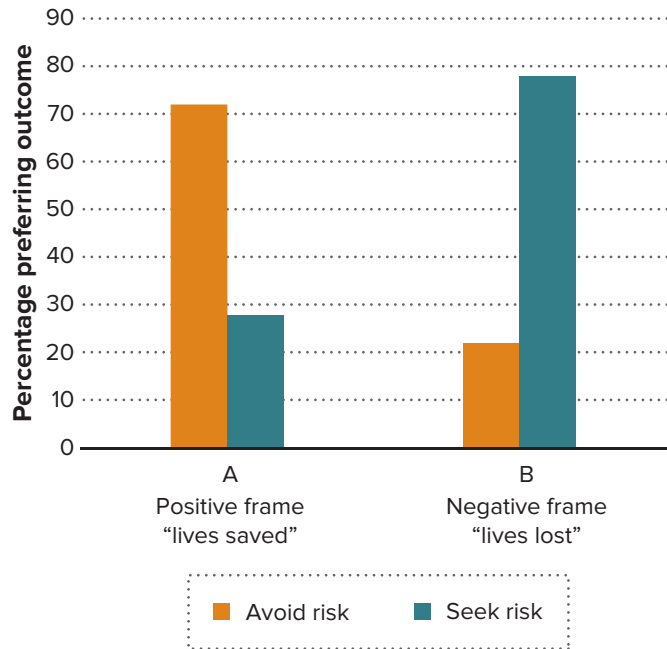
Figure 5.2

Framing Effects and Risk

selecting Program B (78 percent) in the "lives lost" frame (see Figure 5.2). OB Playbook 5.1 offers some easy methods to examine problem frames in different ways to help you have confidence that you are solving the right problem.

Thinking Systemically.   No discussion of solving the right problem is complete without a basic understanding of systems and systems thinking. A **system** is a perceived whole whose elements "hang together" because they continually affect each other over time and operate toward a common purpose.[7] The human body is a great example of a system. When you see the doctor because your stomach hurts, the doctor examines other areas of your body and takes your temperature, blood pressure, and pulse. The reason is

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OⴰX OB PLAYBOOK 5.1

Methods for Reframing Problems

Here are four simple methods that will help you to view problems differently and generate a wider set of solutions.

1. *Paraphrase*: Restate in your own words what someone else has stated.
   Initial: How can we improve our customer service?
   Reframe: How can we get better at managing our customers?

2. *180° turnaround*: Simply turn the problem around.
   Initial: How can we encourage students to study for exams?
   Reframe: How can we discourage students from studying for exams?

3. *Broaden it*: Reframe the problem with a broader frame of reference.
   Initial: Should we expand our product line in China?
   Reframe: How can we achieve increased financial success in China?

4. *Redirect the problem*: Change the actual focus of the problem.
   Initial: How can we decrease employee turnover?
   Reframe: How do we get employees more engaged at work?

Gordon Ramsey, and all successful chefs, understand that kitchens require a great deal of systems thinking.

Sutton Hibbert/Shutterstock

that the stomach is part of a larger bodily system. Thus, your doctor is attempting to find the root cause of your stomach problem, which may have nothing to do with your stomach. Effective problem solving almost always demands attention to a larger system and uncovering the root cause(s); simply treating the symptoms will not solve the problem adequately.

Organizations are elaborate systems and contain thousands of interrelated parts, some of which are more obvious than others. All systems express what is known as **systemic structure,** or a pattern of interrelationships among the system components. The challenge is that symptoms are always much more visible than their underlying systemic structure. Yet this underlying structure is what holds the promise for real problem solving. So a systems approach—"How will this change affect other things?"—is critical to being effective. Identifying these systemic structures requires uncovering our assumptions or our mental models about the systemic structure. **Mental models** are the prevailing assumptions, beliefs, and values that sustain current systems. These habits of thought enable us to ignore valid data, despite the fact that those data are essential to solving the problem. In addition, we protect and preserve these mental models and they become ways of being in organizations. Even if our thinking is faulty, we tend not to question or examine it. If you've ever heard "That's just the way it's done" or "We have an understanding about that," that's a clue that a mental model may be contributing to the problem.

The best way to understand mental models is to ask the right questions about a problem. For example, let's say you're trying to solve the problem of dropped calls in your customer service center. You seek your employees' opinion by asking the following question: "Why are there so many dropped calls in the service center?" You're likely to get great responses, but how will you know what the real problem is?

OB **BUZZ** 5.1

Solving the Wrong Problem Precisely at Make-A-Wish Foundation

The Make-A-Wish Foundation is a first-rate nonprofit with passion. Its sole mission is to find ways to grant dreams and wishes to terminally ill children. Back in 1996, the organization made headlines as it attempted to fulfill the wish of a 17-year-old boy named Erik. Erik's dream was to kill a Kodiak bear in the wild and display the skin in front of the fireplace. To fulfill the wish, the foundation enlisted the Safari Club International, which raised $4,000 to purchase all the hunting equipment and make the dream happen. With outstanding coordination, the Safari Club and Make-A-Wish fulfilled Erik's wish. Unfortunately, the decision to grant this wish had some unforeseen consequences, outraging every animal activist group in the country. Newspapers were flooded with bad press about the foundation's inability to make good decisions, tarnishing the group's reputation. The foundation solved the problem of "finding a way to make Erik's wish come true" quite precisely because they viewed the problem simply as "granting the wish." In reality, the problem was much more complex and required a full examination of all those potentially affected by this solution. From that point on, the foundation created a policy that it won't grant hunting trips, and as of 2017 it has maintained its commitment to granting many types of wishes, as long as they do not involve killing other living beings or the use of firearms in general.

Source: Collins, S. (1996). Young cancer patient's wish fuels debate over animal rights. CNN. Retrieved from www.cnn.com/EARTH/9605/17/bear.flap/index.html.
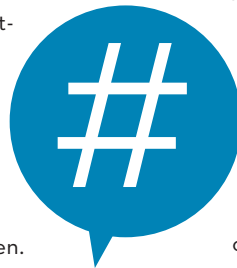
You won't unless you attempt to find the root cause, so you'll need to dig deeper. The following question stems can help you dig deeper toward the root cause.

- What leads you to believe that is the case?
- What conditions exist that allow this to occur?
- Can you tell me more?
- What have you seen that may contribute to this problem?
- Can you help me understand your thinking?
- What do we assume to be true?

While you are asking about others' views, make sure you examine your own mental models, including by asking "What is my role in this problem?" and "What about my behavior allows this problem to persist?" You can easily delude yourself into thinking that the problem is "out there," when, in fact, it may be closer to home than you think!

Tools for Understanding the Problem's Scope.   Some problems have a very well-defined scope, whereas others are quite broad. Your job is to identify the boundaries of your problem—that is, to distinguish between what is truly germane to your problem and what falls outside the realm of the problem. With most problems, potential causes and solutions are infinite. Your job is to narrow down the potential causes and move on to the next step in the PADIL process—finding *alternatives.* We discuss various tools for helping you understand the problem scope. See Table 5.1 for a description of

Table 5.1 Tools for Understanding Problems

Tool	Description	How to Use
Affinity diagram	Idea-generation method that helps sorts aspects of the problem into themes or categories; the categories guide data gathering about the problem and help inform the researching of alternatives	1. Write the problem statement on a flip chart or smart board. Underneath the problem, write "What are the possible causes?" 2. Using sticky notes, allow each person to write as many potential causes of the problem as possible, one per sticky note, and place them on the board or flip chart. Do not evaluate ideas. 3. Begin to look for similarities in the ideas. Group the similar notes together and label them according to the category they represent—for example, "These five deal with our 'Delivery Process' and these three with our 'Customer Service Structure.'"
Is/is not	Helps identify a problem's boundaries by describing aspects that are part of the problem and those that are not	1. On paper or a flip chart, state what you believe the problem to be in a single sentence. 2. Draw a line down the middle of the flip chart or piece of paper. On one side write "Is" and on the other write "Is Not." Down the left-hand side write the words "what," "who," "when," and "where." 3. Answer the questions. What *is* the crux of the problem, and what *is not* the crux of the problem? Who *is* involved with this problem, and who *is not* involved? When *is* the problem a problem, and when *is it not* a problem? Where *is* the problem appearing most, and where *is it not* appearing most?
Graphic displays	A picture is worth a thousand words; use simple plots and graphs to depict data	1. A *histogram* or bar chart allows for the display of data categories (on the *x* axis) tracked against some important standard (on the *y* axis). For example, use "Type of part manufactured" for the *x* axis and the "number of parts per type made each hour" for the *y* axis. 2. *Scatter plots* demonstrate the relationship between two variables. For instance, you might track students' test grades on one axis (*y*) and student absences on the other axis (*x*) to see whether a relationship exists between test grades and class attendance. 3. *Behavior-over-time charts* (*BOTs*) allow the display of data that are routinely collected over periods of time—for example, tracking customer service behaviors (e.g., problems solved in first call, number of calls handled per hour). Plotting these over time may often reveal certain patterns that point to systemic problems, such as increases that level off, steeply rising increases, steeply falling decreases, and "boom and bust" cycles (such as up- and downswings).

some helpful tools. Pro tip: They work best when you have a few key stakeholders working with you.

STEP 2: GENERATE MANY ALTERNATIVES

LO5.3

Identify evidence-based methods for increasing the number of possible solutions to a problem.

The process of framing the problem will lead you to think about many potential solutions. However, evidence suggests that to get to truly unique solutions, you'll need to generate many more possible alternatives than you might expect. Consider the following scenario.

A building manager receives several complaints about the long wait times for the building's elevator. He calls a consultant, who recommends three alternatives: (1) build new elevators; (2) space out the elevators between floors, so that half express to the higher floors; or (3) make all the elevators faster. The manager thinks these solutions are good but very costly, so he calls a different consultant, who recommends installing mirrors by the elevators and soon after the complaints stop. The alternative proposed by the second consultant was not only cheap but also incredibly effective; people simply needed something to do to take their minds off the wait times. Would you have thought of that? Herein lies the quandary: Left to our own thinking, we rarely arrive at unique alternatives to problems. Most of the time, our alternative solutions look very familiar and offer only slight improvements. We don't question whether other, perhaps better, solutions exist. Because of this issue, many organizations turn to brainstorming as the primary way of generating solutions.

In a typical brainstorming session, a group sits face-to-face around a table with a flip chart or whiteboard, or even virtually through collaboration platforms. The brainstorming facilitator states the problem in a clear manner, so that all participants understand it. Members then "free-wheel" (without limiting themselves) as many alternatives as they can in a given length of time. No criticism is allowed, and all alternatives are recorded for later discussion and analysis. Judgments of even the most bizarre suggestions are withheld until later, because one idea can stimulate others. Disallowing criticism thus encourages group members to "think the unusual."

Organizations love brainstorming, but some research suggests that in most cases, it is rendered ineffective because of problems related to group dynamics, meaning that people aren't able to defer judgment, can be critical of others, and usually don't offer the kind of solutions that could eventually be very creative.[8] Indeed, in one large study, involving a team or group of people in face-to-face idea generation actually produced far fewer ideas than letting the same number of individuals generate ideas on their own.[9]

With that in mind, a modest variant of brainstorming called the **nominal group technique** or, more informally, **brainwriting** has emerged as the superior method for generating the highest volume of creative ideas.[10] Using the same rules as brainstorming, brainwriting allows participants time to generate ideas on their own, recording them but not sharing them with the group initially. Then participants' ideas are shared, often anonymously until all alternatives have been presented, and people can then build upon them. Of course, today so much of what might be called brainstorming happens via electronic communications. Large-scale studies suggest that groups using electronic nominal group brainstorming are more productive and more satisfied than groups using face-to-face nominal group techniques.[11] New research even suggests that a

Brainstorming is a way to get a lot of information out in a short period of time.

GaudiLab/Shutterstock

hybrid approach may be best, in which groups alternate between individual and group ideation.[12]

STEP 3: DECIDE ON A SOLUTION

After you have defined the problem and generated alternatives, you'll want to collect more information about the quality of each alternative. However, before doing so you'll need to define the decision criteria you'll use to evaluate each alternative. For example, will you decide solely on the basis of costs? Does ease of implementation matter? You don't have to identify every criterion for making the choice, but you will want to consider some of the most common business-related criteria, including but not limited to costs, benefits, time, feasibility, resources, risks, and ethics. Fortunately, various tools are available to help you evaluate the potential of each alternative using the selected criteria and quickly narrow them to the few best alternatives. We discuss two of them in the following sections: alternatives tables and weighted ranking.

LO5.4

Apply methods for effectively narrowing problem solutions.

Alternatives Tables.   If you were considering multiple job offers, what criteria would be most important? Perhaps salary, work schedule, benefits, and work environment would be the most important. You could deem other criteria, like commute time, less critical but still important. The most basic decision tool, then, is to state explicitly all the information in a table, where comparisons can be made easily. As you can see in Table 5.2, the most important decision criteria are listed on the left side, with the job alternatives across the top. All the information about each alternative is listed in simple terms. The beauty of this table is that you can quickly see the trade-offs. You might be inclined to ask, "Why can't I simply do these comparisons in my head?" Here again is where the nonobvious traps of problem solving cause difficulties. According to research, few people can compare even a short list of alternatives in their heads effectively and end up focusing on or giving too much weight to one particular alternative.[13]

Weighted Ranking.   Weighted ranking allows you to quickly eliminate alternatives by acknowledging that some criteria may be more important than others. First, in a table, list the criteria down the left side of the first column. Next, compare all criteria against each other (use a tick mark with each comparison) and tally up the tick marks next to each criterion. You now have your ranking for your criteria (high numbers are ranked as most important). This captures reality, as some criteria will naturally carry more weight (be more important) than others.

Second, list your alternatives across the top row of the table. Third, on each of your criteria, rate every alternative on a scale such as 1 through 10, where 1 is very poor and

Table 5.2 **Example of an Alternatives Table**

Criteria	Alternatives			
	Job 1	**Job 2**	**Job 3**	**Job 4**
Annual salary	$42,000	$46,000	$45,000	$50,000
Work schedule	38 hours/week	40 hours/week	50 hours/week	60 hours/week
Benefits	Medical, dental, 401(k), 2 weeks' vacation	Medical, dental, 3 weeks' vacation	Medical, company car, 2 weeks' vacation	Medical, dental, 401(k), concierge service, 3 weeks' vacation
Work environment	Cubicle, relaxed	Open office space, relaxed	Travel, flexible, relaxed	Travel, intense

Table 5.3 Weighted Ranking Example

Criteria	Weighted Rank	Train	Car	Plane	Bicycle
Speed	2	$2 \times 6 = 12$	$2 \times 5 = 10$	$2 \times 10 = 20$	$3 \times 2 = 6$
Safety	2	$2 \times 5 = 10$	$2 \times 3 = 6$	$2 \times 9 = 18$	$2 \times 1 = 2$
Cost	1	$1 \times 7 = 7$	$1 \times 9 = 9$	$1 \times 5 = 5$	$1 \times 2 = 2$
Reliability	1	$1 \times 6 = 6$	$1 \times 7 = 7$	$1 \times 6 = 6$	$1 \times 1 = 1$
	Totals	35	32	49	11

10 is outstanding. It doesn't matter what scale you use; just be consistent. Finally, multiply your rank ordering by your rating of each alternative. Let's look at an example in which you select the best mode of transportation for your vacation (see Table 5.3). As you can see, "plane" satisfies your decision criteria best.

Paralyzed by Choices.   Organizational systems display what is known as **equifinality,** a condition in which *different* initial conditions lead to *similar* effects. Sometimes the best way to solve a problem is to select *any one* of your final solutions. It may not be the perfect solution or even the optimal one, but it is likely to jump-start your problem solving. Using this logic, attempt to choose the solution that will provide the greatest payoff (not always financial) or leverage. Remember, systems are comprised of many interrelated parts. Your final solution likely will trigger reactions in the system that provide feedback about whether you're on the right track. That doesn't mean you should just start with any old solution; rather, you can breathe easier knowing that when you've narrowed your choices to a few strong, well-crafted solutions, you are likely to make an impact.

One important technique to help illuminate trade-offs is known as the **devil's advocate** method, which increases debate and explores a problem from many angles.[14] This method can be accomplished with a group of people or with individuals. Either way, you start by clearly articulating the problem and your preferred solution (the one you're leaning toward). Assign someone (e.g., a co-worker, a key customer, or an experienced employee) to play the role of devil's advocate. Your instructions to this person are simple: to challenge the idea, provide a scathing critique of the proposal, poke holes in the logic, and question the assumptions behind it. The devil's advocate will not only help you think through previous blind spots in your solution but also help you anticipate consequences. The more problems you can anticipate upfront, the better you can prepare as you go forward and implement the decision.

Once you've made your decision, state the solution plainly and succinctly; if you can't, others probably won't understand it, either. A simple method for doing this is to follow this template: (1) State the problem, (2) state the assumed reason or cause, (3) state the proposed solution, and (4) describe what the solution will do and for whom:

- **Problem:** Customers are complaining about a long wait time at the elevators.
- **Reason:** The elevators are not significantly slow; customers are just bored while waiting.
- **Solution:** Install video screens with news and weather channels by elevators.
- **Outcome:** Video screens will preoccupy customers with something other than the elevator, reduce complaints, and increase management's time to devote to other problems. They also have the additional benefit of keeping customers informed about world events!

STEP 4: MAKE THE DECISION

The reality is that all decisions require trade-offs. By definition, when you decide on one course of action, you will eliminate others. You'll likely find that when you narrow down your alternatives to only a few, each will have pros and cons. Nothing is perfect; don't panic. Inherent in all decisions are the issues of risk and perceptions of fairness. Although you can produce elegant mathematical calculations, algorithms, and probability charts for any decision to represent how much risk is involved, there is always an element of personal perception and judgment.[15] Risk usually presents itself in several forms, leading people to make different judgments about how much risk is involved.

First, risk presents itself in terms of *dread,* or circumstances in which people feel they have no control or influence. Terrorism is a prime example of this form of risk. Second, risk often appears as *unknown.* The risks in human genetic engineering, for instance, remain largely unknown at this time. Third, risk presents itself differently depending on the number of people exposed. For example, if a single case of a rare disease is found in your town, you are less likely to see it as a high risk than if there were an outbreak in which one person in three had contracted the disease. Thus, the manner in which risk presents itself leads people to assess their risk exposure quite differently.

In addition, we fall into numerous traps in assessing risk. For example, research shows that all things being equal, people are more likely to view positive outcomes as more probable than negative outcomes.[16] In one study, students on average stated that compared to their peers, they were 15 percent more likely to have positive life events and 20 percent less likely to experience negative life events.[17] Although the "objective" risk generally does not change, we believe that for us, nature, risk, or chance behaves differently. What does this mean for you? You should attempt to calculate risks objectively but also recognize that others will likely view the numbers and the meaning of the risk differently than you.

STEP 5: IMPLEMENT THE SOLUTION

This chapter is primarily about solving a problem, meaning determining the most appropriate solution. Executing any change in an organization is itself a complex process, one you will read about more fully in Chapter 15. However, a few points deserve mention here.

Implementing a solution invariably involves others. This means you carefully consider how implementation will impact those who will be affected by the solution. Implementation doesn't have to happen all at once. Sometimes the best way to execute a decision is to attain small wins by splitting an implementation plan into many steps. Each step is considered a mini-project and adds momentum. In this way, you can demonstrate to others your solution has merit, without dumping the whole solution in their laps at one time.

Finally, many problem solvers find they have underestimated a problem's scope or defined the problem incorrectly. Although this discovery can be discouraging, nothing is gained by staying the course simply to be perceived as consistent or confident in the solution. If, in the course of implementation, you uncover significant information indicating you've solved the wrong problem, stop. Many professionals have been burned by implementing solutions they knew were incorrect. Retreating so far along in the process will cause pain in the short term, but in the long term you will have acted appropriately.

Using instant surveys to collect feedback allows organizations like Amazon to adapt very quickly.

VDB Photos/Shutterstock

STEP 6: LEARN AND SEEK FEEDBACK

Have you ever made the same mistake twice? Successful people view failure as an opportunity to learn or to have a "productive failure." We are often defensive about failures and rarely examine our successes; in such cases, very little learning

OB PLAYBOOK 5.2
After Action Review (AAR)

Organizations tend to repeat poor decisions. One tool that has emerged to help overcome this problem is known as an after action review (AAR). The AAR was created in the military to thoroughly review the results of a military exercise immediately after the exercise to assess what went well and what did not. An AAR includes an examination of everyone's role in the exercises, including the unit's highest leaders. When a private feels a commanding officer failed to provide information in time, for example, the private reports this information as part of the AAR—a rare opportunity to question commanding officers.

The basic task of the after action review (AAR) is simple: thoroughly review each problem-solving effort on several factors, including answering these key questions:

- What did we intend to accomplish in solving this problem?
- What actually happened?
- Is there a gap between what we intended and what happened?
- If so, what is causing that gap? Why didn't the solution solve the problem?
- What strengths did we rely on in this process, and how can we do so in the future?
- What weaknesses existed in this process, and how can they be eliminated or avoided in the future?

The AAR is not simply a postmortem in which positives and negatives are listed; rather, it includes serious conversations about the impact of the solution and an examination of what to do to improve the problem-solving process in the future. Evidence suggests that a well-constructed after action review has the following characteristics: (1) It creates a psychologically safe team climate; (2) it has a defined process and structure; (3) it focuses on performance- and teamwork-related categories, rather than reviewing events chronologically; (4) it discusses positive and negative examples of behavior; and (5) it documents conclusions and agreements reached. A meta-analysis of structured debriefs (i.e., with an organized and defined process) suggests that organizations can improve individual and team performance by 20 percent or more through the use of a correctly conducted after action review.

Sources: Tannenbaum, S. I., and Cerasoli, C. P. (2013). Do team and individual debriefs enhance performance? A meta-analysis. *Human Factors*, 55 (1), 231–245; Lacerenza, C. N., Marlow, S. L., Tannenbaum, S. I., and Salas, E. (2018). Team development interventions: Evidence-based approaches for improving teamwork. *American Psychologist*, 73 (4), 517.

takes place after implementing a decision that will help repeat the success or avoid the failure of the problem-solving process. OB Playbook 5.2 discusses a method to learn from failures and successes.

The first step in the post-implementation phase of problem solving is to examine whether the decision was truly successful and continues to be the right solution. Luckily, if you have already defined success in the early stages of the problem-solving process, you have the basics of what's needed. In the elevator problem, for example, we stated that we hoped the solution would lower customer complaints and increase management's time. Clearly, these results are easy to measure and should be checked periodically to ensure that the decision continues to be the right one.

Comedian Damen Wayans once quipped, "I love the concept of people, but people mess it up." The same can be said for problem solving: In theory, the PADIL process is a rational and easy framework to follow. In practice, humans introduce error into the process, making it less easy or effective. Thus, it's critical to understand how people "mess it up," which is the topic of the remainder of this chapter.

Why Smart People Make Bad Decisions

Even highly experienced, intelligent, and well-intentioned professionals can make flawed decisions. This is largely due to several insidious judgment traps that are known to hamper the problem-solving process. Problem solving, then, is a skill where true expertise involves knowing the traps that so frequently hinder sound judgment.

<div style="border:1px solid">
LO5.5

Define intuition and its role in problem solving.
</div>

INTUITION

Talking glowingly about the importance and value of "going with your gut," or using your intuition, to guide decision making has always been popular. In fact, a survey of executives in Fortune 1,000 firms found that 45 percent relied on "their gut" more often than facts and figures when running their businesses.[18] However, evidence is mixed regarding how useful intuition is in solving problems, regardless of how courageous it sounds. This doesn't mean you should totally discount intuition, just that you should bear in mind that most people have a difficult time applying their intuition *systematically* to solving problems.

In its simplest form, our **intuition** is the sum of what we've learned about the world *without knowing we actually learned it.*[19] With respect to problem solving, intuition represents decisions that are nonconscious and based on thoughts and preferences that come to mind quickly without much reflection.[20] Intuition can be useful if we track what we have learned and under what circumstances that learning led to success, so that we can replicate it in the future. Moreover, some research shows that intuition is important in automatic processes such as interacting with others or driving a car—things we do without thinking about them.[21] However, knowing without understanding becomes problematic in problem solving because of the unconscious biases that commonly influence our intuition.

Intuition has a role, but this role is likely much narrower than most people believe.

AWLATAM/Shutterstock

Perception and Attribution Errors.   One critical problem with intuition is that it draws on our personal experience, ignoring anything

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OB MYTHS 5.1

Experienced Professionals Have More Accurate Intuition at Work

It's easy to start to believe that because we've done something for so long, we can take short-cuts in solving problems. Yet experience, even years of experience, is not the same as expertise, which results from intense, repetitive practice over decades. Although some evidence suggests that experts' intuition may be more accurate than other people's, even experts improve their decision effectiveness over their intuition when using a systematic decision-making process and tools.

Sources: Dane, E., Rockmann, K. W., and Pratt, M. G. (2012). When should I trust my gut? Linking domain expertise to intuitive decision-making effectiveness. *Organizational Behavior and Human Decision Processes*, 119 (2), 187–194; Sibbald, M., de Bruin, A. B., and van Merrienboer, J. J. (2013). Checklists improve experts' diagnostic decisions. *Medical Education*, 47 (3), 301–308; Sibbald, M., De Bruin, A. B., and van Merrienboer, J. J. (2014). Finding and fixing mistakes: Do checklists work for clinicians with different levels of experience? *Advances in Health Sciences Education*, 19 (1), 43–51; Simon, H. A. (1987). Making management decisions: The role of intuition and emotion. *Academy of Management Perspectives*, 1, 57–64.
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OB **BUZZ 5.2**

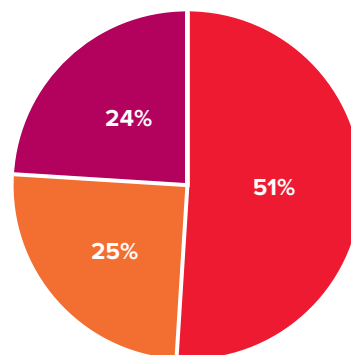### The "First Instinct Fallacy"

You may have been told that you should always trust your instincts when taking a multiple-choice test and not to change your first answer unless you are fully certain it is incorrect.

However, a review of 33 studies representing over 70 years of research found that relying on your first instinct is actually likely to be a poor choice. In one such study, researchers examined the midterm exam answer sheets of more than 1,500 students taking the same course. They noted each instance in which students changed an initial response by examining erasure marks on the sheets. If it were true that trusting your first instinct is best, then the students who kept their first response should have done well, yet the results showed that the students who changed an initial response benefited more than half the time.

The researchers concluded that students dread the possibility of changing a right answer to a wrong one. Thus, they become paralyzed and place more stock in their first instinct than they should. This first instinct drives our behavior and often leads to poorer decisions.
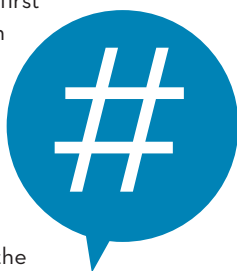
Student response changes and results

- Change from wrong to right
- Change from right to wrong
- Change from wrong to wrong

51% / 25% / 24%

Sources: Kruger, J., Wirtz, D., and Miller, D. T. (2005). Counterfactual thinking and the first instinct fallacy. *Journal of Personality and Social Psychology*, 88 (5), 725–73; Couchman, J. J., Miller, N. E., Zmuda, S. J., Feather, K., and Schwartzmeyer, T. (2016). The instinct fallacy: The metacognition of answering and revising during college exams. *Metacognition and Learning*, 11 (2), 171–185; Benjamin Jr., L. T., Cavell, T. A., and Shallenberger III, W. R. (1984). Staying with initial answers on objective tests: Is it a myth? *Teaching of Psychology*, 11 (3), 133–141.

outside that. In other words, so much of solving problems is about identifying the causes of events—that is, explaining why things occurred. Yet humans often commit an error so basic that it has been termed the **fundamental attribution error.** In it, we tend to overattribute behavior to internal rather than external causes.[22] That is, when identifying the cause of another person's behavior (such as arriving late to a meeting without offering an explanation), we are more likely to consider factors related to the person him- or herself (personality, past behavior, and so on) than the person's particular situation (weather, traffic, and so on).

Perhaps more insidious is the **self-serving bias,** in which we attribute personal *successes* to internal causes and personal *failures* to external causes.[23] For example, let's say you got an A on your last test. To what would you likely attribute your success? Hard work, excellent study habits, natural intellect? But what if you failed the test? To what would you likely attribute your failure? Tricky questions, perhaps a confusing professor, or the distracting sniffles of fellow students with colds? The self-serving bias helps us maintain a comfortable, positive image about ourselves. Unfortunately, that image is often built on false information.

The self-serving bias plays out in problem solving every day: "Why is our customer service so poor? Must be those customer service agents; they're incompetent." "How are we ever going to compete in this market? Get more talented people in the organization." If you are going to solve problems well, you need to expand your thinking about the causes of events and others' behaviors.

OB SKILLS CHALLENGE 5.2

Recognizing Common Decision Traps—Testing Your Judgment

Respond with your first instinct to each of the following six items. Also, include your level of confidence in each of the responses you provide, using a scale from 1 (not at all confident) to 100 (perfectly competent).

A. Which is the more likely cause of death in the United States: being hit by a falling airplane part or being attacked by a shark?

B. Take just five seconds to estimate the multiplicative product of $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$, then $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$.

C. You have been carefully monitoring two slot machines in a Las Vegas casino. One has paid off twice in the last hour. The other has not paid off. You are now ready to play yourself. Which one of those machines will give you the best chance of winning?

D. Suppose each of the following cards has a number on one side and a letter on the other, and someone tells you, "If a card has a vowel on one side, then it has an even number on the other side." Which card(s) would you need to turn over in order to decide whether the person is lying?

- Card 1: E
- Card 2: K
- Card 3: 4
- Card 4: 7

E. Which city is located farther north, New York, New York, or Rome, Italy?

F. Six months ago, you sank the last $5,000 of your student loan money into the purchase of a stock that was highly recommended to you by a trusted family friend. As of today, the stock has already dropped 20 percent and is now worth just $4,000. You are ready to sell, but you simply cannot afford to lose that $1,000 (plus commission costs) and still pay for school next year. What will you do?

SIX WAYS PEOPLE EXERCISE POOR JUDGMENT WITHOUT KNOWING IT[24]

People are not very good at consistently drawing appropriate or accurate conclusions from intuition.[25] In this section, we will discuss the ways in which people, using their intuition and "experience," exercise poor judgment. Our hope is you will (1) recognize quickly how easy it is to make simple mistakes by using intuition alone, (2) learn to spot the most common decision-making biases, and (3) discover methods for combating these biases in judgment.

Errors of Judgment

JUDGMENT ERROR 1: THE AVAILABILITY BIAS

In the following two groups are eight corporations, recently highly ranked in the Fortune 500 according to total revenues.

Group A: Starbucks, UPS, JetBlue, The Home Depot

Group B: McKesson, AmerisourceBergen, HCA Holdings, Centene

Which group of four companies (A or B) had the larger total revenues? If you answered Group A, pat yourself on the back. You're wrong, but you're not alone! In fact, Group B's revenues were approximately twice those of Group A.

Let's try another one. Which of the following causes more deaths per year in the United States, suicide or homicide? Most people believe homicides cause more deaths, but, in fact, suicides lead to more deaths by a ratio of more than 2 to 1.[26]

These two simple problems illustrate the **availability bias.** This bias clouds our judgment because we are more likely to interpret readily available information as

LO5.6

Explain the major ways in which people make judgment errors.

Roulette wheels are great places to see decision-making biases in action!

Ingram Publishing/age fotostock

being more important or as occurring more frequently. There are many stories in the news about homicides, few about suicides. The companies in Group A are household names, whereas those in Group B are less known. When solving a problem, we often choose solutions we've heard about. We feel more comfortable with them and assume that if we've heard about them, they'll work. Firms know this well, which explains why they want their names on the tip of your tongue.

JUDGMENT ERROR 2: THE REPRESENTATIVE BIAS

Let's say you were told that the best student in a particular MBA class writes poetry and is rather shy and introspective. You would probably guess that the student's major is fine arts and that she will likely take a job in managing the arts. These conclusions overlook the fact that more than half of MBA students hold undergraduate degrees in business and that many more take jobs in management consulting firms than in arts management. In other words, these conclusions ignore the *base rate*, or the frequency with which people belong to certain groups or categories. This easily made mistake—the **representative bias**—leads us to pay more attention to descriptors we believe are *representative* of people or situations than to the key base rate information that leads to the better choice.

Another classic example of the representative bias is misconceptions about chance. For example, people assume that when a sequence appears nonrandom, it must be nonrandom.[27] If you won the lottery, would you play different numbers the next time? If you flipped a coin and it was heads nine times in a row, are you due for a tails on the tenth toss? Of course not; the outcome of each toss or lottery pick is completely random. But the "gambler's fallacy" leads people to believe that each coin flip or pull of the slot machine is somehow connected to previous actions.

A special case of the representative bias is the **hasty generalization fallacy.**[28] For a variety of reasons, people often draw inappropriate general conclusions from specific cases because they do not realize that their specific example does not hold in all cases. Consider someone who argues against motorcycle helmet legislation because he has ridden for 25 years without a helmet and has never been hurt. Obviously, this singular example is not representative of all riders and cannot serve as a good general rule.

The hasty generalization fallacy occurs because we tend to operate by the law of small numbers—that is, we are willing to leap to general conclusions after seeing only one or two examples. In fact, we are particularly prone to making this error because we tend to personalize all experience (we assume everyone else's experience is like our own) or even misinterpret our experience ("That's the way the world is—I've seen it with my own two eyes").

JUDGMENT ERROR 3: THE ANCHORING AND ADJUSTMENT BIAS

In an experiment, students were asked to add 400 to the number formed by the last three digits of their student IDs and write down the result. They then were asked to use that number to estimate when Attila the Hun invaded Europe—that is, to say

whether the invasion happened before or after the date created by the ID number. The results were the following:

ID Number "Date"	Average Response
400–700	AD 676
701–1000	AD 738
1001–1200	AD 848
1201–1400	AD 759

Students tended to use their initial value as a starting point, or anchor, and adjusted their estimates around it. But remember, this initial value was based on their ID number, not on any historically relevant data. (By the way, the correct answer is AD 451.) The tendency to provide estimates based on the initial starting estimate, regardless of its accuracy, is known as the **anchoring and adjustment bias.** That is, regardless of where the number comes from or whether it is based in any sort of reality, people have a tough time ignoring it. Even when people are told that an initial estimate is random, their adjusted estimates remain close to the initial estimate, or anchor.[29] Think about the last time you negotiated something. Who proposed the first number? That figure served as a starting point for the negotiation, regardless of whether it was a reasonable figure or based on anything objective.

JUDGMENT ERROR 4: THE CONFIRMATION BIAS

Participants in a study were asked to identify the rule to which the series of numbers 2, 4, 6 conforms and to test their answer with their own series of numbers. Common responses were

- The numbers increase by two.
- The difference between the first two numbers equals the difference between the last two.

The rule used in the experiment was actually *any three ascending numbers.* Few students identified it, because finding it would have required collecting disconfirming, rather than confirming, information; most students tested their proposed rules only to try to confirm them. In other words, the **confirmation bias** is our tendency to collect evidence that supports rather than disproves our intuition.[30] When students found a rule that seemed to work, they stopped searching. In solving problems, one of the most insidious traps is gathering data that seek to confirm our ideas and excluding data that might disconfirm them. Unfortunately, this trap is so prevalent that many of the most popular business books analyzing successful companies fail to seek disconfirming information and thus provide only half-truths about the companies they study.[31]

JUDGMENT ERROR 5: THE OVERCONFIDENCE BIAS

In a survey among college students, 65 percent said they were well prepared to work in teams while 66 percent believed they possessed solid critical thinking and 65 percent reported strong writing communication skills. Yet employers who have hired such college students suggested that their actual capabilities in those areas were less than 40 percent.[32] Such disconnect with reality often indicates individuals' overconfidence in their abilities and underconfidence in others'. The **overconfidence bias** represents the belief that we possess some unique trait or ability that allows us to defy odds. To understand how dangerous this bias can be, consider a study aimed at predicting stock performance. The participants were laypeople (in this case, students) and stock market professionals (that is, portfolio managers, analysts, brokers, and investment counselors).[33] The two groups were asked to forecast the best-performing stock in a pair over 30 days, given only the name of the company, industry, and monthly percentage price change for each stock for the previous 12 months. Participants were also asked to rate how confident they felt about their predictions.

As shown in Figure 5.3, students picked the best-performing stock 52 percent of the time, whereas the stock market professionals were only 40 percent accurate, a performance significantly worse than would be expected by chance alone. Yet the same professionals indicated that they were, on average, 67 percent confident about their picks, whereas the students indicated being only 59 percent confident about their choices. The stock market professionals indicated they relied mostly on their judgment and industry knowledge and experience, believing they possessed knowledge that could defy the outcomes reasonably suggested by chance and prior stock performance.

Being confident is a great thing: It allows people to approach difficult situations with courage and determination. Most of us are overconfident, however, and we greatly overestimate the true probability of success. And more confidence doesn't make us any more accurate in our predictions.

JUDGMENT ERROR 6: ESCALATION OF COMMITMENT

Let's say you just replaced the entire exhaust system on your rusty, old car for $950. Two days later, you hear a clanking sound and your mechanic says you need a new clutch and major engine overhaul—at a cost of $1,700. Most people would spring for the repairs, on the grounds that they have already spent $950 on the car. Yet the money already spent is irrelevant to the cost of the new repairs. Our belief that it matters is known as **escalation of commitment.** In this judgement error,

Figure 5.3

Framing Effects and Risk

Source: Torngren, G., and Montgomery, H. (2004). Worse than chance? Performance and confidence among professionals and laypeople in the stock market. *Journal of Behavioral Finance*, 5, 148–153.

Average accuracy and confidence on stock selection (%)

people are likely to continue to invest additional resources in failing courses of action, even though no payoff is evident. The phrase "throwing good money after bad" expresses the essence of escalation of commitment.

Escalation is prevalent for several reasons. First, we don't want to admit that our solution may not have been the right one, so we stay the course. Second, we don't want to appear inconsistent or irrational, so we continue to hope for the best, even though data simply don't justify such a response. Third, in organizations, not continuing might be seen as giving up rather than fighting onward—and nobody likes a quitter.

Overcoming Judgment Biases

Biases can be hard to avoid even when we are aware of them. But useful tactics exist to overcome biases, including developing confidence estimates, learning from trial-and-error calibration, and exercising some healthy skepticism. Let's look at each of these techniques.

LO5.7

Identify ways to avoid problem-solving biases.

CONFIDENCE ESTIMATES

Because we tend toward overconfidence in our decision making, one way to curb that bias is to attach an estimate of confidence to beliefs held by ourselves and others. For example, you want to improve the on-time delivery problem of your pizza delivery drivers. You ask one driver, "How many on-time deliveries can you make per night?" She says 18. But how confident is she? When asked, she claims an 80 percent confidence level. Now it seems 18 isn't really a good estimate after all, because it might be 20 percent too high or 20 percent too low. A more accurate and usable estimate is, thus, the range of numbers that represent these possibilities, or 14 to 22 on-time deliveries per night. (To see why, do the math as follows: 20 percent of 18 is 3.6, or 4 when rounded to the nearest whole number, since deliveries can't be counted in fractions. If the driver's estimate is 20 percent too low, she can actually make 18 + 4 on-time deliveries per night, or 22. If her estimate is too high, she can make only 18 − 4, or 14.)

Most experts agree that relying on single-point estimates, like the driver's projected 18 deliveries, is dangerous; they just don't provide enough information. Using confidence estimates to build confidence ranges, like the result of 14 to 22, is safer and more accurate. We simply need to ask ourselves, what is the chance that the estimate is wrong? Providing feedback about being overconfident or asking people to explain their estimates, or even warning people about the dangers of being overconfident, can also make estimates more realistic.[34]

CALIBRATION

One familiar but underutilized method for improving problem solving is calibration, which in the simplest sense is trial and error. That is, if you want to improve your success rate and reduce failure *tomorrow*, you must learn from your successes and failures *today*.

For example, most people are surprised to learn that weather forecasters are very accurate. In fact, when an experienced weather person predicts a 40 percent chance of rain, it rains 39 percent of the time. Now consider physicians. One classic study in a clinical setting asked physicians to review patients' medical history and conduct a physical examination, afterward predicting the likelihood that a patient had pneumonia.[35] When the physicians said there was a 65 percent

To improve decisions, calibrating what worked well last time (and what did not) is an important step.
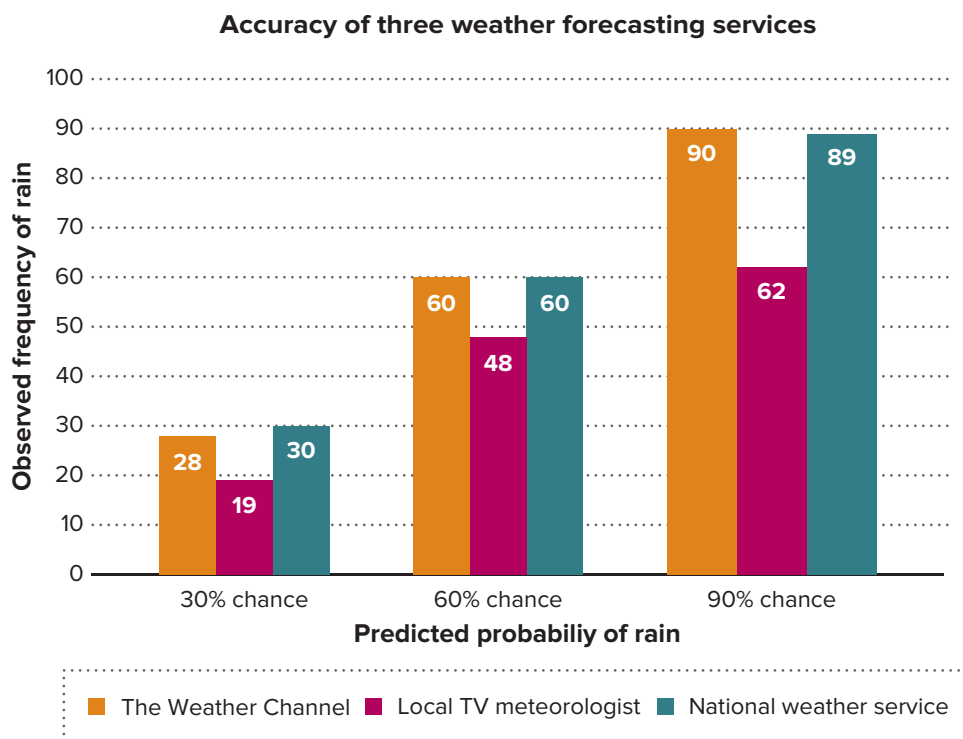
Image Source/Getty Images

Figure 5.4

Even the Worst Weather Forecasters Are Very Accurate

Source: Silver, N. (2012). *The signal and the noise: Why so many predictions fail—but some don't.* London, UK: Penguin.

Accuracy of three weather forecasting services

chance of pneumonia, they were accurate only 10 percent of the time. Accuracy didn't improve with confidence, either. When they predicted an 89 percent chance of pneumonia, the doctors were right just 12 percent of the time. Why are weather forecasters so accurate and physicians less accurate? The answer lies in a key aspect of trial and error—regular feedback and knowledge of results. See Figure 5.4 for an illustration of weather forecasting accuracy where even the worst forecasting organizations are highly accurate.

Weather forecasters predict rain and, in a few hours, get the results of their prediction; if their meteorological model was right, the forecaster records the model that was predictive in that instance; if it was wrong, they examine the data and note the aspects that led to the wrong prediction. This process repeats itself every day as forecasters *calibrate* their predictions with the results. Research supports this calibration process as a way to avoid biases and make better decisions.[36]

Like weather forecasters, we can all learn how to use trial-and-error calibration by following a few simple steps. First, for every prediction, record the reasons you've made it. Second, track the results. Consequences often arrive long after decisions; not all of us have the luxury of seeing the immediate results of our forecasts each day. So keep good records. When others say, "We always lose business when we release a product too soon," you'll be ready with data that might poke holes in such thinking. In several studies, researchers have found that noting the reasons for decisions improved both tracking and learning.[37] Third, study the successes *and* failures—you need *both* confirming and disconfirming evidence to evaluate your forecasts. Fourth, beware the representative bias; remember that chance is not self-correcting; a string of failures does not mean you are "due" for success, or vice versa.

HEALTHY SKEPTICISM

Another simple but powerful rule of thumb is to approach all decisions and presented evidence with healthy skepticism. Be prepared to challenge yourself and other

"experts" and seek out negative or disconfirming evidence. The following specific questions reflect a healthy skepticism and can ultimately lead to better decisions.

- What are the strongest arguments against my position? On what basis am I rejecting them?
- What are the weakest parts of my position? On what basis am I accepting them? Would I find this reasoning convincing if an opponent used it to justify her arguments?
- How will I know if I am wrong? (Given that we have a strong tendency toward escalation of commitment and denial, if we can construct in advance a personal definition of failure/error, then we may know when it's time for plan B. Sharing that with someone else is a good way to keep ourselves honest.)
- How do I know this is what I think I know? What is the base rate? Might something I perceived to be based on cause and effect just be due to random chance?
- Are there other alternatives that might explain what I observed?

In short, the best defenses for decision biases are the following.

1. Do not jump to conclusions.
2. Do not assume that a relationship is a cause; record and test your decision outcomes.
3. Do not base your conclusion only on your own experience.
4. Do not just look to support your case. Look for the nonsupporting evidence, too.
5. Do not fall prey to overconfidence; get confidence estimates and ranges.

CONCLUDING NOTE

Problem solving is tough, and good decisions never guarantee good outcomes. Yet being conscious of common biases and taking careful consideration of how to go about solving a problem can greatly increase your odds of good outcomes. As the old adage goes, "If all you have is a hammer, everything looks like a nail." We rarely know ahead of time the outcomes of our decisions. Thus, it is important to have a set of frameworks, or ways of thinking about problems, that can facilitate clear judgment and maximize to the best of our ability the outcomes of the choices we make.

OB IN ACTION CASE

Crowdsourcing at Threadless

Renowned American physicist Linus Pauling once observed that "the best way to have a good idea is to have lots of ideas." As advances in technology continue to expand traditional networks, companies are looking more and more to crowdsourcing as a means of outsourcing tasks, traditionally performed by an employee, to a large, undefined group of people or community (a "crowd"), through an open call made possible by the wide and instantaneous reach of the Internet and apps.

Jeff Howe, one of the first authors to employ the term, contends that crowdsourcing works because open calls to a large, undefined group of people ultimately attract those who are the most motivated and able to offer relevant and fresh ideas. Online apparel store Threadless takes this concept to a completely different level. Threadless was co-founded in 2000 by Jake Nickell and Jacob DeHart with only $1,000 in seed money. The company has grown to be a multimillion-dollar enterprise and is revolutionizing the process of product design.

Whereas most design shops employ high-priced talent to create their product lines, Threadless uses the crowdsourcing concept to execute an entirely different approach. More specifically, the firm invites anyone interested in being part of the Threadless community to submit T-shirt designs online—afterward, the designs are put to a public vote. A small percentage of submitted designs are selected for printing and then sold through its online store. Creators of the winning designs receive only a small cash prize and some store credit. In the open-source community, a Threadless T-shirt or design is considered to be crowdsourced because the designer and the company retain all rights to the design.

On average, around 1,500 designs compete in any given week. Designers upload their T-shirt designs to the website, where visitors and members of the community score them on a scale of 0 to 5. Each week, the staff selects about 10 designs. Not surprisingly, the printed T-shirts tend to sell well, because they have already been proven popular via the design process. Threadless shirts

Jack Nickell built Threadless using crowdsourcing to help the decision-making process.

Chicago Tribune/Getty Images

are run in limited batches and, when shirts are sold out, customers can request a reprint. However, reprinting occurs only when there is enough demand, and the decision to reprint is ultimately up to the company.

The Threadless experience amounts to something of a revolution in product design models and cost efficiency. It is an intriguing example of the power of crowdsourcing and has been the stimulus for numerous similar business models.

DISCUSSION QUESTIONS

1. Why is Threadless so successful? What competitive advantages does it have over comparable design firms using traditional strategies for product design?

2. What is the logic of crowdsourcing, and why has it caught on in so many areas and for so many applications?

3. What types of decision-making traps might be particularly dangerous for Threadless?

4. How might a stakeholder's analysis at Threadless be different from that at other, more traditional firms?

Source: Coburn, M.F. (2012). How Jake Nickell built his Threadless empire. Retrieved July 9, 2019, from www.chicagomag.com/Chicago-Magazine/July-2012/How-Jake-Nickell-Built-His-Threadless-Empire/.

KEY TAKEAWAYS

- The most important part of solving a problem is not making a decision but, rather, defining the problem. Obsess over understanding a problem and hold yourself and others back from jumping to quick solutions.

- Executing a problem-solving approach requires discipline, but the evidence is clear that you will improve your odds of making a good decision when you stay with a process. Although numerous problem-solving models exist, the PADIL framework discussed in this chapter can be easily adapted to most situations.

- Most people develop only one or two alternatives to a given problem. With the tools presented in this chapter, spend a significant amount of time increasing the quantity of potential ideas before moving on to selecting a solution.

- In solving problems effectively, your own experience and views of the world often get in the way. It's critical to understand what drives your intuition and recognize that you are biased and susceptible to decision traps. Knowing the most common judgment errors is the first step in protecting against them.

- Becoming a problem solver requires that you approach the process with a healthy skepticism that forces you to ask questions and collect disconfirming information. Make this a habit and you are on your way to overcoming common problem-solving traps.

KEY TERMS

Anchoring and adjustment bias 105
Availability bias 103
Bounded rationality 91
Brainwriting 96
Confirmation bias 106
Devil's advocate 98
Equifinality 98
Escalation of commitment 106

Fundamental attribution error 102
Hasty generalization fallacy 104
Intuition 101
Mental models 94
Nominal group technique 96
Overconfidence bias 106
PADIL 91

Rational decision-making model 91
Representative bias 104
Satisficing 91
Self-serving bias 102
System 93
Systemic structure 94

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