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Decision Making: The Heart of Strategy

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Decision Making: The Heart of Strategy

As Peter Drucker once wrote, strategy is a matter of deciding the right things to be doing. Clearly, decision making lies at the heart of this activity. But if executives are made or broken by their decisions, why do so many neglect to get sufficient evaluation of all the data or fail to put enough options on the table?

Harvard Business School professors David A. Garvin and Michael A. Roberto suggest that too many executives treat each decision as a one-time-only event, involving just one set of data and players at a single point in time. These leaders forget that making good decisions is a process—one that takes place against a backdrop of disagreements, personal power plays, and quirks of institutional history. Without taking the time to get all the data and “support at all levels of the organization,” their decisions, no matter how sound, cannot be executed.

This collection of articles from *Harvard Management Update*, *Harvard Management Communication Letter*, and *Harvard Business Review* begins with advice about how to set up a process for generating multiple alternatives, fostering a robust exchange of ideas about those alternatives, and producing a well-tested decision.

But even the most rational of processes can be vulnerable to unconscious biases—desires and commitments that imperceptibly influence how decision makers take in and process information. Thus this collection also includes articles that examine both the most common cognitive errors that decision makers fall prey to as well as some of the most likely arenas in which bias can crop up. In addition, you’ll find a piece that addresses one of the most controversial issues in this field: whether and how to make room for intuition in organizational decision-making processes.

It’s our hope that the insights provided in this collection will have an impact on the strategic thinking and planning that happens at all levels of your organization.

Angelia Herrin,
Group Editor, Newsletters

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What You Don't Know About Making Decisions

by David A. Garvin and Michael A. Roberto



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What You Don't Know About Making Decisions

Decision making is arguably the most important job of the senior executive and one of the easiest to get wrong. It doesn't have to be that way – if you look at the process in a whole new light.

by David A. Garvin and Michael A. Roberto

LEADERS SHOW THEIR METTLE IN MANY WAYS – setting strategy and motivating people, just to mention two—but above all else leaders are made or broken by the quality of their decisions. That's a given, right? If you answered yes, then you would probably be surprised by how many executives approach decision making in a way that neither puts enough options on the table nor permits sufficient evaluation to ensure that they can make the best choice. Indeed, our research over the past several years strongly suggests that, simply put, most leaders get decision making all wrong.

The reason: Most businesspeople treat decision making as an event—a discrete choice that takes place at a single point in time, whether they're sitting at a desk, moderating a meeting, or staring at a spreadsheet. This classic view of decision making has a pronouncement popping out of



ILLUSTRATION: THEO RUDNAK

a leader's head, based on experience, gut, research, or all three. Say the matter at hand is whether to pull a product with weak sales off the market. An "event" leader would mull in solitude, ask for advice, read reports, mull some more, then say yea or nay and send the organization off to make it happen. But to look at decision making that way is to overlook larger social and organizational contexts, which ultimately determine the success of any decision.

The fact is, decision making is not an event. It's a process, one that unfolds over weeks, months, or even years; one that's fraught with power plays and politics and is replete with personal nuances and institutional history; one

Decisions as Process: Inquiry Versus Advocacy

Not all decision-making processes are equally effective, particularly in the degree to which they allow a group to identify and consider a wide range of ideas. In our research, we've seen two broad approaches. *Inquiry*, which we prefer, is a very open process designed to generate multiple alternatives, foster the exchange of ideas, and produce a well-tested solution. Unfortunately, this approach doesn't come easily or naturally to most people. Instead, groups charged with making a decision tend to default to the second mode, one we call *advocacy*. The two

look deceptively similar on the surface: groups of people, immersed in discussion and debate, trying to select a course of action by drawing on what they believe is the best available evidence. But despite their similarities, inquiry and advocacy produce dramatically different results.

When a group takes an advocacy perspective, participants approach decision making as a contest, although they don't necessarily compete openly or even consciously. Well-defined groups with special interests—dueling divisions in search of budget increases, for example—advocate for particular positions. Participants are passionate about their preferred solutions and therefore stand firm in the face of disagreement. That level of passion makes it nearly impossible to remain objective, limiting people's ability to pay attention to opposing arguments. Advocates often present information selec-

tively, buttressing their arguments while withholding relevant conflicting data. Their goal, after all, is to make a compelling case, not to convey an evenhanded or balanced view. Two different plant managers pushing their own improvement programs, for example, may be wary of reporting potential weak points for fear that full disclosure will jeopardize their chances of winning the debate and gaining access to needed resources.

What's more, the disagreements that arise are frequently fractious and even antagonistic. Personalities and egos come into play, and differences are normally resolved through battles of wills and behind-the-scenes maneuvering. The implicit assumption is that a superior solution will emerge from a test of strength among competing positions. But in fact this approach typically suppresses innovation and encourages participants to go along with the dominant view to avoid further conflict.

By contrast, an inquiry-focused group carefully considers a variety of options and works together to discover the best solution. While people naturally continue to have

Two Approaches to Decision Making

	Advocacy	Inquiry
Concept of decision making	a contest	collaborative problem solving
Purpose of discussion	persuasion and lobbying	testing and evaluation
Participants' role	spokespeople	critical thinkers
Patterns of behavior	strive to persuade others	present balanced arguments
	defend your position	remain open to alternatives
	downplay weaknesses	accept constructive criticism
Minority views	discouraged or dismissed	cultivated and valued
Outcome	winners and losers	collective ownership

that's rife with discussion and debate; and one that requires support at all levels of the organization when it comes time for execution. Our research shows that the difference between leaders who make good decisions and those who make bad ones is striking. The former recognize that all decisions are processes, and they explicitly design and manage them as such. The latter persevere in the fantasy that decisions are events they alone control.

In the following pages, we'll explore how leaders can design and manage a sound, effective decision-making process—an approach we call inquiry—and outline a set of criteria for assessing the quality of the decision-making process. First, a look at the process itself.

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their own interests, the goal is not to persuade the group to adopt a given point of view but instead to come to agreement on the best course of action. People share information widely, preferably in raw form, to allow participants to draw their own conclusions. Rather than suppressing dissension, an inquiry process encourages critical thinking. All participants feel comfortable raising alternative solutions and asking hard questions about the possibilities already on the table.

People engaged in an inquiry process rigorously question proposals and the assumptions they rest on, so conflict may be intense—but it is seldom personal. In fact, because disagreements revolve around ideas and interpretations rather than entrenched positions, conflict is generally healthy, and team members resolve their differences by applying rules of reason. The implicit assumption is that a consummate solution will emerge from a test of strength among competing ideas rather than dueling positions. Recent accounts of GE's succession process describe board members pursuing just such an open-minded approach. All members met repeatedly with the major candidates and gathered regularly to review their strengths and weaknesses—frequently without Jack Welch in attendance—with little or no attempt to lobby early for a particular choice.

A process characterized by inquiry rather than advocacy tends to produce decisions of higher quality—decisions

that not only advance the company's objectives but also are reached in a timely manner and can be implemented effectively. Therefore, we believe that leaders seeking to improve their organizations' decision-making capabilities need to begin with a single goal: moving as quickly as possible from a process of advocacy to one of inquiry. That requires careful attention to three critical factors, the "three C's" of effective decision making: *conflict*, *consideration*, and *closure*. Each entails a delicate balancing act.

Constructive Conflict

Critical thinking and rigorous debate invariably lead to conflict. The good news is that conflict brings issues into focus, allowing leaders to make more informed choices. The bad news is that the wrong kind of conflict can derail the decision-making process altogether.

Indeed, conflict comes in two forms—*cognitive* and *affective*. Cognitive, or substantive, conflict relates to the work at hand. It involves disagreements over ideas and assumptions and differing views on the best way to proceed. Not only is such conflict healthy, it's crucial to effective inquiry. When people express differences openly and challenge underlying assumptions, they can flag real weaknesses and introduce new ideas. Affective, or interpersonal, conflict is emotional. It involves personal friction,

Advocacy Versus Inquiry in Action: The Bay of Pigs and the Cuban Missile Crisis

Perhaps the best demonstration of advocacy versus inquiry comes from the administration of President John F. Kennedy. During his first two years in office, Kennedy wrestled with two critical foreign policy decisions: the Bay of Pigs invasion and the Cuban Missile Crisis. Both were assigned to cabinet-level task forces, involving many of the same players, the same political interests, and extremely high stakes. But the results were extraordinarily different, largely because the two groups operated in different modes.

The first group, charged with deciding whether to support an invasion of Cuba by a small army of U.S.-trained Cuban exiles, worked in advocacy mode, and the outcome is widely regarded as an example of flawed decision making. Shortly after taking office, President Kennedy learned of the planned attack on Cuba developed by the CIA during the Eisenhower administration. Backed by the Joint Chiefs of Staff, the CIA argued forcefully for the invasion and minimized the risks, filtering the information presented to the president to reinforce the agency's position. Knowledgeable individuals on the State Department's Latin America desk were excluded from deliberations because of their likely opposition.

Some members of Kennedy's staff opposed the plan but held their tongues for fear of appearing weak in the face of strong advocacy by the CIA. As a result, there was little debate, and the group failed to test some critical underlying assumptions. For example, they didn't question whether the landing would in fact lead to a rapid domestic uprising against Castro, and they failed to find out whether the exiles could fade into the mountains (which were 80 miles from the landing site) should they meet with strong resistance. The resulting invasion is generally considered to be one of the low points of the Cold War. About 100 lives were lost, and the rest of the exiles were taken hostage. The incident was a major embarrassment to the Kennedy administration and dealt a blow to America's global standing.

After the botched invasion, Kennedy conducted a review of the foreign policy decision-making process and introduced five major changes, essentially transforming the process into one of inquiry. First, people were urged to participate in discussions as "skeptical generalists" – that is, as

disinterested critical thinkers rather than as representatives of particular departments. Second, Robert Kennedy and Theodore Sorensen were assigned the role of intellectual watchdog, expected to pursue every possible point of contention, uncovering weaknesses and untested assumptions. Third, task forces were urged to abandon the rules of protocol, eliminating formal agendas and deference to rank. Fourth, participants were expected to split occasionally into subgroups to develop a broad range of options. And finally, President Kennedy decided to absent himself from some of the early task force meetings to avoid influencing other participants and slanting the debate.

The inquiry mode was used to great effect when in October 1962 President Kennedy learned that the Soviet Union had placed nuclear missiles on Cuban soil, despite repeated assurances from the Soviet ambassador that this would not occur. Kennedy immediately convened a high-level task force, which contained many of the same men responsible for the Bay of Pigs invasion, and asked them to frame a response. The group met night and day for two weeks, often inviting additional members to join in their deliberations to broaden their perspective. Occasionally, to encourage the free flow of ideas, they met without the president. Robert Kennedy played his new role thoughtfully, critiquing options frequently and encouraging the group to develop additional alternatives. In particular, he urged the group to move beyond a simple go-no-go decision on a military air strike.

Ultimately, subgroups developed two positions, one favoring a blockade and the other an air strike. These groups gathered information from a broad range of sources, viewed and interpreted the same intelligence photos, and took great care to identify and test underlying assumptions, such as whether the Tactical Air Command was indeed capable of eliminating all Soviet missiles in a surgical air strike. The subgroups exchanged position papers, critiqued each other's proposals, and came together to debate the alternatives. They presented Kennedy with both options, leaving him to make the final choice. The result was a carefully framed response, leading to a successful blockade and a peaceful end to the crisis.

rivalries, and clashing personalities, and it tends to diminish people's willingness to cooperate during implementation, rendering the decision-making process less effective. Not surprisingly, it is a common feature of advocacy processes.

On examination, the two are easy to distinguish. When a team member recalls "tough debates about the strategic, financial, and operating merits of the three acquisition candidates," she is referring to cognitive conflict. When a team member comments on "heated arguments that degenerated into personal attacks," he means affective conflict. But in practice the two types of conflict are surprisingly hard to separate. People tend to take any criticism personally and react defensively. The atmosphere quickly becomes charged, and even if a high-quality decision emerges, the emotional fallout tends to linger, making it hard for team members to work together during implementation.

The challenge for leaders is to increase cognitive conflict while keeping affective conflict low—no mean feat. One technique is to establish norms that make vigorous debate the rule rather than the exception. Chuck Knight, for 27 years the CEO of Emerson Electric, accomplished this by relentlessly grilling managers during planning reviews, no matter what he actually thought of the proposal on the table, asking tough, combative questions and expecting well-framed responses. The process—which Knight called the "logic of illogic" because of his willingness to test even well-crafted arguments by raising unexpected, and occasionally fanciful, concerns—was undoubtedly intimidating. But during his tenure it produced a steady stream of smart investment decisions and an unbroken string of quarterly increases in net income.

Bob Galvin, when he was CEO of Motorola in the 1980s, took a slightly different approach. He habitually asked unexpected hypothetical questions that stimulated creative thinking. Subsequently, as chairman of the board of overseers for the Malcolm Baldrige National Quality Program, Galvin took his colleagues by surprise when, in response to pressure from constituents to broaden the criteria for the award, he proposed narrowing them instead. In the end, the board did in fact broaden the criteria, but his seem-

ingly out-of-the-blue suggestion sparked a creative and highly productive debate.

Another technique is to structure the conversation so that the process, by its very nature, fosters debate. This can be done by dividing people into groups with different, and often competing, responsibilities. For example, one group may be asked to develop a proposal while the other generates alternative recommendations. Then the groups would exchange proposals and discuss the various options. Such techniques virtually guarantee high levels of cognitive conflict. (The exhibit "Structuring the Debate" outlines two approaches for using different groups to stimulate creative thinking.)

But even if you've structured the process with an eye toward encouraging cognitive conflict, there's always a risk that it will become personal. Beyond cooling the debate with "time-outs," skilled leaders use a number of creative techniques to elevate cognitive debate while minimizing affective conflict.

First, adroit leaders pay careful attention to the way issues are framed, as well as to the language used during

Structuring the Debate

By breaking a decision-making body into two subgroups, leaders can often create an environment in which people feel more comfortable engaging in debate. Scholars recommend two techniques in particular, which we call the "point-counterpoint" and "intellectual watchdog" approaches. The first three steps are the same for both techniques:

Point-Counterpoint

The team divides into two subgroups.

Subgroup A develops a proposal, fleshing out the recommendation, the key assumptions, and the critical supporting data.

Subgroup A presents the proposal to Subgroup B in written and oral forms.

Subgroup B generates one or more alternative plans of action.

The subgroups come together to debate the proposals and seek agreement on a common set of assumptions.

Based on those assumptions, the subgroups continue to debate various options and strive to agree on a common set of recommendations.

Intellectual Watchdog

The team divides into two subgroups.

Subgroup A develops a proposal, fleshing out the recommendation, the key assumptions, and the critical supporting data.

Subgroup A presents the proposal to Subgroup B in written and oral forms.

Subgroup B develops a detailed critique of these assumptions and recommendations. It presents this critique in written and oral forms. Subgroup A revises its proposal based on this feedback.

The subgroups continue in this revision-critique-revision cycle until they converge on a common set of assumptions.

Then, the subgroups work together to develop a common set of recommendations.

discussions. They preface contradictory remarks or questions with phrases that remove some of the personal sting ("Your arguments make good sense, but let me play devil's advocate for a moment"). They also set ground rules about language, insisting that team members avoid words and behavior that trigger defensiveness. For instance, in the U.S. Army's after-action reviews, conducted immediately after missions to identify mistakes so they can be avoided next time, facilitators make a point of saying, "We don't use the 'b' word, and we don't use the 'f' word. We don't place blame, and we don't find fault."

Second, leaders can help people step back from their preestablished positions by breaking up natural coalitions and assigning people to tasks on some basis other than traditional loyalties. At a leading aerospace company, one business unit president had to deal with two powerful coalitions within his organization during a critical decision about entering into a strategic alliance. When he set up two groups to consider alternative alliance partners, he interspersed the groups with members of each coalition, forcing people with different interests to work with one another. He then asked both groups to evaluate the same wide range of options using different criteria (such as technological capability, manufacturing prowess, or project management skills). The two groups then shared their evaluations and worked together to select the best partner. Because nobody had complete information, they were forced to listen closely to one another.

Third, leaders can shift individuals out of well-grooved patterns, where vested interests are highest. They can, for example, ask team members to research and argue for a position they did not endorse during initial discussions. Similarly, they can assign team members to play functional or managerial roles different from their own, such as asking an operations executive to take the marketing view or asking a lower-level employee to assume the CEO's strategic perspective.

Finally, leaders can ask participants locked in debate to revisit key facts and assumptions and gather more information. Often, people become so focused on the differences between opposing positions that they reach a stalemate. Emotional conflict soon follows. Asking people to examine underlying presumptions can defuse the tension and set the team back on track. For instance, at Enron, when people disagree strongly about whether or not to apply their trading skills to a new commodity or market, senior executives quickly refocus the discussion on characteristics of industry structure and assump-

tions about market size and customer preferences. People quickly recognize areas of agreement, discover precisely how and why they disagree, and then focus their debate on specific issues.

Consideration

Once a decision has been made and the alternatives dismissed, some people will have to surrender the solution they preferred. At times, those who are overruled resist the outcome; at other times, they display grudging acceptance. What accounts for the difference? The critical factor appears to be the perception of fairness—what scholars call "procedural justice." The reality is that the leader will make the ultimate decision, but the people participating in the process must believe that their views were

Researchers have found that if participants believe the process was fair, they are far more willing to commit to the resulting decision, even if their views did not prevail.

considered and that they had a genuine opportunity to influence the final decision. Researchers have found that if participants believe the process was fair, they are far more willing to commit themselves to the resulting decision even if their views did not prevail. (For a detailed discussion of this phenomenon, see W. Chan Kim and Renée Mauborgne, "Fair

Process: Managing in the Knowledge Economy," HBR July–August 1997).

Many managers equate fairness with *voice*—with giving everyone a chance to express his or her own views. They doggedly work their way around the table, getting everyone's input. However, voice is not nearly as important as *consideration*—people's belief that the leader actively listened to them during the discussions and weighed their views carefully before reaching a decision. In his 1999 book, *Only the Paranoid Survive*, Intel's chairman Andy Grove describes how he explains the distinction to his middle managers: "Your criterion for involvement should be that you're heard and understood.... All sides cannot prevail in the debate, but all opinions have value in shaping the right answer."

In fact, voice without consideration is often damaging; it leads to resentment and frustration rather than to acceptance. When the time comes to implement the decision, people are likely to drag their feet if they sense that the decision-making process had been a sham—an exercise in going through the motions designed to validate the leader's preferred solution. This appears to have been true of the Daimler-Chrysler merger. Daimler CEO Jurgen Schrempp asked for extensive analysis and assessment of potential merger candidates but had long before settled on Chrysler as his choice. In fact, when

consultants told him that his strategy was unlikely to create shareholder value, he dismissed the data and went ahead with his plans. Schrempp may have solicited views from many parties, but he clearly failed to give them much weight.

Leaders can demonstrate consideration throughout the decision-making process. At the outset, they need to convey openness to new ideas and a willingness to accept views that differ from their own. In particular, they must avoid suggesting that their minds are already made up. They should avoid disclosing their personal preferences early in the process, or they should clearly state that any initial opinions are provisional and subject to change. Or they can absent themselves from early deliberations.

During the discussions, leaders must take care to show that they are listening actively and attentively. How? By asking questions, probing for deeper explanations, echoing comments, making eye contact, and showing patience when participants explain their positions. Taking notes is an especially powerful signal, since it suggests that the leader is making a real effort to capture, understand, and evaluate people's thoughts.

And after they make the final choice, leaders should explain their logic. They must describe the rationale for their decision, detailing the criteria they used to select a course of action. Perhaps more important, they need to convey how each participant's arguments affected the final decision or explain clearly why they chose to differ with those views.

Closure

Knowing when to end deliberations is tricky; all too often decision-making bodies rush to a conclusion or else dither endlessly and decide too late. Deciding too early is as damaging as deciding too late, and both problems can usually be traced to unchecked advocacy.

Deciding Too Early. Sometimes people's desire to be considered team players overrides their willingness to engage in critical thinking and thoughtful analysis, so the group readily accepts the first remotely plausible option. Popularly known as "groupthink," this mind-set is prevalent in the presence of strong advocates, especially in new teams, whose members are still learning the rules and may be less willing to stand out as dissenters.

The danger of groupthink is not only that it suppresses the full range of options but also that unstated objections will come to the surface at some critical moment—usually at a time when aligned, cooperative action is essential to implementation. The leader of a large division of a fast-growing retailer learned this the hard way. He liked to work with a small subset of his senior team to generate options, evaluate the alternatives, and develop a plan of action, and then bring the proposal back to the full team for validation. At that point, his managers would feel they

had been presented with a *fait accompli* and so would be reluctant to raise their concerns. As one of them put it: "Because the meeting is the wrong place to object, we don't walk out of the room as a unified group." Instead, they would reopen the debate during implementation, delaying important initiatives by many months.

As their first line of defense against groupthink, leaders need to learn to recognize latent discontent, paying special attention to body language: furrowed brows, crossed arms, or curled-up defiance. To bring disaffected people back into the discussion, it may be best to call for a break, approach dissenters one by one, encourage them to speak up, and then reconvene. GM's Alfred Sloan was famous for this approach, which he would introduce with the following speech: "I take it we are all in complete agreement on the decision here. Then I propose we postpone further discussion of the matter until our next meeting to give ourselves time to develop disagreement and perhaps gain some understanding of what the decision is all about."

Another way to avoid early closure is to cultivate minority views either through norms or through explicit rules. Minority views broaden and deepen debate; they stretch a group's thinking, even though they are seldom adopted intact. It is for this reason that Andy Grove routinely seeks input from "helpful Cassandras," people who are known for raising hard questions and offering fresh perspectives about the dangers of proposed policies.

Deciding Too Late. Here, too, unchecked advocacy is frequently the source of the problem, and in these instances it takes two main forms. At times, a team hits gridlock: Warring factions refuse to yield, restating their positions over and over again. Without a mechanism for breaking the deadlock, discussions become an endless loop. At other times, people bend over backward to ensure evenhanded participation. Striving for fairness, team members insist on hearing every view and resolving every question before reaching a conclusion. This demand for certainty—for complete arguments backed by unassailable data—is its own peculiar form of advocacy. Once again, the result is usually an endless loop, replaying the same alternatives, objections, and requests for further information. Any member of the group can unilaterally derail the discussion by voicing doubts. Meanwhile, competitive pressures may be demanding an immediate response, or participants may have tuned out long ago, as the same arguments are repeated ad nauseam.

At this point, it's the leader's job to "call the question." Jamie Houghton, the longtime CEO of Corning, invented a vivid metaphor to describe this role. He spoke of wearing two hats when working with his senior team: He figuratively put on his cowboy hat when he wanted to debate with members as an equal, and he donned a bowler when, as CEO, he called the question and announced a decision. The former role allowed for challenges and continued discussion; the latter signaled an end to the debate.

The message here is that leaders—and their teams—need to become more comfortable with ambiguity and be willing to make speedy decisions in the absence of complete, unequivocal data or support. As Dean Stanley Teele of Harvard Business School was fond of telling students: “The art of management is the art of making meaningful generalizations out of inadequate facts.”

A Litmus Test

Unfortunately, superior decision making is distressingly difficult to assess in real time. Successful outcomes—decisions of high quality, made in a timely manner and implemented effectively—can be evaluated only after the fact. But by the time the results are in, it's normally too late to take corrective action. Is there any way to find out earlier whether you're on the right track?

There is indeed. The trick, we believe, is to periodically assess the decision-making process, even as it is under way. Scholars now have considerable evidence showing that a small set of process traits is closely linked with superior outcomes. While they are no guarantee of success, their combined presence sharply improves the odds that you'll make a good decision.

Multiple Alternatives. When groups consider many alternatives, they engage in more thoughtful analysis and usually avoid settling too quickly on the easy, obvious answer. This is one reason techniques like point-counterpoint, which requires groups to generate at least two alternatives, are so often associated with superior decision making. Usually, keeping track of the number of options being considered will tell if this test has been met. But take care not to double count. Go-no-go choices involve only one option and don't qualify as two alternatives.

Assumption Testing. “Facts” come in two varieties: those that have been carefully tested and those that have been merely asserted or assumed. Effective decision-making groups do not confuse the two. They periodically step back from their arguments and try to confirm their assumptions by examining them critically. If they find that some still lack hard evidence, they may elect to proceed, but they will at least know they're venturing into uncertain territory. Alternatively, the group may designate “intellectual watchdogs” who are assigned the task of scrutinizing the process for unchecked assumptions and challenging them on the spot.

Well-Defined Criteria. Without crisp, clear goals, it's easy to fall into the trap of comparing apples with oranges. Competing arguments become difficult to judge, since advocates will suggest using those measures (net income, return on capital, market presence, share of mind, and so on) that favor their preferred alternative. Fuzzy thinking and long delays are the likely result.

To avoid the problem, the team should specify goals up front and revisit them repeatedly during the decision-

making process. These goals can be complex and multifaceted, quantitative and qualitative, but whatever form they take, they must remain at the fore. Studies of merger decisions have found that as the process reaches its final stages and managers feel the pressure of deadlines and the rush to close, they often compromise or adjust the criteria they originally created for judging the appropriateness of the deal.

Dissent and Debate. David Hume, the great Scottish philosopher, argued persuasively for the merits of debate when he observed that the “truth springs from arguments amongst friends.” There are two ways to measure the health of a debate: the kinds of questions being asked and the level of listening.

Some questions open up discussion; others narrow it and end deliberations. Contrarian hypothetical questions usually trigger healthy debate. A manager who worked for former American Express CEO Harvey Golub points to a time when the company was committed to lowering credit card fees, and Golub unexpectedly proposed raising fees instead. “I don't think he meant it seriously,” says the manager. “But he certainly taught us how to think about fees.”

The level of listening is an equally important indicator of a healthy decision-making process. Poor listening produces flawed analysis as well as personal friction. If participants routinely interrupt one another or pile on rebuttals before digesting the preceding comment, affective conflict is likely to materialize. Civilized discussions quickly become impossible, for collegiality and group harmony usually disappear in the absence of active listening.

Perceived Fairness. A real-time measure of perceived fairness is the level of participation that's maintained after a key midpoint or milestone has been reached. Often, a drop in participation is an early warning of problems with implementation since some members of the group are already showing their displeasure by voting with their feet.

In fact, keeping people involved in the process is, in the end, perhaps the most crucial factor in making a decision—and making it stick. It's a job that lies at the heart of leadership and one that uniquely combines the leader's numerous talents. It requires the fortitude to promote conflict while accepting ambiguity, the wisdom to know when to bring conversations to a close, the patience to help others understand the reasoning behind your choice, and, not least, a genius for balance—the ability to embrace both the divergence that may characterize early discussions and the unity needed for effective implementation. Cyrus the Great, the founder of the Persian Empire and a renowned military leader, understood the true hallmark of leadership in the sixth century BC, when he attributed his success to “diversity in counsel, unity in command.”

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Problem Solving for Decision Makers

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SUPPOSE YOU'RE A BRAND manager in your company's gourmet snack foods division. After a number of successful years on the market, your sesame snack product has matured, and sales have begun to soften. A brand extension has been proposed. How do you decide if this is the right course of action?

Or perhaps you work for a computer superstore chain that wants to expand. You've been assigned the task of choosing where to locate new stores. Your team is generating lots of ideas for sites. How do you know when to call a halt to the research and select from among the various alternatives?

These situations underscore the extent to which solving problems is central to the work of the manager. And in the age of teams, managers don't solve problems alone. They must operate from a business discipline that will enable a group of workers to frame a problem and agree on the most efficient way to solve it. Yet as basic as this task is, many organizations don't solve problems using processes that result in optimal solutions. The signs of this are too much with us, from the frequent fizzling of comprehensive change-management efforts, to the stalling of "solutions" to more routine, circumscribed business problems such as the creation and marketing of new products and the expansion of a brand franchise or business.

Deficits in basic thinking skills are, in fact, felt at all levels of organizations. Chrysler, for example, has begun screening applicants for assembly-line jobs to see if they can demonstrate problem-solving skills. In the schools, the question "Why can't Johnny think?" has been added to the ques-

tion "Why can't Johnny read?" Universities have been designing curricula to teach both basic and so-called higher-order thinking. At the Cognitive Research Trust Thinking Program in New York City, the basic

*Taking care
to define the
problem helps
lead to optimal
solutions.*

approach is to identify simple procedures that can be applied to any problem. At Sonoma State University's Center for Critical Thinking, teachers are trained to model such competencies as clarity, precision, accuracy, relevance, consistency, and depth because the university believes students must work with others who can model such skills in order to learn them.

But companies can't wait for such reforms in education to percolate down into their work force. So what follows is a six-step guide for making basic business decisions, and some insights from a top tackler of management problems, General Electric.

The six-step model is taken from *Judgment in Managerial Decision Making* by Max Bazerman, J. Jay Gerber Distinguished Professor of Dispute Resolution and Organization at Northwestern's Kellogg Graduate School of Management. It is a "prescriptive" model in the sense that it lays out an optimal approach to mak-

ing decisions in a fully rational manner. Of course, real-world decision making regularly falls short of this purely rational ideal. But given the fog that can cloud critical thinking and problem solving in the workplace, a refresher on (or introduction to) some ideal problem-solving methods can only help. If nothing else, says Bazerman, "A good prescriptive approach helps you make sure you're asking the right questions."

Define the problem.

Defining, or framing, the problem is perhaps the most important step—if for no other reason than it's where most managers and teams first go astray. "We know less about problem definition than we do about decision-making errors and biases," acknowledges Bazerman. Nevertheless, there are some obvious mistakes that can be identified. For instance, defining the problem in terms of a proposed solution. In the gourmet brand example, focusing too quickly on the proposed brand extension can interfere with a more fundamental and broad-based analysis of the factors contributing to the brand's current health. Another example: diagnosing the problem in terms of its symptoms. Prematurely addressing the symptom of sluggish brand sales can lead to a misguided attempt to launch a new ad campaign. If the symptom is actually being caused by distribution snarls, those advertising dollars will be wasted. "So often we simply respond to the problems that come to us, when they aren't the right problems to be focusing on," cautions Bazerman. So don't let the symptoms or the proposed solution impede your effort to uncover the underlying problem.

Identify the criteria.

Most managers need to accomplish more than one objective when making a decision. In the computer superstore situation, the choice of new store locations will depend upon such factors as cheap commercial rental space, the existence of an adequately trained labor pool, proximity to existing distribution centers, ease of access

Problem Solving...

for customers, and market research about sales potential in a given city or neighborhood.

Weight the criteria.

The relevant criteria will vary in importance, so once they have all been identified, they should be weighted—assigned a numerical value according to their relative importance. In the above example, if sales forecasts and rental costs are deemed five times more important than proximity to an existing distribution center, these differentials should be quantified by the numerical weight assigned to each criterion.

Generate alternatives.

“An inappropriate amount of search time is often spent seeking alternatives,” writes Bazerman. “An optimal search continues only until the cost of search outweighs the value of the added information.” Sometimes, of course, you can’t know the value of the added information until after the fact; that is, until after it’s been collected and analyzed. Still, your search for alternatives should be guided by the relative weights you’ve assigned to the relevant criteria. Returning to the superstore location, for example, allocate your time so that you’re concentrating on alternatives that maximize sales potential and minimize rental costs.

Rate each alternative on each criterion.

Determining how well each alternative solution satisfies each of the identified criteria usually involves forecasting future conditions, never an easy prospect. But in this purely rational model, the potential consequences of choosing each possible alternative are carefully assessed and assigned a numerical value.

Compute the optimal decision.

If the first five steps have been done right, this last one is a straightforward matter. For each alternative, multiply the expected effectiveness of the alternative for each criterion by the weight assigned to each criterion.

Adding up the totals for each criterion yields an overall score for the alternative. The alternative with the highest score is the rational choice.

Problem solving for teams

We’ve described a six-step model for individual decision making, but it’s perfectly appropriate for teams as well, notes Bazerman, with some modifications. For example, he explains, “In a group setting you often have multiple definitions of the problem. Even though it may require spending more time on this step, it’s important to agree on the problem definition before trying to generate alternatives.” Moreover, a political dimension enters into the team context in a much more forceful way: Skillful political operators often try to manipulate the agenda by the way they frame a problem. Weighing the evidence for a particular problem definition—assessing it in light of the perspective of and potential benefit to the person offering the definition—thus takes on added importance.

Implementation and evaluation procedures become more crucial in a team context as well. “All the problem-solving approaches we use end up with these two components,” says Steve Mercer, manager of executive education at General Electric’s offices in Crotonville, New York. He outlines one approach that includes defining the problem, initiating immediate action to contain the problem (or minimize its harm) while its causes are being studied, verifying the cause of the problem, verifying the corrective action necessary, implementing the corrective action, and then doubling back to ensure that the problem doesn’t occur again.

GE is adamantly opposed to the notion that one approach to problem solving will fit all situations, Mercer says. “At the corporate level, we try to avoid edicting processes to our constituent businesses, because then you create clones. A process that works for one of our manufacturing busi-

nesses may not be the best one for GE Capital. So we may expose people to five or six different approaches to problem solving in our executive education classes, but we don’t promote any one particular model. Rather, we delegate the problem-solving courses to the training and development departments of the respective businesses. We tell each department to come up with the processes that make the most sense for its business.”

In the real world of managerial decision making, where (research indicates) the average manager engages in a different activity every nine minutes, managers seldom have the luxury of the time it takes for such careful processes. Nobel laureate Herbert Simon has shown that in such settings purely rational judgment is “bounded” by time and cost constraints that limit the quality and quantity of available information, and also by the misperceptions and motivational biases to which decision makers fall prey. In other words, instead of making the optimal decisions prescribed by the rational model, managers “satisfice.” As Bazerman writes, “They search until they find a solution that meets a certain acceptable level of performance.”

In the real world, managers must make decisions amid uncertainty and the ever-pressing demands of time and tasks. The purely rational, prescriptive approach to decision making outlined here can, however, provide a framework for understanding how judgment can be optimized, when we have the will, and the time. ■

If you want to learn more ...

Judgment in Managerial Decision Making
by Max Bazerman (4th ed., 1998,
John Wiley & Sons, 179 pp., \$36.95,
Tel. 800-CALL-WILEY or 212-850-6000)

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HARVARD

Management Update

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Don't Throw Good Money (or Time) After Bad

by Jimmy Guterman

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Don't Throw Good Money (or Time) After Bad

You can prevent the insidious psychological bias known as the sunk-cost trap from poisoning your management of projects and people.

by Jimmy Guterman

YOU'VE APPROVED the development of a high-profile new product for your company and now, a year later, things are not going well. Despite forecasts a year ago that customers needed your product, the market has changed and the response is uncertain at best. You're not going to give up and throw away \$10 million, are you?

Actually, spending another dime on a doomed product is the wrong decision, say the experts. Chasing after sunk costs, investments that are no longer recoverable, is an error people regularly commit when making decisions. *Just another couple hundred thousand dollars*, you say to yourself, *and we'll be able to recoup our prior investment.*

Don't fall for that line of reasoning. True managerial wisdom lies in a kind of forgetfulness—the ability to ignore prior investments, costs, and benefits, and to focus instead on the expected marginal investments, costs, and benefits of the particular decision at hand. But interestingly, people's ability to overlook prior investments seems to vary depending on whether the investment has been one of time or money. Because they're more accustomed to accounting for money, they're more likely to give prior monetary investments undue importance in their deliberations.

When faced with insufficient information and tight time constraints, managers regularly use simplifying strategies, known as *judgment heuristics*, to help them make decision-making shortcuts. Problem is, human psychology always enters into the process, leading to cognitive biases—conclusions based on mis-

perceptions or faulty inferences. The sunk-cost trap is a particular instance of cognitive bias. Max H. Bazerman, Jesse Isidor Straus Professor of Business Administration at Harvard Business School and author of several books,

As Warren Buffett once said, "When you find yourself in a hole, the best thing you can do is stop digging."

including *Judgment in Managerial Decision Making*, likens this "non-rational escalation of commitment" to standing at a bus stop for hour after hour. At some point, you have to admit that the bus is not coming.

To ensure that you don't escalate your company's commitment to a product, person, or strategy beyond a reasonable point, here are some tried-and-true tips to help you identify the sunk-cost trap before you pour too much money or time down a rat hole.

1 Don't make choices merely to justify past decisions. Context always influences which decisions get made and how they are made. That said, it's crucial not to let the context obscure the most important goal of decision making: to make sound decisions that are based on the intended future effects, not to legitimate earlier decisions. You don't retain an underperforming, abusive contractor simply because you hired him and you don't want to be accused of flip-flopping. You don't extend additional lines of credit to a struggling company that has consistently failed to meet its obligations just because you made the initial decision to

go ahead with the loan and the company promises that just one more loan will turn everything around.

You have to be able to recognize that an earlier decision was a mistake. "A smart manager has to disregard sunk costs and the decisions that led to them," says David E. Bell, a Harvard Business School professor and the author of several books on decision making. "You have to look at the costs and benefits of going forward. Do you keep plowing ahead based on hope or accept the fact that something has not worked?"

One common error that leads to sunk costs: failing to gather external evidence to justify a decision. Here, decision makers pursue sunk costs because they are not considering how people other than their supervisors might view their quandary. When confronted with a choice on whether to move forward on a project, consult as many outside voices and devil's advocates as you can. Overly cautious attitudes toward decision making—which can lead to the sunk-cost trap—are more likely when the decision maker doesn't consider the broader picture or consult outside sources, maintain University of California–Los Angeles professor Shlomo Benartzi and University of Chicago professor Richard H. Thaler in an article for *Management Science*.

When you look outside, it can be easier to avoid escalation. In 1995, USAir made itself available for sale. Two larger airlines, American and United, were said to be quite interested, and expectations were high that bids would spiral upward—with both American and United committing more and more money, afraid that losing the purchase would make them lose face.

How did American extricate itself from this dubious bidding war? It indicated that it would not bid on USAir—unless United bid first. If that happened, American hinted, expect a bidding war. As it turned out, United didn't make an initial bid, so neither did American. By giving its competition an opportunity to bow

out before the offers started, American protected itself from a money-sucking entanglement.

2 Focus on the quality of the decision rather than on the quality of the outcome. Everybody gets decisions wrong sometimes—even the experts can't forecast every possible outcome. Many decision makers fall for the sunk-cost trap because they fear being judged for the unfortunate consequences of their good-at-the-time decisions. So if you're managing a decision maker, you can prevent unnecessary escalations of commitment by making it clear that no one will be punished for not owning a crystal ball.

"Often people are evaluated, unfortunately, on quality of outcome rather than quality of decision," says Howard Raiffa, a professor emeritus at Harvard Business School. "Very often a change

Many decision makers fall for the sunk-cost trap because they fear being judged for the unfortunate consequences of their good-at-the-time decisions.

from status quo immediately triggers an evaluation. If decision makers avoid change, the project can limp along without their being held responsible. Good decisions can lead to bad outcomes even for very good decision makers. Any external reviewing process, if there has to be one at that moment, has to take that into account. Otherwise, a person who thinks he'll be fired because of a bad outcome might still pursue the outcome because, hey, it might change and he'll be vindicated. But he knows he'll never be vindicated if he turns back on the original plan."

"Decision makers display a strong bias toward alternatives that perpetuate the status quo," write Raiffa and coauthors John S. Hammond and Ralph L. Keeney in "The Hidden Traps in Decision Making." When things go sour, Raiffa

explains, decision makers become "more worried about acts of commission, like changing course, rather than acts of omission, like continuing to take the company down the wrong road. *If I just go along as things are now*, the thinking goes, *things might change*. *If I commit an act of commission and admit that the current course is wrongheaded*, that may trigger a review process at an unwanted time. There are huge internal and external pressures to keep going even if all parties realize it's wrong and it's going to stay wrong."

"Sunk-time costs come when people are in a rut and afraid to think," says Raiffa. "People think their project is going poorly, their life is going poorly, but they're stuck and afraid to change. They're so emotionally involved they just stick with the status quo. The enlightened manager needs to see this happening, in himself and others, and pull himself out of the trap."

3 The more you equate time with money, the more susceptible you are to the sunk-cost trap. That's the conclusion Hong Kong University of Science and Technology marketing professor Dilip Soman reaches based on a series of sunk-cost experiments he conducted. As he notes in a recent article in the *Journal of Behavioral Decision Making*, the sunk-cost trap tends not to appear when the investment has been one of time. But as people become more adept in their mental accounting for time—that is, as they're able to convert an investment of time into a monetary equivalent—their decisions are more likely to be skewed by sunk-time costs.

4 Use decision rules to prevent cloudy thinking. In *Judgment in Managerial Decision Making*, Bazerman identifies a common scenario: "You personally decided to hire a new middle-level manager to work for you. Although you had expected excellent performance, early reports suggest that she is not performing as you had hoped. Should you fire her? Perhaps you really can't afford her current level of performance.

On the other hand, you have invested a fair amount in her training. Furthermore, she may just be in the process of learning the ropes. So you decide to invest in her a bit longer and provide additional resources so that she can succeed. But still she does not perform as expected. Although you have more reason to 'cut your losses,' you now have even more invested in this employee."

Precise targets can help you avoid this endless round of rationalizing earlier decisions. If you've established in advance how much time and money you're willing to invest in a project or person before you begin to see specific results, you're less likely fall into the sunk-cost trap. As the investment sage Warren Buffett once said, "When you find yourself in a hole, the best thing you can do is stop digging." Such targets tell you when to put down the shovel. They enable you to discriminate, says Bazerman, "between situations in which persistence will pay off and situations in which it will not." ♦

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HARVARD

Management Update

A NEWSLETTER FROM HARVARD BUSINESS SCHOOL PUBLISHING

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How Good Data Leads to Bad Decisions

by David Stauffer

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How Good Data Leads to Bad Decisions

Looking to the past for guidance may skew your view of present facts. Here's how to refocus your decision-making lens.

BY DAVID STAUFFER

THE 1994 PURCHASE OF Snapple by Chicago-based food giant Quaker Oats appeared to be a no-brainer. CEO William Smithburg had engineered Quaker's spectacularly successful 1983 buyout of the slumping sports-drink company Gatorade, amid grave doubts expressed by industry analysts. With the Gatorade win behind him—he paid \$220 million for the company and grew it into a business worth \$3 billion—he seemed to have a gift for identifying smart buys. So the Quaker board gave him the go-ahead on the Snapple deal.

But that acquisition proved to be one of the most unsuccessful in American corporate history. It also cost Smithburg his job. Quaker unloaded Snapple in 1997 for \$300 million, having paid \$1.8 billion for it.

How could the Snapple purchase have gone so wrong after Gatorade had gone so right? The answer lies in our very human tendency to rely on historical precedent. It's in our DNA to seek help with today's decisions by recalling past decisions in situations that seem analogous. Only too late—and sometimes never—do we see that the earlier situation was quite different in fundamental ways.

Where do we err? We misremember. We remember selectively. We recall what's recent and neglect what's more distant. Or we recall what's traumatic and ignore what's subtle. "Where you stand today dictates what you see in the past," says Paul C. Nutt, author of

Why Decisions Fail and professor of management sciences at Ohio State University (Columbus, Ohio). Thus, he notes, Quaker seems to have decided to purchase Snapple because it attributed the success of the Gatorade buyout largely to Smithburg's insight rather than to its actual basis: good luck.

Making a decision based on historical precedent has numerous pitfalls. But if you're thinking you're better off not to factor in any memories—forget it. Research shows that you'll consider past experience subconsciously, even if you disregard it overtly.

Fortunately, we aren't doomed to use historical precedent to misinform today's decisions. In fact, we need past events, experts say, to help us cope with the mind-boggling complexity of today's critical business decisions.

What's more, the beneficial use of past experience doesn't have to be a complicated or time-consuming effort. "You don't need a Ph.D. in decision making to be a little more orderly in making decisions," says John S. Hammond, head of his own decision-making consulting firm in Lincoln, Mass., and a former professor at Harvard Business School.

Here are the most important steps that decision-making experts recommend:

1 Cross-examine every precedent

Subject the first historical precedent that occurs to you to a merciless bar-

rage of validity tests. Research shows that the memory that bubbles up first is more likely than any other to steer you toward a bad decision. We're often unconsciously recalling a past event that confirms the decision we're already leaning toward.

"It's called the prism effect," explains Jack Beauregard, CEO of the Cambridge, Mass., consulting firm Innervisions Associates. "We only recall the analogy that confirms our present thinking."

Ernest H. Forman, professor of management science at George Washington University and coauthor of *Decision by Objectives* (World Scientific, 2002), concurs. "We're all prone to go with what worked out well," he says. And we're led even further astray if that past outcome, like Quaker's purchase of Gatorade, worked out by chance. "It's in your brain for the next 10 years" that your great insight produced the favorable result, says Forman. The top-of-mind recollection, once surfaced, tends to resist all logic that suggests its inapplicability. That's because the mind tends to overweight first thoughts and underweight subsequent evidence. This phenomenon is called "anchoring bias," says Hammond. "It's unbelievably powerful."

So how do you avoid it? "Look for disconfirming evidence," suggests Cornell University Graduate School of Management professor J. Edward Russo. "First, force yourself to list as many ways that your top-of-mind precedent is a mismatch as it is a match. Next, force yourself to come up with what at first seems to be a less similar precedent." Then try to list as many or more ways that it's a better match with your current decision than you listed for your first precedent.

The first precedent that comes to mind is often nearer in time to the current decision than it is closer in similarity. Get past this "recentness bias" by

coming up with at least two events from the more distant past that seem in any way applicable, then follow Russo's advice to try to make them work better.

President John F. Kennedy battled recency bias by having his aides read a history of World War I, says John C. Mowen, professor of marketing at Oklahoma State University, Stillwater. "JFK's intent was to get them thinking of precedents other than those arising from World War II," which they all had lived through and in which many, including the president, had fought.

Kennedy's successor, Lyndon Johnson, might have avoided the quagmire of the Vietnam War had he tested the top-of-mind precedent. "As an exercise, take the exact opposite view that memory presents," advises Fred Turner, a visiting scholar in communication at Stanford University and author of *Echoes of Combat: Trauma, Memory, and the Vietnam War* (University of Minnesota Press, 2001). That would have meant that the Johnson administration "would have considered whether their enemy, rather than they, had the popular support of the people—which we now know would have been a correct assumption."

Clearly, emotion and personal attachment loom large in dictating the historical precedent that most readily comes to mind. Another way to soften the outsize impact is to introduce more-objective decision-making criteria, a tack recommended by The GenSight Group (Doylestown, Pa.). "This helps you get the emotion and opinion out of recollections of past experience," says Jon Donnelly, vice president of strategic planning and process excellence for Janssen Pharmaceuticals, a unit of Johnson & Johnson based in Titusville, N.J., that has started to implement decision processes suggested by GenSight.

"Much more often than not," says Donnelly, eliminating emotion and opinion also eliminates the supposedly analogous precedent in its entirety. "Suppose we are faced with alternative investments to either expand a sales force or invest in additional clinical trials. A decision maker who was once a field sales manager or a clinical director might base his recommendation on his experience of five or six years ago. That might have been a big factor—literally decisive—in a traditional environment. We consider many factors today—both financial and strategic. As it is, the former sales manager or clinical director is as likely as anyone to eventually see that the precedent's current applicability is minimal or nonexistent."

2 Require proof of common knowledge

"Memory is contrived and re-created to suit our current needs," observes GenSight Group President Michael Menard. So apply factual research to the historical precedent that's so widely accepted in an organization that it's no longer challenged. Things deemed to be common knowledge are often the result of inferences made by the "primal" mind—they're a product of evolution, and so tend to be governed by emotions and instinct.

"We can't reverse evolution, but we can use our 'analytical' mind to understand and better cope with the ways evolution causes us to think," Menard continues. An essential part of applying our analytical mind in decision making "is to collect, manage, and visualize relevant data."

"The beauty of being able to display data is that it can be very objective," says Todd D. Render, director of research and development for Warsaw, Ind.-based DePuy Orthopaedics, another unit of Johnson & Johnson that is implementing GenSight's decision processes. "You can display multiple factors, such as risk and

expectations, in ways that make choices obvious to decision makers."

Render acknowledges that he can't quantify bottom-line benefits to the company of the new decision process. "But what I can say is that everyone—marketing, development, operations, and so forth—has input and everyone communicates. I think those may be our biggest gains. I'm certain we're getting better-quality decisions because we're using better inputs."

Those inputs need not be sophisticated or extensive. "Gathering data doesn't mean you study a decision to death," says consultant Lorraine Segil, a former aerospace company CEO who is founding partner of The Lared Group, a strategic alliance advisory firm in Los Angeles. "What's important is doing some cognitive screening, which can get us sufficiently disentangled from our past experience to assess it intellectually."

3 Encourage others to challenge your thinking

The relevance of a particular historical precedent can be more solidly established if you invite others to comment on its validity—others who feel free to dismiss the past events you may consider significant. Just be careful that you don't restrict their comments. Says Forman: "Many CEOs ask for a briefing: 'Just give it to me in a nutshell.' You can't fit very much in a nutshell."

In general, the more people challenging your precedents and suggesting their own, the better, Forman continues, "particularly if they're people with motivations different from yours." Sometimes, however, the decision-making group can turn into a "BOGSAT" (bunch of old guys/gals sitting around talking). Such a bunch is highly prone to "groupthink," a term popularized by the late decision researcher Irving L. Janis in his classic 1982 book, *Groupthink*. Janis demonstrates how decision making

can go very wrong “when a ‘we-feeling’ of solidarity is running high” in a decision-making team and its members fall prey to “concurrence-seeking behavior.”

The tendency toward decision biases, such as the recentness bias, increases when groups make decisions, as compared with when individuals do, says Oklahoma State’s Mowen. “The dominant view will be enhanced as others participate.” To counteract the tendency, “you need a devil’s advocate,” he says. “Among my five partners and me, at least one of us is playing devil’s advocate for every significant decision,” says James Segil, president and COO of Los Angeles-based enterprise software developer Knowledge-Base Solutions.

Turner approvingly calls the formal creation of a naysayer role an encouragement of “heretics and heretical thinking. Some people play that role intuitively,” he says. “But in some large organizations, such as AT&T and Shell Oil, it’s done intentionally, by design.” Heretics also aid decision making by advocating radical departure from the path everyone else is taking. “They urge a contrarian decision. For example, if I were a venture capitalist right now, I might be investing heavily in dot-coms, because everyone else has fled that market following its traumatic meltdown.”

Segil strongly endorses the contrarian approach. He launched his current enterprise just under two years ago, when the pervasive historical precedent looming over almost everyone’s decision making was the dot-com crash. “It seemed to me to be the best time to start a business. Most people were too scared to do it. The few of us who did seem to be succeeding.”

4 Never rely solely on precedent

“History, contrary to the popular saying, never precisely repeats itself,” Turner asserts. “Looking to the past can often limit the possibilities you see in the future.”

He notes that Shell was the only major oil company to anticipate the oil price shock of the 1970s. Why? “Because their then-new scenario planning team

It’s called thinking outside the box, where the box is all past experience.

considered the possibility of something everyone else thought impossible: that oil prices could shock.” It’s called thinking outside the box, where the box is all past experience.

Which is not to say that historic precedent should ever be completely discarded. Russo notes that some people do that, saying, “Everything’s changed.”

5 Above all, develop a process

Surprisingly, seat-of-the-pants decision making predicated on false or flimsy precedent occurs more frequently in today’s sophisticated global economy than you might imagine. “We’re shocked by the extent to which corporate America continues to ignore even the most basic practice of good decision making,” says Menard.

For hope—and guidance—cast an eye toward Detroit and a long-standing paragon of American enterprise. There, a decision process being implemented at General Motors is built around something called a decision record. This document asks a few simple but critical questions about a decision, explains Nick Pudar, director

of GM Strategic Initiatives. For example: What was the context of the decision? What was the decision? What resources were allocated? What alternatives were considered but not selected? Why? What assumptions were made? What outcome were you looking for? By when?

The document is completed and signed by the decision makers after a decision is reached but before it’s implemented.

“It’s quite an eye-opening experience,” says Pudar. “People are forced to be clear. It can be painful. Decision makers will sometimes see the absence of substantiation staring at them from the page they filled out. But they can also solidify in their own minds exactly what they’re deciding.” ♦

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Why Good Accountants Do Bad Audits

by Max H. Bazerman, George Loewenstein, and Don A. Moore



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Why Good Accountants Do Bad Audits

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ON JULY 30, at a ceremony in the East Room of the White House attended by congressional leaders of both parties, President George W. Bush signed into law the Sarbanes-Oxley Act of 2002 addressing corporate accountability. A response to recent financial scandals that had begun to undermine citizens' confidence in U.S. business, the wide-ranging act flew through the House of Representatives and Senate in record time and passed in both chambers by overwhelming majorities. The act places new legal constraints on executives and gives expanded protections to whistle-blowers. Perhaps most important, though, it puts the accounting industry under tightened federal oversight. It creates a regulatory board – with broad powers to punish corruption – to monitor accounting firms, and it establishes stiff criminal penalties, including long jail terms, for accounting fraud. “The era of low standards and false profits is over,” Bush proclaimed.

If only it were that easy.

Given the vast scale of recent accounting scandals and their devastating effects on workers and investors, it's not surprising that the government and the public assume that the underlying problems are corruption and criminality – unethical accountants falsifying numbers to protect equally unethical clients. But that's only a small part of the story. Serious accounting problems have long plagued corporate audits, routinely leading to substantial fines for accounting firms. Some of the errors, no doubt, are the result of fraud. But to attribute most errors

to deliberate corruption would be to believe that the accounting profession is rife with crooks – a conclusion that anyone who has worked with accountants knows is untrue. The deeper, more pernicious problem with corporate auditing, as it's currently practiced, is its vulnerability to unconscious bias. Because of the often subjective nature of accounting and the tight relationships between accounting firms and their clients, even the most honest and meticulous of auditors can unintentionally

distort the numbers in ways that mask a company's true financial status, thereby misleading investors, regulators, and sometimes management. Indeed, even seemingly egregious accounting scandals, such as Andersen's audits of Enron, may have at their core a series of uncon-

sciously biased judgments rather than a deliberate program of criminality.

Unlike conscious corruption, unconscious bias cannot be deterred by threats of jail time. Rooting out bias, or at least tempering its effects, will require more fundamental changes to the way accounting firms and their clients operate. If we are really going to restore trust in the U.S. system of auditing, we will need to go well beyond the provisions of the Sarbanes-Oxley Act. We will need to embrace practices and regulations that recognize the existence of bias and moderate its ill effects. Only then can we be assured of the reliability of the financial reports issued by public companies and ratified by professional accountants.

The real problem
isn't conscious corruption.
It's unconscious bias.

The Roots of Bias

Psychological research shows that our desires powerfully influence the way we interpret information, even when we're trying to be objective and impartial. When we are motivated to reach a particular conclusion, we usually do. That's why most of us think we are better than average drivers, have smarter than average children, and choose stocks or funds that will outperform the market—even if there's clear evidence to the contrary. Without knowing it, we tend to critically scrutinize and then discount facts that contradict the conclusions we want to reach, and we uncritically embrace evidence that supports our positions. Unaware of our skewed information processing, we erroneously conclude that our judgments are free of bias.

Many experiments have demonstrated the power of self-serving bias and shown, for example, how bias can distort legal negotiations.¹ In one series of experiments, which we describe in a 1997 *Sloan Management Review* article, pairs of participants were given police and medical reports, depositions, and other materials from a lawsuit involving a collision between a motorcycle and a car and were assigned to the role of either the motorcyclist plaintiff or the car-driving defendant. They were given the task of negotiating a settlement and were told that if they couldn't reach one, a judge would decide the award amount, and both parties would pay substantial penalties. Finally, before starting the negotiation, each participant was asked to predict the amount the judge would award the plaintiff if negotiations stalled. To further eliminate bias, each member of the pair was assured that the other party wouldn't see his or her estimate and that the estimates would not influence the judge's decision.

The results were striking. Participants playing the motorcyclist plaintiff tended to predict that they'd receive dramatically larger awards than the defendants predicted. This is an example of self-serving bias: Armed with the same information, different people reach different conclusions—ones that favor their own interests. In addition, the degree to which the two hypothetical awards differed was an excellent predictor of the likelihood that the pair would negotiate a settlement. The greater the difference in the negotiators' beliefs, the harder it was for them to come to agreement.

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How can such an impulse toward self-serving bias be moderated? In follow-up experiments, the same researchers tried to reduce participants' bias by paying them to accurately predict the amount of the judge's award and having them write essays arguing the other side's point of view. Neither strategy reduced bias; participants consistently thought that the judge would award damages that favored their side. And what about educating the subjects, alerting them that they were likely to reach biased conclusions? That didn't work, either. After teaching participants about bias and testing them to make sure they understood the concept, the researchers found that the participants concluded that their negotiating opponents would be highly biased but refused to believe that they themselves would be.

In yet another of these experiments, participants were presented with 16 arguments—eight favoring the side they had been assigned (plaintiff or defendant) and eight favoring the other—and were asked to predict how a neutral third party would rate the quality of the arguments. In general, study participants found arguments that favored their own positions more convincing than those that supported the other side. But when participants were assigned to the role of plaintiff or defendant only after they'd seen the case materials—and so were unbiased in their evaluation of the data—their degree of bias was significantly less. Taken together, these findings suggest that unconscious bias works by distorting how people interpret information.

Accounting for Bad Accounting

Professional accountants might seem immune to such biases (after all, they work with hard numbers and are guided by clear-cut standards). But the corporate auditing arena is a particularly fertile ground for self-serving biases. Three structural aspects of accounting create substantial opportunities for bias to influence judgment.

Ambiguity. Bias thrives wherever there is the possibility of interpreting information in different ways. As we saw in the study involving the collision, people tend to reach self-serving conclusions whenever ambiguity surrounds a piece of evidence. While it's true that many accounting decisions are cut-and-dried—establishing a proper conversion rate for British pounds, for instance, entails merely consulting daily foreign exchange rates—many others require interpretations of ambiguous information. Auditors and their clients have considerable leeway, for example, in answering some of the most basic financial questions: What's an investment? What's an expense? When should revenue be recognized? The interpretation and weighting of various types of information are rarely straightforward. As Joseph Berardino, Arthur Andersen's former chief executive, said in his congressional testimony on the Enron collapse, "Many

people think accounting is a science, where one number, namely earnings per share, is *the* number, and it's such a precise number that it couldn't be two pennies higher or two pennies lower. I come from a school that says it really is much more of an art." (See the sidebar "Ambiguity in Accounting and Auditing.")

Attachment. Auditors have strong business reasons to remain in clients' good graces and are thus highly motivated to approve their clients' accounts. Under the current system, auditors are hired and fired by the companies they audit, and it is well known that client companies fire accounting firms that deliver unfavorable audits. Even if an accounting firm is large enough to absorb the loss of one client, individual auditors' jobs and careers may depend on success with specific clients. Moreover, in recent decades, accounting firms have increasingly treated audits as ways to build relationships that allow them to sell their more lucrative consulting services. Thus, from the executive team down to individual accountants, an auditing firm's motivation to provide favorable audits runs deep. As the collision case also showed, once people equate their own interests with another party's, they interpret data to favor that party. Attachment breeds bias.

Approval. An audit ultimately endorses or rejects the client's accounting—in other words, it assesses the judgments that someone in the client firm has already made. Research shows that self-serving biases become even stronger when people are endorsing others' biased judgments—provided those judgments align with their own biases—than when they are making original judgments

themselves.² In one series of studies, researchers found that people were more willing to endorse an overly generous outcome that favored them than they were to make that judgment themselves. For example, if someone says that you deserve a higher raise than facts might suggest, you are more likely to come to agree with this view than you are to decide on your own that you deserve a higher raise. This kind of thinking implies that an auditor is likely to accept more aggressive accounting from her client than what she might suggest independently.

In addition to these structural elements that promote bias, three aspects of human nature can amplify unconscious biases.

Familiarity. People are more willing to harm strangers than individuals they know, especially when those individuals are paying clients with whom they have ongoing relationships. An auditor who suspects questionable accounting must thus choose, unconsciously perhaps, between potentially harming his client (and himself) by challenging a company's accounts or harming faceless investors by failing to object to the possibly skewed numbers. Given this tension, auditors may unconsciously lean toward approving the dubious accounting. And their biases will grow stronger as their personal ties deepen. The longer an accounting partner serves a particular client, the more biased his judgments will tend to be.

Discounting. People tend to be far more responsive to immediate consequences than delayed ones, especially when the delayed outcomes are uncertain. Many human vices spring from this reflex. We postpone routine dental

Ambiguity in Accounting and Auditing

Each year, *Money* magazine sends the financial records of a hypothetical family to 30 to 50 professional tax preparers and asks, "How much does this family owe in taxes for the year?" No two preparers ever agree. The range of answers is shocking. In 1998, the range varied from \$37,715 to \$68,912, a difference of 83%. However, these tax professionals could be proud that they agreed far more than did their colleagues who performed a similar exercise in 1990: That group's results ranged from \$6,807 to \$73,247, a 976% difference.

How could experts disagree so vastly on something that seems as objective as accounting? It turns out that deciding what is income, what is deductible, and what is an appropriate depreciation schedule is subjective. Judgment calls are part of a tax preparer's work. Similarly, at a corporate level, a myriad of ambiguous accounting questions, such as when to recognize revenue and which items to expense, opens the door for self-serving interpretations. An item such as late-stage R&D that one auditor might regard as an investment can be seen by another as an expense. With executives deciding how to state earnings, the two treatments can significantly affect the bot-

tom line reported to the public.

Another indication of ambiguity in accounting is the common practice of negotiating about accounting rules. In one study by Michael Gibbins, Steven Salterio, and Alan Webb of 93 audit partners working for international accounting firms, 67% reported that they commonly negotiated with 50% or more of their clients. These negotiations, for example, might involve the timing of revenue and expenses recognition. Executives are often in a hurry to recognize revenue but prefer to delay recognizing an expense. If there were such a thing as "correct" timing, these negotiations wouldn't take place. Another indication of auditing ambiguity is the tendency of clients to opinion-shop—that is, to ask multiple auditors to interpret specific accounting problems before deciding whom to hire. Because no "right" conclusion exists, different auditing firms can have different opinions.

Finally, in the current political discussion about expensing options, opponents of expensing often argue that an option's value is too ambiguous to assess. They proffer ambiguity as a justification for ignoring the value of options executives receive.

checkups because of the cost and inconvenience and the largely invisible long-term gain. In the same way, auditors may hesitate to issue critical audit reports because of the adverse immediate consequences—damage to the relationship, potential loss of the contract, and possible unemployment. But the costs of a positive report when a negative report is called for—protecting the accounting firm’s reputation or avoiding a lawsuit, for example—are likely to be distant and uncertain.

Escalation. It’s natural for people to conceal or explain away minor indiscretions or oversights, sometimes without even realizing that they’re doing it. Think of the manager who misses a family dinner and blames the traffic, though he simply lost track of time. Likewise, an auditor’s biases may lead her to unknowingly adapt over time to small imperfections in a client’s financial practices. Eventually, though, the sum of these small judgments may become large and she may recognize the long-standing bias. But at that point, correcting the bias may require admitting prior errors. Rather than expose the unwitting mistakes, she may decide to conceal the problem. Thus, unconscious bias may evolve into conscious corruption—corruption representing the most visible end of a situation that may have been deteriorating for some time. It’s our belief that some of the recent financial disasters we’ve witnessed began as minor errors of judgment and escalated into corruption. As Charles Niemeier, chief accountant for the SEC’s enforcement division, put it: “People who never intend to do something wrong end up finding themselves in situations where they are almost forced to continue to commit fraud once they have started doing this. Otherwise, it will be revealed that they had used improper accounting in the earlier periods.”

Putting Theory to the Test

Bias, by its very nature, is typically invisible: You can’t review a corporate audit and pick out errors attributable to bias. Often, we can’t tell whether an error in auditing is due to bias or corruption. But you can design experiments that reveal how bias can distort accounting decisions. We recently did just that, with telling results.

We gave undergraduate and business students a complex set of information about the potential sale of a fictional company and asked them to estimate the company’s value. Participants were assigned different roles: buyer, seller, buyer’s auditor, or seller’s auditor. All subjects read the same information about the company. As we expected, those who hoped to sell the firm thought the company was worth more than the prospective buyers did. More interesting were the opinions offered by the auditors: Their judgments were strongly biased toward the interests of their clients.

These auditors displayed role-conferred biases in two ways. First, their valuations (judgments) were biased in

the clients’ favor: The sellers’ auditors publicly concluded that the firm was worth more than the buyers’ auditors said it was. Second, and more tellingly, their private judgments about the company’s value were also biased in their clients’ favor: At the end of the experiment, the auditors were asked to estimate the company’s true value and were told that they would be rewarded according to how close their private judgments were to those of impartial experts. Despite this incentive for accuracy, the estimates of the sellers’ auditors averaged 30% higher than those of the buyers’ auditors. This exemplifies the persistent influence of self-serving biases: Once participants interpreted information about the target company in a biased way, they were unable to undo the bias later.

Earlier this year, we ran a study with Lloyd Tanlu that focused on professional auditors themselves. The study, of 139 auditors employed full time by one of the big U.S. accounting firms, illuminated the professionals’ vulnerability to bias and their tendency to be influenced by clients’ biases. Each participant was given five ambiguous auditing vignettes and asked to judge the accounting for each. Half the participants were asked to suppose that they had been hired by the company they were auditing; the rest were asked to suppose they had been hired by a different company, one that was conducting business with the company that had created the financial statements. In addition, half the participants in each of those two groups generated their own auditing numbers first, then stated whether they believed that the firm’s financial reports complied with generally accepted accounting principles (GAAP), while the other half did the two tasks in the reverse order.

For all five vignettes, the auditors were on average 30% more likely to find that the accounting behind a company’s financial reports complied with GAAP if they were playing the role of auditor for that firm. Furthermore, the participants who generated their own auditing numbers after first passing judgment on the company’s financial reports tended to come up with numbers that were closer than the other participants’ to the client’s numbers. The study showed both that experienced auditors are not immune from bias and that they are more likely to accede to a client’s biased accounting numbers than to generate such numbers themselves.

These experiments show that even the suggestion of a hypothetical relationship with a client distorts an auditor’s judgments. Imagine the degree of distortion that must exist in a long-standing relationship involving millions of dollars in ongoing revenues.

Problems with Proposed Reforms

Because the reforms in the Sarbanes-Oxley Act and those proposed by others do not address the fundamental problem of bias, they will not solve the crisis in accounting in the

United States. Some of the reforms, in fact, may well make it worse.

Consider the provisions dealing with disclosure. They require individual auditors or their firms to reveal conflicts of interest to investors. But to counteract bias, such disclosure must either inhibit bias outright or allow investors to adjust for it. Neither is likely. With regard to inhibiting bias, we saw earlier that a person's conscious efforts to reduce bias have limited effect. And the latter idea, that disclosure would help investors interpret auditors' reports, would be of little benefit unless investors knew *how* a disclosed conflict of interest biased an auditor's judgment. Imagine an investor who reads a positive audit report containing the caveat that the auditor receives \$60 million in annual fees from the audited company. By how much should the investor adjust the company's self-reported earnings per share? Without specific guidance, people cannot accurately factor conflict of interest into their investment decisions.

More worrisome is evidence that disclosure could actually increase bias. If auditors suspect that disclosure will lead investors to discount or make adjustments for the auditors' public statements, they may feel less duty bound to be impartial and may make judgments more closely aligned with their personal interests. Research by Daylian Cain, Don Moore, and George Loewenstein paired participants and assigned one member of each pair to the role of estimator and the other to that of adviser. The estimator viewed several jars of coins from a distance, estimated the value of the money in them, and was paid according to how close the estimates were to the jars' true values. The adviser, who could study the jars up close, gave the estimator advice. The adviser, however, was not paid according to the estimator's accuracy but according to how high the estimator's guesses were. In other words, advisers had an incentive to mislead the estimators so that they would guess high.

In addition, we told half of the estimators about the advisers' pay arrangement; we said nothing about it to the rest. Disclosure had two effects. First, advisers whose motives were disclosed provided much more biased guesses (i.e., high estimates of coin jar values) than did advisers whose motives were not disclosed; second, disclosure did *not* cause estimators to substantially discount their advisers' advice. As a result, disclosure led advisers to make much more money and estimators to make much less. Applied to auditing, this finding suggests that auditors who are forced to disclose conflicts might exhibit greater self-serving bias.

One other proposed policy warrants mention: the move to impose stricter accounting standards. This remedy, too, is unlikely to improve the situation. Research shows that it takes very little ambiguity to produce biased judgments.³ In one study, some participants were asked to imagine that they had worked seven hours on a task and

that another person had worked ten hours on the same task. Other participants were asked to imagine the opposite scenario: They'd worked ten hours on the project while the other person worked seven. In each case, it was specified that the person who had worked seven hours would be paid \$25; the question was how much the person who had worked ten hours should be paid. Ten-hour participants, on average, thought that they should be paid about \$35 for their ten hours of work, while those who had worked seven hours thought that the 10-hour person should receive less—about \$30. Here, all it took was a tiny bit of ambiguity—whether the fair solution was equal hourly pay (as the ten-hour people thought) or equal total pay (as the seven-hour people thought)—to produce different self-serving assessments of fairness. Note, too, that the incentives for being biased in this study were awfully weak because the question was hypothetical; in the real world, incentives for bias are far stronger. It seems implausible that stricter accounting rules could eliminate ambiguity—and thus they are unlikely to reduce self-serving bias.

Radical Remedies

The key to improving audits, clearly, is not to threaten or cajole. It must be to eliminate incentives that create self-serving biases. This means that new policies must reduce an auditor's interest in whether a client is pleased by the results of an audit.

One provision of the Sarbanes-Oxley Act prohibits accounting firms from providing certain consulting services to companies they audit. This is a step in the right direction, but it doesn't go far enough. Clearly, accounting firms that advise their clients on how to boost profits, while at the same time trying to impartially judge their books, face an impossible conflict of interest. This reform both reduces this conflict and eases the pressure on auditors to act as salespeople for their firm's other services. Unfortunately, while the new law limits the consulting services auditing firms can provide, it doesn't prohibit them entirely, and it gives the new oversight board created by the Sarbanes-Oxley Act the option of overriding this provision.

True auditor independence requires, as a start, full divestiture of consulting and tax services. And even then, a fundamental problem will remain: Because auditors are hired and fired by the companies they audit, they are in the position of possibly casting negative judgments on those who hired them—and who can cut them loose. Therefore, even with the elimination of consulting, the fundamental structure of the auditing system virtually ensures biased auditing. To eliminate this source of bias, we must remove the threat of being fired for delivering an unfavorable audit. Auditors must have fixed, limited contract periods during which they cannot be terminated. All fees and other contractual details should be specified

at the beginning of the contract and must be unchangeable. In addition, the client must be prohibited from rehiring the auditing firm at the end of the contract; instead, the major accounting firms would be required to rotate clients. Current legislation requires auditor rotation; however, this is defined as a change in the lead partner within an auditing firm. There is no provision to rotate the firms conducting the audit, and there is no provision to prevent a client from firing an auditor. Thus, auditors will continue to have powerful incentives to keep their clients happy.

Audit clients must also be prohibited from hiring individual accountants away from their audit firms. As the Enron scandal unfolded, the common practice of Arthur Andersen employees taking positions with Enron, and vice versa, came to light. Clearly, an auditor can't be impartial when he or she hopes to please a client in order to develop job options. We believe that auditors should be barred from taking positions with the firms they audit for at least five years.

Less tangibly, auditors must come to appreciate the profound impact of self-serving biases on judgment. Professional schools have begun to take ethics seriously in recent years, but teaching auditors about ethics will not have an impact on bias. What's needed is education that helps auditors understand the unconscious errors they make and the reasons they make them. That knowledge alone won't solve the problem, but once members of the auditing profession understand the role of bias in their work, honest and visionary leaders in the profession can help change the conduct of accounting to prevent the conflicts of interest that promote bias. And audit leaders

who say that so-called professionalism is a sufficient safeguard against audit error—a claim that's inconsistent with the weight of empirical evidence on human judgment—might abandon that claim if they truly understood the role of bias in auditing.

Our proposals are not perfect. Indeed, it's hard to imagine any practical system that could eliminate all bias. Even with our remedies, for instance, it's still possible that auditors' social contact with clients could introduce subtle biases. But we envision a system in which clients regard auditors as more like tax collectors than partners or advisers—a system that could be expected to at least ameliorate bias. Devising a more robust separation of auditor and client, one that might go further to reduce bias, would require approaches—such as turning over the auditing function to government—that could create problems as serious as those they solve. We see our proposals as both realistic and effective. In the absence of radical and innovative reform, we believe, further accounting disasters are inevitable. 

1. This and subsequent studies about the collision mentioned in this article were conducted by Linda Babcock, Colin Camerer, Sam Issacharoff, and George Loewenstein and are summarized in L. Babcock and G. Loewenstein, "Explaining Bargaining Impasse: The Role of Self-Serving Biases," *Journal of Economic Perspectives*, winter 1997.

2. K.A. Diekmann, S.M. Samuels, L. Ross, and M.H. Bazerman, "Self-Interest and Fairness in Problems of Resource Allocation: Allocators Versus Recipients," *Journal of Personality and Social Psychology*, May 1997.

3. D.M. Messick and K.P. Sentis, "Fairness and Preference," *Journal of Experimental Social Psychology*, July 1979.

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Your Managerial Intuition: How Much Should You Trust It? Can You Improve It?

by David Stauffer

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THE BAD NEWS about intuition is that there's no consensus on what it is, and no way to test the validity of an intuitive thought. The good news is that the bad news apparently doesn't prevent us from improving our intuition or benefiting from its use in making decisions.

What is intuition exactly?

You can't get far on the way to defining intuition without getting into an intellectual catfight. Weston H. Agor, a pioneer in studying the use of intuition in business decision-making, says intuition is a kind of instinct. "We have neurological imprints just like birds' homing patterns," he observes. The implicit suggestion that what we know by intuition is something we never learned would raise eyebrows among a host of other researchers—for example, Paul J. H. Schoemaker, research director of the Huntsman Center at the Wharton School, chairman of the Morristown, New Jersey, consulting firm Decision Strategies International, and co-author of the book *Decision Traps*. He acknowledges that "most people think of intuition as playing a hunch or going on gut instinct. But in decision research, we define intuition as an inability to articulate the thought process that led to a decision."

A chorus of boos would also greet any characterization of intuition as a psychic phenomenon. Cornell University psychology professor Thomas D. Gilovich, author of *How We Know What Isn't So*, notes that any claims involving the paranormal, by their nature, lie beyond the reach of evaluation and analysis. These and other hazards of defining intuition have led corporate attorney Richard M.

Contino, author of *Trust Your Gut!*, to avoid "attaching labels to any thought process or belief system, because the act of labeling narrows our field of vision and our options."

Perhaps the best way to gain a measure of consensus is to say that intuition is at least, in the words of one writer, "knowing something without knowing how you know it" or, as in *Webster's New World Dictionary*, "the direct knowing of something without the conscious use of reasoning."

What makes intuition important to managers today?

However it's defined, there seems to be widespread perception that intuition plays a larger role in business decision-making today than ever before, if for no other reason than that managers are increasingly forced to make decisions at a pace that allows too little time for analysis. As long ago as 1991, Agor, then a professor at the University of Texas at El Paso and head of the Global Intuition Network, perceived "a significant shift in the kind of decision and climate that organizations have to face. Decisions have to be much more rapid. And they're frequently made with inadequate information, because if you wait too long, you've lost your market." Plus, there is "a premium on the capacity to hear the first faint tap of a new trend."

Agor's thinking is echoed today by, among others, Joel Yanowitz, managing director of Innovation Associates, a Waltham, Massachusetts, firm whose executive seminars for clients like Procter & Gamble focus in part on enhancing and applying intuitive skills. "Leaders today have to deal with multiple challenges and opportu-

nities, develop compelling visions, and take effective action in a complex environment," he says. "Intuition is a necessary tool for tackling these and other imperatives. As such, we believe it's part of the skill set leaders need to be successful."

How reliable is intuition?

Among those who advise extreme caution in relying on an intuitive insight is Cornell University management professor J. Edward Russo, who conducts seminars on managerial decision-making and is co-author (with Wharton's Schoemaker) of *Decision Traps*. In Russo's construct of intuition, "people match some characteristics of the current situation with similar aspects of a past situation, with no conscious awareness of the basis of the match. Intuition tells us to take the action in the current situation that either did produce or would have produced a successful outcome in the past situation."

But there's a big problem with acting on intuition, Russo continues: "The aspect or characteristic of the past situation on which we're matching may or may not have any relevance in the current situation. Your 'match' might be based on relevant or incidental parallels. Sometimes it will be one, sometimes the other." In other words, your bad intuitive feeling about a job candidate could stem from the fact that she, like a previous hire who didn't work out, grew up in Kansas. The similarity is irrelevant, but you don't know it's irrelevant because you aren't consciously aware of the basis of the match. "It feels right," Russo comments, "but there's no way for you to know if it *is* right."

Nonetheless, Russo doesn't say the unavailability of the previous "matching" situation to our conscious evaluation renders intuitive thoughts useless. "Consider your actions behind the wheel of a car today, versus when you were learning to drive. Back then, you had to think about every move you made; now it's

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automatic. The split second you save today by not having to go through a conscious thought process may mean you swerve or brake in time to avoid hitting another car.”

Experienced managers, Russo allows, could certainly possess such “automatic expertise” in a variety of areas where they’ve worked. “But you have to ask yourself whether your past experience is pertinent in the current situation and, even if it is, whether that experience is still up to date.” He illustrates with the example of a top officer of a pharmaceutical firm who rejected the sales program suggested by a market study. “He said, ‘I was in sales for 15 years and I know doctors. My gut tells me they won’t go for this.’ The problem is that he was in sales 20 years ago, when he may have been right. But he doesn’t realize that his automatic expertise is outdated; and his marketing subordinates may not feel comfortable telling him that.”

Russo’s view of intuition as automatic expertise is supported by some research, such as that cited in a 1989 *Psychology Today* article, which noted that “researchers have found that intuitive people share one essential trait: They are experts in particular, if in some cases limited, fields of knowledge . . . Mastery of a field, these psychologists argue, is what makes intuitive thought possible.”

“Mastery of a field” appears to be the one avenue that all observers agree can lead to the most consistently reliable flashes of intuition. This is the stuff of legend in science and invention: the spontaneous blast of insight that shatters all real and imagined barriers to a monumental advance. Einstein himself is reported to have said, “I did not arrive at my understanding of the fundamental laws of the universe through my rational mind.”

“We can trust the sort of intuition associated with scientific discovery,” says Cornell’s Gilovich. But he is

skeptical of other claims attributing breakthrough thinking to intuition, such as the common assertion that wildly improbable entrepreneurial successes are achieved by people whose intuitive convictions prompted them to go against conventional wisdom. What’s missing, he asserts, is a likely corollary: that many, if not most, such gambles fail quickly and quietly.

Mastery of a field is the royal road to reliable flashes of intuition.

Contino agrees that intuition outside the realm of scientific inquiry can’t be tested, but states, “untestable is not the same as dismissable. I have often seen business people who are bold enough to advocate a position based on intuition dismissed by other business people demanding data. They say, ‘Forget your feeling, just tell me the facts.’”

Even the most enthusiastic advocates of intuition in business decision-making say it’s not smart to go only with intuition, unless time and circumstances totally preclude analysis. “You want to use both logic and intuition,” Joel Yanowitz says. “I treat intuition as another form of data. Like any data, you ask if it’s sufficient by itself to make a decision. For a major decision, it usually isn’t sufficient, so you gather other data to test the validity of your intuitive thoughts.”

How can you improve your intuition?

None of the experts or studies we consulted holds that we can’t improve our intuitive thinking. Unfortunately, no single technique gains unanimous

approval as a means of accomplishing this. The following list of steps represents the closest thing to a consensus.

Build expertise. For those who assert that intuition flows only from mastery of a field, gaining ever more experience in a given area is the sole means of developing intuition. Wharton’s Schoemaker, contending that intuition is “knowledge frozen into habit,” observes that “you develop your ability to play intuitive golf, for example, by playing repeatedly and keeping track of results.”

Remove distractions, get comfortable. “People generally know the settings in which they tend to get their [intuitive] flashes,” says Yanowitz of Innovation Associates. “For some it’s a walk in the woods, for others it’s driving the car, or listening to opera music. Put yourself in those situations to stimulate intuitive thought.”

Keep a diary. Attorney Contino says a diary “has made me more fully aware of my intuitive feelings and how much a part of my life these feelings are. It also serves as a record of my state of mind when I have intuitive thoughts, so I can now more readily encourage these thoughts by putting myself in similar situations.” Yanowitz concurs, commenting that a journal or diary, over time, “can help you sort out thoughts that are in fact intuitive, as opposed to those based on worries or fears, or simply random.”

Talk it over. Cornell’s Russo says that an intuitive feeling can sometimes be tested by “discussing options and preferences with an unbiased adviser or friend. A different perspective might indicate that either you’re on the right track or you’ve been kidding yourself.” Some observers advise that such a step be taken with someone completely outside the realm to which an intuitive thought applies. If the thought regards a work-related issue, for example, a discussion with a spouse or other family member might be in order. He or she probably has no

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hidden agenda and, being familiar with your behavior and thought processes, is likely to sense when your intuition is on the mark.

It's almost impossible to come up with a single summary recommendation for a topic as gelatinous and controversial as intuition in business decision-making. But Innovation Associates' Yanowitz may come close when he warns, "You ignore intuition at your peril, and you follow it blindly at your peril." ■

If you want to learn more...

Decision Traps by Paul J. H. Schoemaker and J. Edward Russo (1990, Simon & Schuster, 281 pp., \$10.95, Tel. 800-223-2336)

How We Know What Isn't So by Thomas D. Gilovich (1993, Free Press, 200 pp., \$14.95, Tel. 800-223-2336)

Trust Your Gut! by Richard M. Contino (1996, AMACOM, 173 pp., \$16.95, Tel. 800-262-9699)

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Put Your Decision Making to the Test: Communicate

by Nick Morgan

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Put Your Decision Making to the Test: Communicate

Communicating the reasoning behind key decisions can build valuable support—and prevent expensive mistakes.

NICK LEESON and Barings Bank have become, respectively, the poster child and poster company for bad decision making. You remember them—Nick Leeson was the trader whose attempts beginning in 1992 to cover up trading mistakes and losses mushroomed into a billion-dollar loss and the collapse of the bank.

How did it happen? Why didn't anyone in Singapore, where Leeson was based, stop him before the loss became catastrophic? Why did it take so long for HQ in London to respond to the crisis? The answers to these questions suggest the critical steps in a bad decision-making process—an object lesson in How Not to Do It—and point the way toward making better decisions. The bad news is that most of us make decisions just the way Leeson and Barings did—but we think we don't. The good news is that we can learn to make better ones.

Can you pass the 'skeptical colleague' test? The key lesson from the Barings fiasco is that business decisions—and even most personal ones—should never occur in a vacuum. You need to communicate, at some point to someone, the case for your important decisions. Indeed, the process itself, of developing the communications case, is the single best method for ensuring a good decision. If you can tell a convincing story that presents the basis for your decision to a skeptical colleague, explaining what it is and how you arrived at it, what the alternatives were and why you rejected them, then the chances are good that you've given your decision sufficient thought. Barings' top management made the fundamental mistakes first of hiring Leeson (with a flawed résumé) without sufficient discussion,

and then of allowing Leeson to operate alone without sufficient safeguards. Leeson in his turn failed to communicate his mistakes early on, thus turning retrievable errors into calamity.

Stephen J. Hoch and Howard C. Kunreuther, professors at the Wharton School of Business and editors of *Wharton on Making Decisions*, identify several additional mistakes that Barings' managers made and to which we are all prone.

Bad decisions overrely on intuition and emotions. "When Barings entered the futures business," Hoch and Kunreuther write, "it was essentially a one-man operation (Christopher Heath) that relied on an instinctive style of management. As business expanded rapidly, Heath and Barings failed to recognize that such an intuitive management style was no longer appropriate." Many businesses that grow rapidly develop managers that suffer from this kind of seat-of-the-pants decision making. They learned the business when one person could understand it all and make good decisions. Even after that changed, they still make decisions in the same way. What's needed instead is a mixed model of information systems and human intuition. In other words, when the decisions become complicated, set up good communications systems that allow for sufficient input.

Bad decisions underestimate risk. As Hoch and Kunreuther say, "Decision makers have great difficulty in evaluating low-probability, high-risk events before disaster strikes, so they tend to underprotect themselves beforehand and overprotect them-

selves afterward." We see this decision-making pattern playing out from one generation to the next. For example, Depression-era managers learned fiscal caution from the extreme conditions of the 1930s, while Boomer managers had no similar catastrophe to teach them viscerally about financial restraint in their own formative business years. Again, good decision makers adopt communications systems that allow for reality checks against their mental models, models that often are deeply embedded in their thought processes and therefore hard to recognize for what they are.

Bad decisions result from the need for speed. "Barings executives also appeared to make decisions quickly," say Hoch and Kunreuther, "racing to take advantage of market opportunities and failing to institute a sufficiently rigorous system of controls.... This Westernized, time-is-money attitude contrasts with an Eastern view, which emphasizes patient reflection.... The expedient, time-is-money mode may not always lead to the very best choice, but there are times when speed is critical." The pace of decision making in the West has increased enormously in the Internet era, and we have even seen attempts to make a virtue out of the necessity of making fast decisions with incomplete information, as if that were somehow a good model. In fact, that model often leads to a higher ratio of bad decisions. Sometimes, however, there must be a tradeoff. Some decisions simply can't be delayed to wait for perfect information.

Let's say you've learned to avoid the traps that catch the unwary in the decision-making process. You've managed to look skeptically at your emotions, and you're using your intuition judiciously. More than that, you've learned to weigh risk and move when the time is right—not before. You regularly solicit outside input to your sense-making and data-gathering systems so that your decision making is based on strong communications processes that include facts and input from colleagues.

What criteria do you use to make a great decision? Many of the decisions we make involve competing potential benefits—how do we decide amongst them?

In this happy situation, the experts advise, there are some rules that can guide you to great decision making. The first step is to figure out whether the decision you need to make is one you can make alone or one that necessarily involves others.

If you need others to implement a decision, involve them in the process.

“If people don’t own the solution to the problems or agree to the decision, implementation will be half-hearted at best, probably misunderstood, and more likely than not, fail,” says Michael Doyle, a pioneer in the field of participatory decision making.

Once you’ve figured out how many people need to be involved, you’re ready to focus on the issue to be decided. Here, the experts advise setting clear criteria.

Focus on the most important criterion. Says Charles Foster, director of the Chestnut Hill Institute (Boston), and author of *What Do I Do Now?: Dr. Foster’s 30 Laws of Great Decision Making*, “The most important law for shining the biggest spotlight fastest on what’s best for you to do is to *focus on the most important thing*.”

Some of the most difficult decisions involve both personal and business issues. While companies may have a series of decision-making checkpoints, the same systems usually don’t exist for career moves. Most of us face decisions that overwhelm us with a surfeit of possible criteria. Say, for example, that you’re trying to decide whether to move to a distant city to take advantage of a promotion. The promotion is in a new division, and it involves greater risk than the division you’re in right now. It might fail, leaving you high and dry and a long way from home. Your kids are halfway through elementary school,

and one of them has just settled down with a great teacher. Your spouse cannot easily replicate the job he has in the distant town.

You have too many criteria to make an effective go/no-go decision. So decide what the most important criterion is for you right now. Foster offers several criteria for how to pick that single most important criterion. First, he says, “It’s something that will make your life wonderful...or it’s something that will enable you to take care of your most important responsibility...or it’s something that will make it possible for you to solve your biggest problem.” Begin a dialogue with yourself—or with a friend or colleague—to help you

For better decision making, decide what the most important criterion is for you right now.

develop the right kinds of feedback and self-knowledge.

Then, using the example above, ask yourself, what’s most important? Is it the children’s schooling? Or taking that great new opportunity? You can’t begin to make an effective decision until you rate the criteria you’re considering. And how do you know if you’re rating those criteria correctly? Foster says, the correct criteria are “more likely long-term than short-term...more to do with what you want than with what other people want, [and]...more likely connected to your hopes than your fears.”

Once you figure out what the most important criterion is, give it more weight than all the others. Communicate the logic of this new understanding to a friend or colleague in your confidence. See if you can convince that friend—and yourself—that what you’re saying makes sense.

Consider the upside. Far too many of us fall into damage-control mode when

faced with a difficult decision. We forget to look at the upside—all the good things that might happen. Even if they are not likely to happen, they are important to the process, because of course they won’t be realized if your decision is ultimately not to proceed. In the example above, you have no chance of realizing the rapid growth potential of the new business venture if you stay put.

Test your decision against the future.

In the same vein, Foster argues that “good decision makers are not blinded by the now. They take the present situation and play it out in their heads to see what happens to it over time.”

In our hypothetical example, looking into the future might involve guessing whether or not the kids will adjust to a new school, and how well your spouse will do finding work in the new town.

Break big decisions down into a lot of little ones.

Often we feel overwhelmed by some huge decision like relocating, taking a new job, or the like. We tend to see it as an either-or fork in the road. Either you go one way or the other. And all too often, people linger at the fork, paralyzed by the fear of commitment to one irrevocable path or the other.

And yet, often the issue can be broken down into a series of small decisions with continuous feedback loops. Perhaps you can take a week’s vacation and spend it in the new town, getting a feel for the area and researching the business climate. Small steps don’t make the big one inevitable—you’ve kept your options open. And you’ve started to get a feel for what the move would be like.

Keep your options open. Don’t allow yourself to be rushed into a decision. Make the decision when you’re ready, not when everyone else wants you to. Of course, there are times when events force a decision on you. Then, you want to keep your options open as much and as long as possible. As Foster says,

“People who make bad choices not only end up in a worse place, they also find that they’ve made it harder for themselves to make good decisions in the future. That’s because bad decisions bring you to a place where you have fewer, worse options.”

Finally, don’t decide unless you have to. Peter Drucker, the management guru, says, “There is one final question the effective decision maker asks: Is a decision really necessary? *One* alternative is always the alternative of doing nothing. Every decision is like surgery. It is an intervention into a system and therefore carries with it the risk of shock. One does not make unnecessary decisions any more than a good surgeon does unnecessary surgery.” □

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