It is an unwritten law of the stock market that corporations must keep growing, year after year, and for the executives of a company straining to meet these growth expectations, buying another company can look like an awfully attractive shortcut. But it's an expensive shortcut. For public companies, the average premium paid in an acquisition is 41%, which means that if the target company is valued by the stock market at $100 million, the acquirer will bid $141 million for it. Or, to translate that into human terms, the acquiring CEO is basically saying to the target CEO, "I can run your company at least 41% better than you can."

As you might imagine, this self-confidence often proves unwarranted. Warren Buffett said, "In the past, I've observed that many acquisition-hungry managers were apparently mesmerized by their childhood reading of the story about the frog-kissing princess. Remembering her success, they pay dearly for the right to kiss corporate toads, expecting wondrous transfigurations." Unfortunately, said Buffett, "We've observed many kisses but very few miracles."

Two business-school professors, Mathew Hayward and Donald Hambrick, were puzzled by this phenomenon. Why do CEOs keep making pricey acquisitions that rarely pay off? The

answer, they suspected, might have more to do with human flaws than with financial miscalculations. They theorized that the acquiring CEOs were being led astray by their own hubris.

Hubris is exaggerated pride or self-confidence that often results in a comeuppance. In Greek mythology, a hubristic protagonist often suffers humiliation. When Icarus ignored advice not to fly too close to the sun, his wax wings melted and he fell to his death. (By contrast, in American business, hubris is less damning. If Icarus had been a bank CEO, he'd have escaped with a $10 million golden parachute.)

Hayward and Hambrick speculated that executives' hubris—their confidence that they could work magic with their acquisitions—would lead them to overpay for their targets. The researchers tested this theory by analyzing every large acquisition ($100 million or more) conducted in the public markets during a two-year period, a sample that contained 106 transactions. What they wanted to see was whether the price paid in the acquisition was influenced by three particular factors, all of which would tend to inflate the ego of the acquiring CEO:

1. Praise by the media
2. Strong recent corporate performance (which the CEO could interpret as evidence of his/her genius)
3. A sense of self-importance (which was measured, cleverly, by looking at the gap between the CEO's compensation package and the next-highest-paid officer—a CEO must think a lot of himself if he's paid quadruple the salary of anyone else)

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As one example, they found that for every favorable article written in a major publication about the CEO, the acquisition premium paid went up by 4.8%. That's a $4.8 million boost on a $100 million acquisition! Because of one flattering article! And a second article would inflate it by another $4.8 million.

The authors wrote, "It seems some CEOs who pay extremely large acquisition premiums … come to believe their own press." (The lyrics of an old Mac Davis song come to mind: "Oh Lord, it's hard to be humble / when you're perfect in every way. / I can't wait to look in the mirror / 'cause I get better looking each day.")

All of this suggests an important lesson for entrepreneurs: If you're looking to sell your company, definitely call the person on the cover of *Forbes*.

HAYWARD AND HAMBRICK ALSO discovered an antidote to hubris: disagreement.

They found that CEOs paid lower acquisition premiums when they had people around them who were more likely to challenge their thinking, such as an independent chairman of the board or outside board members who were unconnected to the CEO or the company. Unfortunately, these independent viewpoints weren't always present. Remember the former CEO of Quaker who said that there was *no one* inside the firm arguing against the Snapple acquisition?

To make good decisions, CEOs need the courage to seek out disagreement. Alfred Sloan, the longtime CEO and chairman of General Motors, once interrupted a committee meeting with a question: "Gentlemen, I take it we are all in complete agreement on the decision here?" All

in complete agreement on the decision here?" All the committee members nodded. "Then," Sloan said, "I propose we postpone further discussion of this matter until our next meeting to give ourselves time to develop disagreement and perhaps gain some understanding of what this decision is about."

Few of us are stuck in a bubble of power like a CEO, and our hubris levels are mercifully lower, but we do have something in common with them: a bias to favor our own beliefs. Our "bubble" is not the boardroom; it's the brain. The confirmation bias leads us to hunt for information that flatters our existing beliefs.

Imagine that a new restaurant has just opened near you. It serves your favorite kind of food, so you're excited and hopeful. You search the restaurant's reviews online, and the results show a handful of good reviews (four out of five stars) and a handful of poor ones (two stars). Which reviews would you read?

Almost certainly, you'd read more of the positive reviews. You really want this restaurant to be great. A recent meta-analysis of the psychology literature illustrated how dramatic this effect is. In reviewing more than 91 studies of over 8,000 participants, the researchers concluded that we are more than twice as likely to favor confirming information than disconfirming information. (So, scientifically speaking, you'd probably read twice as many four-star reviews as two-star reviews.)

The meta-study found that the confirmation bias was stronger in emotion-laden domains such as religion or politics and also when people had a strong underlying motive to believe one way or the other (as in Upton Sinclair's observation, "It is difficult to get a man to understand something when his salary depends on his not understanding it!"). The confirmation bias also increased when people had previously invested a lot of time or

people had previously invested a lot of time or effort in a given issue.

In the previous section, we saw that it's crucial to Widen Our Perspective in order to break out of a narrow frame; by doing that, we expand the number of options open to us. In this section we ask, what's the best way to *assess* those options?

We know that the confirmation bias will skew our assessment. If we feel a whisker's worth of preference for one option over another, we can be trusted to train our spotlight on favorable data. So how can we learn to overcome the confirmation bias and Reality-Test the Assumptions we're making?

The first step is to follow the lead of Alfred Sloan, the former GM CEO, and develop the discipline to consider the opposite of our initial instincts. That discipline begins with a willingness to spark constructive disagreement.

IN MOST LEGAL SYSTEMS, disagreement is baked into the process. Judges and juries will never find themselves in a CEO-style information bubble, since they are forced to consider two opposing points of view.

The justice system isn't alone in using a balanced process. For centuries, the Catholic Church made use of a "devil's advocate" in canonization decisions (i.e., in deciding who would be named a saint). The devil's advocate was known inside the church as the *promotor fidei*—the "promoter of the faith"—and his role was to build a case *against* sainthood.

John Paul II eliminated the office in 1983, ending 400 years of tradition. Since then, tellingly, saints have been canonized at a rate about 20 times faster than in the early part of the twentieth century.

In our individual decisions, how many of us have ever consciously sought out people we knew

have ever consciously sought out people we knew would disagree with us? Certainly not every decision needs a devil's advocate—"I *strenuously object* to your purchasing those slacks!"—but for high-stakes decisions, we owe ourselves a dose of skepticism. If you have teenagers, they may be a good resource here. Our typical tendency is to flee these skeptical conversations rather than embrace them, but that reflects short-term thinking. We want to avoid the momentary discomfort of being challenged, which is understandable, but surely it's preferable to the pain of walking blindly into a bad decision.

How can we plan for disagreement inside organizations? Some have created devil's advocate–style traditions. The Pentagon used a "murder board," staffed with experienced officers, to try to kill ill-conceived missions. In the era when Disney was churning out hits such as *The Lion King* and *Beauty and the Beast*, its senior leadership team used a *Gong Show* format that allowed many people to pitch ideas for movies or theme-park rides—but the leaders brought the curtain down quickly on bad ideas.

It might be tempting to think about hiring a formal devil's advocate, someone who could inject criticism into a complacent organization. However, it's too easy to imagine the position being marginalized and, beyond that, offering an excuse for others to pull back their own criticism. ("I know the devil's advocate will give this deal a thorough going-over, so I don't need to worry about it.")

The most important lesson to learn about devil's advocacy isn't the need for a formal contrarian position; it's the need to interpret criticism as a noble function. An effective *promotor fidei* is not a token argumentative smarty-pants; it's someone who deeply respects the Catholic Church and is trying to defend the faith by surfacing contrary arguments in

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There are many ways to honor that spirit of values-based opposition. In some organizations, the executive in charge might assign a few people on the executive team to prepare a case against a high-stakes proposal. (What if the Quaker CEO had assigned a team to make a case against the Snapple purchase?) That's a wise idea. It puts the team members in the role of "protecting the organization," and it licenses their skepticism. Another alternative is to seek out existing dissent rather than creating it artificially. If you haven't encountered any opposition to a decision you're considering, chances are you haven't looked hard enough. Could you create a safe forum where critics can air their concerns?

THE DOWNSIDE OF PROVOKING disagreement is that it can curdle into bitter politics. Roger Martin, the dean of the Rotman School of Business and the author of *The Opposable Mind* and other well-regarded business books, said that people often complain to him that their strategy meetings "descend into adversarial position-taking." In his judgment, that's the single biggest barrier to creating effective strategies.

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Martin believes that overcoming this problem is easier than you might think. The solution is a practice that he improvised in a difficult moment early in his career.

In the mid-1990s, Martin, a recent business-school graduate, was working for the Monitor Group, a consulting firm. One of Monitor's clients was Toronto-based Inmet Mining, whose executives were debating the fate of Copper Range, a struggling copper mine in the upper peninsula of Michigan. The mine, which in its glory days had been one of the largest copper mines in America, was losing money fast. To discuss the situation, a critical meeting was set in Rhinelander, Wisconsin. The mine managers drove three hours to be there, and the corporate executives flew in from Toronto. They met in a nondescript hotel conference room near the airport.

The meeting was tense. The Inmet VP of treasury, Richard Ross, came into the meeting suspecting that the right option was to close the mine. "Metal prices were coming down and we were getting squeezed," he said. "We had invested a lot and there was no dividend in sight. Eventually it becomes clear you're not going to turn a sow's ear into a silk purse."

But closing the mine would have harsh consequences. Copper Range employed over a thousand people, and it was the only major business in its region, so the ripple effects on the local economy would be devastating. The shutdown would also be costly for the executive team's reputation—they'd only recently acquired the mine and had chosen to invest millions in it. If they shut it down so soon, what would shareholders think of their judgment?

There were several options other than closing the mine. One alternative was to close down the existing smelter, which was on its last legs, and

existing smelter, which was on its last legs, and ship the ore to Canada to be refined in a more modern smelter. Another was to supplement the dwindling supply of ore in the current mine by expanding to the north, toward an area that was thought to have an untapped vein of ore.

As the discussion progressed, the two sides settled into their predictable roles: The executives were leaning toward closing the mine, and the mining managers opposed it. People were talking past one another. Roger Martin describes the initial discussion as "all over the map."

"I remember we'd been there probably a couple of hours," said the treasurer, Ross. "And there was this sense of frustration. *There's a lot here to talk about. How do we work through it?*"

"I could tell it was going nowhere," said Martin. At the point of impasse, he said, "an idea popped into my head."

He issued the group a challenge: Let's stop arguing about who is right, he said. Instead, let's take each option, one at a time, and ask ourselves: *What would have to be true for this option to be the right answer?*

Surely it's possible, he said, to imagine a set of evidence that would persuade us to change our minds. Let's talk about what that evidence would look like.

Ross said that after Roger Martin posed his challenge, "the lights went on for everyone." Participants switched from arguing to analyzing, discussing the logical underpinnings of each option.

The executives, asked to specify the conditions under which it would make sense to keep the mine open, started talking about production targets that would make it viable. The mine managers, asked to contemplate a scenario where closing the mine might be the best option, agreed that if copper prices didn't recover, it would be hard to recommend continued operations.

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The tenor of the discussion changed. There was still tension in the room, but it was productive tension. Martin's reframing of the meeting had changed adversaries into collaborators.

"It was magic," said Martin. "By the end of the day, we had the group's agreement on what had to be true for each of the five options for it to be the very best choice."

After the meeting wrapped up, the parties began to gather the information they'd agreed would be needed. They experimented with the idea of shipping the ore to Canada, but that turned out to be more costly than anyone had predicted, so they crossed that option off the list.

They also explored the option of expanding the mine but ended up running into a wall, literally. There was an unexpected structural constraint in punching through the rock to get to the new vein. John Sanders, the general manager of the mine at the time, said that you can imagine the old mine and the potential new mine as two shopping centers side by side underground. "Then you discover that, in fact, you can only get one small door, the size of a washroom door, open between the two shopping centers and all the traffic would have to walk through this little door. You just can't do this."

By the time of the next board meeting, they'd arrived at an answer: There were no compelling options for keeping the mine open. Even John Sanders, in his role as general manager of the mine, was convinced. He stood up in front of the board and reluctantly endorsed the closure.

ROGER MARTIN SAYS THE "What would have to be true?" question has become the most important ingredient of his strategy work, and it's not hard to see why. The search for disconfirming information might seem, on the surface, like a thoroughly negative process: We try to poke holes

thoroughly negative process: We try to poke holes in our own arguments or the arguments of others. But Martin's question adds something constructive: *What if our least favorite option were actually the best one? What data might convince us of that?*

Martin said, "If you think an idea is the wrong way to approach a problem and someone asks you if you think it's the right way, you'll reply 'no' and defend that answer against all comers. But if someone asks you to figure out what would have to be true for that approach to work, your frame of thinking changes.… This subtle shift gives people a way to back away from their beliefs and allow exploration by which they give themselves the opportunity to learn something new."

This technique is particularly useful in organizations where dissent is unwelcome, where people who challenge the prevailing ideas are accused of failing to be "team players." Martin's question makes dissenters seem less like antagonists and more like problem solvers.*

What makes Roger Martin's technique so effective, in short, is that it allows people to disagree without becoming disagreeable. It goes beyond merely exposing ourselves to disconfirming evidence; it forces us to imagine a set of conditions where we'd willingly change our minds, without feeling that we "lost" the debate.

2.

We are all pretty good at digging up disconfirming information to respond to a sales pitch. When a time-share salesman raves about a "once in a lifetime" deal, our shields go up and we become implacably logical, picking apart his exaggerated claims. ("Er, if your resort is so

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We are all pretty good at digging up disconfirming information to respond to a sales pitch. When a time-share salesman raves about a "once in a lifetime" deal, our shields go up and we become implacably logical, picking apart his exaggerated claims. ("Er, if your resort is so popular that I risk losing a unit if I don't buy it right now, then why do you seem so desperate? And why did you have to bribe me to be here?")

The problem comes, of course, when *we sort of want to be sold*. At dinner, the waiter approaches with a dessert tray featuring a chocolate lava cake large enough to have its own ZIP code, and, as your mouth starts to salivate, you ask hopefully, "Is it good?" Not exactly a tough stand.

Sometimes we think we're gathering information when we're actually fishing for support. Take the tradition of calling people's references when you want to hire them. It's an exercise in self-justification: We believe someone is worth hiring, and as a final "check" on ourselves, we decide to gather more information about them from past colleagues. So far, so good. Then *we allow the candidate to tell us whom we should call*, and we dutifully interview those people, who say glowing things about the candidate, and then, absurdly, we feel more confident in our decision to hire the person. (Imagine if we bought a time-share because the salesman had three *awesome* references.)

In some organizations, hiring managers have become smarter about reference calls. Some ask the references for additional people to contact who weren't on the original list. Those secondary interviews will tend to yield more neutral information. Other people have reconsidered the kinds of questions they ask in reference calls. Rather than ask for an *evaluation* of the candidate ("Would you say Steve's performance was closer

("Would you say Steve's performance was closer to 'stunning' or 'breathtaking'? Be honest."), many firms now seek specific factual information. For example, Ray Rothrock, a venture capitalist with Venrock, says that one of the best diagnostic questions he's discovered in assessing entrepreneurs is "How many secretaries has this entrepreneur had in the past few years?" If the answer is five, chances are you've got someone with some issues.

This same strategy of fishing for specific information was endorsed in a brilliant article called "On Being a Happy, Healthy, and Ethical Member of an Unhappy, Unhealthy, and Unethical Profession," published in 1999 by U.S. District Court judge Patrick J. Schiltz. In the piece, Schiltz urges law students to ask tough, disconfirming questions before taking a job with a big corporate law firm:

> Every big firm claims that it is different. Every big firm denies that it is a sweatshop. Every big firm insists that, although its attorneys work hard, they lead balanced lives. This is almost always false. It *has* to be. There is no free lunch.…
>
> Ask tough questions of the lawyers you meet. When you are at a recruiting dinner with a couple of lawyers from the firm, don't just ask them, "So, do you folks have any kind of life outside of work?" They will chuckle, say "sure," and ask if you want more wine. Instead, ask them how many times last week they had dinner with their families. And then ask them what time dinner was served. And then ask them whether they worked after dinner.
>
> Ask them what their favorite television show is or what is the last good movie they saw. If they respond, respectively, *Welcome Back, Kotter* and *Saturday Night Fever*, you

Back, Kotter and *Saturday Night Fever*, you will know something's wrong.… When a lawyer tells you that he gets a lot of interesting assignments, ask for examples. You may be surprised at what passes for "interesting" at the firm. And when a lawyer tells you that associates are happy at the firm, ask for specifics. How many associates were hired five years ago? How many of those associates remain at the firm? Who were the last three associates to leave the firm? What are they doing now? How can you contact them?

Asking tough, disconfirming questions like these can dramatically improve the quality of information we collect, as illustrated in a study titled "There *Is* Such a Thing as a Stupid Question," authored by three Wharton researchers, Julie A. Minson, Nicole E. Ruedy, and Maurice E. Schweitzer.

In the study, participants acted as the seller in a role-played negotiation over an iPod. As sellers, they knew everything about the iPod: It was relatively new, had a spiffy cover, and was filled with an impressive collection of songs. On the other hand, it had frozen up twice in the past, forcing a reset that resulted in all the music being deleted.

The researchers wondered what it would take for the sellers to disclose the freezing problem. The buyers in the negotiation, who were cronies of the researchers, tried three different strategies. When the buyers asked about the iPod, "What can you tell me about it?," only 8% of the sellers disclosed the problem. The question "It doesn't have any problems, does it?" boosted the disclosure to 61%.

The best question to ask, in hopes of discovering the truth, was this one: "What problems does it have?" That prompted 89% of

problems does it have?" That prompted 89% of the sellers to come clean.

The researchers explain that probing questions signal confidence and experience in the asker. The seller knows she isn't likely to pull one over on you. There's a similar signaling effect with Judge Schiltz's questions. A law student is likely to get straight answers to the questions "How many associates were hired five years ago?" and "How many of those associates remain at the firm?"

THIS PRACTICE OF ASKING probing questions is useful when you are trying to pry information from people who have an incentive to spin you: salesmen, recruiters, employees with agendas, and so on. On the other hand, it can backfire in situations where there's a clear power dynamic, as between a doctor and a patient. Here's why: Tough questions work in the iPod situation because they signal confidence and experience in the asker, but when the asker is already the clear "expert," as the doctor is in the doctor/patient situation, then asking aggressive questions will only reinforce the doctor's dominance. That can cause patients to clam up or to follow the doctor's lead too eagerly, even if it isn't the most productive direction.

So, for doctors to gather trustworthy information, they've got to be diligent about asking open-ended questions—much more like the generic iPod question, "What can you tell me about it?" That kind of question was ineffective in the iPod situation, but it works wonders with patients.

The late Dr. Allen Barbour, the chief of the Stanford Diagnostic Clinic at the Stanford University School of Medicine, was a master of open-ended interviewing. In his book *Caring for Patients*, he recalls seeing a patient named Joseph

Patients, he recalls seeing a patient named Joseph H., whose ailment had puzzled other doctors for months.

Joseph, 67, had first come to his regular doctor (not Dr. Barbour) reporting feeling "lightheaded, dizzy." His doctor knew that many diseases might be producing these symptoms, so to diagnose Joseph accurately, the doctor and his colleagues ordered a laundry list of tests: "EKG, EEG, aortic arch and cerebral arteriography, consultations in neurology and ENT with electronystagmography, audiometry, and other special tests." All the tests came back negative.

So the doctor tried a portfolio of pharmaceuticals: Hydergine, vasodilators, the "anti-vertigo" antihistamines, and anticoagulants. Nothing worked. Joseph's ailment was a mystery.

Frustrated, the doctor referred Joseph to Dr. Barbour. In their first meeting, Dr. Barbour asked Joseph to describe in depth what he meant by "feeling dizzy" and how often he felt that way. Joseph responded:

"Doctor, I feel dizzy nearly all the time since my wife died. I don't know what to do with myself. I'm confused. I watch TV, but I'm not interested. I go outside, but there's no place to go."

He looked sad indeed as he told of the emptiness of his life. He had moved to California with his wife after retirement. He had no children, no close friends, no special interests.

Suddenly the real problem became clearer to Dr. Barbour. "Dizzy" was Joseph's way of expressing his confusion. He was a lonely man, overcome with grief, who hadn't yet learned to develop a new life.

Before Dr. Barbour, none of Joseph's doctors had thought to ask him what he meant by "feeling

had thought to ask him what he meant by "feeling dizzy." They had never considered that the cause might be emotional rather than physical.

Dr. Barbour argues that doctors are trained to be expert disease detectors, taught to diagnose patients based on fragments of information: a fever, an odd pain, a spell of disorientation. But this disease hunt can backfire, tempting them to lock on to a possible diagnosis prematurely. Dr. Barbour shared the transcript of an interview that illustrates this:

RESIDENT: What's troubling you?

PATIENT: I have this pain in my stomach (indicating with his hands the entire abdomen).

RESIDENT: Where is it?

PATIENT: Pretty much all over.

RESIDENT: Is it here (pointing to the patient's epigastrium)?

PATIENT: Yes, I feel pain there.

RESIDENT: When do you get it?

PATIENT: A lot of the time.

RESIDENT: Before meals?

PATIENT: Yes, before meals, but I get it any old time.

Barbour pointed out how quickly the doctor takes over the interview—and how he prematurely localizes the patient's complaint by asking, "Is it here?" (If the pain is "pretty much all over," then, yes, it's probably in that spot but also many others.) Meanwhile, the patient has been trained not to volunteer information. After a very brief exchange, the doctor develops a tentative diagnosis of peptic ulcer disease and orders the related tests. The tests prove him wrong.

Barbour's assessment of this interview was damning: "Though [the resident] regards himself as objective and scientific, he manipulates the data to fit his concept of disease, but is not aware that he does so. He does not discover a pattern; he generates one."

Unfortunately, the speed with which the doctor took over the interview in the case above may not be unusual. One study of patient interviews revealed that it took only 18 seconds, on average, for a doctor to interrupt a patient.

Barbour recommends a process that is better equipped to dodge the confirmation bias. When the doctor starts asking questions, she should start broad and open-ended: "What was the pain like? How did you feel?" Then she can move slowly and cautiously toward more directed questions: "Was it sharp or dull?" "Were you sad?" In this way, the doctor can avoid unwittingly biasing the interview.†

How do you know whether to ask probing questions or open-ended ones? A good rule of thumb is to ask yourself, "What's the most likely way I could fail to get the right information in this situation?" Generally, it will be obvious what the answer is: If you're buying a used car, you're most likely to fail by not discovering a flaw of the vehicle, or if you're a vice president seeking feedback from factory workers, you're most likely to fail by not uncovering what they really

—more aggressive in the used-car negotiations and more open-ended with the factory worker.

3.

When we want something to be true, we gather information that supports our desire. But the confirmation bias doesn't just affect what information people go looking for; it even affects what they notice in the first place. Think of a couple in a troubled marriage: If one partner has labeled the other's shortcoming—for instance, being "selfish"—then that label can become self-reinforcing. The selfish acts become easier to spot, while the generous acts go unnoticed.

In situations like this, the therapist Aaron T. Beck, the founder of cognitive behavioral therapy, advises that couples consciously fight the tendency to notice only what's wrong. To avoid that trap, he advises couples to keep "marriage diaries," chronicling the things their mates do that *please* them.

In his book *Love Is Never Enough*, he describes a couple, Karen and Ted, who kept such a diary. One week, Karen noted several things that she appreciated about Ted: *He sympathized with me about some bad behavior by one of my clients. He pitched in to help clean up the house. He kept me company while I was doing laundry. He suggested we go for a walk, which I enjoyed.*

Beck said, "Although Ted had done similar things for Karen in the past, they had been erased from her memory because of her negative view of Ted." The same effect held true for Ted's memory of the nice things Karen had done.

Beck cites a research study by Mark Kane

Beck cites a research study by Mark Kane Goldstein, who found that 70% of couples who kept this kind of marriage diary reported an improvement in their relationship. "All that had changed was their *awareness* of what was going on," Beck wrote. "Before keeping track, they had underestimated the pleasures of their marriage."

As in the marriage situation, our relationships at work are sometimes corrupted by negative assumptions that snowball over time. A colleague speaks out against our idea in a meeting, and we think, *He's trying to show off in front of the boss.* If this happens another time or two, we might conclude he's a "brown-noser," a label that will become self-sustaining, as in the marriage situation.

To interrupt this cycle, some organizational leaders urge their employees to "assume positive intent," that is, to imagine that the behavior or words of your colleagues are motivated by good intentions, even when their actions seem objectionable at first glance. This "filter" can be extremely powerful. Indra Nooyi, the chairman and CEO of PepsiCo, cited it to *Fortune* as the best advice she ever received. (She learned it from her father.)

She said, "When you assume negative intent, you're angry. If you take away that anger and assume positive intent, you will be amazed.… You don't get defensive. You don't scream. You are trying to understand and listen because at your basic core you are saying, 'Maybe they are saying something to me that I'm not hearing.' "

A blogger named Rochelle Arnold-Simmons uses the "assume positive intent" principle with her husband: "When your husband does something and you immediately go to a negative place, ask yourself, 'What are other possibilities that may be more positive than what you are thinking?' Assume he is trying to help, assume he does not need to be reminded, assume it is not his

does not need to be reminded, assume it is not his fault. I try to always ask the question, 'What's another possibility?' "

Pittsburgh-area Industrial Scientific had to give its employees a crash course in assuming positive intent when it added a French subsidiary to its existing operations in the United States and China. The cultural differences played themselves out in many subtle ways. For example, French employees were very chatty in e-mails, while the Chinese were direct. Each saw the others' e-mails as a little disrespectful. Chairman Kent McElhattan said in an interview that his employees need to be reminded, about their colleagues, that "they are interested in the same things you are. Assume that."

ASSUMING POSITIVE INTENT AND keeping a marriage diary are two examples of what psychologists call "considering the opposite." *I think my spouse is selfish—but perhaps I should keep track of situations where he's looking out for me. I think my colleague is being rude and abrupt—but what if he's not being abrupt and is just trying to respect my time? (Oops, and what if he thinks I'm disrespecting his time when I try to chat?)* This simple technique of considering the opposite has been shown, across multiple studies, to reduce many otherwise thorny cognitive biases. (See endnotes for more.)

The ultimate form of "considering the opposite" might be what Paul Schoemaker did when he convened his colleagues at DSI—Decision Strategies International, the management consulting firm he'd founded—to discuss an important matter of business. He wanted them to make a mistake.

Schoemaker, a decision researcher and consultant, was dead serious. He wanted his colleagues to help him plan and execute a deliberate mistake as a way of testing their

consultant, was dead serious. He wanted his colleagues to help him plan and execute a deliberate mistake, as a way of testing their assumptions about DSI's business.

"Everyone at our firm was willing to believe that some of our beliefs were flawed and we should subject them to a test," Schoemaker said, "but as soon as we got concrete about it, people kind of thought it was not very wise or even silly. So as a leader I stepped in and said, 'I'll take the blame for it.' After all, leaders always say, 'I learned the most from my mistakes.' Well, why leave the mistakes to serendipity? Why not take some control of the process and make mistakes that you're most likely to learn from?"

As he describes in his book, *Brilliant Mistakes*, his team started by listing some of the key assumptions underlying their efforts, an exercise that surfaced the "conventional wisdom" that, in most organizations, is never articulated or questioned.

After they'd identified ten key assumptions, they whittled the list down to three—those they were least confident about and that, if proven wrong, had the highest potential payoff for the business:

1. Young MBAs don't work well for us. We need experienced consultants on the team.
2. The firm can be successfully run by a president who is not a major-billing senior consultant.
3. It is not worthwhile to respond to RFPs. Clients who use RFPs are usually price shopping or are going through the motions to justify a choice they have already made. [RFPs are requests for proposals. Customers send out RFPs to attract vendors to bid on their business.]

A further round of assessment led them to

A further round of assessment led them to select number 3 as "having the highest potential of benefiting from a strategy of deliberate mistakes." Now they were ready to make their mistake.

The firm's policy had been never to respond to an RFP, but they resolved to respond to the next one that came over the transom, which, as it happened, came from a regional electric utility. The DSI team submitted a proposal with a budget of about $200,000, a price that reflected their normal fees but that they suspected would be well out of the client's league. Schoemaker said, "To our surprise, the electric utility invited our firm to visit with the CEO and the senior management team to explore not only the project in question but others as well."

DSI would eventually land over $1 million in consulting business from the utility. "Not a bad return for making a small mistake," said Schoemaker.

WHY COULDN'T YOU RUN Schoemaker's game plan in your organization? Could you create a "Mistake of the Year" program? To be clear, you shouldn't do it expecting a million-dollar surprise to pop out. Most of your "deliberate mistakes" will fail, and in fact that failure should be encouraging, because it means you've been making the right assumptions all along. Beyond the mistake itself, the willingness to test your assumptions has its own value. It signals to your colleagues that your work will be conducted based on evidence, not folklore or politics.

That cultural reinforcement is precious, because it helps to correct for our natural inclination to avoid this work. Reality-Testing Our Assumptions is difficult. We'll rarely do it instinctively. That's the whole point of the confirmation bias—deep down, we never really

confirmation bias—deep down, we never really want to hear the negative information. (When's the last time you earnestly "considered the opposite" of one of your political views?) That's why we are advocating so strongly in this book for the use of a process, something that becomes habitual. Otherwise it will be too easy to discard this advice in the heat of the moment.

If you are an overachiever—and single—you might even consider applying this "consider the opposite" principle to your dating life. One research team, interested in why some people find someone to marry and others don't, interviewed women who were exiting the office where they'd just received their marriage license. To their surprise, 20% of the women reported *not liking* their spouse-to-be when they first met. (This also implies that there are millions of other people who *met their future spouse and then walked away* because their gut instinct led them to abandon the interaction too early.)

The researcher who led that study, John T. Molloy, reported that some of the single women on his research team were surprised and intrigued by this result. Almost all of them could think of men whose interest they'd rejected—and some of these men were continuing to express their interest (in acceptable, non-stalkerish ways). Now the women wondered if these men might be overlooked potential mates. So they decided to try their own version of a "deliberate mistake" strategy, accepting a date with a guy they'd turned down multiple times in the past.

Molloy said that "most women decided they were right the first time." But one of his team members liked the first date enough to go on a second, and a third, and a fourth. She ended up marrying the guy! (*By the power vested in me, I now pronounce you Mistake and Wife*.) And not only did she find a spouse, but she also scored an inspiring victory over the confirmation bias.

SO FAR, WE'VE REVIEWED three approaches for fighting the confirmation bias: One, we can make it easier for people to disagree with us. Two, we can ask questions that are more likely to surface contrary information. Three, we can check ourselves by considering the opposite.

There's a different strategy for helping people Reality-Test Their Assumptions that involves knowing where to go looking for the right information: If your boyfriend is considering the hot new "Caveman Diet," how should he assess it? If your boss wants to cut the amount of inventory you hold, how would you determine whether that's a good idea?

The answer will force us to embrace a certain cosmic humility. From the perspective of our brains, we are unique. Our challenges and opportunities feel particular to us. From the perspective of the universe, though, we are utterly typical. And as we'll see in the next chapter, when our predictions and opinions clash with the universe's averages, the universe usually wins.

CHAPTER FIVE IN ONE PAGE
Consider the Opposite

1. Confirmation bias = hunting for information that confirms our initial assumptions (which are often self-serving).
   - *The hubris of CEOs can be counteracted by disagreement. We need the same disagreement to counteract our confirmation bias.*

2. We need to spark constructive disagreement within our organizations.
   - *The devil's advocate, murder boards, and* The Gong Show *all license skepticism. How can we?*
   - *Roger Martin's brilliant question: "What would have to be true for this option to be*

the very best choice?"

3. To gather more trustworthy information, we can ask disconfirming questions.
   - *Law students: "Who were the last three associates to leave the firm? What are they doing now? How can I contact them?"*
   - *iPod buyers: "What problems does the iPod have?"*

4. Caution: Probing questions can backfire in situations with a power dynamic.
   - *Doctors are wiser to use open-ended questions. "What do you mean by 'dizzy'?"*

5. Extreme disconfirmation: Can we force ourselves to *consider the opposite* of our instincts?
   - *A marriage diary helps a frustrated spouse see that his/her partner isn't always selfish.*
   - *"Assuming positive intent" spurs us to interpret someone's actions/words in a more positive light.*

6. We can even test our assumptions with a deliberate mistake.
   - *Schoemaker's firm won $1 million in business by experimenting with the RFP process.*
   - *One woman actually married her "mistake."*

7. Because we naturally seek self-confirming information, we need discipline to consider the opposite.

The photos on the Web site of Myrtle Beach's Polynesian Resort depict a beach paradise, a landscape of golden sand and palm trees and colorful umbrellas. People recline on lounge chairs; a catamaran sails in the distance. It looks like just the kind of place you might want to take your family on a summer vacation.

By the time you're reading this, it might indeed be a lovely place. But in 2011, when we saw the Web site, the Polynesian Resort had a nasty secret —it had been named by TripAdvisor, a travel advice Web site, as one of 2011's Top 10 Dirtiest Hotels in the United States.

Many of the hotel's past guests have shared their opinions of the experience on TripAdvisor; their commentaries are often scathing and hilarious:

Terri B (7/24/12): We checked in on July 21st and left in 10 minutes. I cannot put into words the horror.

Fetters26 (6/7/2011): My dog was at a kennel and his accommodations were much cleaner and more plush than the Polynesian!

Jackie503 (6/30/2011): The floors have not been mopped or vacuumed since Moses

parted the Red Sea. The beds were old and the sheets were itchy …

4q2 (1/27/11): Many reviews compared this property to a dump. That just isn't fair to the dumps of the world.

Thanks to sites like TripAdvisor, it's easier for us to avoid making a hotel choice we'll regret. We can ignore the glossy pictures and simply look at the reviews. In the case of the Polynesian Resort, 67% of the reviews rated the experience as "Terrible," compared with a mere 4% who said "Excellent." (One of those "Excellent" reviews cites the place as perfect for a debaucherous spring break, if you don't mind the "filthy rooms.")

Many people have come to take this kind of review shopping for granted. We hunt routinely for the rating of a book on Amazon or a restaurant on Yelp or a digital camera on CNET. It's an obvious thing to do, right? But this "obvious" behavior shows wisdom. Because when we make decisions based on reviews, we are acknowledging two things: (1) Our ability to glean the truth about a product is limited and subject to distortion by the company that makes it; and (2) For that reason, we are smarter to trust the averages over our own impressions.

Often in life, though, we do the opposite: We trust our impressions over the averages. For example, many people will accept a new job without consulting a sample of people who currently or formerly held the same title. Shouldn't their "reviews" be as valuable as a stranger's assessment of a hotel room or restaurant?

Strange to think that when we make critical decisions, we do less objective research than when we're picking a sushi joint.

when we're picking a sushi joint.

Psychologists distinguish between the "inside view" and "outside view" of a situation. The inside view draws from information that is in our spotlight as we consider a decision—our own impressions and assessments of the situation we're in. The outside view, by contrast, ignores the particulars and instead analyzes the larger class it's part of. So in deciding whether to book a reservation at the Polynesian Resort, the inside view relies on our own assessment: *Does this look like the kind of place where I would enjoy staying?* The outside view trusts the TripAdvisor reviews: *How much did people, in general, enjoy staying there?*

The outside view is more accurate—it's a summary of real-world experiences, rather than a single person's impressions—yet we'll be drawn to the inside view. To see why, imagine a restauranteur, Jack, who is deciding whether to take out a loan to start a Thai restaurant in downtown Austin. What's in the spotlight, for him, will be all the factors going for him: *I'm a wonderful Thai cook. The location on 4th Street would be perfect. The foot traffic in that area is huge. There's no other Thai restaurant close by.* From the inside view, the opportunity looks pretty good.

By contrast, the outside view does not treat Jack's situation as unique. It looks for the averages: Are there other people who've faced a similar situation, and if so, how did they fare? This involves looking for, in statistics terminology, some "base rates" on the situation—data showing the record of other people in similar circumstances. Jack might learn, for instance, that 60% of restaurants fail in their first three years. From the outside view, the restaurant looks pretty risky.

Yet notice how different this feels from the TripAdvisor situation. It is *intuitive* for us to

Yet notice how different this feels from the TripAdvisor situation. It is *intuitive* for us to accept that we're likely to have a bad experience at the Polynesian Resort, but it's not intuitive for Jack to accept that he's likely to fail. Why?

The outside view ignores everything that is special about our situation. All entrepreneurs have reason to believe, at the beginning, that they will succeed. Jack, for instance, would surely scoff at the base-rates data, saying, "I know Thai food, and I know Austin, and I know this will work. You can't lump me in with a guy who sells corn dogs at the mall." But he'd be wrong. There are enough commonalities among restaurants that their experiences are likely to be more similar than different. He should trust the base rates on restaurant success almost as much as he trusts the base rates on staying at the Polynesian Resort.*

Mind you, for Jack to take the outside view—and accept those bleak odds of restaurant success—does not demand that he give up on the idea. It may be that a successful restaurant would be so lucrative that the risk is worth taking. Or he may consider the restaurant a good investment in his career, even if it fails. The outside view doesn't require defeatism, but it does require respect for the likely outcomes. Put it this way: If he bets his kids' college money on the venture, he's nuts.

Your friends and colleagues will suffer from this same stubbornness: the tendency to trust their own impressions too much. They'll be trapped in the inside view, but you'll have an easier time seeing the outside view. Be forewarned, though: Sometimes people can have access to the perfect set of data—and still manage to ignore it.

This was something Daniel Kahneman, the Nobel Prize–winning psychologist, experienced himself early in his career. He and his colleagues were exploring the idea of writing a high-school textbook on the subject of judgment and decision making. They would be the first to develop

making. They would be the first to develop curricula on those subjects, so they roped in the dean of the School of Education, who was a curriculum expert, to work with them. The team began to write some sample chapters, and they met every Friday to review their progress. One Friday, they were discussing research about how groups think about the future, and it occurred to Kahneman that they should take their own advice. He said, "Let's see how we think about the future."

He asked his colleagues to write down the date when they thought the textbook would be completed. The range of estimates was quite narrow—everyone's projections, including Kahneman's and the dean's, ranged from 1.5 to 2.5 years into the future. Then Kahneman suddenly recalled the idea of base rates from his statistics training, so he asked the dean whether he could recall other groups similar to theirs that had written a new curriculum from scratch. The dean said, yes, he could remember quite a few of them. Kahneman asked him to quantify the base rate: *How long did it take them to finish?*

After some back-and-forth, two disturbing facts had surfaced. One: According to the dean, 40% of the groups never finished writing the curriculum. Two: Of the groups that did finish, all of them took seven to ten years. Then Kahneman asked the dean, "How does our group compare to the others?" (Note that he's trying to see whether there's any reason to adjust their prediction up or down from the base rate, based on the group's skill.) The dean replied, "Below average, but not by much."

The curriculum took eight years to write.

LIKE JACK THE RESTAURANTEUR, Kahneman and his colleagues were optimistic when they took the inside view. The puzzle here is the dean's behavior. He *knew* the base rates for

Kahneman and his colleagues were optimistic when they took the inside view. The puzzle here is the dean's behavior. He *knew* the base rates for developing a new curriculum, but his spotlight stayed trained on the group's unique circumstances. From the inside view, it looked like they could wrap it up in two years. "There was no contact between something he knew and something he said.… He had all the information necessary to conclude that the prediction he was writing down was ridiculous," said Kahneman.

This brings us to a critical point about experts. Perhaps the simplest and most intuitive advice we can offer in this chapter is that when you're trying to gather good information and reality-test your ideas, go talk to an expert. If you're considering filing an intellectual-property lawsuit against a competitor, talk to a top IP lawyer.

An expert doesn't have to be a heavily credentialed authority, though. The bar is actually far lower than that: An expert is simply someone who has more experience than you. If your son wants to be a carpenter, go talk to a carpenter. Any carpenter. If you're thinking about relocating your business to South Carolina, call up someone, anyone, who has relocated their business to South Carolina.

Here's what is less intuitive: Be careful what you ask them. As we'll see in the next chapter, experts are pretty bad at predictions. But they are great at assessing base rates.

As an example, imagine that you are indeed consulting an IP lawyer about a potential patent-infringement suit. The right kinds of questions to ask him are "What are the important variables in a case like this?," "What kind of evidence can tip the verdict one way or the other?," "In percentage terms, how many cases get settled before trial?," and "Of those that go to trial, what are the odds that the plaintiff prevails?" If you ask questions like that—questions about past cases and legal

like that—questions about past cases and legal norms—you will get a wealth of trustworthy information.

On the other hand, if you ask a predictive question—"Do you think I can win this case?"—it will trigger the lawyer to slip into the inside view. Like the curriculum-writing dean, your lawyer will tend to be too optimistic about the chances of success.

We don't want to overstate the case here—a good IP lawyer will surely know the difference between a slam-dunk case and a long shot. The point is that the *predictions* of even a world-class expert need to be discounted in a way that their *knowledge of base rates* does not. In short, when you need trustworthy information, go find an expert—someone more experienced than you. Just keep them talking about the past and the present, not the future.

2.

What we've seen so far is a very simple rule for analyzing your options: Take the outside view. You should distrust the inside view—those glossy pictures in your head—and instead get out of your head and consult the base rates. Sometimes those numbers are readily available, as on TripAdvisor or Yelp. Sometimes you might have to cobble them together yourself. If neither of those options is possible, try consulting an expert for their estimates of the base rates.

In our experience, people fall into two camps about the outside view. Some people buy into the idea immediately, but others feel a bit dissatisfied. Should we really be willing to trust a set of data over our own antennae? Isn't that dehumanizing somehow? Overly analytical?

somehow? Overly analytical?

The advice to trust the numbers isn't motivated by geekery; it's motivated by humility. We can't lose sight of what the numbers represent: A lot of people like us—people full of passion for their opportunities—spent their time trying something very similar to what we're contemplating. To ignore their experience isn't brave and romantic—"I'm not going to let some *analysis* stand in the way of doing what I believe." Rather, it's egotistical. It's saying, *We set ourselves apart from everyone else. We're different. We're better.*

The humble approach is to ask, "What can I reasonably expect to happen if I make this choice?" Once we accept the answer—and trust it to make our decision—*then* we can turn our attention to fighting the odds. That, in essence, is the story of Brian Zikmund-Fisher, who as a young man was forced to make a life-or-death choice.

In early 1998, Zikmund-Fisher, a 28-year-old graduate student in the Social and Decision Sciences group at Carnegie Mellon University in Pittsburgh, was playing racquetball with a friend. At one point, he made an overeager swing of the racket and hit himself in the left arm.

An hour later, he had a bruise that started at his shoulder and ended at his wrist.

Brian was disturbed but not shocked. He had a history of blood problems that had begun 13 years earlier, when he was a junior in high school. At the time, he was traveling with his mother, visiting universities, when he got an urgent message from his doctor, whom he'd seen recently for a checkup. Brian called him back, and the doctor sounded tense.

"Are you okay?" said the doctor.

"Yes, why?" said Brian.

"We'd like you to retake your blood test when you can. As soon as possible," said the doctor.

The second test confirmed what had spooked

The second test confirmed what had spooked the doctor: Brian's blood platelet count was 45, a disturbingly low number. (To be more accurate, that's 45 × 10 per liter. Platelets play an important role in clotting, and the platelet count is also a good diagnostic for the health of a person's blood supply and immune system.) Normal counts are between 150 and 450. By way of comparison, patients aren't allowed to undergo surgery when they're below 50, and at about 10, there's a risk of spontaneous bleeding and hemorrhaging.

After some treatment, Brian's count climbed back up to 110. His doctors warned him that he'd need to be checked at least every six months for the rest of his life.

Until the racquetball game, it had been years since he'd had a problem. But when the bruise took over his arm, Brian knew what was happening. He went to the doctor and, as he suspected, his platelet count was shockingly low—19, in fact.

The doctors, after further testing, diagnosed Brian with a life-threatening disease called myelodysplastic syndrome (MDS). The hallmark of MDS is that a person's bone marrow stops producing blood cells effectively. Brian's doctors told him that eventually, not even the platelet transfusions he was receiving (every eight days) would be enough to keep him from bleeding to death.

Brian said, "The message was that I didn't have to do anything immediately. But I did not have 10 years; I had maybe 5."

The only potential cure for MDS was a complete bone-marrow transplant, a complex and dangerous procedure. The treatment typically begins with radiation and chemotherapy, a combination that demolishes the patient's immune system.

The goal is for the patient to start over with a completely new immune system transplanted

completely new immune system, transplanted from a donor who is a good genetic match. Unfortunately, there is no guarantee that the patient's body will accept the transplant, and in Brian's case, finding a compatible donor would be tricky. The best matches for bone marrow come from siblings, and Brian was an only child.

During the year or more that it takes the transplant to take hold, the patient operates without a well-running immune system, so *any* infection—even a basic cold—can be life threatening.

The transplant, then, was a cure fraught with peril. The doctors told Brian that, if he chose to get a transplant, he had a one in four chance of not surviving the year. If he did survive, though, he would likely enjoy a long life.

He faced a brutal choice: Refuse the transplant and live another five or six years of relatively normal life, until the inevitable collapse. Or endure a devastating procedure that could cure him for good—or leave him dead within a year.

What made the choice harder still was that Brian's wife was six months pregnant with their first child.

BRIAN WAS DESPERATE FOR information that could help him make the decision, but it wasn't always clear how to interpret what he found. He could locate relevant journal articles and books online, but he wondered whether the base rates in the study were relevant to him. "Most people with my diagnosis are much older than me. So I looked through the studies—the population is 60-year-olds and I'm 28. I'm like, 'Okay, is this going to apply to me? Is this not going to apply to me? How do I know?' "

For answers, he turned to a friend who was a hematologist. She advised him that he should take the average outcomes in the journals seriously, but since his youth and vigor would help him

but since his youth and vigor would help him survive the procedure, his odds were probably a little better than the averages. She also highlighted another variable that was critical: the experience of the hospital doing the procedure. In picking an institution, she counseled, don't just seek out a well-known hospital like the Mayo Clinic; look for a place that specializes in bone-marrow transplants, such as the Fred Hutchinson Cancer Research Center in Seattle or the MD Anderson Cancer Center in Houston. He should trust his health to a hospital doing 300 transplants per year rather than 30.

Brian wanted to understand, too, what kinds of complications the transplant would entail. To his frustration, he found that when he asked about the risks of various side effects, doctors gave vague answers. He wanted hard numbers, but they were reluctant. "To overcome the reluctance of doctors to give estimates, I've taken to asking questions that may sound almost ridiculous.… 'Are we talking about a 50% chance? A 5% chance? A five-in-a-thousand chance? A five-in-a-million chance?' And you make it obvious that you're not asking for them to be precise. It just puts them at ease."

Brian and his wife, Naomi, sought out contact with other transplant patients and their families, so they could learn how they'd coped with the process. "We didn't have fancy online communities back then," said Brian. "We had a Listserv, an e-mail distribution list. We started following the list and tracking particular people.… They would talk about all kinds of medical topics, like dealing with chemotherapy nausea, but some of the most useful topics for us had nothing to do with medicine.…

"One of our big questions up front was, How much will Naomi have to be with me? And with a one-year-old, how do we arrange that? It became very clear that we needed to have a third adult, in

very clear that we needed to have a third adult, in the same place, to manage the child care. There would be times when Naomi would need to be with me to ask the questions I was mentally or physically unable to ask, and those moments might arise unexpectedly, and they might be at feeding or nap time. She couldn't ask the right questions and hear the answers if she's watching a one-year-old."

After hearing about the need for a "third adult," Brian's parents offered to relocate with Brian and Naomi if they decided to have the procedure done outside Pittsburgh. That allowed them to consider the high-volume transplant centers in other parts of the country.

Naomi and Brian's parents were strongly in favor of the transplant, and he was leaning that way as well, but he didn't find the decision as easy as they did. One night, he talked to Naomi and shared his fear that, if he didn't survive the transplant, his daughter would not have any memories of him. If he avoided the transplant, at least he'd have the luxury of a few years with her. When he was gone, she'd remember him.

Naomi acknowledged that this was true but said gently, "What she'll remember about you is that her daddy was always in the hospital getting transfusions and lying in hospital beds. That will be the memory that she has of you."

"I remember that moment," said Brian. "I thought, 'Damn, she's right.' And I knew."

HE MADE THE DECISION to have the transplant done under the care of the Fred Hutchinson Cancer Research Center, one of the centers most experienced with the procedure. That choice required him and Naomi to relocate from Pittsburgh to Seattle along with their new baby, Eve. His parents also joined them in Seattle, as they'd promised, to provide support for the

as they'd promised, to provide support for the weeks around the procedure.

Meanwhile, Brian had embarked on a self-imposed training regimen. After hearing on the Listservs how difficult the recovery was, even for young people, Brian was determined to stack the odds as far in his favor as he could. "I realized, *I need to train for this*," said Brian. "I intentionally tried to do more exercise to get into the best possible physical shape before the transplant."

After 40 potential marrow matches that didn't pan out, doctors finally located a promising genetic match, and Brian was approved for a transplant.

The process began with six days of intensive chemotherapy. "They hit your body hard and fast," said Brian. His old defective bone marrow was destroyed, and his body was ready to start over with the transplant. The transplant procedure itself was a bit of an anticlimax. "You sit there and they drip your new blood cells into your body through an IV drip," he said.

In the anxious 30 days following the transplant, Brian couldn't leave the hospital. His daughter, Eve, had her first birthday during this period. They have pictures of her eating birthday cake on Brian's hospital bed.

The recovery process proved as challenging as he had anticipated. Knowing that exercise was critical to ward off complications, he pushed himself to fight his nausea and fatigue and keep moving by doing laps around the hospital ward. "I don't think I would have kept going without having heard other people's experiences and knowing in advance how difficult it would be," he said.

After a month in the hospital and two more months recovering nearby in Seattle, he returned home to Pittsburgh. It was 18 months before he could work consistently, because the fatigue and nausea were so intense and unpredictable. But he

nausea were so intense and unpredictable. But he was steadily recovering.

He was one of the lucky ones. Of the six people he'd grown close to at the transplant center, three died before the end of the first year.

Thirteen years after his transplant, Brian is thriving. He is now a professor at the School of Public Health at the University of Michigan and has become known among his colleagues for his research on medical decision making and among his students for his patient-centered lectures.

He recently helped his daughter Eve, now 14, make a tough decision about which high school she'd attend.

BRIAN WAS A SICK patient facing one of the hardest choices imaginable: the guarantee of a short life or the chance at a longer one. As a decision-making expert, he was also a man determined to use every scrap of his expertise to make that choice. And if you replay the story, what you'll notice is that he was constantly taking the outside view and pushing for base rates.

After reading the journal articles, he wondered which base rate he should be consulting: Was the evidence derived from older patients applicable to him? So he talked to an expert, the hematologist, who told him to take the odds of success seriously but to adjust them upward a little because of his youth and health. She also suggested a different base rate to consult: the success rates of different hospitals, which hinged on the volume of transplants they performed. (He didn't ask the expert to predict *what would happen in his case*. Experts are great with base rates and mediocre at predictions.)

Concerned about side effects, he pumped doctors for base-rate information: *Are we talking about a 50% chance? Or a 5% chance? Or a five-in-a-million chance?*

Notice, however, that knowing the base rates did not make the choice easy for Brian. He agonized about it for months, and it actually took a moment of intense emotion—his wife's comment about how his daughter would remember him—to clinch his decision. This foreshadows what we'll encounter in the next section, which is that the right kind of emotion can be exactly what we need to make a wise choice.

There's one aspect of Brian's decision-making process, though, that looks nothing like base-rate thinking: He sought out the stories of other transplant patients, eager to learn from their experiences. What he learned led to a few choices that almost certainly increased his odds of success, including his self-imposed exercise regimen and the decision of his parents to accompany him to Seattle.

These insights didn't arise from asking doctors about base rates. Nor did they come from a flawed "inside view" approach—he was not simply trusting his own impressions; he was diligently gathering evidence. What, exactly, was his strategy?

Brian wanted more textured information, more color. He wanted to see, with his own eyes, what life was like for these patients. And that's what we'll see next: In assessing our options, the best complement to the big picture is often a close-up.

This mixture of the big-picture view and the close-up was the signature strategy of President Franklin D. Roosevelt, whom historians consider a master of information collection. FDR's family physician, asked to describe the president, said, "He loved to know everything that was going on and delighted to have a finger in every pie."

Like all presidents, FDR was concerned about the quality of information that reached him, worried that it would be polluted by the agendas of the people passing it along. Hungry for trustworthy data, FDR became the first president to make heavy use of polling to keep tabs on public opinion.

He was also aggressive about developing sources of "ground truth," cultivating a network of sources outside the federal government, such as businessmen, academics, friends, and relatives. They served as his eyes and ears outside of the bureaucracy. "Go and see what's happening," he told one. "See the end product of what we are doing. Talk to people; get the wind in your nose."

He had an able collaborator in the First Lady, Eleanor Roosevelt, who would often visit projects unannounced so she could avoid "stage-managed" situations. Once on-site, she'd interview the directors and staff and compile detailed reports for FDR. "As the years went by I became a better and better reporter and a better and better observer," she said, "largely owing to the fact that Franklin's questions covered such a wide range. I found myself obliged to notice everything."

FDR was known for cultivating relationships with lower-level staffers, bypassing his own department heads, which made them furious. In his memoirs, FDR's secretary of the interior, Harold Ickes, complained indignantly about the president's penchant for calling on members of Ickes's staff without consulting him first. During the lead-up to World War II, Roosevelt consistently circumvented Secretary of State

consistently circumvented Secretary of State Cordell Hull, developing a close relationship with his undersecretary Sumner Welles and even hiring his own personal liaison to Winston Churchill, so that he didn't have to rely exclusively on Secretary Hull's reports.

One of the White House staffers reflected on Roosevelt's mastery of the flow of information: "He would call you in and he'd ask you to get the story on some complicated business, and you'd come back after a couple of days of hard labor and present the juicy morsel you'd uncovered under a stone somewhere, only to find out he knew all about it, along with something else you didn't know.… After he had done this to you once or twice, you got damn careful about your information."

Much more than prior presidents, Roosevelt used the mail as a strategic source of information. In his fireside chats, he encouraged Americans to send him their views, and they responded: The White House averaged 5,000 to 8,000 pieces of mail per day. If the volume of mail dipped, he groused to his advisers about it. Roosevelt insisted that the mail be analyzed scientifically; he had it sorted by category and by stance, and these statistical breakdowns were delivered to him as "mail briefs." These briefs provided ready-made base rates on the public's point of view.

FDR went a step further; he pushed beyond the base rates and reviewed a sample of the actual letters. What the letters added was texture. It's one thing to know, in statistical terms, how people feel about an issue. But what's their temperature? Are they concerned, or irritated, or angry, or violently incensed? The numbers can conceal the nuance.

This is why we need to add the "close-up" to our tool kit. Base rates are good at establishing norms: *Here are the outcomes we can expect if we make this decision*. Close-ups, though, create

SOME ORGANIZATIONAL LEADERS HAVE caught on to the wisdom of this close-up approach. One of them was Anne Mulcahy, who as CEO of Xerox orchestrated one of the most dramatic turnarounds in recent business history. When she took the reins in 2001, the company was $19 billion in debt and had almost no cash in the bank. Its stock price had dropped by 90% the year before. On the day Mulcahy was named CEO—as a 45-year-old, little-known executive—investors welcomed her with an additional 15% plunge in the share price. Six years later, Mulcahy had cut the debt in half and made the stock four times more valuable.

One of the many challenges Mulcahy faced was that her executive team had lost touch with the company's most important customers. In response, she created a program called Focus 500, which was designed to provide a close-up view of Xerox's customers and their challenges. In the program, Xerox's top 500 clients were each matched with a top executive. Every senior executive—including the chief accountant and the general counsel—was responsible for working with at least one customer.

In addition, Mulcahy announced that executives, on a rotating basis, would have to serve as the customer officer of the day. The customer officer would have to deal with every customer complaint that came into corporate headquarters that day. Mulcahy said, "It keeps us in touch with the real world. It grounds us. It permeates all of our decision making."

This program created perhaps the world's most expensive customer-support department. But it also helped a group of top executives reconnect with the customers who were the lifeblood of the company.

Another variety of close-up involves going to the *genba*, a Japanese term meaning "the real

Another variety of close-up involves going to the *genba*, a Japanese term meaning "the real place" or, more loosely, the place where the action happens. Japanese detectives, for instance, call the crime scene the *genba*. In a manufacturing firm, the *genba* would be the factory floor, and for a retailing company it would be the store. Practitioners of Total Quality Management encourage leaders to "go to the *genba*" to understand problems. If a problem occurs on a factory floor, for example, engineers should go see it firsthand, assessing the situation and talking directly to the people involved. The best ideas, it's believed, come from this kind of close-up sensory investigation of the situation; how can you improve something you don't fully understand?

So engineers diagnosing problems in a factory find it useful to have a close-up view of the relevant process, and Mulcahy found it useful to give her leadership teams a close-up view of how Xerox was treating its customers. A consumer research director at Procter & Gamble (P&G) named Paul Smith used a similar technique to give his colleagues a close-up view of their competitors.

For consumer products, such as paper towels or dishwashing soap or toothpaste, the competition is fierce, dominated by several multinational companies that wrestle one another for market share. The competitors understand one another's products mind-bogglingly well at a technical level. In the labs at P&G, for instance, here are some of the scientific tests that paper towels are subjected to:

- *The Caliper Test:* A micrometer presses down on a single sheet to a set pressure and measures its thickness in thousandths of an inch. (thicker = better)
- *Rate of Absorbency Test:* Allow the center of

By conducting these tests in the lab—or, as we call it, the paper-towel torture chamber—the scientists can pinpoint the strengths and weaknesses of competitors' products.

The precision of these numbers, though, can cloud a real understanding of the products. What do you really understand about your competitor's paper towel when you know its tensile strength? So Paul Smith decided to arrange a close-up for his colleagues. He began stocking the competitors' products in their office: paper towels, toilet paper, and facial tissue.

"We collect consumer reactions from thousands of consumers a year, but I wanted the people in my building to have a personal, visceral understanding of how good (or bad) our competitors' products were," Smith said. "The typical marketer thinks, 'I've been working here for three years and I think my product is the best thing since sliced bread.' Well, of course you do, because it's your product. But if you actually try your competitors' products yourself, it gives you a different kind of understanding."

Initially, the presence of the competitors' products was greeted with all the enthusiasm of Whoppers being served at a McDonald's company picnic. The competitive chest puffing eventually yielded to another reaction, which Smith characterizes as "Holy crap, my competitors' products are much better than I thought!"

One brand manager said, "I was really surprised. I liked the other brand a lot more than I thought I would! I didn't think product performance was an area I needed to worry about much. Now I do."

Others found that the close-up revealed important competitive advantages. One member of the Bounty team said, "I used the other paper towel to wipe off the sink in the bathroom after I washed my hands, but all it did was push the

water around. I had to use two sheets to get the job done quickly." As a result, the marketer began to brainstorm about ways to highlight Bounty's advantage in advertisements.

By staging a close-up for his team, Paul Smith helped reveal important nuances that weren't visible in the numbers.

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WHEN WE ASSESS OUR choices, we'll take the inside view by default. We'll consider the information in the spotlight and use it to form quick impressions. *The Polynesian Resort looks great. My Thai restaurant is a sure thing*. What we've seen, though, is that we can correct this bias by doing two things: zooming out and zooming in.†

When we zoom out, we take the outside view, learning from the experiences of others who have made choices like the one we're facing. When we zoom in, we take a close-up of the situation, looking for "color" that could inform our decision. Either strategy is helpful, and either one will add insight in a way that conference-room pontificating rarely will.

When possible, we should do both. In interpreting the sentiments of Americans, FDR created statistical summaries *and* read a sample of real letters. In assessing the competitors' products, Paul Smith's colleagues relied on scientific data *and* personal experience. In making a high-stakes health decision, Brian Zikmund-Fisher trusted both the base rates *and* the stories of actual patients.

Zooming out and zooming in gives us a more realistic perspective on our choices. We downplay the overly optimistic pictures we tend to paint inside our minds and instead redirect our attention to the outside world, viewing it in wide-angle and