Praise for *A More Beautiful Question*

"The genesis of many great startups is the simple question, 'Wouldn't it be cool if?' Warren Berger helps you understand the power of questions to change the world. Real men ask questions, they don't spout out answers." **—Guy Kawasaki, former chief evangelist at Apple and author of *APE: Author, Publisher, Entrepreneur***

"Mastering the art of asking questions is essential to creativity and innovation. *A More Beautiful Question* should be standard reading for all aspiring design thinkers as well an inspiration to those searching for a life of curiosity and meaning." **—Tim Brown, chief executive at IDEO and author of *Change by Design***

"In an age of instant information, it's easier than ever to find answers, but also easy to forget how important it is to ask the right kinds of questions. In this deeply thought-provoking book, Warren Berger shows how learning the art of good questioning is the path to a far more fruitful and creative way of engaging with the world, at work, and in life as a whole." **—Oliver Burkeman, columnist at *The Guardian* and author of *The Antidote: Happiness for People Who Can't Stand Positive Thinking***

"*A More Beautiful Question* provides a framework to help leaders ask the most important questions—which is one of the most fundamental characteristics of a great leader—while sharing inspiring stories to show the incredible power of this concept." **—Jim Stengel, former global marketing officer at Procter & Gamble and author of *Grow: How Ideals Power Growth and Profit at the World's Greatest Companies***

"Why has a book like this never been written before? Here is a persuasive case for the simple and yet extraordinary power of a question. Fascinating, engaging stories give life to a strong argument about how much can be accomplished, in every domain of our lives, 'just' by asking questions. Innovators, entrepreneurs, citizens, parents, teachers, idealists, and realists—all of us have much to gain by reading *A More Beautiful Question*." **—Dan Rothstein and Luz Santana, co-directors of the Right Question Institute and co-authors of *Make Just One Change: Teach Students to Ask Their Own Questions***

A More Beautiful Question

THE POWER OF INQUIRY TO SPARK BREAKTHROUGH IDEAS

WARREN BERGER

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WHY . . .

Why do we have to wait for the picture?

Edwin Land was a brilliant inventor, sometimes described today as the Steve Jobs of his time. He was capable of seeing new possibilities—at times coming to him as detailed, fully formed visions—that others could not begin to imagine. Yet even Land couldn't see the life-changing opportunity he held in his own hands on a sunny winter's day in 1943. Rather, a question from a precocious three-year-old suddenly brought the future into focus.

Land was on vacation with his family in Santa Fe, New Mexico. He had taken some photographs of his young daughter, Jennifer, using his favorite camera. In those days, film had to be taken to a darkroom or a processing lab for development; Land knew this, as did any adult. But young Jennifer had a different take. She asked her father why they couldn't see the picture he had just taken without having to wait.

Land found he had no good answer for her. He took this as a challenge, a "puzzle she had set for me," as he described it.

"Stimulated by the dangerously invigorating plateau air," Land recalled in a speech years later, "I thought, *Why not? Why not design a picture that can be developed right away?*"

Land, then in his midthirties, was already used to tackling big questions. The two-time Harvard dropout had parlayed his fascination with light polarization into a modestly successful business. His technology, which allowed for filtering light and reducing glare, was used on sunglasses and photo filters. Land had bigger ambitions, hoping it could actually save lives: *What if we could reduce automobile accidents through polarized headlights and windshields?*

This idea, which Land explored during the 1930s and early 1940s, was to use polarization so that headlights, while still fully lighting the road ahead, would no longer blind drivers coming the other way. But Land couldn't get backing from the automakers, and by 1943 his company was slowing down and in need of a fresh innovation.

After Land spent a couple of hours thinking about Jennifer's query, he began to build upon her initial Why with a series of What If questions of his own. The fundamental challenge he faced could be summed up as *What if you could somehow have a darkroom inside a camera?*

According to Christopher Bonanos, author of *Instant: The Story of Polaroid*, Land knew that "it wouldn't do to have a tank of chemicals sloshing around inside a camera." But what if those chemicals "could be contained in little pouches, and then spread over the negative somehow?" This was one of a series of questions Land worked through during a feverish couple of hours spent walking by himself. He wondered, *How would one print a positive? How would you configure both negative film and positive paper in the back of the camera?*

Land wasted no time in giving form to the questions, and partial answers, swirling in his head. That very day he summoned a colleague and began to write out a detailed plan for an instant camera. He began creating prototypes so quickly that he produced the first instant test photo (a picture of himself) within a few months. But, facing hurdles and setbacks, too, Land's team had to struggle to get the first black-and-white instant camera to market by a promised introduction date four years later.

Land's own questions weren't even fully answered by then. From the outset, he had envisioned something greater than what he was able to deliver in 1948 in a splashy introduction. Land grappled with questions like *How can we do this in color? Why can't the camera be easier to use?* Another thirty years would pass before he answered those questions with his masterpiece: the color, one-button, even faster-printing SX-70.

The journey to answer his daughter's beautiful question may have been long and arduous at times, but Land was primed and ready for the trip. A year before Jennifer's question and Land's feverish walk, in December of 1942, he had said to Polaroid employees, "If you dream of something worth doing and then simply go to work on it . . . if you think of, detail by detail, what you have to do next, it is a wonderful dream even if the end is a

long way off, for there are about five thousand steps to be taken before we realize it; and start making the first ten, and stay making twenty after, it is amazing how quickly you get through those five thousand steps."

THE POLAROID STORY is a favorite of innovators and questioners because it shows a number of interesting things about the dynamics of questioning. To begin with, it demonstrates that a game-changing question can come from anyone, even a naïve child. This underscores a point made earlier, that nonexperts or outsiders are often better at questioning than the experts. No one would argue that expert knowledge isn't valuable—but when it's time to question, it can get in the way.

The Polaroid tale also nicely illustrates the sequential inquiry process that can be triggered by a certain kind of catalytic question. This Why–What If–How progression—which can be identified in many stories of innovative breakthroughs—is clearly evident in the Polaroid example.

Land's worldview began to shift as soon as he (with prompting from Jennifer) looked at an existing, less-than-ideal reality and asked, in effect, *Why does it have to be that way?* This led to a blizzard of What If hypothetical queries as Land worked through many smaller questions in service of a larger one: *What if you could have a darkroom inside a camera?* He connected ideas and pieces of knowledge from his work in chemistry, optics, and engineering—the author Bonanos observes that everything Land knew seemed to come together. But all of that clever connective inquiry would have come to nothing if Land hadn't eventually proceeded to the How stage: getting his ideas down on paper, getting feedback on the idea, then beginning to create early, tangible versions of his camera-with-darkoom-inside; then testing those early versions, failing, revising, testing again.

I'M SURE LAND never thought of his creative process as being divided into Why, What If, and How stages. But the logic in this sequence reflects how people tend to approach and work through

problems—progressing from becoming aware of and understanding the problem, to thinking of possible solutions, to trying to enact those solutions.

Each stage of the problem solving process has distinct challenges and issues—requiring a different mind-set, along with different types of questions. Expertise is helpful at certain points, not so helpful at others; wide-open, unfettered divergent thinking is critical at one stage, discipline and focus is called for at another. By thinking of questioning and problem solving in a more structured way, we can remind ourselves to shift approaches, change tools, and adjust our questions according to which stage we're entering.

If What If is about imagining and How is about doing, the initial Why stage has to do with seeing and understanding. The "seeing" part of that might seem easy—just open your eyes and look around, right? But Edwin Land couldn't see a problem that was right in front of him; at first only Jennifer could see it. That suggests those who would like to get better at asking Why have two options. You can conduct all business, including the business of everyday life, constantly accompanied by a curious and vocal three- or four-year-old, who will see what you miss. Or you can attempt to adjust the way you look at the world so that your perspective more closely aligns with that of a curious child. That second option is by no means easy—it takes some effort to see things with a fresh eye.

That's only part of what's required to ask powerful Why questions. To do so, we must:

- Step back.
- Notice what others miss.
- Challenge assumptions (including our own).
- Gain a deeper understanding of the situation or problem at hand, through contextual inquiry.
- Question the questions we're asking.
- Take ownership of a particular question.

While a fairly straightforward process, it begins by moving backward.

Why does stepping back help us move forward?

The term *stepping back* is often used when we talk about questioning—*step back and ask why, step back and reconsider*, and so forth. But what are we stepping back from?

It's not insignificant that Edwin Land was on vacation when the big Why question surfaced. He was removed from the day-to-day rush of his work. He had the time and the distance from practical business matters to entertain a question that was highly impractical. Meanwhile, Land's daughter, in asking her question, inspired him to pause briefly to consider reality from a naïve perspective. This points to a second, different kind of back step—his distancing himself from his own assumptions and expertise. For a moment, he stopped knowing and began to wonder.

To question well—in particular, to ask fundamental Why questions—we don't necessarily have to be on vacation, accompanied by a precocious three-year-old. But at least temporarily, it's necessary to stop *doing* and stop *knowing* in order to start asking.

The "doing" part would seem to be more in our control to stop than the "knowing"—yet it might be even harder. In a world that expects us to move fast, to keep advancing (if only incrementally), to just "get it done," who has time for asking why?

This is particularly true in the workplace. A good way to become unpopular in a business meeting is to ask, "Why are we doing this?"—even though the question may be entirely justified. It often takes a thick-skinned outsider to be willing to even try. George Lois, the renowned designer of iconic magazine covers and celebrated advertising campaigns, was also known for being a disruptive force in business meetings. It wasn't just that he was passionate in arguing for his ideas; the real issue, Lois recalls, was that often he was the only person in the meeting willing to ask why. The gathered business executives would be anxious to proceed on a course

of action assumed to be sensible. While everyone else nodded in agreement, "I would be the only guy raising his hand to say, 'Wait a minute, this thing you want to do doesn't make any sense. Why the hell are you doing it this way?'"

Others in the room saw Lois to be slowing the meeting and stopping the group from moving forward. But Lois understood that the group was apt to be operating on habit—trotting out an idea or approach similar to what had been done in similar situations before, without questioning whether it was the best idea or the right approach in this instance. The group needed to be challenged to "step back" by someone like Lois—who had a healthy enough ego to withstand being the lone questioner in the room.

The pressure to keep moving forward—and the accompanying reluctance to step back and question—is not just a business phenomenon. As everyday life becomes more jam-packed with tasks, activities, diversions, and distractions, "stepping back and questioning" is unlikely to get a slot on the schedule. Which means some of the most important questions—about why we're engaging in all those activities in the first place—never get raised.

Gretchen Rubin, author of *The Happiness Project*, says that it's becoming increasingly difficult for people to find time "to step back and ask a large question like, 'What do I want from life, anyway?'" Rubin says that for a long time, she was caught up in this same cycle herself. "I was so focused on my daily to-do list that I didn't spend any time thinking about whether I was

Why does it pay to swim with dolphins?

Stepping back from everyday work and activities can allow for the kind of reflection and deep questioning that occasionally leads to career-changing (and even industry-changing) insights. Such was the case with Marc Benioff, an executive at the tech company Oracle who took an extended break from his job so he could just think. Benioff journeyed to India and then continued on to Hawaii, where, as he told the authors of *The Innovator's DNA*, he went swimming with dolphins in the Pacific Ocean. Out there in the water, he thought of a question: "I asked myself *'Why aren't all enterprise software applications built like Amazon and eBay?'*" This inspired Benioff to launch Salesforce.com, which set out to use the Internet to radically change the design and distribution of business software programs. Within eight years, Benioff's company had $1 billion in sales and was credited with "turning the software industry on its head."

actually happy or how I could be happier." As previously noted, Rubin's "back-step" moment came during a bus ride on a rainy day, at one of those rare times when everything slowed down enough to allow her to ask, *Why am I not happy? (And what if I were to do something about that?)*

So perhaps the first rule of asking why is that there must be a pause, a space, an interruption in the meeting, a halt of "progress," a quiet moment looking out the window on the bus. Often, these are the only times when there is time to question.

IF ASKING WHY requires stepping back from "doing," it also demands a step back from "knowing." Whether in life or in work, people become experts within their own domains—generally confident that they already know what they need to know to do well in their jobs and lives. Having this sense of knowing can make us less curious and less open to new ideas and possibilities. To make matters worse, we don't "know" as much we might think we do.

Robert Burton, a neurologist and the author of the book *On Being Certain*, contends that we all suffer from a common human condition of thinking we know more than we do. For years, Burton has been grappling with the question *What does it mean to be convinced?*

He told me he has concluded, based on extensive research, that the feeling of "knowing" is just that—a feeling, or a sensation. However, the feeling is so strong that it creates what Burton calls a "certainty epidemic"—wherein many people overestimate their knowledge, put too much faith in their "gut instinct," and walk around convinced they have more answers than they actually do. If you feel this way, you're less likely to ask questions.

Furthermore, we also get in the habit of not paying much attention to the world around us. Neurologists have found that our brains are hardwired to quickly categorize, filter, and even ignore some of the massive amounts of stimuli coming at us every moment. A nice description of this phenomenon comes from Maura O'Neill, the chief innovation officer for USAID, a

government agency focused on social problems. In her writing, O'Neill observed, "Our brains have evolved to dump most of what we see, quickly categorize the rest, and file it away in our long term memory using our brain's equivalent of the Dewey Decimal system."

As O'Neill notes, this behavior developed for practical reasons. Our ancestors needed to quickly determine if something coming at them was friendly or harmful; today, we still need to do that at times, though we're more often concerned, in this info-rich environment, with trying to sort what's new and important from what's known or extraneous. We make judgments in fractions of a second: *This* I'll pay attention to, everything else I'll ignore because (a) it doesn't concern/interest me or (b) I already know about it.

We make that judgment about what's "known" based on everything we've experienced already—and as O'Neill notes, "the more we see, hear, touch, or smell something, the more hard-wired in our brain it becomes." We routinely "default to the set of knowledge and experience each one of us has."

This works well under most circumstances, but when we wish to move beyond that default setting—to consider new ideas and possibilities, to break from habitual thinking and expand upon our existing knowledge—it helps if we can let go of what we know, just temporarily. You have to be adventurous enough (and humble enough) to enter the "know nothing" zone of a constant questioner such as Paul Bennett.

BENNETT IS A longtime creative director at the innovation firm IDEO. A native of the United Kingdom who grew up in Singapore, he originally headed up IDEO's London office, then helped open branches in Asia. A globe-trotter, he is constantly observing and wondering why, for instance, people in certain parts of China hang their dried fish on the line right next to their washed clothes. Bennett shares many of his observations and questions in a blog titled The Curiosity Chronicles.

"I position myself relentlessly as an idiot at IDEO," Bennett observes. "And that's not a negative, it's a positive. Because being

comfortable with not knowing—that's the first part of being able to question."

Having grown comfortable in that role, Bennett says, he is able to ask "incredibly naïve questions" without feeling the least self-conscious. For example, when Bennett was called in to speak at the parliament in Iceland during the country's financial meltdown, "I asked stupid questions like 'Where's the money?' Not because I was trying to be disrespectful but because no one seemed to be able to give a straight answer to this basic question."

Part of the value in asking naïve questions, Bennett says, is that it forces people to explain things simply, which can help bring clarity to an otherwise complex issue. "If I just keep saying, 'I don't get it, can you tell me why once more?,' it forces people to synthesize and simplify—to strip away the irrelevances and get to the core idea."

Sometimes, he says, his naïveté gives others permission to step back and rethink in ways they might not normally be comfortable doing. In some parts of Asia, for example, rigid hierarchical structures in business and government tend to discourage questioning. "In those cultures, people sometimes welcome outsiders coming in and asking basic questions because they may be wondering about these things themselves—but they don't want to ask because they can't afford to look foolish or disrespectful."

Bennett says that within IDEO, the company recognizes it's important to create an environment where it's safe to ask "stupid" questions. "You need to have a culture that engenders trust," he says. "Part of questioning is about exposing vulnerability—and being okay with vulnerability as a cultural currency." So at the firm, no question is too basic to ask; and co-workers are encouraged to support and build upon others' questions, rather than dismissing them or giving pat answers. Bennett says, "We allow people to fall backwards and be caught by one another."

In Silicon Valley, IDEO and other innovation-driven firms go out of their way to protect and encourage naïve questioning because they know, from experience, that it can lead to valuable insights that result in breakthrough ideas and successful products.

The valley is a place where everyone, it seems, is racing nonstop to get to "what's next." This would seem an unlikely place for slowing down, stepping back, and asking fundamental questions. Yet a number of the best minds in the tech sector have embraced this approach, led in recent years by the late cofounder of Apple, Steve Jobs, who was a proponent and practitioner of the Zen principle known as *shoshin*, or "beginner's mind."

Jobs was determined to reimagine and re-create the ways we integrate technology into our everyday lives. This required asking fundamental questions (Jobs was known to be a dogged questioner of everything from current market practices to the ideas of his employees, many of whom were subject to deconstructive interrogation). One of his tools in challenging conventional wisdom was a bit of ancient wisdom, brought to Northern California in the 1960s by a Japanese Zen master named Shunryu Suzuki. Author of the book *Zen Mind, Beginner's Mind*, Suzuki immigrated to the area and taught there until his death in 1971.

In his book, Suzuki writes, "The mind of the beginner is empty, free of the habits of the expert." Such a mind, he added, is "open to all possibilities" and "can see things as they are."

Suzuki also made an important point that underscores the potential value of this way of thinking to a would-be innovator: "In the beginner's mind there are many possibilities, but in the expert's there are few."

Beginner's mind, along with other Zen principles of deep thinking, mindfulness, listening, and questioning, gradually caught on with others in Silicon Valley, beyond Jobs and Apple. Les Kaye is a Zen abbot whose Kannon Do Zen Meditation Center is located in Mountain View, California, just down the road from Google. His followers include folks from Google and Apple, as well as various tech-start-up entrepreneurs and the venture capitalists who fund them. Kaye is aware that some of these people may be motivated by the notion that a "question-everything" Zen mind-set could be used to help spark new ideas and innovations (one recent book coined the term *Zennovation* to describe the merging of Zen principles and innovation strategies).

Kaye is quick to point out, "It would be a mistake for people to think, 'If I do Zen practice, I'll become more creative.' It's not a magic pill." Moreover, Kaye's center cites "no striving" as a guiding Zen principle; it's considered inappropriate to lust after material gains and business success. When I pointed out to Kaye that Steve Jobs seemed to successfully use "beginner's mind" to envision new products as he simultaneously "strived" for greater market share, Kaye, who once studied with Jobs at the same Zen center, remarked, "Steve had an unusual relationship with Zen. He got the artistic side of it but not the Buddhist side—the art, but not the heart."

Still, Jobs proved that, for better or worse, you can be both a questioner and a conqueror. Indeed, you can extract practical lessons from beginner's mind, whether or not you choose to go "full Zen." Randy Komisar, a partner in the renowned Silicon Valley venture capital firm Kleiner Perkins Caufield & Byers, and a Zen practitioner, says the key to adopting this manner of observing and questioning is to make an effort to become, in his word, "detached"—from everyday thoughts, distractions, preconceived notions, habitual behaviors, and even from oneself. "Basically, you begin to observe yourself as if you were a third party." If you can achieve that sense of detachment, your thinking becomes more "flexible and fluid," Komisar maintains, and "you find yourself in a better position to question everything."

TED founder Richard Saul Wurman says it helps him, when approaching any new situation or subject, to think of his mind as "an empty bucket." The job is to slowly and methodically fill that bucket, Wurman says, and you begin by asking the most basic of questions.

Beginner's mind is akin to adopting a more childlike mindset. That's not as fanciful as it might sound. I mentioned previously that Joichi Ito, director of the prestigious MIT Media Lab—which has had a hand in creating everything from the Kindle electronic reader to futuristic cars that can fold in half—favors the term *neoteny* to describe the phenomenon of maintaining childlike mental attributes as an adult. Ito says one can train oneself to think this way.

The Media Lab has a "kindergarten for adults" atmosphere, where constant play is encouraged. The lab is also designed so that people from different disciplines work together, which means "we are often looking at a problem we're not an expert in," says Tod Machover, a cutting-edge musical composer and MIT professor who, in his experimental work at the lab, helped create the popular interactive video game *Guitar Hero*. Machover says it's not uncommon for breakthrough ideas to come from people who are working outside their area of expertise because the novices are "able to see a problem with a fresh eye, forget about what's easy or hard, and not worry about what other people in that field have done."

For those who doubt whether "serious" adults can actually be encouraged to think more like children, a study conducted by the researchers Darya Zabelina and Michael Robinson at North Dakota State University indicates that it's actually easy for people to "think young," with a little nudge.

Zabelina had noticed, in previous studies, that young children tended to perform well on creativity tests because they are uninhibited. So Zabelina and Robinson took two groups of adults and instructed one group to think of themselves as "seven-year-olds, enjoying a day off from school" (the other group just thought of themselves as the adults they are). When the two groups were given a creativity test, the "think young" group came up with better, more original ideas and exhibited "more flexible, fluid thinking."

Zabelina believes that "mind-sets are flexible. It is possible to tap into the more open way of thinking of a child." All that's needed, it seems, is to be given permission (by others or by ourselves) to take that step back in time.

Why did George Carlin see things the rest of us missed?

When we do step back, what do we then see? We're seeing essentially the same realities and situations. But with more distance, a bigger picture comes into view. We may now be able to see the

overall context; we might notice the patterns and relationships between things we'd previously thought of as separate. This can change everything. Upon stepping back and reexamining something you've been looking at the same way for years, you might suddenly feel as if you're seeing it for the first time.

If you've ever experienced this, it feels a bit like déjà vu in reverse. With déjà vu, you go somewhere you've never before been yet it seems oddly familiar; conversely, when you look at something familiar and suddenly see it fresh, this is a case of *vuja de*, to use a quirky term favored by Stanford University professor and author Bob Sutton.

Sutton has argued that if we train ourselves to look at the world around us through a vuja de lens, it can open up a range of new possibilities—fresh questions to ask, ideas to pursue, challenges to tackle, all previously unnoticed because they were camouflaged in overly familiar surroundings. Adopting this view, business leaders and managers are more apt to notice inconsistencies and outdated methods—as well as dormant opportunities. Someone working on social issues or even personal ones is likely to notice more and to ask fundamental questions about what he or she notices.

It isn't easy, Sutton notes: "It means thinking of things that are usually assumed to be negative as positive, and vice versa. It can mean reversing assumptions about cause and effect, or what matters most versus least. It means not traveling through life on automatic pilot."

As with beginner's mind, Sutton's vuja de idea has resonated in various corners of the innovation sector, having been picked up by, among others, IDEO, whose general manager, Tom Kelley, has written that vuja de provides the ability to "see what's always been there but has gone unnoticed."

But years before IDEO or even Sutton talked about vuja de, the term was mentioned, albeit briefly, in a stand-up comedy routine by the American comedian George Carlin. In the midst of his act, Carlin paused, as if he'd just had an epiphany—then announced to the audience that he'd experienced vuja de, which, as he explained, was "the strange feeling that, somehow, none of this has ever happened before."

Carlin died in 2008, but his daughter, the comedian and radio host Kelly Carlin, feels the vuja de way of looking at the world—of observing mundane, everyday things as if one were witnessing something strange and fascinating—is exactly the way Carlin went through his life and got his material. "When the familiar becomes this sort of alien world and you can see it fresh, then it's like you've gone into a whole other section of the file folder in your brain," she said. "And now you have access to this other perspective that most people don't have."

Carlin used that perspective to develop a style of observational humor that could be thought of as the Why school of comedy. "It was observing our everyday life—baseball, dogs and cats, the way someone stands in front of the refrigerator—and asking, *Why do we do things the way we do them?*" Kelly Carlin says. George Carlin studied routine behaviors that most of us take for granted, mapping the inconsistencies, searching for some kind of rationale (and usually not finding one). *When we've lost our keys and are searching for them,* he wondered, *why do we keep looking in the same few places, over and over?*

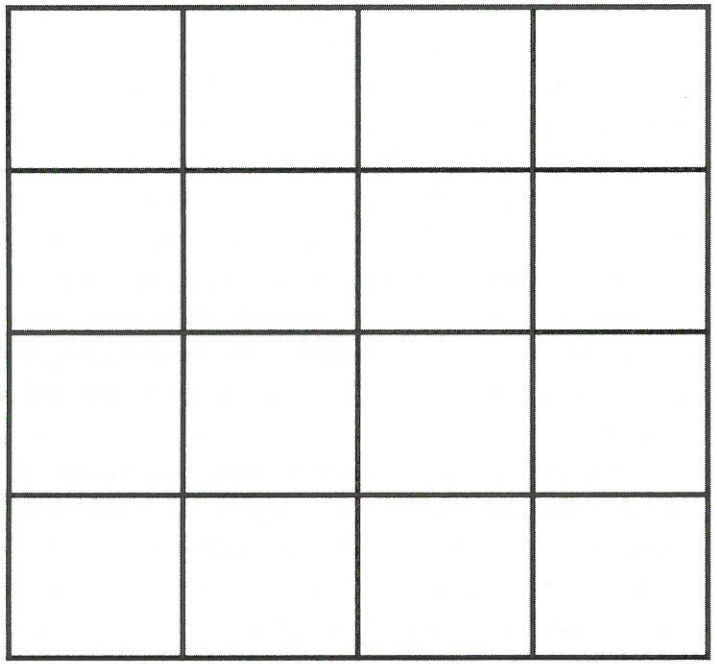
Kelly Carlin, who often interviews other comedians on her podcast series *Waking from the American Dream*, thinks comedians in general are more apt to have a vuja de perspective. "Most comics grew up feeling like they didn't belong," she says. "They were the class clowns, the outsiders—maybe the one who had the learning disability and didn't do well in an academic setting. As outsiders, it's natural for them to stand back and observe, and to wonder about what everyone is doing. And eventually, that's where they get their material."

George Carlin once said that he could not help noticing the irrational behaviors, all the things that just don't make sense—and that he sometimes wished he didn't notice all of it because it agitated him so much.

MOST OF US have the opposite problem—we don't notice enough. IDEO's Kelley thinks it's because we don't generally take the time required for close observation. When people fail to see

what's right in front of them, it's often because "they stopped looking too soon."

The Dartmouth University business professor Vijay Govindarajan and the consultant Srikanth Srinivas have devised an exercise that nicely illustrates what Kelley is talking about. In their seminars, they briefly show attendees the figure below:



Then, Srinivas told me, the figure is covered up and he asks, "How many squares did you see?"

The easy answer is sixteen. But the more observant people in the group are apt to notice—especially after Srinivas allows them to have a second, longer look—that you can find additional squares by configuring them differently. In addition to the sixteen single squares, there are nine two-by-two squares, four three-by-three squares, and one large four-by-four square, which brings the total to thirty squares.

"The squares were always there, but you didn't find them until you looked for them," Govindarajan and Srinivas wrote on the *Harvard Business Review* blog, after they published the puzzle there. (They got hundreds of responses from readers, whose answers to "How many squares?" ranged from sixteen to thirty up to sixty—if you count the thirty squares with black edges as well as the thirty with white edges—and all the way to infinity.)

Srinivas told me he uses the exercise to illustrate that we often fail to see all the possibilities available to us because we simply haven't spent enough time looking. He said the exercise particularly resonates with people who are in a difficult situation: "Sometimes people feel like they have nowhere to go and they've run out of options, and my point is, 'There is always another square, another possibility, if you just keep looking for it.'"

Great questioners "keep looking"—at a situation or a problem, at the ways people around them behave, at their own behaviors. They study the small details; and they look for not only what's there but what's *missing*. They step back, view things sideways, squint if necessary. In Sutton's writings on vuja de and how to see the familiar, he advises "shifting our focus from objects or patterns in the foreground to those in the background."

Such close observation demands patience and persistence. After seeing the first sixteen squares, we're inclined to move on and look elsewhere; but the thirtieth square, the one you notice later, can turn out to be a window of opportunity that others haven't yet seen. Einstein talked about looking for the needle in the haystack and finding it—at which point most people stop looking. The secret, he said, is

Why can't computers do more than compute?

In the 1950s it wasn't clear how computers could be used outside of mathematics. Conway Berners-Lee, a British mathematician who worked on the early commercial electronic computers, was fascinated by the question, *Could computers be used to link information rather than simply compute numbers?* The question was later refined by his son, software engineer Tim Berners-Lee. Overwhelmed by massive amounts of research data, Berners-Lee wondered if there were a way to combine the nascent Internet with linked hypertext documents to better find and share information. In 1989, he proposed the global hypertext project to be known as the World Wide Web. His prototype included the now familiar architecture of web browsers, HTML, HTTP, and URLs.

to keep looking, in search of an even better needle.

Why should you be stuck without a bed if I've got an extra air mattress?

In the fall of 2007, Joe Gebbia and Brian Chesky had one question uppermost in their minds, and it wasn't a beautiful one. "How were we going to pay the rent? *That* was the main issue at the time," Gebbia recalls. He and his roommate, Chesky, had no jobs, and not much money. But they did have a decent San Francisco apartment with a place to sleep and a roof over their heads. Which was more than could be said for many of the people coming to town for a local business conference—the city's hotels were all booked, and conference-goers were desperate for a place to stay.

This situation (which Gebbia and Chesky had experienced first-hand as visitors to prior conferences) didn't make sense to them: *Why can't we find a place for these people to crash for a night or two?* Which then led to *Why not our place?*

Gebbia and Chesky got hold of three inflatable air mattresses. They could simply have run a cheap classified ad, rented out their airbeds for a modest fee during the conference, and picked up enough money to cover a small portion of that month's rent. But almost immediately, they started to think bigger about this idea and asked all kinds of What If questions, such as *What if we provide more than just a mattress to sleep on?* They didn't have much to offer, but they threw in a modest breakfast (how modest? Pop-Tarts!) and sightseeing tips. And rather than just put a listing on Craigslist, Gebbia and Chesky (who both had a design background) thought, *What if we create our own website?*

They did all of this, rented out the three mattresses to three individuals who didn't know each other, and everyone enjoyed the experience. Gebbia says, they now started to think, *Why not make a business out of this? What if we could create this same experience in every major city?*

Here is where the two dreamers ran headfirst into conventional

wisdom. Initially, no one, outside of Chesky, Gebbia, and a third partner they brought on, thought this was an idea that made business sense or was worth supporting. Paul Graham, a renowned angel investor in Silicon Valley who runs the start-up incubator firm Y Combinator, believed quite simply, "No one would want to stay in someone else's bed."

The idea that would eventually become Airbnb was challenging a basic assumption: that you needed established, reputable hotels to provide accommodation for out-of-town visitors. Those paying close attention might have noticed that just a few years prior to this, lots of people held similar assumptions about cars—you could buy them, you could rent them, but there was no practical way to *share* them. Then an entrepreneur named Robin Chase asked, *Why not?*—and subsequently introduced Zipcar.

Gebbia told me that part of the reason he and Chesky believed this was a problem worth solving—the reason, he suspects, that they saw what others missed—was that they had been on both sides of the problem. "We knew what it was like to come to town needing a place to stay, and we knew what it was like to have extra space that we needed to rent," Gebbia said. "So we connected those two dots. In retrospect it makes complete sense—but at the time no one else had connected those dots."

Gebbia and Chesky had a kind of "rebel" attitude that goes with successful questioning. It's one thing to see a problem and to question why the problem exists—and maybe even wonder whether there might be a better alternative. It's another to keep asking those questions even after experts have told you, in effect, "You can't change this situation; there are good reasons why things are the way they are."

Gebbia and Chesky had to overcome that initial resistance by continuing to push forward on their original question (about whether they could expand that first hosting experience into a business), and they were propelled by new questions at each step of the way. They wondered, *What if we take this idea on the road and test it in another city?* With the 2008 Democratic presidential convention in Denver, they found the perfect place to

launch—lots of people coming into town, not enough hotels. *But how would those visitors, and the people with space to rent, learn about Airbnb?* Gebbia and Chesky couldn't afford ads; so they had to make news. The founders knew that the news channels would be doing stories about how crowded and overbooked Denver was. They pitched Airbnb as a "solution story" to news producers and ended up on CNN. The bookings came in and the Denver launch was a success.

But Gebbia says they kept questioning, kept iterating and refining the model for another year before they felt they had it right. They used the site themselves, stayed in rentals, and asked, *What's working here and what's not?* When they noticed, for example, that exchanging money with apartment hosts was awkward—"It just felt like the whole experience was relaxed and fun, until it came time to pay," Gebbia recalls—this spurred them to ask, *What if you could pay online?* When they noticed that many of the visitors to their site were asking about foreign cities, this led to a big question: *Why are we limiting this to the U.S.? What if we go global?* Within less than two years, they were in more than a hundred countries, doing a million bookings, and flush with more than one hundred million investment dollars. They had even won over early skeptics such as Y Combinator's Graham, who became one of their seed investors.

These days, Gebbia and Chesky are asking a whole new set of questions about whether it's feasible to create a "sharing economy." At the core of this idea is the fundamental question *Why should we, as a society, continue to buy things that we really don't need to own?* (Consider, for example, that the average power drill in the United States is used a total of thirteen minutes in its lifetime.) As Gebbia notes, we've spent decades accumulating "stuff" in the modern consumer age. *"What if we spent the next hundred years sharing more of that stuff? What if access trumped ownership?"*

WHETHER OR NOT Airbnb, joined by others, will be able to successfully lead that ambitious "sharing economy" movement is an open question, and one that—even more than the earlier questions about whether people would be willing to share homes and beds—aggressively challenges assumptions about how our economy works, the extent to which people are willing to change ingrained behavior, and whether sharing even makes sense as a viable business model.

Clearly, though, the success Gebbia and Chesky have already achieved is rooted in their willingness to challenge assumptions and to believe that everything is subject to change—regardless of what conventional wisdom holds. I think of this brand of questioning as a subcategory of Why questions that could be considered "challenger questions." They have a certain attitude about them: restless, rebellious, skeptical of convention and authority. As in:

Why should we settle for what currently exists?

And why should I believe you when you tell me something can't be done?

Why can't India have 911 emergency service?

This was the question Shaffi Mather tackled, following a health emergency involving his mother. He started with one ambulance and a simple number (1298) that people could dial in a crisis. But the toughest question was, *How much should we charge?* Mather wanted the service to be available to everyone, so he tried a pay-what-you-can honor system—but everyone claimed to be poor. So he inquired, *How can we get those with money to pay more?* The answer: The better the hospital you requested, the more you were charged for the ride. With backing from the Acumen Fund, Mather's service became Asia's largest ambulance company, transporting nearly 2 million people. Mather kept questioning along the way, with occasional misfires: Once, to try to cut costs, he asked, *What if the ambulance doctors also carried the cots?* The lesson learned: people assume that any doctor who has to carry cots must not be a very good doctor.

Asking challenger questions is inherently uncomfortable—"it creates dissonance," notes Paul Bottino, who directs Harvard University's student-innovator program. The program draws some of the brightest, most creative college students—yet even those students arrive with a tendency to accept much of what they're told without question, Bottino says. One of his chief tasks is to teach them "to understand that the incumbency has an interest in maintaining the status quo. To question well, you must have the ability to say, 'It doesn't have to be that way.'"

That goes against what many are taught in school: that each

question has one right answer and you'd better accept it (and memorize it). When Deborah Meier established her Central Park East School designed to encourage questioning, the first "habit of mind" she taught her students was to ask, *How do we know what's true?* Meier wanted them to question everything they were taught and all they were told. George Carlin had a lifelong mistrust of authority, Kelly Carlin noted, and his advice to parents was "Don't just teach your children to read. Teach them to question what they read. Teach them to question everything."

After years of being conditioned to think that "answers" coming from "experts" should be accepted, the only way to get more comfortable questioning the expert assumptions of others is to do it repeatedly and over time, Bottino says. Among the things one must get used to, in asking challenger questions, is that you're likely to be asked the classic antichallenger question: *What makes you think* you *know more than the experts?* (The answer is that you don't know more, you know less—which sometimes is a good thing.)

Another common counterquestion that challengers can expect to be hit with is some version of *Okay, genius, how would* you *do it better?* An interesting assumption is built into this question: that if someone is going to challenge the existing ways, then he/she had better have an alternative ready. But it's important to ask Why and What If questions even if we don't yet know the How. Getting to a better alternative may be a long process, but it has to start somewhere—and that starting point often involves questioning the status quo.

Why must we "question the question"?

Questions that challenge the prevailing assumptions are useful and sometimes catalytic—but they can also be flawed themselves. Assumptions and biases of our own may be embedded in the questions we ask. One of the ways to find out is to subject those questions to . . . questioning.

Robert Burton, the aforementioned neurologist who writes about the "certainty epidemic," the widespread tendency of people to question less than they should, says that even when people do ask questions, they're often relying on those same unreliable gut instincts and biases. "Everything that's ever happened to you or occurred to you in your life informs every decision you make—and also influences what questions you decide to ask. So it can be useful to step back and inquire, *Why did I come up with that question?*" Burton adds, "Every time you come up with a question, you should be wondering, *What are the underlying assumptions of that question? Is there a different question I should be asking?*"

Questioning one's own questions—as in, *Why am I asking why?*—might seem like a circular exercise, bound to lead nowhere and yield dizziness. But there are practical, constructive ways to do this, and they can help produce a more insightful or more informed question. They range from simple practices such as "the five whys" to more exhaustive methods such as contextual inquiry, wherein we take our questions out into the larger world to see how they survive contact with reality.

The five whys methodology originated in Japan and is credited to Sakichi Toyoda, the founder of Toyota Industries. For decades, the company used the practice of asking why five times in succession as a means of getting to the root of a particular manufacturing problem. When, for example, a faulty car part came out of a factory, asking why the first time would yield the most obvious answer—say, that someone on the assembly line had made a mistake. By then asking why that mistake occurred, an underlying cause might surface—such as insufficient training on a task. Asking why again, the company might discover the training program was underfunded; and asking why about that could lead back to fundamental company priorities about where money should be spent and what was most important in the end.

The value of this kind of excavation-by-inquiry is becoming more widely recognized in the business world, most recently as part of the Lean Startup methodology taught by the author/consultant Eric Ries, who is a big proponent of the five whys. I asked Ries why a simple, almost-childlike practice seems to work

so well. "It's a technique that's really designed to overcome the limits of human psychology," Ries explained. By this he means that people are inclined to look for the easiest, most obvious explanation for a problem. On top of that, "we tend to personalize things that are really systemic." It's easier to just blame that poor assembly-line worker than to consider all the complex, interrelated factors that may be contributing to the problem.

The five whys can be used outside of business, as well. IDEO has used it to address a number of behavioral issues. The firm offers this example of how it can be applied to a lifestyle issue.

Why do you exercise?
Because it's healthy.
Why is it healthy?
Because it raises my heart rate.
Why is that important?
So that I burn more calories.
Why do you want to do that?
To lose weight.
Why are you trying to lose weight?
I feel social pressure to look fit.

One might ask, *Why stop at five?* That designated stopping point does seem arbitrary (in actual practice, you may get to something important after three whys, other times it might take six—and, admittedly, sometimes the technique doesn't work at all). But if you don't stop asking why at some reasonable point, you may end up, like Louis C.K. in his "Why?" comedy bit, lost in cosmic questions about why the universe is the way it is.

However many times you do it, asking "Why?" repeatedly does seem to have value in all kinds of endeavors that require getting at deeper truths. The Hollywood character actor and author Stephen Tobolowsky uses this kind of sequential questioning to burrow down to the core of each character he plays—and said it usually takes "three levels of questions, three assaults on the fortress, before you get to something useful and specific as an actor."

If Tobolowsky is playing, say, a doctor, he may start by questioning the character's current motivations, but he'll gradually use levels of inquiry to go deeper and deeper: "I'll ask myself, *As a doctor, what am I really good at and not so good at?* Then I'll go to a deeper level of questioning: *Why did I want to become a doctor in the first place?*" When told about the five whys methodology, Tobolowksy hadn't heard of it—but said he's been doing his own version of the three whys for many years because it works.

Why isn't the water reaching the people who need it?

With the creation of Water.org, the engineer/activist Gary White teamed up with actor Matt Damon to tackle the problem of nearly one billion people lacking access to safe water. The conventional approach was to raise charitable donations to drill wells "and basically give water projects away." Seeing this wasn't working, White and Damon inquired, *Why aren't charitable efforts succeeding in getting water to where it's most needed*? Turns out the subsidies were going to local middlemen who ran the utilities—while the poor were still left having to overpay or walk great distances to get water. Eventually, White and Damon focused on this empowering question: *What if local communities could have the means to create their* own *sources of water?* Water.org's innovative "Water Credit" makes small loans available to people (mostly women) who can then develop or acquire their own water sources. So far it has helped more than a million people worldwide.

There are various other ways to "work on" a question you have chosen to pursue—to deconstruct it, or to alter its shape and scope. At the MIT Media Lab, Tod Machover teaches students to broaden their questions in some instances, and narrow them in others. You might broaden a question to make it more applicable to more people, and therefore more significant. For example, the Airbnb founders could have limited the scope of their question to *Can we set up an online accommodation-sharing system in San Francisco?*—but they quickly broadened it to *Can this idea work worldwide?* On the other hand, as Machover notes, to move forward on a big question sometimes it's necessary to break it down into smaller, more actionable questions—as in, *Before we try to do this thing worldwide, how might we make it work in our own backyard?*

Another method of tinkering with questions has been developed by the Right Question Institute, which has discovered,

through its research, that you can improve a question by opening and closing it. For instance, suppose one is grappling with the question *Why is my father-in-law difficult to get along with?* Like most Why, What If, and How questions, this question is open-ended because it has no one definitive answer. But note what happens when we transform this into a closed, yes-or-no question: *Is my father-in-law difficult to get along with?*

Worded this way, the question almost forces one to confront the assumption within the original question—and to consider that it might not be valid (because the father-in-law, in this scenario, might have other relatives and friends with whom he gets along swimmingly). So this might cause me to go back and revise that original question to make it more accurate: *Why is my father-in-law so difficult* for me *to get along with?* In its research, the RQI has found that this process works both ways—closed questions can also be improved by opening them up.

While you can do much tinkering around the edges of a question using such methods, perhaps the best way to question a question is to take it out into the world with you—and see if the assumptions behind it hold up when exposed to real people and situations. Often, what seems to be the right question in one context proves to be the wrong one in another.

The developing world has a shortage of incubators for infants. For years, health organizations and philanthropic groups asked the logical question: *How can we get more incubators to the places that need them?* A relatively straightforward answer to that question was—donate them. But that was the right answer to the wrong question. This led to thousands of incubators being donated to poor nations, "only to end up in 'incubator graveyards,'" as the *New York Times* reported. This was part of a larger problem that went far beyond incubators; one study found that 96 percent of foreign-donated medical equipment ended up being used for a short time, then abandoned.

The better question, which was eventually asked by health officials working on the problem, was *Why aren't people in developing countries using the incubators they have?* On-the-ground

observation revealed that the incubators were prone to breaking down and locals didn't have the parts or know-how to fix them. Having answered the Why, the health officials moved to the What If, specifically, *What if we could provide incubators that were easy to maintain and fix?*

One doctor working on the initiative, Jonathan Rosen, knew from his own study of the problem that cars and car parts were readily available in many of the areas with incubator problems. So the ultimate question became *How can we make an incubator out of car parts?* A nonprofit design group was brought in to tackle that question, and they eventually pieced together the "car-parts incubator," which was inexpensive, easy to use, and could be fixed by anyone with basic mechanical skills, using parts from a local junkyard.

In the philanthropic world, as well as in business, medicine, and science, there are many stories like the car-parts-incubator story—in which the wrong question is asked, based on incomplete information or faulty assumptions, often because those formulating the questions are too far removed from the problem they're trying to solve. One of the best ways to overcome this is to try to close the distance between the questioner and the problem.

Contextual inquiry is about asking questions up close and in context, relying on observation, listening, and empathy to guide us toward a more intelligent, and therefore more effective, question.

IN THE BUSINESS world, IDEO has been a pioneer of this type of research. As the design firm was being formed twenty-odd years ago, its founders, including the designer David Kelley and his brother Tom, realized that to solve human engineering problems (such as, *How do we make gadgets that fit into people's lives?*), the company would have to employ the kind of psychological and behavioral inquiry normally done by social scientists. So the firm hired psychologists and other students of human behavior and began to develop its own methods of observing people.

IDEO understood that to question effectively, one couldn't do it from inside the bubble of the company, or in artificial settings

such as focus groups. To understand how people live, you have to immerse yourself in their lives—watch them in their kitchens, follow them as they go to the supermarket, and so forth. The company's researchers sometimes go to great lengths to experience things firsthand.

One classic example involved a hospital group that hired IDEO to help answer the question *What is our patient experience like?* The hospital executives were surprised when IDEO, instead of doing a snazzy PowerPoint presentation, showed them a long, deadly dull video of a hospital ceiling. The point of the film: "When you lie in a hospital bed all day, all you do is look at the ceiling, and it's a really shitty experience," IDEO's Paul Bennett explained. The firm understood this because someone from IDEO actually checked into the hospital, was wheeled around on a gurney, and then lay in a hospital bed for hours. This kind of "immersive" approach enables the firm to consider a question or problem from the inside out, instead of from the outside looking in. (Soon after seeing the video, the hospital's nurses took it upon themselves to decorate the ceiling tiles in each room.)

To do contextual inquiry well, you don't need a team of trained researchers. What's required is a willingness to go out into the world with a curious and open mind, to observe closely, and—perhaps most important, according to a number of the questioners I've interviewed—to *listen*. Listening informs questioning. Paul Bennett says that one of the keys to being a good questioner is to stop reflexively asking so many thoughtless questions and pay attention—eventually, a truly interesting question may come to mind. The Acumen Fund's Jacqueline Novogratz, whose nonprofit group tackles social problems by first spending extensive time on the ground in the villages and communities they're trying to help, talks about "listening with your whole body"—using all senses to absorb what's going on around you.

Contextual inquiry requires a commitment to the question you're exploring. It's one thing to ponder questions in your room, or within your own company's offices, or in online surveys; it's another to go out there and, as Novogratz says, "spend time

sitting on the floor with people, listening to them as they tell about their lives." Deciding to go to that level is part of taking ownership of a question. It's about pausing, before jumping in headlong, to ask, *Why is this* my *problem? And if it's not my problem, why* should it be?

While I was interviewing Srikanth Srinivas—the man who asks people to count squares and look for unseen windows—he asked an interesting question. We were discussing how breakthroughs often start with a question and were focused on stories such as those of Netflix and Polaroid. Srinivas noted that the questions that were asked (*Why should I have to pay late fees? Why do we have to wait for the picture?*) were ordinary questions that could have been asked by anyone. Then he added, "But most people would have asked a question like that and then not acted on it. So the question is, *why do some people act on a question?*"

There's no one answer to that; you could say it has to do with imagination, determination—or sometimes desperation, as in the case of Van Phillips and his prosthetic foot. But this much can be said of Phillips, Polaroid's Land, Netflix's Hastings, Acumen's Novogratz, the Airbnb founders, and others in this book: Confronted with a problem that was larger than themselves, they decided to make that problem—and the question that defined the problem—their own.

The difference between just asking a question or pursuing it is the difference between flirting with an idea or living with it. If you choose the latter, the question will likely become what the psychotherapist Eric Maisel calls a "productive obsession." It will surface, recede, then surface again. It will invade your dreams as it embeds itself in your subconscious. You'll wrestle with it, walk with it, sleep with it. And all of this will prove helpful during the What If stage of inquiry.