Chapter 1

THINKING WORKS

I think there is only one quality worse than hardness of heart, and that is softness of head.
— Theodore Roosevelt

The Case of the Stanford Limousine

My (Charles') brother Douglas Hooper has photographed hundreds of weddings in the San Francisco Bay Area. One of them was at Stanford's Faculty Club in the summer of 1999. The ceremony was complete and the reception was progressing nicely. The mariachi band had gotten everyone in a celebratory mood, and the disk jockey took charge of the dance music. The wedding couple's 225 guests were enjoying themselves, lost in conversation, food, and drink at this upscale, prestigious university restaurant. Douglas was preparing to photograph the remaining elements of the reception—the cake cutting, bouquet throwing, and garter toss—when the wedding couple, looking harried, approached him. They explained that they had to leave at precisely 5:00 PM, a time that was quickly approaching. And leave they did.

The mystery of their sudden departure was soon revealed. They had left at precisely 5:00 to avoid paying their limousine driver's customary fine of one dollar a minute for tardy passengers.

Think about it. After planning for a year, inviting hundreds of people, and spending many thousands of dollars, the happy couple cut short the event they will remember their whole lives to avoid paying a fine of $1 a minute.

Let's put that dollar-a-minute into perspective. Assume that, on average, the 225 attendees spent $200 for clothing, travel, gifts, and lodging—a total of $45,000. Assume, also, that the bride and groom spent $30,000 (probably more) for rental of the Stanford Faculty Club, food, drinks, music, and everything else. Then the total cost of the wedding was $75,000. Including the ceremony, the event lasted just over five hours, for a cost of $15,000 per hour. Had the bride and groom stayed the extra hour, from 5:00 to 6:00, the cost would have been an additional $60, or one two hundred and fiftieth ($1/250^{th}$) as much. Even ignoring what everyone else spent, the additional $60 would have been only one one hundredth ($1/100^{th}$) as much per hour as what the bride and groom had already spent. What were they thinking?! Perhaps they *weren't* thinking.

If they had stopped to consider the situation differently—if someone had asked them if they would like to extend their party for a mere $60—no doubt they would have happily agreed. They could have even passed around a hat and collected 27 cents from each guest. If their wedding guests were typical, the newlyweds would have been fighting off uncles and aunts shoving fistfuls of money at them and demanding to pay the whole amount.

Our central theme is that a little clear thinking goes a long way. This book will help you make great decisions in your business and in your life. In most of the situations you'll ever face, whether in your personal or business life, if you use some basic tools to clear your head, you'll do better than if you don't. This book is your toolbox.

What motivated us to write this book is that, over the years, both of us have regularly come across people in organizations—often bright people with MBAs or other graduate degrees—who don't think they have the time, energy, or skills to make good decisions. They have many clues but don't know how to put them together. They regularly face situations that they could analyze with some of the tools they learned in their courses, but they don't realize that. We don't hold ourselves apart from this group. See David's story in the box below.

DUH!

As a 26-year-old assistant professor at the University of Rochester's Graduate School of Management (now the Simon School), I (David) was telling a student about an apartment complex in Los Angeles whose rents were way too low. The absentee property owners, a group of doctors in Philadelphia, weren't paying attention. Some UCLA graduate school friends and I were thinking of making them an offer, I said, but we didn't know how much it was worth. "Why don't you figure it out?" asked Mark Zachmann, the Ph.D. student. "I have no idea how to do that," I answered. "Yes, you do," he replied. "You figure out the stream of net income, use a reasonable interest rate, and compute the present value." "Oh, yeah," I said sheepishly, suddenly realizing that the economics Jack Hirshleifer had taught me at UCLA had a very practical component.

To succeed in business, or in any organization, you need a range of skills: political skills, language skills, knowledge of how to dress, and knowledge of your industry, just to name a few. This is what you need to keep the train moving, so to speak.

However, a large part of running or working in a business is not simply keeping the train on the track; sometimes you need to switch to a new track or turn the train around. Momentum alone might keep your train moving, but changes in direction require explicit decision-making. Whether you're in computers, cars, or non-profits, you face many decisions. And good decisions require good thinking.

So what does it mean to make a decision? The ultimate goal when you think is to have clear understanding that leads to action. Understanding for the sake of understanding is great. But this book is about **understanding that allows you to solve a particular problem.** While understanding for education is the source of much of our learning, the danger in it is the lack of a clear endpoint or goal. That may be fine while you're a college student and can take the time for protracted inquiry. But when you're a business executive, you face immediate problems and waiting isn't an option. **You want to do just the right amount and right kind of analysis to quickly achieve the understanding you need to make a decision**.

MESSY PROBLEMS

Many subjects in school are presented with a clear problem and a clear answer. In trigonometry class, we knew the solution was trigonometric, while in algebra the solution was algebraic. This approach didn't give many of us skills at framing messy problems. Our abilities broke down when the problem wasn't clear, had significant complexity or uncertainty, or just was too squishy. Once in the "real world," if we couldn't solve a problem analytically, perhaps we'd resort to judgment out of desperation. Judgment and analysis were thus seen as different or opposite ways to solve problems, not as complementary parts of a complete solution. When we solve problems in real life, we need to figure out which tools apply to the problem. And that's something that few of our college or graduate school courses have taught us. It's one of the main skills this book teaches.

The tools we offer are taken from three areas: economics, decision science, and common sense. We have found that our respective disciplines—economics for David and economics and decision science for Charles—are full of incredible insights. But here's the problem: in both disciplines, few of those insights are communicated effectively and, therefore, don't make it into the "real world." In both, the key bottom lines are hidden in complicated graphs and even more complicated mathematical proofs that the virtuosos typically celebrate at the expense of what they proved. Nevertheless, the insights and core ideas are there—they just have to be teased out.

Both of us are passionate about communicating the core ideas from our disciplines because we both have witnessed the power of those ideas in running our businesses and helping us live our lives. But economics and decision science are not enough. That leads us to the third discipline: common sense—which, by the way, is not all that common. We've found that many things get in the way of common sense. In this book, we have melded the most important insights from economics, decision science, and common sense—insights that, once you understand them, will enhance the quality of your decisions. Follow them consistently, and, as a bonus, you can improve your friendships and other relationships.

Here, in a nutshell, are the insights:

- Use powerful techniques to help think clearly (Chapter 2)
- Think about what is really valuable to you (Chapter 3)
- For something to change, something else must have changed. Ask what changed. (Chapter 4)
- Know what you want before you choose (Chapter 5)
- Watch out for biases—and we all have them (Chapter 6)
- Realize what's important (Chapter 7)
- Think about what is available to you, and then create better alternatives (Chapter 8)
- Consciously choose the best alternative (Chapter 9)
- Accept risk and learn how to take account of it (Chapter 10)
- Exploit life's inequalities, and in doing so, learn to appreciate non-linearity, balance, and proportionality (Chapter 11)
- Get the right amount of information for any situation by first determining the value of information (Chapter 12)
- Think simple (Chapter 13)
- Discover arbitrage opportunities—shifting resources from uses that are less valuable to those that are more valuable—that help yourself and others, too (Chapter 14)
- Do the right thing (Chapter 15)

Back to our penny-pinching newlyweds. What should they have done? They should have considered other alternatives (Chapter 8), and they should have looked at what was really

important (Chapter 7). Here are several more stories to give you a feel for how to apply these insights to everyday decisions.

Ronnie Lott's Finger

Ronnie Lott was a fearsome hall-of-fame safety for the champion San Francisco 49ers football team. In the December 22, 1985 game, as Lott tried to tackle the Dallas Cowboys' powerful running back, Timmy Newsome, something went terribly wrong. Lott's finger caught on his chest, allowing Newsome's helmet to smash it awkwardly. "My chest acted like an anvil upon impact, and my pinkie splattered onto my jersey. All I saw was blood and a mashed finger."[1]

Later, the extent of the injury became evident: part of the bone was missing and the painful wound refused to heal. "The bone at the tip of the finger and the bone at the first joint would not fuse in the area of the nail bed. Clearly I couldn't play football with my pinkie in this shape," explained Lott.

Lott and his doctor, Dr. Vincent Pellegrini, discussed his options. First, there was retirement. The second possibility was waiting and hoping—something that had not worked yet. A third alternative was to remove some bone from Lott's wrist and graft it into his finger with the help of a pin, but the problem was that it would take a long time to heal and could easily break again. None of the options looked good.

Dr. Pellegrini explored one last, radical, seemingly barbaric alternative: they could amputate the end of the finger. Although it was not an easy decision, Lott decided to do the unthinkable. "Practically speaking, amputation was the only way I could be sure of playing in the 1986 season, and every other season after that, without the finger bothering me."

The surgery was a success, and, while embarrassed by his shortened finger, Lott lengthened his celebrated professional football career by nine years. Lott and Dr. Pellegrini explored all available alternatives to select the one that best met Lott's objectives and values. We discuss alternatives further in Chapter 8.

Saving My Father's Life

In 1988, my (DRH's) cousin Doug called from Canada to tell me that my father was in the hospital. Doug's tone made me wonder if he was telling me something in code, but I couldn't figure out what. I then called the doctor, who told me that my father had taken an overdose of sleeping pills. He didn't say whether it had been accidental or deliberate, but something made me think it was deliberate. So I asked him directly if my father had tried to commit suicide. After beating around the bush for a while, the doctor admitted that he had. My next call was to buy a plane ticket to go see my father.

On the way to Winnipeg, I had time to collect my thoughts and, I realized, I didn't know *why* he had tried to commit suicide. I had spoken to him on the phone less than two weeks earlier, and he had seemed to be doing well, or at least doing as well as he ever did. What had changed? Why had he suddenly made a decision so at odds with what I had thought to be true about his psyche? I realized that *that* is what I needed to understand. Simply

understanding why my father had tried to kill himself would be a good starting goal and, in fact, would be a necessary achievement if I wanted to tackle the more ambitious goal of talking him out of it.

When I asked my father why he had tried to kill himself, he told me that he had some pains in his leg that wouldn't go away and that he was miserable. He was a very active man—aged 78 at the time—and he still rode his bicycle 20 to 30 miles in a day. With physical activity like that no longer possible, he would understandably get much less pleasure out of life. I asked my father whether he would want to kill himself if he knew that a surgery could fix the pain in his legs. "Of course not," he answered, "but what assurance do I have that the pain will go away?" "I don't know," I answered, "but *that* is the question we need to get answered."

So I talked to the doctor and learned that there was a good chance that surgery could improve his condition. "Good," I answered, "then let's get that done." But there was a problem. My father's condition was not serious enough to put him at the front of the queue, and in Canada's socialized medicine system, there was always a queue. Given my father's age and the "non-seriousness" of his condition, he might well wait months or years for his surgery.

Even this piece of information was news to my father. He had not even asked the doctor if there was such a surgery available, but had simply assumed that there wasn't. Just the prospect of being able to get surgery, even if it meant waiting months, lightened my father's attitude. But not that much. Once he started thinking about it, he decided he was unwilling to bear months of pain while waiting.

But I realized that we could do better. There was no need to wait months when we could pay for the surgery across the border in Grand Forks or Fargo.

"But wouldn't it be expensive?" he asked. I answered that it would, that I could imagine it costing $20,000 in 1988 dollars. But I pointed out that his house was paid for, that he had over $50,000 in savings, and that his various pensions in total exceeded his annual expenditures. "But I want to leave you and April [my

sister] something in my will," he answered. "You'll still be able to leave us something. It'll just be less," I answered. "Besides, I would rather give up my 50-percent share to have you live a few more years."

My father was convinced. However, he, like most of us humans, had trouble with new thoughts, however clear, that challenged his previous conclusions. When I came back to the hospital after lunch, he had backslid. So we went through the reasoning again, and he got it. Then when I came to visit him after dinner Saturday evening, he had backslid but not as much. Then Sunday morning, he backslid even less. By Sunday afternoon, he haltingly laid out the logical sequence to me: "I'll see if I can get the surgery quickly. If not, you can come up in the next week or two and take me down to Fargo for surgery. And I can afford it." After dinner, he laid it out beautifully, with no hesitation. Sunday evening, when I drove into Winnipeg to stay at a hotel before leaving for Monterey early the next morning, I felt incredibly satisfied and proud of myself. I had gone there with a less ambitious goal—understanding why my father had done what he had done—and had left there achieving a much more ambitious goal—giving my father a clear way of thinking about how to preserve his future. That evening I went to see the movie "Stand and Deliver," about the dedicated school teacher who teaches calculus to inner-city students. It was a wonderful movie to see after having taught my father, a master math teacher, something about looking for new solutions and creating better alternatives, a subject that is explored more in Chapter 8. The other techniques I used were asking what changed—the pain in his legs (see Chapter 4), and thinking about what was really valuable (Chapter 3). [In case you're wondering, the next week his leg got worse, putting him at the top of the list, and he got the surgery in Canada. He lived another 9 years and our relationship was much closer after that. He died of natural causes at age 87.]

The Case of the Corporate Printers

Turn now to a successful biotechnology company. Because the company had bought an unplanned proliferation of brands and models of computer printers, it established a task force to narrow the number and establish some standards. The dozen-

person task force met over many months until an agreement was reached.

Separately, a manager from the same company analyzed a major licensing deal for a $100-million-a-year product. After a few hours of analysis, he ran off to present his findings to the top management committee. The committee members reached an agreement and the product was licensed.

The printer task force spent more than ten times the hours as the management committee on licensing. Adjusting for the differences in costs between the two classes of employees, pricey senior management versus cheaper information technology analysts, the printer analysis still cost the company significantly more than the licensing analysis. Given the level of investment, you would conclude that the printer decision was more important to this company, wouldn't you? Yet, in fact, the printer decision was less than one hundredth as important.

The amount of analysis put toward a problem should be proportional to the importance of the problem. This company had not learned the *One-Percent Rule*, which we explain in Chapter 12.

The Expensive $65 Muffler

> *There's no product that can't be made cheaper by some manufacturer. Those people who buy based only on price are his victims.* — Anonymous

For some products, purchasers seem to repeat the mantra "cheaper is better." Why buy a computer for $800 when you can get one for $600? Why pay for a cellular phone when you can get one for free? A number of years ago, I (CLH) had two mufflers installed by two different companies. One charged me $65 and the other $155. Which was the better purchase?

The $65 company made me wait for two hours before they even started. It took them another two hours to finish, so by then I had already killed half a day. One reason they took so long was their utter incompetence. It was all I could do to keep from grabbing the welding torch and finishing the job myself—or running for cover as these Abbott and Costello impersonators

torched the underside of my truck. While it took four hours to install the muffler, it took less than an hour to uninstall it; it broke off as I drove over a bump in the road.

The next day, I tried the second muffler company, Kwik-Way Muffler in Santa Clara, California. I was in and out quickly, and, although my wallet was $155 lighter, five years later the muffler still worked perfectly. The bottom line: I got over 10,000 times as much useful service for the $155 as I did for the $65. Even taking into account the higher cost, my second purchase was still more than 4,000 times better.

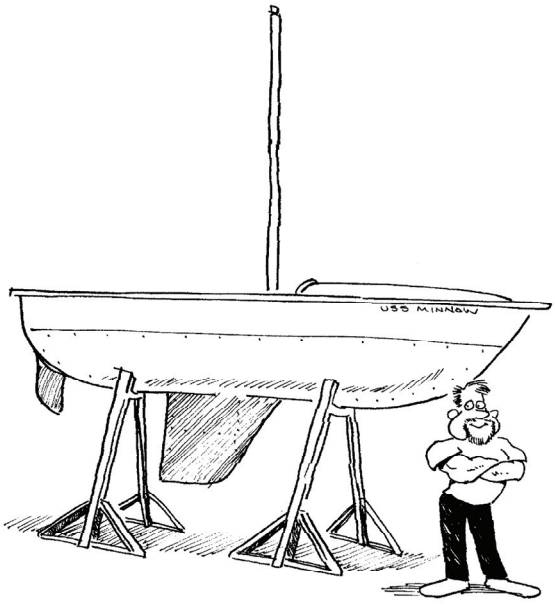
If muffler shops can offer such dramatically different value, what about all the other products and services people price-compare so aggressively? Consider the local bicycle shop that charges $5 more for a helmet than one purchased through a catalog, but spends 15 minutes helping you fit it properly to your child's head. When you pay Craig, the bike god at Saratoga Bike Shop, or Jason at Tour of Nevada City, you sometimes pay more, but you get the services of someone with enormous understanding and experience. The Harborview Injury Prevention and Research Center in Seattle reports that riders with poorly fitting helmets are almost twice as likely to suffer head injuries in a crash.[2] Wouldn't you pay $5 to have your child's (or your own) helmet fitted correctly?

If you consider initial costs only, you buy the cheapest computer, the cheapest muffler, and the cheapest helmet. And you often end up paying more. You need to consider the overall experience. In business, the overall experience is measured in profits. The trick is to consider costs, especially initial costs, as only part of the equation. Add in revenues and maintenance costs and you have the profit picture.

Costs truly are important, but only for two reasons. First, you don't want to pay too much. Second, you don't want to spend money before you have it, which is a cash-flow problem. But at the end of the day, profits are what you deposit in the bank. If given the choice between profits of $200,000 and $100,000, you should pick $200,000, even if this path has higher costs. We need to think about profits and our ultimate value from every situation, as we explain in Chapters 3 and 7.

Turning Lead Into Gold

My (DRH's) friend, Pat Parker, tells of the time he had his arbitrage epiphany. As a seventeen-year-old, he was sailing his small boat in the Long Island Sound off Larchmont in 1948, three years after World War II had ended. Suddenly he realized that his boat had something on it that other people really wanted, something they'd pay a lot of money for. Having grown up in a mining family where metal prices were regularly discussed, he was well aware that since the World War II price controls had been lifted, the price of lead had skyrocketed. And here he was, a teenager sailing on a boat with a lead keel. He pulled his $1,000 boat out of the water, unbolted the lead keel and reinstalled an iron keel. He then sold the lead keel for more than the boat's price and the boat for about $1,000, informing the new buyer that the keel was iron. Now it was obvious what to do; he bought another boat. The script was the same. He would buy a larger boat, remove the lead keel and mount an iron keel. He'd sell the lead for scrap, repair the boat, and sell it for about what he bought it for. In this way, the seventeen-year-old made a significant fortune until the market came to recognize the facts. He earned about $20,000 that summer (about $160,000 in 2005 dollars).



Interestingly, by taking advantage of this arbitrage opportunity, Pat helped increase the supply of lead. That's what arbitrage does—it shifts resources from uses that are less valuable to uses that are more valuable. "Buy low, sell high" is a formula for both getting rich and improving efficiency. Pat found lead that was being used for low-valued uses and transferred it to people who wanted it for higher-valued uses. In this way, he helped himself and others, too. In Chapter 14, we show how to spot arbitrage opportunities where you otherwise might miss them.

The Dishonest Mortgage Application

One day, an associate passed a piece of paper in front of me (CLH) and asked me to sign it. It was a mortgage application stating his employment history, assets, and sources of income. I signed it hurriedly without reading it. However, my better sense and curiosity took over, and when I glanced at the important sections of the form, some incorrect statements jumped out at me.