Sources of Power:

Anyone who watches the television news has seen images of firefighters rescuing people from burning buildings and paramedics treating bombing victims. How do these individuals make the split-second decisions that save lives? Most studies of decision making, based on artificial tasks assigned in laboratory settings, view people as biased and unskilled. Gary Klein is one of the developers of the naturalistic decision making approach, which views people as inherently skilled and experienced. It documents human strengths and capabilities that so far have been downplayed or ignored.

Since 1985, Klein has conducted fieldwork to find out how people tackle challenges in difficult, nonroutine situations. *Sources of Power* is based on observations of humans acting under such real-life constraints as time pressure, high stakes, personal responsibility, and shifting conditions. The professionals studied include firefighters, critical care nurses, pilots, nuclear power plant operators, battle planners, and chess masters. Each chapter builds on key incidents and examples to make the description of the methodology and phenomena more vivid. In addition to providing information that can be used by professionals in management, psychology, engineering, and other fields, the book presents an overview of the research approach of naturalistic decision making and expands our knowledge of the strengths people bring to difficult tasks.

In [*Sources of Power*](https://personalmba.com/book/sources-of-power/), Gary Klein studies time-constrained, high-stakes decision-making in the field and explains how people actually use their skills and experience to make decisions with real consequences.

Much of Klein’s research is focused on the military and civil service, so you’ll follow a team of firefighters trying to rescue a woman from a car hanging off the side of a bridge, observe an aircraft carrier officer order his gunners to shoot down an unidentified bogey, and observe the crew of Apollo 13 as they discover the reality of their situation, formulate plans, and adjust their goals and actions accordingly. Along the way, you’ll be exposed to the key elements of Klein’s “Recognition-Primed” decision-making model, which takes into account elements like experience, intuition, and mental simulation: factors that allow human beings to make extraordinarily complex decisions quickly and relatively accurately.

In [*Sources of Power*](https://personalmba.com/book/sources-of-power/), you’ll learn about the importance of communicating intent and context, asking clarifying questions, using analogy and metaphor, and how to deal with uncertainty and lack of information. By understanding how people actually make decisions, you’ll be equipped to provide your colleagues with the facts and context they need to make smart, informed decisions, and you’ll have a better understanding of how to ensure your decisions are as good as they can possibly be.

Subtitled “How People Make Decisions”, this book attempts to explore the process of decision-making from a perspective far outside the normal business-world-oriented theories. In business school, people are taught that the right way to make a decision is to define the problem, generate a list of possible solutions, evaluate all of the possible solutions, and then carry out a course of action. Klein spent twenty years studying decision making in the field, from firefighters to nurses in the emergency room, and proposes an alternative theory that describes how people make decisions in the real world (“Naturalistic Decision-Making”), calling it the “Recognition-Primed Decision Model”.

Klein’s interest in this area began when his consulting firm was asked to “study how people make decisions under time pressure” by the U.S. Army. Without a war to study, he chose to study firefighters, who often have to “function under the stress of having to make choices with high stakes”. He went in believing in the “rational” decision-making methodology described above. But after observing and interviewing firefighters, he found that such a model did not correspond at all with what they actually did. In fact, one fireground commander, when asked about how he made difficult decisions, claimed, “I don’t make decisions. I don’t remember when I’ve ever made a decision.” Klein was startled to hear this. When pressed, the commander “agreed that there were options, yet it was usually obvious what to do in any given situation.” He was not listing options and comparing them, as the normal decision-making methodology would have. He was just reacting to the situation.

“The commanders’ secret was that their experience let them see a situation, even a nonroutine one, as an example of a prototype, so they knew the typical course of action right away. Their experience let them identify a reasonable reaction as the first one they considered, so they did not bother thinking of others. They were not being perverse. They were being skillful. We now call this strategy *recognition-primed decision making*.”

Klein goes on to explore how RPD works. What are the elements that let an expert immediately generate good options? How do teams work under the RPD model? What lets an expert quickly evaluate whether an option is good enough, and decide whether to move on to another option? He does this primarily through careful interviews and observations. His team focuses on a scenario, identifies the key decision points, and reviews them with the subject afterwards to see what they thought of at the decision point. It’s an anecdote-based system, but a powerful one for generating a model. And when they have tested the system, for instance by studying how chess players of different levels handle time pressure, the results have supported their theories.

Part of the issue with the normal model is that it’s completely unrealistic. In the laboratory, it is easy to study how people make decisions; you give them a goal, and some information, and examine how they use the information to move towards that goal. In the situations that Klein covers, the goals are undefined and can change on a moment-by-moment basis. The information is incomplete and disorganized, so you have to take your best guess, start acting on it, and then see if the situation evolves as you expect it to. For instance, he describes fire-fighters who go into a house, thinking that it’s a small fire in the basement, then realize that it’s a much bigger fire because it’s spread up a laundry chute, switch priorities from putting out the fire to search-and-rescue, calling in a second alarm to get some more help.

The situation is evolving constantly, and an expert will know which elements are important to follow, and which are not. The expert has been in a situation enough times before that they can mentally simulate what should be happening, and recognize when things are deviating from their expectancies, which is a sign of danger. Another good example: a fire commander goes into a building for what he thinks is a regular kitchen fire. As he’s scouting around, he realizes that it’s not behaving like a normal fire. It’s too quiet, and too hot. He doesn’t like it, and pulls his team out of the house. A few moments later, the floor of the house collapses – the fire was actually in the basement. He had no idea that there was even a basement, but his experience let him know that something was wrong, and that he needed to figure out why the situation diverged from his expectations before he continued.

Klein goes into much further detail of how experts “see the invisible” (because they know what signs to look for), generate a course of action, mentally simulate the results of that action, and then carry it out. He also describes the non-linear aspects of problem solving; it’s an iterative process, where you continually are updating your mental model with the results of what has occurred compared to your expectations. He devotes a chapter to the power of stories, a topic [dear to my heart](http://www.nehrlich.com/blog/2004/10/24/#story_based_culture). He talks about the power to read minds, where if a commander communicates his intent clearly, not just of the plan, but of the overall goals of the plan, their subordinates can make the right decisions, even when those decisions conflict with the plan as laid out. He describes how teams function together, studying how the team has a collective cognition which can be developed by working together closely.

At the very end, he examines rational analysis and where it is appropriate and where it is not. In situations where the problem can be analyzed into basic components, rational analysis is a great tool. However, trying to force other situations into that form can be disastrous, because much of the relevant information may be lost. This is also why he says that teaching novices a set of rules as the only way to do things is misleading, and restricting experts to follow those rules can be dangerous. The path to expertise depends on learning the situations that generated the rules, understanding when to apply the rules, and when to break them. The whole point of having experts is to leverage their expertise, not to keep them from using it.