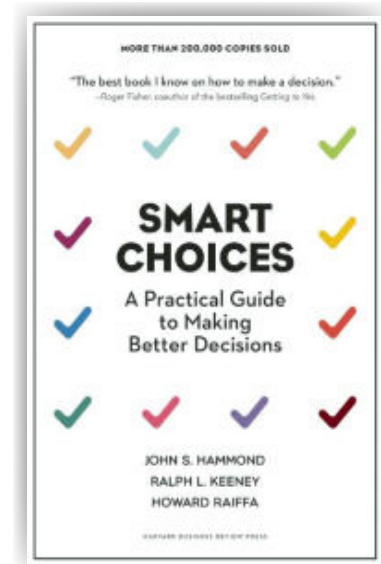


## Smart Choices

### *A Practical Guide to Making Better Decisions*

John S. Hammond, Ralph L. Keeney, and Howard Raiffa

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ISBN: 978-1-63369-104-9



### KEY CONCEPTS

In the classic book **Smart Choices**, the authors outline an eight-step approach to making the best decisions possible:

1. *Define the decision problem.* How a problem is first framed ultimately affects how beneficial the final choice is.
2. *Clarify objectives.* Objectives are goals that direct the whole decision-making process.
3. *Create alternatives.* Alternatives represent the range of potential options for achieving objectives. Taking time to form creative and numerous alternatives is vital to success.
4. *Describe the consequences of each alternative.* Understand how well each of the alternatives meets each of the objectives. This process helps clarify and winnow alternatives.
5. *Make tradeoffs.* When achieving some objectives conflicts with achieving others, tradeoffs must be made.
6. *Consider uncertainties.* If the consequences of people's decisions are unknown, they must weigh the desirability of outcomes by their probability of occurring. This can be done by creating risk profiles and decision trees.
7. *Account for risk tolerance.* When people's decisions contain uncertainty, they must understand their personal risk tolerance in order to choose the best alternatives. Tools such as desirability scoring can facilitate this process.
8. *Coordinate linked decisions.* Decisions are linked when present choices affect the alternatives available for future decisions. Addressing linked decisions requires focusing on one or two uncertainties, having a good strategy for gathering information, and planning for the future.

# SUMMARY

## INTRODUCTION

Decision making is rarely taught or honed as a skill, yet it is a vital component of success. People's most important decisions often require making difficult tradeoffs among a set of options. Rather than systematically assessing what the best choice is, people resort to common and ineffective strategies, such as defaulting to the status quo, letting others or time decide for them, or procrastinating (which limits their options). In Harvard Business School Publishing's **Smart Choices**, decision-making experts John S. Hammond, Ralph L. Keeney, and Howard Raiffa lay out a systematic method of reaching optimal decisions regardless of dilemmas. They demonstrate how learning and practicing decision making can accelerate people's progress toward their goals and give them control over their lives.

## DEFINE THE DECISION PROBLEM

Making a smart choice first requires forming an appropriate *decision problem*. A poorly phrased decision problem can set a person down the wrong path at the outset of his or her journey. For instance, a person asking, "Which unfurnished apartment should I rent in the city?" may or may not be starting with the right decision problem. Perhaps that person should rent a furnished apartment and use a storage unit until he or she is more comfortable. Perhaps the person should buy a condo. Perhaps he or she should move outside the city and commute. In short, people should not be lazy about this important step. They should take time to define and refine their decision problems using the following steps:

- *Write down the trigger to the problem.* This could be a request from a boss, a discussion with a spouse, a change of job, or just about anything. The key is to not let the trigger bias how the problem is stated.
- *Question the constraints.* Constraints are often helpful in narrowing choices, but they can also blind people to some of their best options. Identifying what constraints are assumed and pretending they do not exist at first can help expand people's thinking.
- *Identify key elements of the problem and examine related decisions.* Key elements of a problem might involve a deadline, money, future opportunities, or other limits or benefits. The scope of the decision should not be too broad, but it should somewhat account for related decisions.
- *Get others' insights.* A person who has already thought through the decision problem independently may want to then get alternate perspectives for fresh insights. It may be worthwhile to write multiple decision problems and then reexamine them during the process.

*Despite the importance of decision making to our lives, few of us ever receive any training in it. So we are left to learn from experience.*

## CLARIFY OBJECTIVES

The second step requires listing the *objectives*, or the standards against which the subsequent alternatives will be measured. Making a thorough list of objectives protects people from overemphasizing one value, such as monetary compensation, over another, such as schedule flexibility. Objectives can also help guide a greater set of alternatives to explore in the next step and help clarify what additional information might need to be gathered. Objectives will ultimately help justify decisions to other people. Decision makers should take the following steps when listing their objectives:

- *Write down the concerns the decisions should address.* The process should begin as free form as possible. What are the worst outcomes possible? What should their decisions accomplish? How do they imagine justifying their decisions to others?

- *Convert the concerns into more concise objectives.* Having thought thoroughly about concerns, the decision maker should be able to see patterns and clear desires emerge that can be stated more succinctly.
- *Establish fundamental objectives by separating means and ends.* The list of concise objectives should be organized into two groups: objectives that are ends themselves (e.g., have a comfortable and aesthetically appealing living room) and those that are a means to an end (e.g., get leather couches).
- *Ask “What?” questions to clarify meaning.* People must be sure fundamental objectives are phrased in a meaningful way. For instance, a person desiring a “prestigious” job should ask, “What do I mean by prestigious?”
- *Test the objectives.* If people cannot make decisions with their given objectives or they find that their alternatives are not meeting many of their objectives, they may need to reexamine their lists.

***The way you state the problem represents a crucial choice in its own right. Get it wrong and you’ll march out in the wrong direction. Get it right and you’ll be well on your way to where you want to go.***

### **CREATE ALTERNATIVES**

Creating a list of alternatives means establishing a range of options from which a decision will be made. People tend to fall prey to some common pitfalls at this stage, which can narrow their opportunities and lead them toward suboptimal choices. These include:

- *Defaulting to the status quo.* It is always easier to maintain business as usual (e.g., reapprove last year’s budget for this year), but this is rarely the best course of action.
- *Incrementalizing.* Only slightly more work than defaulting to the status quo, this involves making small changes to an existing alternative (e.g., making minimal adjustments to last year’s budget).
- *Choosing the first possible alternative.* People are more likely to default to the first option presented to them rather than researching alternatives (e.g., using a supplier someone recommended without considering other suppliers).
- *Choosing among a range of alternatives presented by others.* A person that is content in his or her job may receive an offer from a recruiter for another job. Considering only the two jobs, the current one and the offer, is a choice framed by others. There may be other job alternatives that could be even better.
- *Limiting options by waiting too long.* Often the best alternatives disappear due to procrastination.

The following techniques can help people avoid the above pitfalls and generate more and better alternatives to their decision problems:

- *Look at objectives and ask “How?”* Asking “Why?” helps people move from a means to an end when listing objectives, but asking “How?” helps them define their next steps.
- *Challenge constraints or assume they do not exist.* Some constraints are real (e.g., the office space is 1,500 square feet) while others are assumed (e.g., the job is not available because the company always hires internally). When first listing alternatives, constraints should be ignored so that the range of alternatives is not too narrow.
- *Set the bar high.* When people set high expectations for themselves, they are more likely to avoid defaulting to the status quo.
- *List alternatives independently before consulting others for suggestions.* People who are uninvolved with the problem are likely to see it from a different angle and will not have the emotional barriers that the primary decision maker may have.

## DESCRIBE CONSEQUENCES FOR EACH ALTERNATIVE

Decision makers must evaluate what the consequences would be of pursuing each alternative and how those consequences would meet or miss their objectives. Consequences are best expressed in a *consequences table*, which can be made by following four steps:

1. *Imagine having chosen the alternative, not potentially choosing it.* This practice helps people focus on what the consequences of alternatives would be in the long term. By doing this, they understand the consequences in context and are better able to conceptualize and feel what those consequences would be like to experience.
2. *Describe the consequences using words and numbers.* Describing consequences requires using some type of scale that captures each one of the objectives. For example, a measure of the objective “work flexibility” might be the percentage of hours that can be shifted without authorization from a boss. Subjective scales (e.g., A through F grades, 1 through 10, green circle/blue square/black diamond, etc.) can be used for objectives such as “job enjoyment” where hard data would not apply.
3. *Eliminate clearly inferior alternatives.* People can evaluate alternatives by making comparisons in pairs. If one alternative is clearly superior to another, the inferior one can be eliminated. The “winning” alternative can then be compared to another alternative. In pairs where there is no clear superior option, both can be kept.
4. *Organize remaining alternatives in a consequences table.* A consequences table is made by listing alternatives along the top row to form columns and objectives along a left column to form rows. At each intersection in the matrix, people should succinctly describe the consequences that a particular alternative would have for a particular objective. Consequences may be described numerically or with words, but the scale should be consistent across each row (i.e., the same scale per objective). Using a consequences table and forcing all relevant information into a single graphic is essential for examining and comparing alternatives.

***Alternatives are the raw material of decision making. They represent the range of potential choices you'll have for pursuing your objectives.***

## MAKE TRADEOFFS

When a decision maker cannot eliminate all but one alternative from the consequences table, his or her choice requires making *tradeoffs*. This means determining which objectives have relatively greater importance to the decision maker than the others. Sometimes this simply requires complimenting the different scales used in the consequences table with a ranking table. For instance, in a ranking table with 5 alternatives, each would be ranked 1 through 5 by each objective. This second table makes it easier to spot which alternatives dominate others.

If the decision maker still does not feel that the choice is clear, he or she should use a systematic method for making tradeoffs, referred to as the *even swap method*. This method is based on the simple concept that if all the alternatives for a given objective have an identical rating, that objective can be eliminated from consideration. The even swap method forces the decision maker to create equivalencies for a given objective to help narrow his or her focus on the remaining objectives. This requires increasing the value of one alternative's objective while decreasing its value by the same amount in terms of a different objective. This method of making tradeoffs clarifies the value judgments that must be made to determine relative importance and allows the decision maker to concentrate on one value judgment at a time.

## CONSIDER UNCERTAINTIES

In some cases, the consequences of each alternative are known before making the decision, and the process ends after making tradeoffs. However, in many cases the consequences cannot be known before deciding. Decisions involving uncertainty about future outcomes are more difficult, but they can also benefit from a systematic

approach that uses risk profiles and decision trees in addition to the above process. A *risk profile* summarizes four key components of uncertainty:

1. What the key uncertainties are.
2. What the potential outcomes of those uncertainties are.
3. What the chances of each outcome occurring are.
4. What the consequences of each alternative given each outcome would be.

*In one sense, a decision tree is like a blueprint—it lays out, methodically and objectively, the architecture of a decision. And just as a builder would not set out to construct a house without a blueprint, a decision maker will often require a decision tree to resolve a tough choice under uncertain conditions.*

For example, if a person is considering submitting a proposal to win a contract, the key uncertainty would be whether he or she will get the contract. The potential outcomes might be: getting no contract, getting a partial contract, and getting a full contract. He or she could then estimate the chances of those three outcomes occurring and the subsequent consequences, financial and other, for the business.

For decisions with a greater number of outcomes and uncertainties, it can be helpful to depict risk profiles on a *decision tree*, which is a graphic representation of the connections between choices among alternatives, the uncertainties, and the consequences. From left to right, the tree starts with a decision one faces. It is shown like a fork in a road where each branch represents an alternative. For example, submitting a proposal or not submitting one. Following each alternative is another fork that represents the uncertainty which follows. Each branch represents a possible outcome. If a person submits a contract, he or she will win, get a partial contract or lose. Each outcome is labelled with the likelihood of occurrence. Finally, the consequences are listed at endpoints on the right. This type of graphic can aid decision makers by focusing their attention on the most relevant uncertainties and forcing them to think in a thorough, logical progression.

## ACCOUNT FOR RISK TOLERANCE

Two people examining an identical decision may appropriately reach different decisions, if each has a different level of *risk tolerance*. A person's level of risk tolerance is essentially how heavily he or she weighs the downside of consequences against the upside. There are three straightforward steps to assessing risk tolerance in a decision:

1. Consider the relative desirability of the consequences listed in the far right of the decision tree.
2. Weight the desirability of the consequences with their chances of happening.
3. Choose the most attractive alternative.

Naturally, assessing risk tolerance is easier said than done. *Desirability scoring* can introduce greater precision into the process by shifting the analysis from a qualitative to a quantitative assessment. Desirability scoring mirrors the process outlined above but uses numbers to help clarify the decision. There are four steps in this process:

1. *Assign desirability scores to all consequences.* Consequences must first be ranked from best to worst. The best receives a score of 100 while the worst receives a score of 0. The remaining consequences are given scores that reflect their desirability relative to one another.

2. *Weight the desirability scores of the consequences by the chances they will occur.* The lower the chances are that a consequence will occur, the less it should influence an alternative's desirability score. The scores assigned in the first step must therefore be weighted by the chances they will occur. For instance, if the best consequence (with a score of 100) had a 30 percent chance of occurring, its contribution to an outcome's desirability would be 30 ( $100 \times 0.3 = 30$ ).
3. *Calculate each alternative's overall desirability score.* Once all the consequences have been given desirability scores, the decision maker can get an overall desirability score for each alternative by adding up the contributions of the relevant consequence desirability scores.
4. *Compare the desirability scores of all the alternatives and make a choice.* At this point there is a clear and quantifiable basis for making a decision. The alternative with the highest desirability score is the smart choice. While this process is not necessary for most decisions, it can be invaluable for the most complex and important ones.

### COORDINATE CURRENT AND FUTURE DECISIONS

Some decisions cannot be made independently of other decisions. When decisions are linked, alternatives selected in the present can change which alternatives are available in the future. The key to making linked decisions is to plan ahead and map out a *decide-learn sequence* that depicts movement from information decisions to current decisions to future decisions. The authors use the analogy of a skilled chess player to describe this process. Successful chess players choose their moves (the current decision) based on what they know now (information decision) and what they may want to do several moves from the present (future decisions). They have mapped out their plans several moves in advance, but may change those plans depending on what other players do next (new information). They will subsequently choose new moves (basic decisions) and again plan several moves ahead (future decisions).

*Linked decisions* require an iterative process of deciding and learning that mirrors making decisions under conditions of uncertainty, but with a more extensive decision tree. The crux of making linked decisions is narrowing the list of uncertainties to one or two. For instance, a company trying to decide between two products to launch may find that the critical uncertainty is how well the products will sell, not what the production costs or marketing budget will be. Learning is the key means of reducing uncertainty, but it may not always be worth the investment. As before, decision makers should draw a decision tree to better inform decision making.

*The art of good decision making lies in systematic thinking . . . It may take a bit more time and effort to articulate your objectives carefully or to expand your set of alternatives, but the thought process itself is straightforward.*

### AVOID PSYCHOLOGICAL TRAPS

While this decision-making approach outlines a method for avoiding process mistakes, it does not protect people from the psychological mistakes that are imbedded in how their minds work. The human brain relies on routines and assumptions, or *heuristics*, to help cope with the complexity and fast pace of life. While heuristics generally enable people to operate more effectively and block out unnecessary information, heuristics can also bias them toward poor choices. For example, people often fall into the sunk-cost trap, where money spent in the past influences their decisions in the present. People tend to make choices that would help justify their decisions in the past as opposed to choices that would better their futures. For example, money spent on unsatisfying college degrees should not factor into decisions about what to pursue next, but many people consider the money they would "lose" if they did not apply the skills from their degrees in their decision-making processes. The best defense against falling victim to these types of psychological traps is simply for people to increase their awareness of them.

## BECOMING A SMART DECISION MAKER

Smart decision makers use this process consistently on important decisions, hone their skills to use it over time, and are proactive about resolving decision problems. When people create their own decision problems, these are not problems but rather decision opportunities, giving them a chance to discover and live out their core values. Smart decision makers know that to take control of their lives they have to take control of their decisions and make smart choices a habit.

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## FEATURES OF THE BOOK

### **Estimated Reading Time: 4–5 hours, 256 pages**

In **Smart Choices**, John S. Hammond, Ralph L. Keeney, and Howard Raiffa offer readers a practical step-by-step approach for making any type of decision. The authors use a variety of case studies that span relatively simple choices (e.g., daily office management and planning) to more complex decisions (e.g., buying a house or selling a business). Some case studies span multiple chapters, allowing readers to see the larger decision-making process at work. A “roadmap” at the end of the book serves as a summary and reference guide. The book should be read chronologically and in its entirety for best understanding.

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11. The Wise Decision Maker

### *A Roadmap to Smart Choices*

### *About the Authors*

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