This book is not intended as an exposition of the early research that Amos and I conducted together, a task that has been ably carried out by many authors over the years. My main aim here is to present a view of how the mind works that draws on recent developments in cognitive and social psychology. One of the more important developments is that we now understand the marvels as well as the flaws of intuitive thought. Amos and I did not address accurate intuitions beyond the casual statement that judgment heuristics "are quite useful, but sometimes lead to severe and systematic errors." We focused on biases, both because we found them interesting in their own right and because they provided evidence for the heuristics of judgment. We did not ask ourselves whether all intuitive judgments under uncertainty are produced by the heuristics we studied; it is now clear that they are not. In particular, the accurate intuitions of experts are better explained by the effects of prolonged practice than by heuristics. We can now draw a richer andigha riche more balanced picture, in which skill and heuristics are alternative sources of intuitive judgments and choices.

The psychologist Gary Klein tells the story of a team of firefighters that entered a house in which the kitchen was on fire. Soon after they started hosing down the kitchen, the commander heard himself shout, "Let's get out of here!" without realizing why. The floor collapsed almost immediately after the firefighters escaped. Only after the fact did the commander realize that the fire had been unusually quiet and that his ears had been unusually hot. Together, these impressions prompted what he called a "sixth sense of danger." He had no idea what was wrong, but he knew something was wrong. It turned out that the heart of the fire had not been in the kitchen but in the basement beneath where the men had stood. We have all heard such stories of expert intuition: the chess master who walks past a street game and announces "White mates in three" without stopping, or the physician who makes a complex diagnosis after a single glance at a patient. Expert intuition strikes us as magical, but it is not.

Indeed, each of us performs feats of intuitive expertise many times each day. Most of us are pitch-perfect in detecting anger in the first word of a telephone call, recognize as we enter a room that we were the subject of the conversation, and quickly react to subtle signs that the driver of the car in the next lane is dangerous. Our everyday intuitive abilities are no less marvelous than the striking insights of an experienced firefighter or physician—only more common.

The psychology of accurate intuition involves no magic. Perhaps the best short statement of it is by the great Herbert Simon, who studied chess masters and showed that after thousands of hours of practice they come to see the pieces on the board differently from the rest of us. You can feel Simon's impatience with the mythologizing of expert intuition when he writes: "The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition." We are not surprised when a two-year-old looks at a dog and says "doggie!" because we are used to the miracle of children learning to recognize and name things. Simon's point is that the miracles of expert intuition have the same character. Valid intuitions develop when experts have learned to recognize familiar elements in a new situation and to act in a manner that is appropriate to it. Good intuitive judgments come to mind with the same immediacy as "doggie!" Unfortunately, professionals' intuitions do not all arise from true expertise. Many years ago I visited the chief investment officer of a large financial firm, who told me that he had just invested some tens of millions of dollars in the stock of Ford Motor Company. When I asked how he had made that decision, he replied that

he had recently attended an automobile show and had been impressed. “Boy, do they know how to make a car!” was his explanation. He made it very clear that he trusted his gut feeling and was satisfied with himself and with his decision. I found it remarkable that he had apparently not considered the one question that an economist would call relevant: Is Ford stock currently underpriced? Instead, he had listened to his intuition; he liked the cars, he liked the company, and he liked the idea of owning its stock. From what we know about the accuracy of stock picking, it is reasonable to believe that he did not know what he was doing.

The specific heuristics that Amos and I studied proviheitudied de little help in understanding how the executive came to invest in Ford stock, but a broader conception of heuristics now exists, which offers a good account. An important advance is that emotion now looms much larger in our understanding of intuitive judgments and choices than it did in the past.

The executive’s decision would today be described as an example of the affect heuristic, where judgments and decisions are guided directly by feelings of liking and disliking, with little deliberation or reasoning. When confronted with a problem—choosing a chess move or deciding whether to invest in a stock—the machinery of intuitive thought does the best it can. If the individual has relevant expertise, she will recognize the situation, and the intuitive solution that comes to her mind is likely to be correct. This is what happens when a chess master looks at a complex position: the few moves that immediately occur to him are all strong. When the question is difficult and a skilled solution is not available, intuition still has a shot: an answer may come to mind quickly—but it is not an answer to the original question. The question that the executive faced (should I invest in Ford stock?) was difficult, but the answer to an easier and related question (do I like Ford cars?) came readily to his mind and determined his choice. This is the essence of intuitive heuristics: when faced with a difficult question, we often answer an easier one instead, usually without noticing the substitution.

The spontaneous search for an intuitive solution sometimes fails—neither an expert solution nor a heuristic answer comes to mind. In such cases we often find ourselves switching to a slower, more deliberate and effortful form of thinking. This is the slow thinking of the title. Fast thinking includes both variants of intuitive thought—the expert and the heuristic—as well as the entirely automatic mental activities of perception and memory, the operations that enable you to know there is a lamp on your desk or retrieve the name of the capital of Russia.

The distinction between fast and slow thinking has been explored by many psychologists over the last twenty-five years. For reasons that I explain more fully in the next chapter, I describe mental life by the metaphor of two agents, called System 1 and System 2, which respectively produce fast and slow thinking. I speak of the features of intuitive and deliberate thought as if they were traits and dispositions of two characters in your mind. In the picture that emerges from recent research, the intuitive System 1 is more influential than your experience tells you, and it is the secret author of many of the choices and judgments you make. Most of this book is about the workings of System 1 and the mutual influences between it and System 2.