Think Straight

A Practical Guide to Everyday Critical Thinking: Spot Bias, Weigh Evidence, Change Your Mind and Check What You Read

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2026 Edition | Free chapters 1 to 3

Chapter 1: Why Smart People Reason Badly

Intelligence and good reasoning are not the same thing. A quick mind can reach a wrong answer fast and feel sure about it. This chapter looks at why that happens and at the first habit that helps: noticing the moment when your first answer arrives.

TWO WAYS OF THINKING

Researchers who study decision making describe two kinds of processing, often called Type 1 and Type 2. Type 1 is fast and intuitive. Type 2 is slower and analytical. A review of how people reason, written about medical diagnosis but built on general theory, explains that Type 1 processes work well most of the time but can open the door to biases. The authors report that the biases mostly appear to start in the fast intuitive processes, and that there are two major sources: innate, hard-wired biases from our evolutionary past, and acquired biases formed during development and in our working environments. Both are linked to shortcuts called heuristics. The review also notes that fatigue, sleep deprivation and cognitive overload appear to be important risk factors, and that the common feature of the debiasing approaches it covers is a deliberate step away from Type 1 thinking into Type 2 thinking so that an intuitive judgment can be checked (Croskerry, Singhal and Mamede, 2013, BMJ Quality and Safety).

That last point is the heart of this book. You cannot switch off your intuition, and you would not want to. What you can do is learn when to stop and check it.

A TEST OF STOPPING TO CHECK

One research tool measures the tendency to override a first, wrong answer and think again. It is called the Cognitive Reflection Test. In a study of how well different measures predict performance on a wide sample of reasoning tasks, the test predicted performance better than measures of cognitive ability, thinking dispositions and executive functioning. It still added information after those other measures were taken into account. The authors suggest this is because the test captures a tendency toward what they call miserly processing, meaning settling for the easy answer, and because it is a performance measure and not a self-report (Toplak, West and Stanovich, 2011, Memory and Cognition).

Puzzles of this type are easy to try. Here is one, offered as an example and not taken from that study: a bat and a ball cost 1.10 dollars together, and the bat costs 1.00 dollar more than the ball. How much does the ball cost? Many people answer ten cents at once. Check it: if the ball were ten cents, the bat would be 1.10 dollars and the total 1.20 dollars. The ball is five cents. The feeling of having the answer arrived before the checking did.

WHAT TO TAKE FROM THIS

Being clever does not protect you. The first answer that feels right is a draft, not a verdict. Tired, rushed or overloaded minds lean harder on shortcuts, so your reasoning is worth the most when you are rested and unhurried.

THREE HABITS TO START WITH

These are practical suggestions. They are not findings from the studies above.

Name the draft. When an answer pops up, say to yourself "that is my first answer." Naming it opens a small gap between the thought and the decision.

Ask for the opposite. Spend ten seconds on how the answer could be wrong. If you cannot think of anything, that is a signal to look harder.

Match effort to stakes. Do not check every thought. Save the slow check for choices that are costly, hard to undo or involve other people.

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

A colleague says a project failed because of one person. Your first answer is that it is that person's fault. You name the draft. You ask for the opposite: what else could explain it? You list three possibilities: a short deadline, unclear instructions, a missing tool. You still might blame the person, but now you are choosing it from a list.

PRACTICE EXERCISE

For one week, catch three first answers and write each as a line: "First answer: ... Check: ... Final answer: ..." At the end of the week, count how many changed. You are testing your own thinking, not grading yourself.

KEY POINTS

Fast intuitive thinking works most of the time and can bias you. Fatigue and overload make shortcuts more likely. A deliberate pause to check an intuition is the core skill. In a study of reasoning tasks, a test of the tendency to override a first answer predicted performance better than the other measures tried.

Chapter 2: Overconfidence and How It Hides

Overconfidence sounds like one thing. Researchers have found it is at least three, and they do not always point the same way. Knowing which kind you are prone to makes it easier to catch.

THREE KINDS OF OVERCONFIDENCE

A paper that tried to reconcile the research literature describes three distinct ways overconfidence has been defined. The first is overestimation, thinking you did better than you really did. The second is overplacement, thinking you did better than other people. The third is overprecision, being too sure about the exact answer, as when a range you give is too narrow (Moore and Healy, 2008, Psychological Review).

THE EASY AND HARD PATTERN

The same paper reports a pattern that surprises many readers. On difficult tasks, people overestimate how well they did but also mistakenly believe they are worse than others. On easy tasks, they underestimate how well they did but mistakenly believe they are better than others. The authors offer a straightforward theory that explains these apparent contradictions. Overprecision appears to be more persistent than the other two, and its presence reduces the size of both overestimation and overplacement.

Put plainly, how sure you feel depends on how hard the task seems, and the direction can flip. After a hard exam you may expect a low mark and think everyone else did better. After an easy one you may expect a high mark and think you beat the others. Neither guess is a reliable guide.

WHAT TO TAKE FROM THIS

Feeling confident is not evidence. Your sense of how well you are doing is influenced by how hard the task felt, and your sense of how you compare with others is influenced by it too. The most stubborn type, overprecision, shows up as ranges that are too tight and certainty that is too neat.

HABITS TO TRY

These are practical suggestions, not findings from the paper.

Widen the range. When you estimate a number, give a range wide enough that you would be surprised to be outside it. Then widen it again.

Separate the three questions. Ask "How well did I do?", "How did I do compared with others?" and "How exact is my answer?" Each can be wrong in its own way.

Track your guesses. Write down a prediction and check it later. The gap between prediction and result is your own calibration data.

Be wary on both ends. After a hard task, do not assume you failed and others succeeded. After an easy one, do not assume you stood out.

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

You estimate that a task will take two days. Instead of one number, you write: "Most likely two days, between one and five." A week later it takes four. You note that your first guess was too tight and add a line to your tracker: "Estimates for new tasks: add 50 percent." You have turned a miss into a rule you can test.

PRACTICE EXERCISE

For one week, make five predictions about things you can check, such as how long a task will take or how many emails you will get. For each, write a best guess and a range you are 90 percent sure of. At the end of the week, count how many fell inside your range. If fewer than four did, your ranges are too narrow.

KEY POINTS

Overconfidence comes in at least three forms: overestimation, overplacement and overprecision. On hard tasks people overestimate themselves while believing they are worse than others, and on easy tasks the pattern reverses. Overprecision is the most persistent. A prediction log is a simple way to see your own pattern.

Chapter 3: Open-Minded Thinking

Good thinking is not only about being smart. It is also about being willing to consider that you might be wrong. Researchers have studied this trait for a long time under the name actively open-minded thinking.

WHAT IT MEANS

A review of 25 years of work on the idea says it is measured by items covering the willingness to consider alternative opinions, sensitivity to evidence that contradicts current beliefs, the willingness to postpone closure, and reflective thought. Scales that measure it are strong predictors of performance on tasks from the heuristics-and-biases research and of avoiding reasoning traps such as superstitious thinking and belief in conspiracy theories. The authors present a 13-item scale and argue that these scales predict well because they tap processes of cognitive decoupling and decontextualization, which modern life increasingly requires (Stanovich and Toplak, 2023, Journal of Intelligence).

A CAUTION FROM THE SAME REVIEW

The authors also note a paradox. Although open-minded thinking scales are strong predictors of performance on most rational-thinking tasks, they do not predict avoiding myside thinking, which is thinking that favours your own side, even though avoiding it is close to the heart of the concept. In plain terms, people who say they are open-minded can still read the evidence in favour of their own view. The scales are also mostly questionnaires, so the authors warn that answers can be contaminated.

A STANDARD FOR THINKING, YOURS AND OTHERS

A paper on the same idea in politics describes it as a standard for judging thinking, both your own and other people's. It argues that this matters for three reasons: it gives a prescription for thinking about decisions, it works as a social norm when others agree, and it helps you decide whom to trust, including politicians and pundits. The author notes that the idea does not assume more thinking is always better, and that low confidence in the results of thinking is often warranted and useful (Baron, 2019, Cognition).

WHAT TO TAKE FROM THIS

Open-mindedness is a set of habits, not a feeling. It is easy to claim and harder to do. Treat your own sense of being fair-minded with some suspicion, because the research suggests it does not guarantee fairness to your own side.

FOUR HABITS TO TRY

These are practical suggestions, not findings from the papers.

Seek the best opposing case. Before you decide, look for the strongest version of the other view, not the weakest.

Look for evidence that would change your mind. Ask "What would I need to see?" and write it down before you look.

Delay the verdict. Put a gap between taking in information and deciding. Sleeping on an important choice is a cheap way to postpone closure.

Check which side you are favouring. Ask yourself: "If this evidence supported the other side, would I accept it as easily?"

A WORKED EXAMPLE (INVENTED FOR PRACTICE)

You read an article that agrees with your view on a workplace policy. You ask yourself the side question: if the same evidence had pointed the other way, would you have accepted it? You are not sure. So you search for the best argument against the policy and read it fully. Your view does not change, but it now has a stated weak point.

PRACTICE EXERCISE

Pick one opinion you hold with some heat. Write down what would change your mind. Then spend fifteen minutes looking for the best case against it, from the people who believe it. Note whether anything surprised you.

KEY POINTS

Actively open-minded thinking includes weighing other views, noticing contrary evidence, delaying closure and reflecting. Scales that measure it predict performance on reasoning tasks and avoidance of some reasoning traps, but they do not predict avoiding thinking that favours your own side. Make open-mindedness concrete with written tests for what would change your mind.

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