

BLINK

Author, journalist, cultural commentator and intellectual adventurer, Malcolm Gladwell was born in 1963 in England to a Jamaican mother and an English mathematician father. He grew up in Canada and graduated with a degree in history from the University of Toronto in 1984. From 1987 to 1996, he was a reporter for the *Washington Post*, first as a science writer and then as New York City bureau chief. Since 1996, he has been a staff writer for the *New Yorker* magazine. His curiosity and breadth of interests are shown in *New Yorker* articles ranging over a wide array of subjects including early childhood development and the flu, not to mention hair dye, shopping and what it takes to be cool. His phenomenal bestseller *The Tipping Point* captured the world's attention with its theory that a curiously small change can have unforeseen effects, and the phrase has become part of our language, used by writers, politicians and business people everywhere to describe cultural trends and strange phenomena.

BLINK

*The Power
of Thinking
Without Thinking*

MALCOLM GLADWELL



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To my parents, Joyce and Graham Gladwell

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Introduction

The Statue That Didn't Look Right

In September of 1983, an art dealer by the name of Gianfranco Becchina approached the J. Paul Getty Museum in California. He had in his possession, he said, a marble statue dating from the sixth century BC. It was what is known as a kouros — a sculpture of a nude male youth standing with his left leg forward and his arms at his sides. There are only about two hundred kouros in existence, and most have been recovered badly damaged or in fragments from grave sites or archeological digs. But this one was almost perfectly preserved. It stood close to seven feet tall. It had a kind of light-colored glow that set it apart from other ancient works. It was an extraordinary find. Becchina's asking price was just under \$10 million.

The Getty moved cautiously. It took the kouros on loan and began a thorough investigation. Was the statue consistent with other known kouros? The answer appeared to be yes. The style of the sculpture seemed reminiscent of the Anavyssos kouros in the National Archaeological Museum of Athens, meaning that it seemed to fit with a particular time and place. Where and when had the statue been found? No one knew precisely, but Becchina gave the Getty's legal department a sheaf of documents relating to its more recent history. The kouros, the records stated, had been in the private collection of a Swiss physician named Lauffenberger since the 1930s, and he in turn had acquired it from a well-known Greek art dealer named Roussos.

A geologist from the University of California named Stanley Margolis came to the museum and spent two days examining the surface of the statue with a high-resolution stereomicroscope. He then removed a core sample measuring one centimeter in diameter and two centimeters in length from just below the right knee and analyzed it using an electron microscope, electron microprobe, mass spectrometry, X-ray diffraction, and X-ray fluorescence. The statue was made of dolomite marble from the ancient Cape Vathy quarry on the island of Thasos, Margolis concluded, and the surface of the statue was covered in a thin layer of calcite — which was significant, Margolis told the Getty, because dolomite can turn into calcite only over the course of hundreds, if not thousands, of years. In other words, the statue was old. It wasn't some contemporary fake.

The Getty was satisfied. Fourteen months after their investigation of the kouros began,

they agreed to buy the statue. In the fall of 1986, it went on display for the first time. The *New York Times* marked the occasion with a front-page story. A few months later, the Getty's curator of antiquities, Marion True, wrote a long, glowing account of the museum's acquisition for the art journal *The Burlington Magazine*. "Now standing erect without external support, his closed hands fixed firmly to his thighs, the kouros expresses the confident vitality that is characteristic of the best of his brothers." True concluded triumphantly, "God or man, he embodies all the radiant energy of the adolescence of western art."

The kouros, however, had a problem. It didn't look right. The first to point this out was an Italian art historian named Federico Zeri, who served on the Getty's board of trustees. When Zeri was taken down to the museum's restoration studio to see the kouros in December of 1983, he found himself staring at the sculpture's fingernails. In a way he couldn't immediately articulate, they seemed wrong to him. Evelyn Harrison was next. She was one of the world's foremost experts on Greek sculpture, and she was in Los Angeles visiting the Getty just before the museum finalized the deal with Becchina. "Arthur Houghton, who was then the curator, took us down to see it," Harrison remembers. "He just swished a cloth off the top of it and said, 'Well, it isn't ours yet, but it will be in a couple of weeks.' And I said, 'I'm sorry to hear that.' " What did Harrison see? She didn't know. In that very first moment when Houghton swished off the cloth, all Harrison had was a hunch, an instinctive sense that something was amiss. A few months later, Houghton took Thomas Hoving, the former director of the Metropolitan Museum of Art in New York, down to the Getty's conservation studio to see the statue as well. Hoving always makes a note of the first word that goes through his head when he sees something new, and he'll never forget what that word was when he first saw the kouros. "It was 'fresh' — 'fresh,' " Hoving recalls. And "fresh" was not the right reaction to have to a two-thousand-year-old statue. Later, thinking back on that moment, Hoving realized why that thought had popped into his mind: "I had dug in Sicily, where we found bits and pieces of these things. They just don't come out looking like that. The kouros looked like it had been dipped in the very best caffè latte from Starbucks."

Hoving turned to Houghton. "Have you paid for this?"

Houghton, Hoving remembers, looked stunned.

"If you have, try to get your money back," Hoving said. "If you haven't, don't."

The Getty was getting worried, so they convened a special symposium on the kouros in Greece. They wrapped the statue up, shipped it to Athens, and invited the country's most

senior sculpture experts. This time the chorus of dismay was even louder.

Harrison, at one point, was standing next to a man named George Despinis, the head of the Acropolis Museum in Athens. He took one look at the kouros and blanched. “Anyone who has ever seen a sculpture coming out of the ground,” he said to her, “could tell that that thing has never been in the ground.” Georgios Dontas, head of the Archeological Society in Athens, saw the statue and immediately felt cold. “When I saw the kouros for the first time,” he said, “I felt as though there was a glass between me and the work.” Dontas was followed in the symposium by Angelos Delivorrias, director of the Benaki Museum in Athens. He spoke at length on the contradiction between the style of the sculpture and the fact that the marble from which it was carved came from Thasos. Then he got to the point. Why did he think it was a fake? Because when he first laid eyes on it, he said, he felt a wave of “intuitive repulsion.” By the time the symposium was over, the consensus among many of the attendees appeared to be that the kouros was not at all what it was supposed to be. The Getty, with its lawyers and scientists and months of painstaking investigation, had come to one conclusion, and some of the world’s foremost experts in Greek sculpture — just by looking at the statue and sensing their own “intuitive repulsion” — had come to another. Who was right?

For a time it wasn’t clear. The kouros was the kind of thing that art experts argued about at conferences. But then, bit by bit, the Getty’s case began to fall apart. The letters the Getty’s lawyers used to carefully trace the kouros back to the Swiss physician Lauffenberger, for instance, turned out to be fakes. One of the letters dated 1952 had a postal code on it that didn’t exist until twenty years later. Another letter dated 1955 referred to a bank account that wasn’t opened until 1963. Originally the conclusion of long months of research was that the Getty kouros was in the style of the Anavyssos kouros. But that, too, fell into doubt: the closer experts in Greek sculpture looked at it, the more they began to see it as a puzzling pastiche of several different styles from several different places and time periods. The young man’s slender proportions looked a lot like those of the Tenea kouros, which is in a museum in Munich, and his stylized, beaded hair was a lot like that of the kouros in the Metropolitan Museum in New York. His feet, meanwhile, were, if anything, modern. The kouros it most resembled, it turned out, was a smaller, fragmentary statue that was found by a British art historian in Switzerland in 1990. The two statues were cut from similar marble and sculpted in quite similar ways. But the Swiss kouros didn’t come from ancient Greece. It came from a forger’s workshop in Rome in the early 1980s. And what of the scientific analysis that said

that the surface of the Getty kouros could only have aged over many hundreds or thousands of years? Well, it turns out things weren't that cut and dried. Upon further analysis, another geologist concluded that it might be possible to "age" the surface of a dolomite marble statue in a couple of months using potato mold. In the Getty's catalogue, there is a picture of the kouros, with the notation "About 530 BC, or modern forgery."

When Federico Zeri and Evelyn Harrison and Thomas Hoving and Georgios Dontas — and all the others — looked at the kouros and felt an "intuitive repulsion," they were absolutely right. In the first two seconds of looking — in a single glance — they were able to understand more about the essence of the statue than the team at the Getty was able to understand after fourteen months.

Blink is a book about those first two seconds.

1. Fast and Frugal

Imagine that I were to ask you to play a very simple gambling game. In front of you are four decks of cards — two of them red and the other two blue. Each card in those four decks either wins you a sum of money or costs you some money, and your job is to turn over cards from any of the decks, one at a time, in such a way that maximizes your winnings. What you don't know at the beginning, however, is that the red decks are a minefield. The rewards are high, but when you lose on the red cards, you lose a lot. Actually, you can win only by taking cards from the blue decks, which offer a nice steady diet of \$50 payouts and modest penalties. The question is how long will it take you to figure this out?

A group of scientists at the University of Iowa did this experiment a few years ago, and what they found is that after we've turned over about fifty cards, most of us start to develop a hunch about what's going on. We don't know why we prefer the blue decks, but we're pretty sure at that point that they are a better bet. After turning over about eighty cards, most of us have figured out the game and can explain exactly why the first two decks are such a bad idea. That much is straightforward. We have some experiences. We think them through. We develop a theory. And then finally we put two and two together. That's the way learning works.

But the Iowa scientists did something else, and this is where the strange part of the

experiment begins. They hooked each gambler up to a machine that measured the activity of the sweat glands below the skin in the palms of their hands. Like most of our sweat glands, those in our palms respond to stress as well as temperature — which is why we get clammy hands when we are nervous. What the Iowa scientists found is that gamblers started generating stress responses to the red decks by the tenth card, *forty* cards before they were able to say that they had a hunch about what was wrong with those two decks. More important, right around the time their palms started sweating, their behavior began to change as well. They started favoring the blue cards and taking fewer and fewer cards from the red decks. In other words, the gamblers figured the game out before they realized they had figured the game out: they began making the necessary adjustments long before they were consciously aware of what adjustments they were supposed to be making.

The Iowa experiment is just that, of course, a simple card game involving a handful of subjects and a stress detector. But it's a very powerful illustration of the way our minds work. Here is a situation where the stakes were high, where things were moving quickly, and where the participants had to make sense of a lot of new and confusing information in a very short time. What does the Iowa experiment tell us? That in those moments, our brain uses two very different strategies to make sense of the situation. The first is the one we're most familiar with. It's the conscious strategy. We think about what we've learned, and eventually we come up with an answer. This strategy is logical and definitive. But it takes us eighty cards to get there. It's slow, and it needs a lot of information. There's a second strategy, though. It operates a lot more quickly. It starts to kick in after ten cards, and it's really smart because it picks up the problem with the red decks almost immediately. It has the drawback, however, that it operates — at least at first — entirely below the surface of consciousness. It sends its messages through weirdly indirect channels, such as the sweat glands in the palms of our hands. It's a system in which our brain reaches conclusions without immediately telling us that it's reaching conclusions.

The second strategy was the path taken by Evelyn Harrison and Thomas Hoving and the Greek scholars. They didn't weigh every conceivable strand of evidence. They considered only what could be gathered in a glance. Their thinking was what the cognitive psychologist Gerd Gigerenzer likes to call "fast and frugal." They simply took a look at that statue and some part of their brain did a series of instant calculations, and before any kind of conscious thought took place, they *felt* something, just like the sudden prickling of sweat on the palms

of the gamblers. For Thomas Hoving, it was the completely inappropriate word “fresh” that suddenly popped into his head. In the case of Angelos Delivorrias, it was a wave of “intuitive repulsion.” For Georgios Dontas, it was the feeling that there was a glass between him and the work. Did they know why they knew? Not at all. But they *knew*.

2. The Internal Computer

The part of our brain that leaps to conclusions like this is called the adaptive unconscious, and the study of this kind of decision making is one of the most important new fields in psychology. The adaptive unconscious is not to be confused with the unconscious described by Sigmund Freud, which was a dark and murky place filled with desires and memories and fantasies that were too disturbing for us to think about consciously. This new notion of the adaptive unconscious is thought of, instead, as a kind of giant computer that quickly and quietly processes a lot of the data we need in order to keep functioning as human beings. When you walk out into the street and suddenly realize that a truck is bearing down on you, do you have time to think through all your options? Of course not. The only way that human beings could ever have survived as a species for as long as we have is that we’ve developed another kind of decision-making apparatus that’s capable of making very quick judgments based on very little information. As the psychologist Timothy D. Wilson writes in his book *Strangers to Ourselves*: “The mind operates most efficiently by relegating a good deal of high-level, sophisticated thinking to the unconscious, just as a modern jetliner is able to fly on automatic pilot with little or no input from the human, ‘conscious’ pilot. The adaptive unconscious does an excellent job of sizing up the world, warning people of danger, setting goals, and initiating action in a sophisticated and efficient manner.”

Wilson says that we toggle back and forth between our conscious and unconscious modes of thinking, depending on the situation. A decision to invite a co-worker over for dinner is conscious. You think it over. You decide it will be fun. You ask him or her. The spontaneous decision to argue with that same co-worker is made unconsciously — by a different part of the brain and motivated by a different part of your personality.

Whenever we meet someone for the first time, whenever we interview someone for a job, whenever we react to a new idea, whenever we’re faced with making a decision quickly and under stress, we use that second part of our brain. How long, for example, did it take you,

when you were in college, to decide how good a teacher your professor was? A class? Two classes? A semester? The psychologist Nalini Ambady once gave students three ten-second videotapes of a teacher — with the sound turned off — and found they had no difficulty at all coming up with a rating of the teacher's effectiveness. Then Ambady cut the clips back to five seconds, and the ratings were the same. They were remarkably consistent even when she showed the students just *two* seconds of videotape. Then Ambady compared those snap judgments of teacher effectiveness with evaluations of those same professors made by their students after a full semester of classes, and she found that they were also essentially the same. A person watching a silent two-second video clip of a teacher he or she has never met will reach conclusions about how good that teacher is that are very similar to those of a student who has sat in the teacher's class for an entire semester. That's the power of our adaptive unconscious.

You may have done the same thing, whether you realized it or not, when you first picked up this book. How long did you first hold it in your hands? Two seconds? And yet in that short space of time, the design of the cover, whatever associations you may have with my name, and the first few sentences about the kouros all generated an impression — a flurry of thoughts and images and preconceptions — that has fundamentally shaped the way you have read this introduction so far. Aren't you curious about what happened in those two seconds?

I think we are innately suspicious of this kind of rapid cognition. We live in a world that assumes that the quality of a decision is directly related to the time and effort that went into making it. When doctors are faced with a difficult diagnosis, they order more tests, and when we are uncertain about what we hear, we ask for a second opinion. And what do we tell our children? Haste makes waste. Look before you leap. Stop and *think*. Don't judge a book by its cover. We believe that we are always better off gathering as much information as possible and spending as much time as possible in deliberation. We really only trust conscious decision making. But there are moments, particularly in times of stress, when haste does not make waste, when our snap judgments and first impressions can offer a much better means of making sense of the world. The first task of *Blink* is to convince you of a simple fact: decisions made very quickly can be every bit as good as decisions made cautiously and deliberately.

Blink is not just a celebration of the power of the glance, however. I'm also interested in those moments when our instincts betray us. Why, for instance, if the Getty's kouros was so

obviously fake — or, at least, problematic — did the museum buy it in the first place? Why didn't the experts at the Getty also have a feeling of intuitive repulsion during the fourteen months they were studying the piece? That's the great puzzle of what happened at the Getty and the answer is that those feelings, for one reason or another, were thwarted. That is partly because the scientific data seemed so compelling. (The geologist Stanley Margolis was so convinced by his own analysis that he published a long account of his method in *Scientific American*.) But mostly it's because the Getty desperately wanted the statue to be real. It was a young museum, eager to build a world-class collection, and the kouros was such an extraordinary find that its experts were blinded to their instincts. The art historian George Ortiz was once asked by Ernst Langlotz, one of the world's foremost experts on archaic sculpture, whether he wanted to purchase a bronze statuette. Ortiz went to see the piece and was taken aback; it was, to his mind, clearly a fake, full of contradictory and slipshod elements. So why was Langlotz, who knew as much as anyone in the world about Greek statues, fooled? Ortiz's explanation is that Langlotz had bought the sculpture as a very young man, before he acquired much of his formidable expertise. "I suppose," Ortiz said, "that Langlotz fell in love with this piece; when you are a young man, you do fall in love with your first purchase, and perhaps this was his first love. Notwithstanding his unbelievable knowledge, he was obviously unable to question his first assessment."

That is not a fanciful explanation. It gets at something fundamental about the way we think. Our unconscious is a powerful force. But it's fallible. It's not the case that our internal computer always shines through, instantly decoding the "truth" of a situation. It can be thrown off, distracted, and disabled. Our instinctive reactions often have to compete with all kinds of other interests and emotions and sentiments. So, when should we trust our instincts and when should we be wary of them? Answering that question is the second task of *Blink*. When our powers of rapid cognition go awry, they go awry for a very specific and consistent set of reasons, and those reasons can be identified and understood. It is possible to learn when to listen to that powerful onboard computer and when to be wary of it.

The third and most important task of this book is to convince you that our snap judgments and first impressions can be educated and controlled. I know that's hard to believe. Harrison and Hoving and the other art experts who looked at the Getty kouros had powerful and sophisticated reactions to the statue, but didn't they bubble up unbidden from their unconscious? Can that kind of mysterious reaction be controlled? The truth is that it can. Just

as we can teach ourselves to think logically and deliberately, we can also teach ourselves to make better snap judgments. In *Blink* you'll meet doctors and generals and coaches and furniture designers and musicians and actors and car salesmen and countless others, all of whom are very good at what they do and all of whom owe their success, at least in part, to the steps they have taken to shape and manage and educate their unconscious reactions. The power of knowing, in that first two seconds, is not a gift given magically to a fortunate few. It is an ability that we can all cultivate for ourselves.

3. A Different and Better World

There are lots of books that tackle broad themes, that analyze the world from great remove. This is not one of them. *Blink* is concerned with the very smallest components of our everyday lives — the content and origin of those instantaneous impressions and conclusions that spontaneously arise whenever we meet a new person or confront a complex situation or have to make a decision under conditions of stress. When it comes to the task of understanding ourselves and our world, I think we pay too much attention to those grand themes and too little to the particulars of those fleeting moments. But what would happen if we took our instincts seriously? What if we stopped scanning the horizon with our binoculars and began instead examining our own decision making and behavior through the most powerful of microscopes? I think that would change the way wars are fought, the kinds of products we see on the shelves, the kinds of movies that get made, the way police officers are trained, the way couples are counseled, the way job interviews are conducted, and on and on. And if we were to combine all of those little changes, we would end up with a different and better world. I believe — and I hope that by the end of this book you will believe it as well — that the task of making sense of ourselves and our behavior requires that we acknowledge there can be as much value in the blink of an eye as in months of rational analysis. “I always considered scientific opinion more objective than esthetic judgments,” the Getty’s curator of antiquities Marion True said when the truth about the kouros finally emerged. “Now I realize I was wrong.”

The Theory of Thin Slices: How a Little Bit of Knowledge Goes a Long Way

Some years ago, a young couple came to the University of Washington to visit the laboratory of a psychologist named John Gottman. They were in their twenties, blond and blue-eyed with stylishly tousled haircuts and funky glasses. Later, some of the people who worked in the lab would say they were the kind of couple that is easy to like — intelligent and attractive and funny in a droll, ironic kind of way — and that much is immediately obvious from the videotape Gottman made of their visit. The husband, whom I'll call Bill, had an endearingly playful manner. His wife, Susan, had a sharp, deadpan wit.

They were led into a small room on the second floor of the nondescript two-story building that housed Gottman's operations, and they sat down about five feet apart on two office chairs mounted on raised platforms. They both had electrodes and sensors clipped to their fingers and ears, which measured things like their heart rate, how much they were sweating, and the temperature of their skin. Under their chairs, a "jiggle-o-meter" on the platform measured how much each of them moved around. Two video cameras, one aimed at each person, recorded everything they said and did. For fifteen minutes, they were left alone with the cameras rolling, with instructions to discuss any topic from their marriage that had become a point of contention. For Bill and Sue it was their dog. They lived in a small apartment and had just gotten a very large puppy. Bill didn't like the dog; Sue did. For fifteen minutes, they discussed what they ought to do about it.

The videotape of Bill and Sue's discussion seems, at least at first, to be a random sample of a very ordinary kind of conversation that couples have all the time. No one gets angry. There are no scenes, no breakdowns, no epiphanies. "I'm just not a dog person" is how Bill starts things off, in a perfectly reasonable tone of voice. He complains a little bit — but about the dog, not about Susan. She complains, too, but there are also moments when they simply forget that they are supposed to be arguing. When the subject of whether the dog smells comes up, for example, Bill and Sue banter back and forth happily, both with a half smile on their lips.

Sue: Sweetie! She's not smelly...

Bill: Did you smell her today?

Sue: I smelled her. She smelled good. I petted her, and my hands didn't stink or feel oily. Your hands have never smelled oily.

Bill: Yes, sir.

Sue: I've never let my dog get oily.

Bill: Yes, sir. She's a dog.

Sue: My dog has never gotten oily. You'd better be careful.

Bill: No, you'd better be careful.

Sue: No, you'd better be careful.... Don't call my dog oily, boy.

1. The Love Lab

How much do you think can be learned about Sue and Bill's marriage by watching that fifteen-minute videotape? Can we tell if their relationship is healthy or unhealthy? I suspect that most of us would say that Bill and Sue's dog talk doesn't tell us much. It's much too short. Marriages are buffeted by more important things, like money and sex and children and jobs and in-laws, in constantly changing combinations. Sometimes couples are very happy together. Some days they fight. Sometimes they feel as though they could almost kill each other, but then they go on vacation and come back sounding like newlyweds. In order to "know" a couple, we feel as though we have to observe them over many weeks and months and see them in every state — happy, tired, angry, irritated, delighted, having a nervous breakdown, and so on — and not just in the relaxed and chatty mode that Bill and Sue seemed to be in. To make an accurate prediction about something as serious as the future of marriage — indeed, to make a prediction of any sort — it seems that we would have to gather a lot of information and in as many different contexts as possible.

But John Gottman has proven that we don't have to do that at all. Since the 1980s, Gottman has brought more than three thousand married couples — just like Bill and Sue — into that small room in his "love lab" near the University of Washington campus. Each couple has been videotaped, and the results have been analyzed according to something Gottman dubbed SPAFF (for specific affect), a coding system that has twenty separate categories corresponding to every conceivable emotion that a married couple might express during a

conversation. Disgust, for example, is 1, contempt is 2, anger is 7, defensiveness is 10, whining is 11, sadness is 12, stonewalling is 13, neutral is 14, and so on. Gottman has taught his staff how to read every emotional nuance in people's facial expressions and how to interpret seemingly ambiguous bits of dialogue. When they watch a marriage videotape, they assign a SPAFF code to every second of the couple's interaction, so that a fifteen-minute conflict discussion ends up being translated into a row of eighteen hundred numbers — nine hundred for the husband and nine hundred for the wife. The notation "7, 7, 14, 10, 11, 11," for instance, means that in one six-second stretch, one member of the couple was briefly angry, then neutral, had a moment of defensiveness, and then began whining. Then the data from the electrodes and sensors is factored in, so that the coders know, for example, when the husband's or the wife's heart was pounding or when his or her temperature was rising or when either of them was jiggling in his or her seat, and all of that information is fed into a complex equation.

On the basis of those calculations, Gottman has proven something remarkable. If he analyzes an hour of a husband and wife talking, he can predict with 95 percent accuracy whether that couple will still be married fifteen years later. If he watches a couple for fifteen minutes, his success rate is around 90 percent. Recently, a professor who works with Gottman named Sybil Carrère, who was playing around with some of the videotapes, trying to design a new study, discovered that if they looked at only *three minutes* of a couple talking, they could still predict with fairly impressive accuracy who was going to get divorced and who was going to make it. The truth of a marriage can be understood in a much shorter time than anyone ever imagined.

John Gottman is a middle-aged man with owl-like eyes, silvery hair, and a neatly trimmed beard. He is short and very charming, and when he talks about something that excites him — which is nearly all the time — his eyes light up and open even wider. During the Vietnam War, he was a conscientious objector, and there is still something of the '60s hippie about him, like the Mao cap he sometimes wears over his braided yarmulke. He is a psychologist by training, but he also studied mathematics at MIT, and the rigor and precision of mathematics clearly moves him as much as anything else. When I met Gottman, he had just published his most ambitious book, a dense five-hundred-page treatise called *The Mathematics of Divorce*, and he attempted to give me a sense of his argument, scribbling equations and impromptu graphs on a paper napkin until my head began to swim.

Gottman may seem to be an odd example in a book about the thoughts and decisions that bubble up from our unconscious. There's nothing instinctive about his approach. He's not making snap judgments. He's sitting down with his computer and painstakingly analyzing videotapes, second by second. His work is a classic example of conscious and deliberate thinking. But Gottman, it turns out, can teach us a great deal about a critical part of rapid cognition known as thin-slicing. "Thin-slicing" refers to the ability of our unconscious to find patterns in situations and behavior based on very narrow slices of experience. When Evelyn Harrison looked at the kouros and blurted out, "I'm sorry to hear that," she was thin-slicing; so were the Iowa gamblers when they had a stress reaction to the red decks after just ten cards.

Thin-slicing is part of what makes the unconscious so dazzling. But it's also what we find most problematic about rapid cognition. How is it possible to gather the necessary information for a sophisticated judgment in such a short time? The answer is that when our unconscious engages in thin-slicing, what we are doing is an automated, accelerated unconscious version of what Gottman does with his videotapes and equations. Can a marriage really be understood in one sitting? Yes it can, and so can lots of other seemingly complex situations. What Gottman has done is to show us how.

2. Marriage and Morse Code

I watched the videotape of Bill and Sue with Amber Tabares, a graduate student in Gottman's lab who is a trained SPAFF coder. We sat in the same room that Bill and Sue used, watching their interaction on a monitor. The conversation began with Bill. He liked their old dog, he said. He just didn't like their new dog. He didn't speak angrily or with any hostility. It seemed like he genuinely just wanted to explain his feelings.

If we listened closely, Tabares pointed out, it was clear that Bill was being very defensive. In the language of SPAFF, he was cross-complaining and engaging in "yes-but" tactics — appearing to agree but then taking it back. Bill was coded as defensive, as it turned out, for forty of the first sixty-six seconds of their conversation. As for Sue, while Bill was talking, on more than one occasion she rolled her eyes very quickly, which is a classic sign of contempt. Bill then began to talk about his objection to the pen where the dog lives. Sue replied by closing her eyes and then assuming a patronizing lecturing voice. Bill went on to say that he

didn't want a fence in the living room. Sue said, "I don't want to argue about that," and rolled her eyes — another indication of contempt. "Look at that," Tabares said. "More contempt. We've barely started and we've seen him be defensive for almost the whole time, and she has rolled her eyes several times."

At no time as the conversation continued did either of them show any overt signs of hostility. Only subtle things popped up for a second or two, prompting Tabares to stop the tape and point them out. Some couples, when they fight, *fight*. But these two were a lot less obvious. Bill complained that the dog cut into their social life, since they always had to come home early for fear of what the dog might do to their apartment. Sue responded that that wasn't true, arguing, "If she's going to chew anything, she's going to do it in the first fifteen minutes that we're gone." Bill seemed to agree with that. He nodded lightly and said, "Yeah, I know," and then added, "I'm not saying it's rational. I just don't want to have a dog."

Tabares pointed at the videotape. "He started out with 'Yeah, I know.' But it's a yes-but. Even though he started to validate her, he went on to say that he didn't like the dog. He's really being defensive. I kept thinking, He's so nice. He's doing all this validation. But then I realized he was doing the yes-but. It's easy to be fooled by them."

Bill went on: "I'm getting way better. You've got to admit it. I'm better this week than last week, and the week before and the week before."

Tabares jumped in again. "In one study, we were watching newlyweds, and what often happened with the couples who ended up in divorce is that when one partner would ask for credit, the other spouse wouldn't give it. And with the happier couples, the spouse would hear it and say, 'You're right.' That stood out. When you nod and say 'uh-huh' or 'yeah,' you are doing that as a sign of support, and here she never does it, not once in the entire session, which none of us had realized until we did the coding."

"It's weird," she went on. "You don't get the sense that they are an unhappy couple when they come in. And when they were finished, they were instructed to watch their own discussion, and they thought the whole thing was hilarious. They seem fine, in a way. But I don't know. They haven't been married that long. They're still in the glowy phase. But the fact is that she's completely inflexible. They are arguing about dogs, but it's really about how whenever they have a disagreement, she's completely inflexible. It's one of those things that could cause a lot of long-term harm. I wonder if they'll hit the seven-year wall. Is there enough positive emotion there? Because what seems positive isn't actually positive at all."

What was Tabares looking for in the couple? On a technical level, she was measuring the amount of positive and negative emotion, because one of Gottman's findings is that for a marriage to survive, the ratio of positive to negative emotion in a given encounter has to be at least five to one. On a simpler level, though, what Tabares was looking for in that short discussion was a pattern in Bill and Sue's marriage, because a central argument in Gottman's work is that all marriages have a distinctive pattern, a kind of marital DNA, that surfaces in any kind of meaningful interaction. This is why Gottman asks couples to tell the story of how they met, because he has found that when a husband and wife recount the most important episode in their relationship, that pattern shows up right away.

“It's so easy to tell,” Gottman says. “I just looked at this tape yesterday. The woman says ‘We met at a ski weekend, and he was there with a bunch of his friends, and I kind of liked him and we made a date to be together. But then he drank too much, and he went home and went to sleep, and I was waiting for him for three hours. I woke him up, and I said I don't appreciate being treated this way. You're really not a nice person. And he said, yeah, hey, I really had a lot to drink.’ ” There was a troubling pattern in their first interaction, and the sad truth was that that pattern persisted throughout their relationship. “It's not that hard,” Gottman went on. “When I first started doing these interviews, I thought maybe we were getting these people on a crappy day. But the prediction levels are just so high, and if you do it again, you get the same pattern over and over again.”

One way to understand what Gottman is saying about marriages is to use the analogy of what people in the world of Morse code call a fist. Morse code is made up of dots and dashes each of which has its own prescribed length. But no one ever replicates those prescribed lengths perfectly. When operators send a message — particularly using the old manual machines known as the straight key or the bug — they vary the spacing or stretch out the dots and dashes or combine dots and dashes and spaces in a particular rhythm. Morse code is like speech. Everyone has a different voice.

In the Second World War, the British assembled thousands of so-called interceptors — mostly women — whose job it was to tune in every day and night to the radio broadcasts of the various divisions of the German military. The Germans were, of course, broadcasting in code, so — at least in the early part of the war — the British couldn't understand *what* was being said. But that didn't necessarily matter, because before long, just by listening to the cadence of the transmission, the interceptors began to pick up on the individual fists of the

German operators, and by doing so, they knew something nearly as important, which was *who* was doing the sending. “If you listened to the same call signs over a certain period, you would begin to recognize that there were, say, three or four different operators in that unit, working on a shift system, each with his own characteristics,” says Nigel West, a British military historian. “And invariably, quite apart from the text, there would be the preambles, and the illicit exchanges. How are you today? How’s the girlfriend? What’s the weather like in Munich? So you fill out a little card, on which you write down all that kind of information and pretty soon you have a kind of relationship with that person.”

The interceptors came up with descriptions of the fists and styles of the operators they were following. They assigned them names and assembled elaborate profiles of their personalities. After they identified the person who was sending the message, the interceptors would then locate their signal. So now they knew something more. They knew who was *where*. West goes on: “The interceptors had such a good handle on the transmitting characteristics of the German radio operators that they could literally follow them around Europe — wherever they were. That was extraordinarily valuable in constructing an order of battle, which is a diagram of what the individual military units in the field are doing and what their location is. If a particular radio operator was with a particular unit and transmitting from Florence, and then three weeks later you recognized that same operator, only this time he was in Linz, then you could assume that that particular unit had moved from northern Italy to the eastern front. Or you would know that a particular operator was with a tank repair unit and he always came up on the air every day at twelve o’clock. But now, after a big battle, he’s coming up at twelve, four in the afternoon, and seven in the evening, so you can assume that unit has a lot of work going on. And in a moment of crisis, when someone very high up asks, ‘Can you really be absolutely certain that this particular Luftwaffe *Fliegerkorps* [German air force squadron] is outside of Tobruk and not in Italy?’ you can answer, ‘Yes, that was Oscar, we are absolutely sure.’ ”

The key thing about fists is that they emerge naturally. Radio operators don’t deliberately try to sound distinctive. They simply end up sounding distinctive, because some part of their personality appears to express itself automatically and unconsciously in the way they work the Morse code keys. The other thing about a fist is that it reveals itself in even the smallest sample of Morse code. We have to listen to only a few characters to pick out an individual’s pattern. It doesn’t change or disappear for stretches or show up only in certain words or

phrases. That's why the British interceptors could listen to just a few bursts and say, with absolute certainty, "It's Oscar, which means that yes, his unit is now definitely outside of Tobruk." An operator's fist is stable.

What Gottman is saying is that a relationship between two people has a fist as well: a distinctive signature that arises naturally and automatically. That is why a marriage can be read and decoded so easily, because some key part of human activity — whether it is something as simple as pounding out a Morse code message or as complex as being married to someone — has an identifiable and stable pattern. Predicting divorce, like tracking Morse Code operators, is pattern recognition.

"People are in one of two states in a relationship," Gottman went on. "The first is what I call positive sentiment override, where positive emotion overrides irritability. It's like a buffer. Their spouse will do something bad, and they'll say, 'Oh, he's just in a crummy mood.' Or they can be in negative sentiment override, so that even a relatively neutral thing that a partner says gets perceived as negative. In the negative sentiment override state, people draw lasting conclusions about each other. If their spouse does something positive, it's a selfish person doing a positive thing. It's really hard to change those states, and those states determine whether when one party tries to repair things, the other party sees that as repair or hostile manipulation. For example, I'm talking with my wife, and she says, 'Will you shut up and let me finish?' In positive sentiment override, I say, 'Sorry, go ahead.' I'm not very happy, but I recognize the repair. In negative sentiment override, I say, 'To hell with you, I'm not getting a chance to finish either. You're such a bitch, you remind me of your mother.' "

As he was talking, Gottman drew a graph on a piece of paper that looked a lot like a chart of the ups and downs of the stock market over the course of a typical day. What he does, he explains, is track the ups and downs of a couple's level of positive and negative emotion, and he's found that it doesn't take very long to figure out which way the line on the graph is going. "Some go up, some go down," he says. "But once they start going down, toward negative emotion, ninety-four percent will continue going down. They start on a bad course and they can't correct it. I don't think of this as just a slice in time. It's an indication of how they view their whole relationship."

3. The Importance of Contempt

Let's dig a little deeper into the secret of Gottman's success rate. Gottman has discovered that marriages have distinctive signatures, and we can find that signature by collecting very detailed emotional information from the interaction of a couple. But there's something else that is very interesting about Gottman's system, and that is the way in which he manages to simplify the task of prediction. I hadn't realized how much of an issue this was until I tried thin-slicing couples myself. I got one of Gottman's tapes, which had on it ten three-minute clips of different couples talking. Half the couples, I was told, split up at some point in the fifteen years after their discussion was filmed. Half were still together. Could I guess which was which? I was pretty confident I could. But I was wrong. I was terrible at it. I answered five correctly, which is to say that I would have done just as well by flipping a coin.

My difficulty arose from the fact that the clips were utterly overwhelming. The husband would say something guarded. The wife would respond quietly. Some fleeting emotion would flash across her face. He would start to say something and then stop. She would scowl. He would laugh. Someone would mutter something. Someone would frown. I would rewind the tape and look at it again, and I would get still more information. I'd see a little trace of a smile, or I'd pick up on a slight change in tone. It was all too much. In my head, I was frantically trying to determine the ratios of positive emotion to negative emotion. But what counted as positive, and what counted as negative? I knew from Susan and Bill that a lot of what looked positive was actually negative. And I also knew that there were no fewer than twenty separate emotional states on the SPAFF chart. Have you ever tried to keep track of twenty different emotions simultaneously? Now, granted, I'm not a marriage counselor. But that same tape has been given to almost two hundred marital therapists, marital researchers, pastoral counselors, and graduate students in clinical psychology, as well as newlyweds, people who were recently divorced, and people who have been happily married for a long time — in other words, almost two hundred people who know a good deal more about marriage than I do — and none of them was any better than I was. The group as a whole guessed right 53.8 percent of the time, which is just above chance. The fact that there was a pattern didn't much matter. There were so many other things going on so quickly in those three minutes that we couldn't find the pattern.

Gottman, however, doesn't have this problem. He's gotten so good at thin-slicing marriages that he says he can be in a restaurant and eavesdrop on the couple one table over and get a pretty good sense of whether they need to start thinking about hiring lawyers and

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