



Being
Wrong

ADVENTURES IN THE
MARGIN OF ERROR

Kathryn Schulz

Being Wrong

Adventures in the Margin of Error

Kathryn Schulz

 HarperCollins e-books

*For my family,
given and chosen*

*And for Michael and Amanda,
at whose expense
I wrote about what I knew*

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Perhaps the history of the errors of mankind, all things considered, is more valuable and interesting than that of their discoveries. Truth is uniform and narrow; it constantly exists, and does not seem to require so much an active energy, as a passive aptitude of soul in order to encounter it. But error is endlessly diversified; it has no reality, but is the pure and simple creation of the mind that invents it. In this field, the soul has room enough to expand herself, to display all her boundless faculties, and all her beautiful and interesting extravagancies and absurdities.

—*Benjamin Franklin, Report of Dr. Benjamin Franklin, and Other Commissioners, Charged by the King of France, with the Examination of the Animal Magnetism, as Now Practiced in Paris (1784)*

MAN: You said pound cake.

WOMAN: I didn't say pound cake, I said crumb cake.

MAN: You said pound cake.

WOMAN: Don't tell me what I said.

MAN: You said pound cake.

WOMAN: I said crumb cake.

MAN: I actually saw the crumb cake but I didn't get it because you said pound cake.

WOMAN: I said crumb cake.

MAN: Well, I heard pound cake.

WOMAN: Then you obviously weren't listening. Crumb cake doesn't even sound like pound cake.

MAN: Well, maybe you accidentally said pound cake. Woman: I said crumb cake.

—*overheard in Grand Central Station, November 13, 2008*

THE IDEA OF ERROR

Wrongology

It infuriates me to be wrong when I know I'm right.

—MOLIÈRE

Why is it so fun to be right? As pleasures go, it is, after all, a second-order one at best. Unlike many of life's other delights—chocolate, surfing, kissing—it does not enjoy any mainline access to our biochemistry: to our appetites, our adrenal glands, our limbic systems, our swoony hearts. And yet, the thrill of being right is undeniable, universal, and (perhaps most oddly) almost entirely indiscriminating. We can't enjoy kissing just anyone, but we can relish being right about almost anything. The stakes don't seem to matter much; it's more important to bet on the right foreign policy than the right racehorse, but we are perfectly capable of gloating over either one. Nor does subject matter; we can be equally pleased about correctly identifying an orange-crowned warbler or the sexual orientation of our coworker. Stranger still, we can enjoy being right even about disagreeable things: the downturn in the stock market, say, or the demise of a friend's relationship, or the fact that, at our spouse's insistence, we just spent fifteen minutes schlepping our suitcase in exactly the opposite direction from our hotel.

Like most pleasurable experiences, rightness is not ours to enjoy all the time. Sometimes we are the one who loses the bet (or the hotel). And sometimes, too, we are plagued by doubt about the correct answer or course of action—an anxiety that, itself, reflects the urgency of our desire to be right. Still, on the whole, our indiscriminate enjoyment of being right is matched by an almost equally indiscriminate feeling that we *are* right. Occasionally, this feeling spills into the foreground, as when we argue or evangelize, make predictions or place bets. Most often, though, it is just psychological backdrop. A whole lot of us go through life assuming that we are basically right, basically all the time about basically everything: about our political and intellectual convictions, our religious and moral beliefs, our assessment of other people, our memories, our grasp of facts. As absurd as it sounds when we stop to think about it, our steady state seems to be one of unconsciously assuming that we are very close to omniscient.

To be fair, this serene faith in our own rightness is often warranted. Most of us navigate day-to-day life fairly well, after all, which suggests that we are routinely right about a great many things. And sometimes we are not just routinely right but spectacularly right: right about the existence of atoms (postulated by ancient thinkers thousands of years before the emergence of modern chemistry); right about the healing properties of aspirin (recognized since at least 3000 BC); right to track down that woman who smiled at you in the café (now your wife of twenty years). Taken together, these moments of rightness represent both the high-water marks of human endeavor and the source of countless small

joys. They affirm our sense of being smart, competent, trustworthy, and in tune with our environment. More important, they keep us alive. Individually and collectively, our very existence depends on our ability to reach accurate conclusions about the world around us. In short, the experience of being right is imperative for our survival, gratifying for our ego, and, overall, one of life's cheapest and keenest satisfactions.

This book is about the opposite of all that. It is about being wrong: about how we as a culture think about error, and how we as individuals cope when our convictions collapse out from under us. If we relish being right and regard it as our natural state, you can imagine how we feel about being wrong. For one thing, we tend to view it as rare and bizarre—an inexplicable aberration in the normal order of things. For another, it leaves us feeling idiotic and ashamed. Like the term paper returned to us covered in red ink, being wrong makes us cringe and slouch down in our seat; it makes our heart sink and our dander rise. At best we regard it as a nuisance, at worst a nightmare, but in either case—and quite unlike the gleeful little rush of being right—we experience our errors as deflating and embarrassing.

And that's just for starters. In our collective imagination, error is associated not just with shame and stupidity but also with ignorance, indolence, psychopathology, and moral degeneracy. This set of associations was nicely summed up by the Italian cognitive scientist Massimo Piattelli-Palmarini, who noted that we err because of (among other things) “inattention, distraction, lack of interest, poor preparation, genuine stupidity, timidity, braggadocio, emotional imbalance, ... ideological, racial, social or chauvinistic prejudices, as well as aggressive or prevaricatory instincts.” In this rather despairing view—and it is the common one—our errors are evidence of our gravest social, intellectual, and moral failings.

Of all the things we are wrong about, this idea of error might well top the list. It is our meta-mistake: we are wrong about what it means to be wrong. Far from being a sign of intellectual inferiority, the capacity to err is crucial to human cognition. Far from being a moral flaw, it is inextricable from some of our most humane and honorable qualities: empathy, optimism, imagination, conviction, and courage. And far from being a mark of indifference or intolerance, wrongness is a vital part of how we learn and change. Thanks to error, we can revise our understanding of ourselves and amend our ideas about the world.

Given this centrality to our intellectual and emotional development, error shouldn't be an embarrassment, and cannot be an aberration. On the contrary. As Benjamin Franklin observed in the quote that heads this book, wrongness is a window into normal human nature—into our imaginative minds, our boundless faculties, our extravagant souls. This book is staked on the soundness of that observation: that however disorienting, difficult, or humbling our mistakes might be, it is ultimately wrongness, not rightness, that can teach us who we are.

This idea is not new. Paradoxically, we live in a culture that simultaneously despises error and insists that it is central to our lives. We acknowledge that centrality in the very way we talk about ourselves—which is why, when we make mistakes, we shrug and say that we are human. As bats are batty and slugs are sluggish, our own species is synonymous with screwing up. This built-in propensity to err is also recognized within virtually every religious, philosophical, and scientific account of personhood. Nor are errors, in these accounts, just surface features or passing oddities, like hiccups or fingernails or déjà vu. Twelve hundred years before René Descartes penned his famous “I think, therefore I am,” the philosopher and theologian (and eventual saint) Augustine wrote “*fallor ergo sum*”: I err, therefore I am. In this formulation, the capacity to get things wrong is not only part of being alive, but in some

sense proof of it. For Augustine as for Franklin, being wrong is not just what we do. In some deep sense, it is who we are.

And yet, if fallibility is built into our very name and nature, it is in much the same way the puppet is built into the jack-in-the-box: in theory wholly predictable, in practice always a jarring surprise. In this respect, fallibility is something like mortality, another trait that is implicit in the word “human.” As with dying, we recognize erring as something that happens to everyone, without feeling that it is either plausible or desirable that it will happen to us. Accordingly, when mistakes happen anyway, we typically respond as if they hadn’t, or as if they shouldn’t have: we deny them, wax defensive about them, ignore them, downplay them, or blame them on somebody else.

Our reluctance to admit that we are wrong is not just an individual failing. With the exception of those error-prevention initiatives employed in high-risk fields like aviation and medicine, our culture has developed remarkably few tools for addressing our propensity to err. If you commit a moral transgression, you can turn to at least a handful of established options to help you cope with it. Virtually every religious tradition includes a ritual for penitence and purification, along the lines of confession in Catholicism and Yom Kippur in Judaism. Twelve-step programs advise their participants to admit “to God, to ourselves, and to another human being the exact nature of our wrongs.” Even the criminal justice system, although far from reform-minded these days, has one foot rooted in a tradition of repentance and transformation. By contrast, if you commit an error—whether a minor one, such as realizing halfway through an argument that you are mistaken, or a major one, such as realizing halfway through a lifetime that you were wrong about your faith, your politics, yourself, your loved one, or your life’s work—you will not find any obvious, ready-to-hand resources to help you deal with it.

How could you? As a culture, we haven’t even mastered the basic skill of saying “I was wrong.” This is a startling deficiency, given the simplicity of the phrase, the ubiquity of error, and the tremendous public service that acknowledging it can provide. Instead, what we have mastered are two alternatives to admitting our mistakes that serve to highlight exactly how bad we are at doing so. The first involves a small but strategic addendum: “I was wrong, *but...*”—a blank we then fill in with wonderfully imaginative explanations for why we weren’t so wrong after all. (More on this in Part Three.) The second (infamously deployed by, among others, Richard Nixon regarding Watergate and Ronald Reagan regarding the Iran-Contra affair) is even more telling: we say, “mistakes were made.” As that evergreen locution so concisely demonstrates, all we really know how to do with our errors is *not* acknowledge them as our own.⁵

By contrast, we positively excel at acknowledging other people’s errors. In fact, if it is sweet to be right, then—let’s not deny it—it is downright savory to point out that someone else is wrong. As any food scientist can tell you, this combination of savory and sweet is the most addictive of flavors: we can never really get enough of reveling in other people’s mistakes. Witness, for instance, the difficulty with which even the well-mannered among us stifle the urge to say “I told you so.” The brilliance of this phrase (or its odiousness, depending on whether you get to say it or must endure hearing it) derives from its admirably compact way of making the point that not only was I right, I was also right about being right. In the instant of uttering it, I become right squared, maybe even right factorial, logarithmically right—at any rate, really, extremely right, and really, extremely delighted about it. It is possible to refrain from this sort of gloating (and consistently choosing to do so might be the final milestone of maturity), but the feeling itself, that triumphant *ha!*, can seldom be fully banished.

Of course, parading our own brilliance and exulting in other people’s errors is not very nice. For that matter, even *wanting* to parade our own brilliance and exult in other people’s errors is not very nice, although it is certainly very human. This is where our relationship to wrongness begins to show

its stakes. Of all the strife in the world—strife of every imaginable variety, from conflict over crumb cake to conflict in the Middle East—a staggering amount of it arises from the clash of mutually incompatible, entirely unshakable feelings of rightness. Granted, we find plenty of other reasons to fight with one another as well, ranging from serious and painful breaches in trust to resource scarcity to the fact that we haven't had our coffee yet. Still, an impressive number of disputes amount to a tug-of-war over who possesses the truth: we fight over the right to be right. Likewise, it is surprisingly difficult to get angry unless you are either convinced that you are correct, or humiliated and defensive about being wrong.

Our default attitude toward wrongness, then—our distaste for error and our appetite for being right—tends to be rough on relationships. This applies equally to relationships among nations, communities, colleagues, friends, and (as will not be lost on most readers) relatives. Indeed, an old adage of therapists is that you can either be right or be in a relationship: you can remain attached to Team You winning every confrontation, or you can remain attached to your friends and family, but good luck trying to do both.

If insisting on our rightness tends to compromise our relationships, it also reflects poorly on our grasp of probability. I've already suggested that error isn't rare, yet it often seems remarkably scarce in our own lives—enough so that we should take a moment to establish exactly how un-rare it really is. By way of example, consider the domain of science. The history of that field is littered with discarded theories, some of which are among humanity's most dramatic mistakes: the flat earth, the geocentric universe, the existence of ether, the cosmological constant, cold fusion. Science proceeds by perceiving and correcting these errors, but over time, the corrections themselves often prove wrong as well. As a consequence, some philosophers of science have reached a conclusion that is known, in clumsy but funny fashion, as the Pessimistic Meta-Induction from the History of Science. The gist is this: because even the most seemingly bulletproof scientific theories of times past eventually proved wrong, we must assume that today's theories will someday prove wrong as well. And what goes for science goes in general—for politics, economics, technology, law, religion, medicine, child-rearing, education. No matter the domain of life, one generation's verities so often become the next generation's falsehoods that we might as well have a Pessimistic Meta-Induction from the History of Everything.

What is true of our collective human pursuits is also true of our individual lives. All of us outgrow some of our beliefs. All of us hatch theories in one moment only to find that we must abandon them in the next. Our tricky senses, our limited intellects, our fickle memories, the veil of emotions, the tug of allegiances, the complexity of the world around us: all of this conspires to ensure that we get things wrong again and again. You might never have given a thought to what I'm calling wrongology; you might be the farthest thing in the world from a wrongologist; but, like it or not, you are already a wrongitioner. We all are.

A book about being wrong can't get very far without first making its way across a definitional quagmire: *Wrong? About what? Says who?* We can be wrong about the integrity of our money manager, the identity of the murder suspect, or the name of the shortstop for the '62 Mets; about the structure of a hydrogen molecule or the date of the Second Coming; about the location of our car key or the location of weapons of mass destruction. And that's just the straightforward stuff. There are also all those things about which we can never be proved wrong, but about which we tend to believe that people who disagree with us *are* wrong: the author of the Bible, the ethics of abortion, the merits of anchovies, whether it was you or your girlfriend who left the laptop in front of the window before

the storm.

As arbitrary as this list is, it raises some important questions about any project that proposes to treat error as a coherent category of human experience. The first question concerns the stakes of our mistakes. The difference between being wrong about your car keys and being wrong about weapons of mass destruction is the difference between “oops” and a global military crisis—consequences so dramatically dissimilar that we might reasonably wonder if the errors that led to them can have anything in common. The second question is whether we can be wrong, in any meaningful sense, about personal beliefs. It’s a long way from the Mets to the moral status of abortion, and some readers will suspect that the conceptual distance between being wrong about facts and being “wrong” about convictions is unbridgeable. Other readers, meanwhile, will raise a different objection: that we can never be completely sure of the truth, and therefore can’t legitimately describe *anything* as “right” or “wrong.”

In short, trying to forge a unified theory out of our ideas about error is akin to herding cats. Nor is the opposite approach, divvying up wrongness into categories, much easier. Still both tactics have been attempted. The former is a pet project of Western philosophy, which has been attempting to define the essential nature of error from the get-go. For at least the first two thousand years of its existence, philosophy understood itself as the pursuit of knowledge and truth—a job description that obliged its practitioners to be almost equally obsessed with error and falsity. (You can’t define error, Socrates observes in Plato’s *Theaetetus*, without also defining knowledge; your theory of one hinges entirely on your theory of the other.) As philosophy diversified and formalized its areas of inquiry—into ethics, metaphysics, logic, and so forth—the branch concerned with the study of knowledge became known as epistemology. Epistemologists disagree among themselves about many aspects of error, but from Plato onward they have shared a rough consensus on how to define it: to be wrong is to believe something is true when it is false—or, conversely, to believe it is false when it is true. This admirably straightforward definition will be useful to us, partly because it will help us eavesdrop on philosophical conversations about error, and partly because it captures what we typically mean by wrongness in everyday life. Still, as we’ll soon see, this definition is bedeviled by a problem so significant that I will choose not to rely on it.

If philosophy has traditionally sought to unify and define wrongness, a far newer field—the multidisciplinary effort known sometimes as human factors research and sometimes as decision studies—has sought to subdivide and classify it. “Decision studies” is something of a euphemism; the field focuses primarily on *bad* decisions, without which it wouldn’t need to exist. Likewise, the “human factors” in question—stress, distraction, disorganization, inadequate training, lack of information, and so forth—are those that contribute to inefficiencies, hazards, and mistakes. For these reasons, the field is also (although less often) referred to as error studies, which, for clarity’s sake, is the name I’ll use here.

Error-studies practitioners are a motley crew, ranging from psychologists and economists to engineers and business consultants, and the work they do is similarly diverse. Some seek to reduce financial losses for corporations by eliminating mistakes in manufacturing processes. Others try to improve safety procedures in situations, ranging from angioplasties to air traffic control, where human error poses a major threat to life and health. As that suggests, error studies, unlike epistemology, is an applied science. Although its researchers look at the psychological as well as the structural reasons we get things wrong, their overall objective is practical: they seek to limit the likelihood and impact of future mistakes.

In service of this goal, these researchers have become remarkable taxonomists of error. A brief survey of their literature reveals a dizzying proliferation of categories of wrongness. There are slips and lapses and mistakes, errors of planning and errors of execution, errors of commission and errors

of omission, design errors and operator errors, endogenous errors and exogenous errors. I could go on but ~~only at the expense of plunging you into obscure jargon and precise but—it must be said—painful~~ explication. (A sample: “Mistakes may be defined as deficiencies or failures in the judgmental and/or inferential processes involved in the selection of an objective or in the specification of the means to achieve it, irrespective of whether or not the actions directed by this decision-scheme run according to plan.”)

Mistakes *may* be defined this way, but not by me. Don’t misunderstand: I’m grateful to the error studies folks, as we all should be. At a moment in history when human error could easily unleash disaster on a global scale, they are trying to make our lives safer and easier. And, because they are among the few people who think long and hard about error, I count them as my colleagues in wrongology. The same goes for epistemologists, whose project has somewhat more in common with my own. Still, I depart from both groups of thinkers in important ways. My own interest lies neither in totalizing nor in atomizing error; and my aim is neither to eliminate mistakes nor to illuminate a single, capital-T Truth. Instead, I’m interested in error as an idea and as an experience: in how we think about being wrong, and how we feel about it.

This attention to how we think and feel about error casts a different light on some of the difficulties with defining it. Take the matter of stakes. The question I raised earlier was whether it ever makes sense to treat minor gaffes and world-altering errors—the car keys and the WMDs—as comparable phenomena. In their causes and consequences, these errors are so unlike that including them in the same category seems at best unhelpful and at worst unconscionable. But if we’re interested in the human experience of error, such comparisons become viable—in fact, invaluable. For example, we are usually much more willing to entertain the possibility that we are wrong about insignificant matters than about weighty ones. This has a certain emotional logic, but it is deeply lacking in garden-variety logic. In high-stakes situations, we should want to do everything possible to ensure that we are right—which, as we will see, we can only do by imagining all the ways we could be wrong. That we are able to do this when it hardly matters, yet unable to do so when the stakes are huge, suggests that we might learn something important by comparing these otherwise very different experiences. The same can be said of comparing our verifiable and unverifiable beliefs—say, the name of that Mets player versus a contested memory. By examining our sense of certainty and our reaction to error in cases where we turn out to be objectively wrong, we can learn to think differently about our convictions in situations where no one will ever have the final say.

This attention to the experience of being wrong resolves some potential objections to my everything-but-the-kitchen-sink approach to error. But two important things remain to be said about the scope and method of this project. And they are two important *big* things: one concerns morality and the other concerns truth. Take morality first. In daily life, we use “wrong” to refer to both error and iniquity: it is wrong to think that the earth is flat, and it is also wrong to push your little brother down the stairs. I’m concerned here only with the former kind of wrongness, but for several reasons, moral issues will be a constant presence in these pages.

One such reason is that moral and intellectual wrongness are connected not by mere linguistic coincidence but by a long history of associating error with evil—and, conversely, rightness with righteousness. (We’ll hear more about that history in the next chapter.) Another reason is that some of our most significant experiences of error involve reversing moral course. Sometimes, we conclude that we were wrong about the substance of our ethical convictions: that premarital sex actually isn’t morally abhorrent, say, or that vegetarianism isn’t morally requisite. At other times, we conclude that we were right about our ethics but wrong about the people or institutions we trusted to uphold them. Thus some Communists abandoned their faith in Stalin (but not in Communism) when he signed his nonaggression pact with Hitler, and some Catholics abandoned their church (but not its teachings)

after revelations that it had sought to cover up widespread child abuse by priests. These experiences of being wrong about moral issues are distinct from the other errors in this book in content, but not in form. In every case, we place our faith in an idea (or a policy, or a person) only to realize, either by process or by crisis, that it has failed us.

A third reason morality will crop up in this book is that many moral wrongs are supported and legitimized by factual errors. To take an obvious example, consider phrenology, the now-discredited “science” of determining intelligence and personality through the shape of the skull. Throughout the nineteenth and early twentieth centuries, phrenology was used to defend discrimination against foreigners, Jews, Blacks, and other maligned minorities (to say nothing of women, that maligned majority). Here, as in so many cases, intellectual errors enabled moral wrongs. Of course, the opposite is true, too: preexisting prejudices shaped and sustained phrenology as much as phrenology shaped and sustained those prejudices. But that’s the point. Often, our beliefs about what is factually right and our beliefs about what is morally right are entirely inextricable.

There is one final way in which morality is relevant—central, in fact—to this book. This concerns the moral implications of wrongness itself. As I’ve already noted, the relationship we cultivate with error affects how we think about and treat our fellow human beings—and how we think about and treat our fellow human beings is the alpha and omega of ethics. Do we have an obligation to others to contemplate the possibility that we are wrong? What responsibility do we bear for the consequences of our mistakes? How should we behave toward people when we think that they are wrong? The writer and philosopher Iris Murdoch once observed that no system of ethics can be complete without a mechanism for bringing about moral change. We don’t usually think of mistakes as a means to an end, let alone a positive end—and yet, depending on how we answer these questions error has the potential to be just such a mechanism. In other words, erring is not only (although it is sometimes) a moral problem. It is also a moral *solution*: an opportunity, as I said earlier, to rethink our relationship to ourselves, other people, and the world.

This sketch of the relationship between moral wrongness and error brings us almost to the end of our definitional quagmire. But I confess I have saved the swampiest step for last. This is the truth question: whether “right” and “wrong” reflect the real state of the world or are simply subjective human designations. The conundrum of whether truth exists, how we can arrive at it, and who gets to adjudicate it has preoccupied some of the best thinkers of every culture and era since time immemorial. This obsession has yielded tremendous intellectual and artistic returns, but very little that could truly be called progress, let alone resolution. Safe to say, then, that we aren’t going to get to the bottom of these issues here. But we can’t just ignore them, either. Socrates was right: no theory of error can exist entirely outside a theory of truth.

It’s easy to spot the theory of truth implicit in the traditional philosophical definition of wrongness. If we believe that error involves taking something false to be true, then we are also signing on to a belief in truth. In other words, this definition of wrongness assumes the existence of absolute rightness—a fixed and knowable reality against which our mistakes can be measured. Sometimes, this assumption serves us well. There are, after all, plenty of broadly accepted standards of truth; even a committed relativist will likely concede that we can be just plain wrong about, say, the outcome of an election or the paternity of a child. The trouble with this definition is that the opposite is true, too. Even a committed realist will concede that there are many situations where an absolute standard of truth is unavailable. And yet, confronted with such situations, we often continue to act as if right and wrong are the relevant yardsticks.

Take the issue of aesthetics. We all know that matters of taste are different from matters of fact—that standards of right and wrong apply to facts but not to preferences. Indeed, we are somehow able to sort this out very early in life. Even young children understand that it’s not okay if you think the

sky is blue and I think the sky is green, but totally okay if your favorite color is blue and my favorite color is green. Yet it is comically easy to find examples of full-grown adults acting like their own taste is the gospel truth. Mac fanatics are famous for treating PC users like the victims of a mass delusion. People who swoon over hardwood floors regard wall-to-wall carpeting in Victorian homes as objectively appalling. Neighbors fulminate—or litigate—over one another’s exterior paint colors or inflatable lawn ornaments. It is barely an exaggeration to say that I once almost broke up with someone over the question of whether rhubarb pie qualifies as a great dessert (obviously not) and whether *The Corrections* qualifies as a great novel (obviously so).

Granted, most of us are a bit wry about our tendency to treat our own predilections as the transcendent truth. Still, knowing that this behavior is ridiculous seldom stops us from engaging in it. The late novelist and critic John Updike once noted that the trouble with writing book reviews is that it is “almost impossible to...avoid the tone of being wonderfully right.” The same goes for our informal reviews of almost everything. It’s as if I believe, in some deep-down part of myself, that rhubarb pie radiates a kind of universal ickiness, while *The Corrections*, in some intrinsic way, just is brilliant. (And you, my rhubarb pie loving reader, are marveling at how wrong I am.) It follows, then, that anyone sufficiently perceptive and intelligent would respond to these things—to everything—the same way I do.

If this is how we act when we know that right and wrong are irrelevant, you can imagine what happens when there really is a fact of the matter, whether or not we ourselves can ever arrive at it. Forget, for a moment, the obvious but treacherous terrain of religion or politics. You can provoke a deep-seated sense of rightness just as swiftly by, say, asking a bunch of scholars of Elizabethan literature who really wrote *Hamlet*. It’s almost impossible to imagine any finding that would settle that question to everyone’s satisfaction, just as it is almost impossible to imagine how you would get all parties to agree on the origins of human life, or on the necessity of U.S. intervention in Iraq. Yet it is often precisely these irresolvable issues that arouse our most impassioned certainty that we are right and our adversaries are wrong. To my mind, then, any definition of error we choose must be flexible enough to accommodate the way we talk about wrongness when there is no obvious benchmark for being right.

To find such a definition, we might return to the experience of error. Rather than thinking of being wrong as believing something is true when it is objectively false, we could define it as the experience of rejecting as false a belief *we ourselves* once thought was true—regardless of that belief’s actual relationship to reality, or whether such a relationship can ever be determined. This is a tempting fix, for two reasons. First, with a slight tweak to an established definition of error, it puts paid to any irksome questions about truth. Second, it shines the spotlight on an important and often overlooked corner of human experience, one that is central to this book: the hinge moment when we swing from believing one thing to believing its antithesis. Still, as an overall definition, this one seems unsatisfactory as well, since it fails to capture our everyday notion of error. When we accuse someone of being wrong, we don’t mean that she is in the throes of rejecting one of her own beliefs. We mean that her beliefs are at odds with the real state of the world.

In the end, then, neither of these definitions of being wrong—as a deviation from external reality or an internal upheaval in what we believe—will completely suffice for our purposes. Although I will draw on both ideas, the full human experience of error is too multiform and chameleon to stay put inside either one. In writing about comedy, the French philosopher Henri Bergson argued against “imprisoning the comic spirit within a definition.” Instead, he wrote, he hoped to provide his readers with “something more flexible than an abstract definition—a practical, intimate acquaintance, such as springs from a long companionship.” This strikes me as an admirable goal, and one that will serve as well for wrongness as for funniness. For better and worse, error is already our lifelong companion.

Surely, then, it's time we got to know it.

Most of the rest of this book—into which I promise to release you very soon—is built around stories of people screwing up. These stories involve, among other things, illusions, magicians, comedians, drug trips, love affairs, misadventures on the high seas, bizarre neurological phenomena, medical catastrophes, legal fiascos, some possible consequences of marrying a prostitute, the lamentable failure of the world to end, and Alan Greenspan. But before we can plunge into the experience of being wrong, we must pause to make an important if somewhat perverse point: there *is* no experience of being wrong.

There is an experience of *realizing* that we are wrong, of course. In fact, there is a stunning diversity of such experiences. As we'll see in the pages to come, recognizing our mistakes can be shocking, confusing, funny, embarrassing, traumatic, pleasurable, illuminating, and life-altering, sometimes for ill and sometimes for good. But by definition, there can't be any particular feeling associated with simply *being* wrong. Indeed, the whole reason it's possible to be wrong is that, while it is happening, you are oblivious to it. When you are simply going about your business in a state you will later decide was delusional, you have no idea of it whatsoever. You are like the coyote in the Road Runner cartoons, after he has gone off the cliff but before he has looked down. Literally in his case and figuratively in yours, you are already in trouble when you feel like you're still on solid ground. So I should revise myself: it does feel like something to be wrong. It feels like being right.

This is the problem of error-blindness. Whatever falsehoods each of us currently believes are necessarily invisible to us. Think about the telling fact that error literally doesn't exist in the first person present tense: the sentence "I am wrong" describes a logical impossibility. As soon as we know that we are wrong, we aren't wrong anymore, since to recognize a belief as false is to stop believing it. Thus we can only say "I *was* wrong." Call it the Heisenberg Uncertainty Principle of Error: we can be wrong, or we can know it, but we can't do both at the same time.

Error-blindness goes some way toward explaining our persistent difficulty with imagining that we could be wrong. It's easy to ascribe this difficulty to various psychological factors—arrogance, insecurity, and so forth—and these plainly play a role. But error-blindness suggests that another, more structural issue might be at work as well. If it is literally impossible to feel wrong—if our current mistakes remain imperceptible to us even when we scrutinize our innermost being for signs of them—then it makes sense for us to conclude that we are right. Similarly, error-blindness helps explain why we accept fallibility as a universal phenomenon yet are constantly startled by our own mistakes. The psychologist Marc Green has observed that an error, from the point of view of the person who makes it, is essentially "a Mental Act of God." Although we understand in the abstract that errors happen, our specific mistakes are just as unforeseeable to us as specific tornadoes or specific lightning strikes. (And, as a result, we seldom feel that we should be held accountable for them. By law, after all, no one is answerable for an Act of God.)

If our current mistakes are necessarily invisible to us, our past errors have an oddly slippery status as well. Generally speaking, they are either impossible to remember or impossible to forget. This wouldn't be particularly strange if we consistently forgot our trivial mistakes and consistently remembered the momentous ones, but the situation isn't quite that simple. I can never come across the name of the German writer Goethe without remembering the kindly but amused correction delivered to me by a college professor the first time I said it out loud, as Go-eth. As in pride goeth before a fall. (For readers in my erstwhile boat, it comes closer to rhyming with the name Bertha, minus the H. And the R.) This was a trivial and understandable mistake, yet I seem destined to go to my grave

remembering it.

—Compare that to an experience recounted by Sigmund Freud in *The Psychopathology of Everyday Life* (itself a book about erring). Once, while settling his monthly accounts, Freud came upon the name of a patient whose case history he couldn't recall, even though he could see that he had visited her every day for many weeks, scarcely six months previously. He tried for a long time to bring the patient to mind, but for the life of him was unable to do so. When the memory finally came back to him, Freud was astonished by his “almost incredible instance of forgetting.” The patient in question was a young woman whose parents brought her in because she complained incessantly of stomach pains. Freud diagnosed her with hysteria. A few months later, she died of abdominal cancer.

It's hard to say which is stranger: the complete amnesia for the massive error, or the perfect recall for the trivial one. On the whole, though, our ability to forget our mistakes seems keener than our ability to remember them. Over the course of working on this book, when I had occasion to explain its subject matter to strangers, a certain percentage would inevitably respond by saying, “You should interview me, I'm wrong all the time.” I would then ask for an example and, almost as inevitably, their brows would furrow, they would fall silent, and after a while, with some puzzlement they would admit to drawing a blank. As one such would-be interviewee observed, “It's funny; I can sort of picture many times where I've said, ‘oh, no, I'm so wrong, this is so bad or so embarrassing,’ and I can even sort of recall losing sleep and missing dinners and being all uptight, but I can't actually remember a single specific instance of being wrong.”

Part of what's going on here is, in essence, a database-design flaw. Most of us don't have a mental category called “Mistakes I Have Made.” A close friend of mine, one who knew about this book from its earliest stages, wrote to me two years into the process to say that it had suddenly dawned on her that one of the formative events of her childhood was an experience of dramatic wrongness. My friend hadn't forgotten about this event during the previous two years, but it was mentally filed away under other labels (in this case, “times I've been lonely” and “times I've been angry”). As a result—and despite all the vicarious thinking about wrongness she had done on my behalf—the memory hadn't been accessible to her as a story about error.

Like our inability to say “I was wrong,” this lack of a category called “error” is a communal as well as an individual problem. As someone who tried to review the literature on wrongness, I can tell you that, first, it is vast; and, second, almost none of it is filed under classifications having anything to do with error. Instead, it is distributed across an extremely diverse set of disciplines: philosophy, psychology, behavioral economics, law, medicine, technology, neuroscience, political science, and the history of science, to name just a few. So too with the errors in our own lives. We file them under a range of headings—“embarrassing moments,” “lessons I've learned,” “stuff I used to believe”—but very seldom does an event live inside us with the simple designation “wrong.”

This category problem is only one reason why our past mistakes can be so elusive. Another is that (as we'll see in more detail later) realizing that we are wrong about a belief almost always involves acquiring a replacement belief at the same time: something else instantly becomes the new right. In light of this new belief, the discarded one can quickly come to seem remote, indistinct, and irrelevant, as if we never took it all that seriously in the first place. This convenient erasure of past errors happens on a societal level as well. Doctors don't teach medical students the theory of bodily humors, and astronomy professors don't teach their students to calculate the velocity of the fifty-five concentric spheres Aristotle thought composed the universe. This is practical and efficient pedagogy, but it shores up our tacit assumption that current belief is identical with true belief, and it reinforces our generalized sense of rightness.

What with error-blindness, our amnesia for our mistakes, the lack of a category called “error,” and our tendency to instantly overwrite rejected beliefs, it's no wonder we have so much trouble

accepting that wrongness is a part of who we are. Because we don't experience, remember, track, or retain mistakes as a feature of our inner landscape, wrongness always seems to come at us from left field—that is, from outside ourselves. But the reality could hardly be more different. Error is the ultimate inside job. Yes, the world can be profoundly confusing; and yes, other people can mislead or deceive you. In the end, though, nobody but you can choose to believe your own beliefs. That's part of why recognizing our errors is such a strange experience: accustomed to disagreeing with other people, we suddenly find ourselves at odds with *ourselves*. Error, in that moment, is less an intellectual problem than an existential one—a crisis not in what we know, but in who we are. We hear something of that identity crisis in the questions we ask ourselves in the aftermath of error: *What was I thinking? How could I have done that?*

These private questions about the origins of error echo a broader public inquiry that has been under way since time immemorial. If wrongness both haunts and eludes us, we can take comfort from the fact that it has done the same for countless generations of theologians, philosophers, psychologists, sociologists, and scientists. Many of the religious thinkers who tried to understand why we err found their answer at the gates of the Garden of Eden. Thus Thomas Aquinas, the thirteenth-century scholastic, held that we make mistakes because, when we were banished from paradise, we were cut off forever from direct access to divine truth. To Aquinas and many of his fellow theologians, our errors arise from the gap between our own limited and blemished minds and God's unlimited and perfect omniscience.

This same basic idea has received countless secular treatments as well. Plato thought that our primordial soul was at one with the universe, and that we only began to err when we took on our current physical form and forgot those cosmic truths. The Enlightenment philosopher John Locke thought that error seeped into our lives from the gap between the artificiality of words and the reality of the things they name—from the distance between an indescribable essence and the nearest sayable thing. The German philosopher Martin Heidegger thought that error could be explained by the fact that we live in time and space; because we are bound to a particular set of coordinates, we can't rise above them and see reality as a whole, from a bird's-eye (or God's-eye) view. As different as these explanations seem, all these thinkers and many more conceived of error as arising from a gap: sometimes between the particular and the general, sometimes between words and things, sometimes between the present and the primeval, sometimes between the mortal and the divine—but in every case, and fundamentally, between our own mind and the rest of the world.

For the most part, we spend our lives blithely ignoring this gap. And with good reason. Who wants to be reminded of the fall from grace, the separation from truth, the particular and limited nature of our existence? When we get things wrong, however, this rift between internal and external realities suddenly reveals itself. That's one reason why erring can be so disquieting. But another, oddly paradoxical reason is our failure to spot this rift *earlier*. Our mistakes show us that the content of our minds can be as convincing as reality. That's a dismaying discovery, because it is precisely the quality of convincing-ness, of verisimilitude, that we rely on as our guide to what is right and real.

Yet if we find this mental trickery troubling, we should also find it comforting. The miracle of the human mind, after all, is that it can show us the world not only as it is, but also as it is *not*: as we remember it from the past, as we hope or fear it will be in the future, as we imagine it might be in some other place or for some other person. We already saw that “seeing the world as it is not” is pretty much the definition of erring—but it is also the essence of imagination, invention, and hope. As that suggests, our errors sometimes bear far sweeter fruits than the failure and shame we associate with them. True, they represent a moment of alienation, both from ourselves and from a previously convincing vision of the world. But what's wrong with that? “To alienate” means to make unfamiliar and to see things—including ourselves—as unfamiliar is an opportunity to see them anew.

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