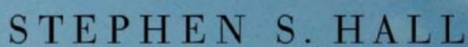

WISDOM

FROM PHILOSOPHY TO NEUROSCIENCE

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PUBLISHED BY ALFRED A. KNOPF

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www.aaknopf.com

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Library of Congress Cataloging-in-Publication Data
Hall, Stephen S.
Wisdom : from philosophy to neuroscience / by Stephen S. Hall—1st ed.
p. cm.
"A Borzoi book."
Includes bibliographical references and index.
ISBN 978-0-307-26910-2 (hardcover : alk. paper) 1. Wisdom. 2. Neuropsychology
I. Title.
BJ1595.H28 2010
179'.99—dc22 2009027438

Manufactured in the United States of America

First Edition

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PART ONE

WISDOM DEFINED (SORT OF)

You, my friend . . . are you not ashamed . . . to care so little about wisdom and truth and the greatest improvement of the soul, which you never regard or heed at all?

—Socrates, defending himself at his trial

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CHAPTER ONE

WHAT IS WISDOM?

The days of our life are seventy years,
or perhaps eighty if we are strong;
even then their span is only toil and trouble;
they are soon gone, and we fly away . . .
So teach us to count our days
that we may gain a wise heart.

—Psalm 90

That man is best who sees the truth himself,
Good too is he who listens to wise counsel.
But who is neither wise himself nor willing
To ponder wisdom is not worth a straw.

—Hesiod

On a beautiful fall morning nearly a decade ago, like hundreds of mornings before and since, I dropped off one of my children at school. Micaela, then five years old, had just started first grade, and the playground chatter among both the children and their parents reflected that mix of nervous unfamiliarity and comforting reconnection that marks the beginning of the school year. I lingered in the schoolyard until Micaela lined up with her teacher and classmates. She wore a pretty purple dress that my mother had just sent her, white socks, and pink-and-white-checkered sneakers. A hair band exposed her hopeful, eager, beautiful face. I sneaked in a last hug, as impulsive dads are wont to do, before she disappeared into the building. The time was about 8:40 a.m.

As I left the schoolyard and began to head toward the subway and home to Brooklyn, I heard a thunderous, unfamiliar roar overhead. As

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the noise grew louder and closer, I froze in an instinctive crouch, much like the rats we always read about in scientific experiments on fear, wondering where the sound was coming from, knowing only that it was ominously out of the ordinary. Moments later, a huge shadow with metal wings passed directly over my head, like some prehistoric bird of prey. I instantly recognized it as a large twin-engine commercial airliner, but nothing in my experience prepared me for what happened next. I watched for the endless one . . . two . . . three . . . four seconds it took for this shiny man-made bird to fly directly into the tall building that I faced several blocks away. In real time, I watched a 395,000-pound airplane simply disappear. Almost immediately black smoke began to curl out of the cruel, grinning incision its wings had sliced in the façade of the skyscraper.

In moments when life's regular playbook flies out the window, when the ground shifts beneath our feet in a literal or figurative earthquake, we feel a surge of adrenalized fear at the shock of the unexpected. But right behind that feeling comes the struggle to make sense of the seemingly senseless, to try to understand what has just happened and what it means so that we will know how to think about a future that suddenly seems uncertain and unpredictable. In truth, the future is *always* unpredictable, which is why these moments of shock remind us, with unusual urgency, that we have a constant (if often unconscious) need for wisdom, too.

Although we now all know exactly what happened that terrible morning, the ground truth in lower Manhattan on September 11, 2001, was much fuzzier at 8:45 a.m. One of the hallmarks of wisdom, what distinguishes it so sharply from "mere" intelligence, is the ability to exercise good judgment in the face of imperfect knowledge. In short, do the right thing—ethically, socially, familiarly, personally. Sometimes, as on this day, we have to deliberate these decisions in the midst of an absolutely roaring neural stew of conscious and unconscious urgings. In one sense, I knew exactly what had happened long before the first news bulletin hit the airwaves. In a larger sense, someone watching television in Timbuktu soon knew vastly more about the big picture than I did. This may be an exaggerated example, but it is in precisely the murk of this kind of confusion that we often have to make decisions. So what did I do?

I went to a nearby shop and bought a cup of coffee.

It didn't occur to me until much later that this was a decision of

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sorts—perhaps a foolish one, and certainly not an obvious one. But to the extent that I mustered even a dram of wisdom that day, it was in how I viewed the situation and what I thought was most important. Oddly, I felt little or no physical threat, despite such close proximity to the unfolding disaster; in some respects, the event played much scarier on TV than in person. My immediate focus, even then, was on the long-term psychological impact that such a calamity might have on a young child, and what (if anything) a parent might do to minimize it. I hadn't quite understood yet that that would be my mission for the day, but by standing in the street and sipping a cup of coffee, in that mysterious shorthand of human choice, I had chosen to stay close to my daughter, to stay calm, and, failing that, to fake parental calm realistically enough to convince her that this was a situation we could deal with.

But she didn't need to see the whole movie. I did not think it was a good idea for a young child to witness, as I did, human bodies falling like paperweight angels from the upper floors of the nearby tower. Even more, I did not think it was a good idea for a young child to absorb, even for a moment, the panic and despair written on the faces of all the adults who were beginning to comprehend that the world as they had known it, even a few minutes earlier, had suddenly changed, slipping irrevocably out of their (however illusionary) controlling grasp.

If you're thinking that I'm offering a smug little narrative about wise parenting, not to worry. Wisdom doesn't come easily to us mortals, and I've been reminded many times since that it probably didn't come to me that day, either. Many of the choices I made that morning were second-guessed by my wife, by my friends, and even by my daughter. More to the point, my small-minded plan to buffer Micaela's emotional experience was rudely interrupted by the collapse of 500,000 tons of metal, concrete, and glass. Just as teachers began to evacuate children from the school, the second tower came down, unleashing the kind of apocalyptic roar no child should ever have to hear, and a huge pyroclastic cloud of debris came boiling up Greenwich Street toward us. You couldn't tell if the cloud was going to reach us or not, but it wasn't a moment for contemplation. I picked up Micaela and we joined a horde of people running up the street. As I carried her in my arms, swimming upriver in a school of panicked fish, she was forced to look backward, downtown, right into the onrushing menace of our suddenly dark times. Even to this

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day, however, the thing Micaela remembers most about the evacuation is the moment her classmate Liam accidentally walked into a street sign when he wasn't looking.

It will be a long time, if ever, before I know if I acted wisely on 9/11. Indeed, it didn't even occur to me until I was writing this passage that the most important decision I made that day did not even rise to the level of conscious choice. I "decided," without any conspicuous deliberation, that I had to be a parent first, not a journalist, on that particular morning. At one level, it was an obvious choice; at another, it went against self-interest, career, my professional identity, taking advantage of being an eyewitness to the biggest story of my lifetime. What was I thinking?

That, in a sense, is what I want this book to be about: How do we make complex, complicated decisions and life choices, and what makes some of these choices so clearly wise that we all intuitively recognize them as a moment, however brief, of human wisdom? What goes on in our heads when we're struggling to be patient and prudent, and are there ways to enhance those qualities? When we're being foolish, on the other hand, do our brains make us do it? And how does the passage of time, and our approaching mortality, change our thought processes and perhaps make us more amenable to wisdom?

In moments of exceptional challenge and uncertainty, we tend to ask, How did this happen? What could we have done to prevent this dire turn of events? This is another way of saying, I realize now, that we are always searching for wisdom, but all too often we are looking for it in the rearview mirror, sifting the past for clues to how we might have thought about the future in a different way.

We crave wisdom—worship it in others, wish it upon our children, and seek it ourselves—precisely because it will help us lead a meaningful life as we count *our* days, because we hope it will guide our actions as we step cautiously into that always uncertain future. At times of challenge and uncertainty, nothing seems more important than wisdom—economic wisdom, moral wisdom, political wisdom, even that private, behind-closed-doors wisdom that allows us to convey the gravity of changed circumstances to our children without making them afraid of change itself.

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Nothing seems more important, yet nothing seems more beyond our grasp, until we begin to think about wisdom before we think we need it.

I am not an expert on wisdom (in the most important sense, none of us is). I'm just a journalist who for many years has written about science, which in some circles even further disqualifies me from having anything of value to say about wisdom. But all of us find ourselves in situations that demand it, and we don't need a 9/11 or a cataclysmic economic collapse to bring our desire for wisdom front and center. A car accident, the loss of a job, sudden illness, a floundering relationship, deep disagreements with parents or children—any old run-of-the-mill crisis will do.

We all aspire to have wisdom. Not necessarily because it will guarantee us happier, more fulfilling, better lives (although those have been worthy goals almost from the moment philosophers began to contemplate it), but because wisdom *as a process* can serve as a guide to helping us make the best-possible decisions at junctures of great importance in our lives. With an added, implicit (or sometimes explicit) tincture of mortality, it can get us to slow down long enough to think about actions and consequences. It can help us frame problems in a different way, allowing us to see unexpected solutions. It can help us maximize the good we do not only in the intimate community of family and friends but also in the larger communities that define our social identity as neighbors, residents, citizens, congregants, and custodians of the planet.

Many of these decisions are years in the planning and preparation, like selecting a mate or choosing a career. Some of them arrive with the roar of a hijacked plane or the suddenness of a phone call from the doctor. At the same time, we can't separate those crossroads moments from the "vehicle," the lifetime of experiences, that brought us to the intersection in the first place. Was this vehicle well maintained? Was it tested in all sorts of emotional weather, on every kind of situational terrain? Wisdom resides not just in the decision per se but also, as Confucius perhaps best of all philosophers shrewdly understood, in the Way of life—what he called *gen*—that precedes the decision.

Decision making lies at the heart of wisdom, but it's not the whole story. Making those decisions, in turn, draws on a subtle weave of intellectual, emotional, and social gifts—gathering information, discerning

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the reality behind artifice (especially when it comes to human nature), evaluating and editing that accumulated knowledge, listening to one's heart and one's head about what is morally right and socially just, thinking not only of oneself but others, thinking not only in the here and now but about the future. Even in times of crisis, however, wisdom sometimes demands the paradoxical decision to resist doing something just for the sake of doing it—that flailing impulse "to do something, *anything*" that social scientists sometimes call the "action bias." "Some of the wisest and most devout men," the French essayist and philosopher Michel de Montaigne observed, "have lived avoiding all noticeable actions."

If wisdom weren't important, no one would even bother arguing about its definition. But that's the point: It *is* important, and every one of us, because we do lead lives and want those lives to be as good as they can be, is, to a certain extent, an expert in wisdom, even if (as is certainly the case with almost all of us) it is an expertise grounded in want, not possession. All of us have an intuitive sense of what wisdom means and what constitutes wise behavior. In a rough, nonacademic sense (to paraphrase Supreme Court Justice Potter Stewart's famous opinion about pornography), we know it when we see it, even if we can't define it.

That may suffice as a satisfyingly casual approach to personal philosophy, but such definitional squishiness usually makes for bad science, and this is, in many ways, a book about science's improbable exploration (if not annexation) of one of philosophy's most prized duchies. No one in a modern laboratory would argue that wisdom is a tractable subject for research; many scientists reasonably view it as something like intellectual libel to suggest that experiments in their labs have anything whatsoever to do with such a fuzzy topic. Even social scientists have trodden lightly; Paul B. Baltes, who probably studied wisdom with more depth and empirical rigor than any other psychologist in the modern era, spoke of a "fuzzy zone" of wisdom, where human expertise never quite rises to an idealized level of knowledge about the human condition.

But the struggle to define wisdom is embedded in the texture of its philosophical, psychological, and cultural history. And every time we think about it, every time we make the mighty effort to pause and contemplate a potential role for wisdom in whatever we are about to do or say, we join that noble struggle and move a step closer to achieving it. In

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trying to define wisdom, we are not merely engaging in a dry academic exercise. We are, in a fundamental and indeed essential sense, engaging in a conversation with ourselves about how to lead the best-possible life. We are engaging in a conversation with ourselves about who we want to be by the time we complete that journey and, in the words of Psalm 90, "fly away."

Wisdom begins with awareness, of the self and the world outside the self; it deepens with our awareness of the inherent tension between the inner "I" and the outer world.

I began to realize this when I was asked to write an article for *The New York Times Magazine* about wisdom research—or, as the cover line asked, "Can Science Tell Us Who Grows Wiser?" As I quickly discovered, there's no shortage of definitions of wisdom, and no dearth of disagreement about them; in an academic anthology entitled *Wisdom: Its Nature, Origins, and Development,* published in 1990, there are thirteen separate chapters written by prominent psychologists, and each one offers a different definition of wisdom. As Robert J. Sternberg succinctly put it, "To understand wisdom fully and correctly probably requires more wisdom than any of us have."

But *thinking* about wisdom nudges us closer to the thing itself. Every time I encountered a new definition of wisdom, or some argument from the psychological literature, I found myself considering my own life: my decisions, my values, my shortcomings, my choices in confronting difficult practical and moral dilemmas. If some psychologist had identified emotional evenhandedness as a component of wisdom, I would pause to consider my own emotional behavior. What set me off emotionally, and what kinds of decisions did I make—things said, actions taken, tone of voice and physical vocabulary—when I had to deal, for example, with a frustrating situation with professional colleagues or with my children's inconvenient moments of emotional demand? When compassion emerged as a central component, I was forced to consider the limitations and inconsistencies of my own behavior. When I read the work of Baltes, who believed that dealing with ambiguity and uncertainty was a central aspect of modern wisdom, I realized that moments of ambiguity and uncertainty are often the most stressful and challenging of our lives. (This form of self-consciousness reminded me of the way I used to

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obsess about diseases when I wrote about medical conditions, but this was more like a philosophical form of hypochondria, much less scary and much more illuminating.) With each new question, I realized that I had unwittingly embarked on an impromptu program of mental exercise, an informal calisthenics of self-awareness.

As I burrowed deeper into the literature of wisdom, I found myself silently mouthing the same question over and over to myself whenever I confronted a problem or dilemma: What would be the wisest thing to do here? I won't say I *acted* wisely—as Baltes and many others have pointed out, wisdom is more an ideal aspiration than a state of mind or a pattern of behavior that we customarily inhabit. But simply framing a decision in those terms was intellectually and emotionally bracing. I came away from this experience discovering (in the process of researching and writing a brief magazine article) that as soon as you are confronted with a definition of wisdom, however provisional or tentative, however debatable or howlingly inadequate, you are forced to view that definition through the prism of your own history and experience. Which is another way of saying that we all have a working definition of wisdom floating around in our heads, but we are rarely forced to consider it, or consult it, or challenge it, or amend it, much less apply any standard of wisdom to gauge our own behavior and decisions on a daily basis.

Simply put, thinking about wisdom forces you to think about the way you lead your life, just as reading about wisdom, I believe, forces you to wrestle with its meaning and implications. You might come to think of this exercise, as I have, as an enlightened form of self-consciousness, almost an armchair form of mindfulness or meditation that cannot help but inform our actions. And that's another key point: to separate wisdom from action is a form of malpractice in the conduct of one's life. "We ought to seek out virtue not merely to contemplate it," Plutarch wrote, "but to derive benefit from doing so."

Soon, whenever I found myself in a challenging situation—refereeing a sibling spat, confronting interpersonal friction with a loved one or friend, being called upon to deal with something that triggered titanic forces of procrastination, or even weighing a trivial dilemma of daily compassion, such as deciding whether to give a poor person some spare change—I felt myself slowing down long enough to ask myself that question: What would be the wisest thing to do? I realize this was very

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small potatoes compared to Mother Teresa working in the slums of Calcutta or Martin Luther King, Jr., marching on Selma, and I won't say I did this all the time—a conscientiously wise person might easily experience an existential form of rigor mortis, paralyzed by serial episodes of deliberation.

But I found it a refreshing exercise. It forced me to clarify choices. It slowed down the clock of urgency against which we all seem to be racing as we struggle with decisions. It allowed me to step outside of myself and momentarily stifle the urges of my innate selfishness—second to none, I submit, yet probably pretty much equivalent to everybody else's—long enough to see a bigger picture. It had an archaic but familiar quality of self-monitoring. It felt, for lack of a better word, *responsible*—not in the sense that others hold us responsible, but, rather, in terms of raising the bar of expectations we hold for ourselves.

But what exactly do I mean by wisdom?

Many definitions of wisdom converge on recurrent and common elements: humility, patience, and a clear-eyed, dispassionate view of human nature and the human predicament, as well as emotional resilience, an ability to cope with adversity, and an almost philosophical acknowledgment of ambiguity and the limitations of knowledge. Like many big ideas, it's also nettled with contradictions. Wisdom is based upon knowledge, but part of the physics of wisdom is shaped by uncertainty. Action is important, but so is judicious inaction. Emotion is central to wisdom, yet emotional detachment is indispensable. A wise act in one context may be sheer folly in another.

These inherent contradictions do not fatally vex a potential definition of wisdom; rather, they are embedded in it. One of the best ways to think about wisdom, in fact, is to try to identify those rare individuals who manage to reconcile these contradictions and still embody wisdom. These are (or once were) living, breathing, and, because they are human, imperfect definitions of wisdom, but they are also less abstract, more like wisdom in the flesh. We can learn a lot about wisdom from its exemplars, past and present.

A few years ago, psychologists in Canada conducted a study in which they asked subjects to nominate people, historical or modern, who struck them as especially wise. There are plenty of problems with these

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so-called questionnaire studies, beginning with the fact that they are typically inflicted on college undergraduates and may represent a narrow, undercooked demographic slice of wisdom pie. Nonetheless, consider the names they came up with: Mahatma Gandhi, Confucius, Jesus Christ, Martin Luther King, Jr., Socrates, Mother Teresa, Solomon, Buddha, the Pope, Oprah Winfrey, Winston Churchill, the Dalai Lama, Ann Landers, Nelson Mandela, and Queen Elizabeth II, in that order. Overwhelmingly historical (what does it say about contemporary culture that one of the few living exemplars of modern wisdom is a talk-show host?), predominantly male, surprisingly rich in social activists, and yet a reasonably wise catch for an admittedly porous cultural net. As with wisdom, we all seem to recognize wise people when we see them.

The fact that so many of the figures were historical adverts to humankind's enduring cultural fascination with the topic—wisdom is never out of fashion, and wise people speak to us beyond their time, place, and circumstance. The nomination of contemporary figures like Mr. Mandela and Ms. Winfrey, on the other hand, is a reassuring ratification of the notion that wisdom still exerts a strong cultural hold on the modern world, and reminds us that a core element of wisdom is the commitment to social justice and the greater public good. Many of us could quibble with some of the names on this Sage Hit Parade (indeed, you might provoke a very interesting conversation if you discussed the relative merits of these "wise" people at a dinner party). Most of us would nonetheless agree that they represent a reasonably exalted conclave of thoughtful individuals who could act wisely, at least part of the time.

Several startling facts leap out from this list, however. One is its dark message about the inherent threat posed by insistently wise behavior: In a profound sense, the figures we now celebrate for their wisdom often had a deeply adversarial relationship with the prevailing values of the societies in which they lived. Indeed, Pythagoras—who gave us the word *philosophy* (literally, "love of wisdom"), who identified three distinct "lifestyles" (the acquisitive, the competitive, and the contemplative), and who argued that contemplation, awareness, or, in the Eastern idiom, "awakening" is by far the best lifestyle—so alienated the populace of Croton, where he lived, that its citizens burned his house down, massacred many of his fellow Pythagoreans, and forced the "inventor" of philosophy to flee for his life. In an early foreshadowing of the Socratic

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tragedy, we can see that in many cultures, the wise man is also a marked man. Many of the wise people on the list needed to abandon conventional modes of life and thought to nurture the habit of mind for which they are now celebrated, which is often to tell society what it doesn't want to hear; many were ostracized during their lifetime, while others were executed outright or assassinated. Mandela and Gandhi were imprisoned; Confucius was unemployable; Socrates was put to death; even the closest friends of Jesus Christ, according to philosopher Karl Jaspers, viewed him as a madman. In its particular time and place, wisdom not only perturbs but often appears socially dangerous.

The other surprise, and a troubling one at that, is the relative absence of women. The presence of so many wise men is more than a gender aberration; it tells us something very important about our working definition. Wisdom clearly isn't a trait conferred by a gene sequestered on the male Y chromosome. For every Solomon, there is a Sarah and an Esther; for every Pericles, there is an Aspasia, his little-known mistress, who, according to Plutarch, was one of the wisest people in that wisest era of Greek civilization. For every Jesus, a Mary Magdalene; for every Mandela, an Aung San Suu Kyi. In the Hebrew Bible, wisdom is a She.

So why so few women? I don't think there's a dearth of female wisdom, just a painfully slow evolution in the cultural notion of wisdom and an equally painful and long-standing disenfranchisement of women from the public domain of wisdom for many centuries. The ancient Greeks personified wisdom in the goddess Athena, but at the same time, Athenian women were not citizens, could not speak or vote in the assembly, could not sit on juries, could not select their own marriage partners or the age at which they could marry. Did this deprive them of wisdom? Of course not. As a recent art exhibit ("Worshiping Women: Ritual and Reality in Classical Athens") made clear, the female deities of Athens—Athena, Artemis, Demeter, and Aphrodite—were all role models for a private, domestic, almost mystical domain of wisdom. Art critic Holland Cotter got it exactly right in noting, "Birth and death—the only real democratic experiences, existentially speaking—were in women's hands." In her strategic abstinence, Lysistrata is as much an exemplar of Athenian wisdom as Socrates; in her enfranchisement of emotion as parcel to thought, Sappho was closer to modern neuroscience than Plato.

So the relative dearth of wise women is not a problem in the stars, but

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in us: We need to be a little more catholic about where we look for, and are willing to find, wisdom. I don't mean we should throw out all the usual Old White Guys, in all the usual Great Books; they make very good company. We can find useful provocations about the meaning of wisdom in the dialogues of Plato and in the proverbs of the Bible, in the lamentations of Saint Augustine and especially in the clear-eyed though often grumpy insights of Montaigne, who once declared, "The most manifest sign of wisdom is continual cheerfulness." If by that he meant optimism about the future, he is backed up by neuroscientists, who have begun to find support for that notion.

But as one of the most famous Old White Guys observed, in the voice of Poor Richard and his humble bromides, "There have been as great Souls unknown to fame as any of the most famous." The truth is that we can find wisdom not only on the steps of the Parthenon, but also around a family dinner table; not only in the pages of the Everyman's Library but also in the funny pages (in a recent biography of cartoonist Charles Schulz, writer David Michaelis captured the minimalist wisdom of "Peanuts" when he described it as a comic strip "about people working out the interior problems of their daily lives without ever actually solving them"). The fact is that women have historically exerted their abundant wisdom out of the public eye, "unknown to fame," but no less powerful and influential.

Indeed, I will argue that it is in this domain—the private, the domestic, the familial—where wisdom has its greatest lifelong impact. Gandhi was shaped by his mother's saintliness, Benjamin Franklin by his father's practical sagacity; Confucius's diligence was rooted in a childhood with a single parent, and perhaps Socrates' hard-nosed form of philosophy owes something to his having had a stonecutter for a father and midwife for a mother. All of them, moreover, had teachers and mentors. Wisdom is apparent in the pronouncements of great leaders at moments of great historical challenge, but also in the quotidian reassurances and bits of advice shared by parents and children (a kind of wisdom that travels well in both directions, I might add). We can find it at home, on the job, in solitude and amid a crowd, in places of worship, and sometimes even in the locker room (sportswriters have long appreciated the fact that there's often more wisdom among losers than among winners).

So wisdom occupies many different venues, depending on the histor-

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ical period, the cultural circumstances, and the nature of the personal or social dilemma being confronted, and is shaped by the temperaments of the people who are wrestling with those dilemmas. In an age of reason, thought will seem like wisdom's most esteemed companion. In an age of sentiment, emotion will seem like the wisest guide. If we want to push the envelope a little, in a period where basic survival is paramount, like the times we find ourselves in right now, a very practical form of wisdom is likelier to lead to a good life (in fact, a crude form of social practicality probably passed for proto-wisdom in prehistoric times). And in an age of science, the inner workings of the human brain may appear to offer us a glimpse at the biology of wisdom.

On a January weekend in 2008, an unusually diverse interdisciplinary group of researchers came together for a meeting at New York University. Some were economists, and some were ethologists, the scientists who study behavior in animals (usually primates). Some were psychologists, and some were neuroscientists. The occasion was the ninth biennial symposium on "Neuroeconomics: Decision Making and the Brain." As countless popular science books have already recounted, neuroeconomics is the relatively new but rapidly evolving field that has pushed human economic decision making into every nook and cranny of the brain. Not, it should hastily be added, without some problems still to be worked out. As one expert in "behavioral finances" put it, "Decision theory works very well in controlled situations, but works very bad in the real world, and humans operate very well in the real world." We would all be wise to mind that gap.

Over the course of the three-day meeting, there were enough statistics to trigger math-inflected migraines, and enough brain scans to put you in mind of digital phrenology. There were elaborate formulas, obscure as hieroglyphics, that purported to capture human behavior, and multiple sightings of the vaunted "hyperbolic discount curve," a simple graph that aspires to explain human impulsiveness, human impatience, and indeed human foolishness—why we always succumb to actions that sabotage our nobler long-term goals, even though we know we're being dumb.

But every talk, no matter how technical, was at least dusted with a surprisingly familiar vocabulary, a common verbal currency that would

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be recognizable to anyone from Socrates to your next-door neighbor: patience, delayed rewards, deliberation, reflection, decision making, attention, altruism, punishment, the role of emotion in driving desires, the role of thought in curbing those desires. As I listened to many of these talks, and struggled to understand their implications, I found myself suddenly thinking, These guys (and, unfortunately, it was mostly male scientists who spoke) are talking about wisdom, and they don't even know it.

The world doesn't need another book about neuroeconomics, and this doesn't plan on being one. But a lot of recent research in neuroeconomics and (in a broader sense) social neuroscience—including related fields like cognitive neuroscience, behavioral psychology, moral philosophy, and the like—strikes me as an immensely fertile area to till for fresh new insights into the nature of wisdom. The most successful strategy for the advancement of biological knowledge in the past half century has been reductionism—breaking down a scientific problem, or natural mystery, into its smaller, component parts and then designing experiments to tease apart the underlying biology. Using this strategy, bacteria can tell us how our genes work; fruit flies can tell us how memory works; mice can tell us how stem cells work; and now college undergraduates, who have become the model organism for much of social neuroscience, are telling us (up to a point) how the brain works.

In a metaphoric sense, I'm taking the same reductionist approach to wisdom. I've tried to break this very large idea down into several of its most salient cognitive and emotional components—I think of them as "neural pillars of wisdom," to which the second section of this book is devoted—and then paid visits to scientists doing research in those areas. This approach is wholly speculative, deeply unauthorized (at least by the scientists whose work I'll describe in the context of wisdom), and yet constantly edifying. If you ask scientists about the "science of wisdom," you'll get blank looks and rolled eyes. But if you ask about a specific, more "reductive" aspect of wisdom—emotional regulation, say, or delayed gratification or moral choice—suddenly there's a lot to talk about, think about, and, often, argue about.

Now, reductionism also happens to be, in my opinion, the most frustrating strategy for the advancement of biological understanding. When we pare and trim the big idea down to its component parts, we never

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quite know if we've made fatal simplifications (a point some neuroscientists concede) and we never quite know what we're throwing away. (What used to be dismissed as "junk DNA" is now seen to be a chromosomal closet crammed full of genetic control elements and evolutionary runes.) In reducing wisdom to some of its salient qualities, I plead guilty in advance to losing sight occasionally of the rich, ineffable, holistic essence of the idea itself. The problem with reductionism is that, at the end of the day, you need and want to put all the parts back together. I can't do that with wisdom; no one can. The best I can do is to respect its essential mystery while offering a peek at some of its neural gears.

And, yes, a number of scientists and organizations have begun talking about the neural components of wisdom. In 2008, the Center for Cognitive and Social Neuroscience at the University of Chicago launched a $2 million research program called "Defining Wisdom" and, in conjunction with the John Templeton Foundation, invited young neuroscientists, historians, theologians, and other academic researchers to submit grant proposals; the project later awarded twenty-three competitive grants to investigate aspects of wisdom. Even a tough-minded, hard-core cognitive neuroscientist like Stephen M. Kosslyn, who heads the Department of Psychology at Harvard University, impressed me with his willingness to engage the idea of brain function and wisdom. "Wisdom presumably has something to do with memory and reasoning, and our understanding of both has changed dramatically in recent years," he told me. "Memory is not just one thing, but rather there are many different kinds of memory, and some forms of wisdom probably rely on types of memory we didn't even know about before. In reasoning, we now know that emotion plays a major role in how we reason, and wisdom may have a lot to do with knowing when emotion is helpful and when it is not." Kosslyn also mentioned a relatively recent concept in cognitive psychology known as "framing," which refers to the way we conceptualize a problem. "People who are wise can interrupt, take a step back, and reframe," he said, "and a lot of wisdom probably has to do with looking at a situation differently and reframing."

Let me sketch out a few general principles that often seem to be associated with wise behavior. Wisdom requires an experience-based knowledge of the world (including, especially, the world of human nature). It requires mental focus, reflecting the ability to analyze and discern the

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most important aspects of the acquired knowledge, knowing what to use and what to discard, almost on a case-by-case basis (put another way, it requires knowing when to follow rules but also when the usual rules no longer apply). It requires mediating, refereeing, between the frequently conflicting inputs of emotion and reason, of narrow self-interest and broader social interest, of instant rewards or future gains. Moreover, it expresses itself through an insistently social vocabulary of interactive behavior: a fundamental sense of justice (which is sometimes described as an innate form of morality, of knowing right from wrong), a commitment to the welfare of social (and, for that matter, genetic) units that extend beyond the self, and an ability to defer immediate gratification in order to achieve the greatest amount of good for the greatest number of people.

Beg to differ? Good. As this brief and inadequate first pass at a definition suggests, one of the most appealing things about wisdom is the elevated form of self-awareness it inspires. When I consider the importance of emotional evenhandedness, I think immediately (as most parents would) about daily interactions with my children. When I consider "socioemotional selectivity theory," which describes how a person's emotional priorities change with shrinking time horizons (due to age, illness, or unsettling external events like the September 11 tragedy), I can't help but think about my own station in life: a baby boomer in his mid-fifties, with aging and ailing parents on one side and young, impressionable children on the other.

To repeat: Thinking about wisdom almost inevitably inspires you to think about yourself and your relationship with the larger world. With diligence (and luck), it might even make you think about how both can be made better.

Could there be a "science" of wisdom? And if there is, can it provide us anything more at this point than a fuzzy geography of neural activity superimposed upon a vague definition of a human virtue? Can it shed light on the process by which each of us deals with the decisions and dilemmas of our own private 9/11s? Can it guide us to make the best decisions possible for our loved ones and ourselves, and help us find the right path when those interests collide? Might it even hint at ways we could train our hearts and minds to give us a better shot at achieving that lofty goal?

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As I embarked on this investigation, I was immensely grateful for the opportunity to find out, but terrified that I had set off on a fool's errand. As Peter Medawar, the British immunologist and Nobel laureate, once put it, science represents that rare balance of imagination and critical thinking that yields "rectifying" episodes that tell us whether a story that sounds good also rises to the level of *truth*. The story of wisdom has always sounded good, but is there anything that rectifies the notion that it has a particular biology, a scientific reality, a natural history?

Paul Baltes, in a wry bit of understatement, once described wisdom as "a topic at the interface between several disciplines: philosophy, sociology, theology, psychology, political science, and literature, to name a few." Standing at the crossroads of all those disciplines, I found it hard to know where to begin. Although science journalists feel most comfortable writing about science, that didn't seem like the best place to start. Rather, I wanted to start with what might be considered the mother of all midwives to science: philosophy.

It would be a stretch to say that Socrates or the Buddha designed the protocols for contemporary experiments in social neuroscience, but it is no stretch at all to say that a lot of the most exciting modern experimentation is founded on an empirical vocabulary that has been defined, revised, debated, contested, squelched, and resurrected over the past 2,500 years. This vocabulary of timeless human virtue—patience, moral judgment, compassion, emotional self-control, altruism, and so on—forms the foundation for what I call the eight neural pillars of wisdom, the science of which is discussed later in the book.

But before we get to questions about wisdom and the brain, we need some provisions for the trip. We need to know, at least tentatively, what was originally meant by wisdom. And then we need to pay brief visits to some of the pioneering researchers on the subject—to the philosophers who invented wisdom, and to the psychologists who first invented a way to study it empirically.

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CHAPTER TWO

THE WISEST MAN IN THE WORLD

The Philosophical Roots of Wisdom

Applicants for wisdom do what I have done: inquire within.

—Heraclitus, *Fragments*

ONE DAY, late in the fifth century B.C., a well-known man-about-Athens named Chaerephon made his way to the Greek city of Delphi and posed an unusual question to the renowned oracle of the ancient world. From the time they were boys, Chaerephon had been a friend and, later, a disciple of the philosopher Socrates; indeed, both had been lampooned by Aristophanes in *The Clouds* as philosophic charlatans, and they shared many ideas about dialogue, disputation, and the steadfast, often impolitic pursuit of truth. Was anyone, Chaerephon asked the oracle, wiser than his old childhood friend? The oracle replied that no one exceeded the wisdom of Socrates.

During his famous trial in 399 B.C., Socrates recounted this story to a jury of fellow Athenians when he attemped to defend himself against attacks on his reputation—in fact, he facetiously called the oracle of Delphi as a defense witness. Although he was formally charged with corrupting young people and refusing to believe in the Athenian gods, nothing less than Socrates' lifelong pursuit of wisdom itself was on trial. Yet his greatest crime—or, perhaps, his greatest lapse in social judgment—may well have been the deft, dispassionate inquisitions by which he established that so many of his judges and jurors were not nearly as wise as they thought. As a nearby hourglass drained perhaps the final moments of his freedom, Socrates conceded that the anecdote about Delphi had contributed to "this false notoriety" about his sagacity, but he went on to admit, "I have gained this reputation, gentlemen, from

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nothing more or less than a kind of wisdom. What kind of wisdom do I mean? Human wisdom, I suppose. It seems that I really am wise in this limited sense."

Human wisdom? Is there any other kind?

Well, yes. There is divine wisdom, of the sort that prevailed during the centuries before Socrates stepped up to the bar, and which roared back to prominence in the Middle Ages. There is practical wisdom, of the sort immortalized in sayings and proverbs. There is even state-sponsored wisdom, of the sort that Plato would be among the first (but surely not the last) to inflict on fellow citizens. In a two-word phrase—so deceptively simple that, if you are like me, you probably didn't even notice it at first reading—Socrates managed to say something monumental in the history of human thought: that wisdom is a *human* virtue, won like all virtues by hard work, in this case the hard work of experience, error, intuition, detachment, and, above all, critical thinking. It is counterintuitive, adversarial, unsentimental, demythologizing, anything but conventional. Most important, Socrates' wisdom is *secular,* perhaps the highest form of human excellence any mortal can hope to achieve without the help of the gods (or God).

The oracle's puzzling declaration inspired Socrates to undertake what he called a "cycle of labors" to understand what exactly the god of Delphi had intended. "I am only too conscious that I have no claim to wisdom, great or small," the philosopher told his accusers; "so what can he mean by asserting that I am the wisest man in the world?" Incited by the mystery of that oracular pronouncement, Socrates then embarked upon a kind of philosophic road show (one that has as much relevance to our modern concepts of wisdom as it did to his).

On his impromptu "wisdom tour," Socrates managed to alienate, humiliate, illuminate, and educate his countrymen about the paradoxes of Socratic wisdom. He first visited a prominent Athenian politician—"a man with a high reputation for wisdom," he told the court—and lured him into a classic Socratic sand trap. The "slow old man," as Socrates described himself, wielded his questions like a box cutter, methodically stripping away ill logic and so enlarging the holes in the politician's threadbare arguments that he left the man denuded of both premise and dignity. This exercise left the philosopher disillusioned ("although in many people's opinion, and especially in his own, he

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appeared to be wise, in fact he was not"). When Socrates had the temerity to point this out, he managed only to provoke precisely the kind of resentment, in both the man and in his influential friends, that had led to his indictment. As he walked away from the encounter, Socrates concluded that the politician "thinks that he knows something which he does not know, whereas I am quite conscious of my ignorance. At any rate it seems that I am wiser than he is to this small extent, that I do not think that I know what I do not know." With this remark, Socrates defined an essential and indeed profound aspect of true wisdom: recognizing the limits of one's own knowledge.

The same pattern ensued with each subsequent conversation. When he moved on to the poets, Socrates felt certain that in the company of such rarefied talents, he, the poor and frankly ugly son of a stonemason and a midwife, would be exposed as a "comparative ignoramus." Again, those with the most vaunted literary reputations wilted under close questioning, so much so that a random bystander, Socrates concluded, "could have explained those poems better than their actual authors." When the philosopher turned his attention to the skilled craftsmen of his city, he searched for wisdom in what we might consider a working-class, seat-of-the-pants practical knowledge. Their technical expertise far exceeded his knowledge, Socrates conceded, and amounted to a kind of wisdom. But these skilled workers succumbed to the same affectation as the poets and politicians; "on the strength of their technical proficiency," Socrates realized, "they claimed a perfect understanding of every other subject, however important; and I felt that this error eclipsed their positive wisdom." Again, the arrogance of limited expertise inevitably produced foolishness.

At the end of his search for wisdom, Socrates decided to interrogate himself. "I made myself spokesman for the oracle," he told the Athenian court, "and asked myself whether I would rather be as I was—neither wise with their wisdom nor ignorant with their ignorance—or possess both qualities as they did. I replied through myself to the oracle that it was best for me to be as I was." And that, doubtful though its feigned humility may be, places wisdom close to its headwaters: the kind of self-awareness that allows humans to have virtues in the first place.

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Countless books and endless commentary have been written about the trial of Socrates, yet one of its most astonishing features often goes unremarked. When was the last time a "trial of the century," in any century, devoted so much public discussion to the meaning of wisdom? When was the last time a national conversation about the qualities of this elusive virtue became Topic A of its time and culture? When was the last time an entire society found itself debating the definition and importance of wisdom as if it were a matter of life and death (as it indeed was for Socrates)?

Socrates gave flesh—abundant flesh, for he did not cut a slender figure—to our enduring cultural image of the wise man. Old (he was seventy at the time of the trial), stocky, potbellied, and balding, with a pug nose well suited to his pugnacious interrogatory style and deep-set eyes as unsentimental as those of a raptor, he emerges in the pages of Plato's *Apology* (he left not a jot of writing of his own) as prickly, brilliant, unrepentant, boastful, condescending, at times almost sadistic in the glee with which he tweaks his main accuser, Meletus. In other words, the "wisest man in the world" was no laid-back Yoda. Reading between the lines, the archetype for all our cultural notions of the Socratic wise man comes across as a pain in the ass with, by his own definition, a "stubborn perversity."

These seamy details, these gossipy and unflattering physical descriptions hint at one of the most fundamental paradoxes of wisdom: It is rooted in character, personal history, and the experience of human nature, yet it is bigger than any one individual. It exists as both edifice and fog, is both immortal and yet fleeting, in some broad human consensus about what constitutes a well-lived life. Still, some individuals are bigger than others in the scheme of wise things, and some people have uniquely spoken to our urge to find wisdom in human behavior.

A couple of years ago, a friend of mine gave me an absolutely terrific (and, of course, out-of-print) little book by the philosopher Karl Jaspers, which was entitled simply *Socrates, Buddha, Confucius, Jesus: The Paradigmatic Individuals.* Jaspers famously coined the phrase "Axial Age" to define that extraordinary historical moment, roughly between 800 B.C. and 200 B.C., when civilizations in the East and West gravitated around figures that represented new modes of thought and uniquely human

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paths to wisdom: Socrates in ancient Greece, of course, but also Confucius in feudal China and the Buddha in the Asian subcontinent (Jesus obviously arrived on the scene a little later). If, as Socrates suggested, wisdom is essentially a human virtue, then it is virtually impossible to separate the biographical details of a life from the philosophy that exemplified that life. That is exactly what Jaspers argued in his book, which inspired me to treat the history of wisdom as a series of visitations—sometimes, I confess, a first-time visit in my case.

The arguments Socrates made at his trial and in his later deathbed ruminations (recounted in Plato's *Phaedo*) mark philosophy's grand, almost melodramatic annexation of the study of wisdom, in all its gnarly contradictions and insoluble paradoxes. Many of the essential elements we associate with wisdom were introduced as "evidence" at Socrates' trial: the importance of humility, especially in acknowledging the limits of one's knowledge and expertise; the importance of persistent, discomfiting critical thinking and discernment (usually in the form of conversational questions) to unearth the truth; the importance of identifying and pursuing goodness; and, often underappreciated, the acceptance that true wisdom at some level is often an act of hostility against society. "No man on earth who conscientiously opposes either you or any other organized democracy," Socrates told the court, "and flatly prevents a great many wrongs and illegalities from taking place in the state to which he belongs, can possibly escape with his life. The true champion of justice, if he intends to survive even for a short time, must necessarily confine himself to private life and leave politics alone."

This Socratic ideal of the closely examined, well-lived life placed cultural markers on the definition of wisdom that would not be redeemed, either by psychology or science, for millennia. But Socrates was not alone. In roughly the same remarkable period of ancient history, in every other significant corner of the civilized world, different but equally venerable schools of philosophy, each with its own definition of wisdom, began to flower. Confucius, a midlevel bureaucrat and the son of a minor government official in the Chinese kingdom of Lu, began to formulate the foundations for a very practical syllabus of public behavior that survives as a sociobureaucratic guide to wisdom. A young man of privilege and good breeding, Siddhartha Gautama, renounced worldly possessions and began teaching the sutras that would define Buddhism.

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were philosophers, so there persists into the Christian era this overlap of wisdom, human judgment, and social justice.

Finally, there is Heraclitus, who in the bright, shiny, poetic shards of philosophy that survive in his *Fragments* made contingency and change the essential challenge of wisdom. To Heraclitus, knowledge was fluid (his metaphor was fire). Nothing was constant; everything changed. And Heraclitean wisdom began with the fact that reality is dynamic; the world as we thought we knew it in the past is sure to be different as we venture into the future. It changes; we change. And so, in his most famous metaphor, when we dip our toe into a river, the river itself is different from the way it was just a moment ago, when our toe entered.

The river
where you set
your foot just now
is gone—
those waters giving way to this,
now this.

During a rare period of relative peace, after the defeat of Persia in 479 B.C. and prior to the start of the Peloponnesian Wars in 432 B.C., Athens enjoyed a pacific explosion of commerce, public building, the arts, and, of course, the practice of philosophy at the highest level. The city remade itself as an urban shrine to Wisdom, deified in the Parthenon, the great temple erected to honor Athena, the patroness of the city and goddess of wisdom. Philosophy assumed a central role in civic and cultural life; as Socrates told the jury at his trial, Athenians "belong to a city which is the greatest and most famous in the world for its wisdom and strength."

In a famous speech honoring soldiers who had died in the first skirmishes of the war between Athens and Sparta, Pericles spoke at length of the greatness of Athens at its peak in the fifth century B.C., and his remarks manage to capture a working definition of civic wisdom as it existed at the height of Greek civilization 2,500 years ago. He spoke of a uniquely Athenian talent for deliberation and decision making that, whether in the public domain in which he operated or in a more domestic setting, established a model for wisdom in action, one that probably

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strikes us as bracingly modern. "We Athenians," he said, "are able to judge at all events if we cannot originate, and instead of looking on discussion as a stumbling-block in the way of action, we think it an indispensable preliminary to any wise action at all. Again, in our enterprises we present the singular spectacle of daring and deliberation, each carried to its highest point, and both united in the same persons; although usually decision is the fruit of ignorance, hesitation of reflection."

In the Periclean formulation, wisdom was deliberative, judgmental, collective, reflective, and deeply social, rooted in conversation and disputation, steered by critical thinking. All these elements, in varying proportion, form a reasonably good working recipe for the kind of decision making that, even today, we likely would consider wise. They also begin to provide a vocabulary, a kind of high-minded philosophic slang, for modern experimentation on human judgment and decision making.

For all its celebrated enlightenment, Athens was not so enlightened a place that its citizens could resist putting the wisest man in the world to death. Plato used Socrates' last moments on earth (in his dialogue *Phaedo*) as an occasion to reiterate his belief that the pursuit of wisdom was the highest human calling—and, perhaps, a mission more easily accomplished without the distractions of bodily desires.

In a memorable passage, Socrates lamented that "the body fills us with loves and desires and fears and all sorts of fancies and a great deal of nonsense, with the result that we literally never get an opportunity to think at all about anything. . . . That is why, on all these accounts, we have so little time for philosophy. Worst of all, if we do obtain any leisure from the body's claims and turn to some line of inquiry, the body intrudes once more into our investigations, interrupting, disturbing, distracting, and preventing us from getting a glimpse of the truth. We are in fact convinced that if we are ever to have pure knowledge of anything, we must get rid of the body and contemplate things in isolation with the soul in isolation. It's likely, to judge from our argument, that the wisdom which we desire and upon which we profess to have set our hearts will be attainable only when we are dead, and not in our lifetime."

It is hard to read these lines now without recognizing a fatal, centuries-long flaw in the psychological logic of this valedictory. In Plato's account, Socrates essentially demonized and exiled emotion as a foe of wisdom, devaluing its importance, casting it as distraction and

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perturbation, setting it up for a philosophical reclamation project that would last more than a millennium. It is also difficult to read these lines now without thinking of neuroscience's recent notion of "embodiedness," the idea that bodily sensations do not so much compete with the mind as become satellite outposts of the mind, not only informing it but part of it.

In any event, soon after these remarks, a jailer brought Socrates the cocktail of hemlock, and he calmly drank his poison. Surrounded by disciples, the philosopher-king of the interrogatory posed his final questions: "Will a true lover of wisdom who has firmly grasped this same conviction—that he will never attain to wisdom worthy of the name elsewhere but in the next world—will he be grieved at dying? Will he not be glad to make that journey?" Even in death, Socrates managed to make wisdom a road trip.

Although standard histories locate the nativity of philosophy in Greece in the sixth century B.C., the dawn of the Axial Age rose first in the East. At least a century earlier than the Greek stirrings in Miletus, Eastern religions and belief systems had begun to coalesce around a somewhat different notion of knowledge, one that nonetheless anticipated contemporary concepts of wisdom. The Upanishads—formally committed to written form only around 800–500 B.C., roughly the same time frame of Homer and Hesiod—assembled poems and tales that offered the collective wisdom of saints and sages on a less material, almost ineffable plane of knowledge. "Wisdom diverged from the knowable, sensory world we live in," James Birren and Cheryl Svensson observed, "to a vaster, more intuitive understanding of the nature of life and death." This more intuitive form of wisdom especially flowered in the teachings of Confucius, the most influential Chinese philosopher of all time, and, later, in the Buddha.

Born in the sixth century B.C., Confucius lived most of his adult life in the north-central coastal region of China, although he traveled extensively later in life—in a ceaseless and largely unsuccessful search for work! His father, a minor military figure, was seventy years old when Confucius was born, and he died when his son was three. Confucius applied himself avidly to his studies as a young man, married at age nineteen, and had a son named Kong Li (Li meaning "carp"). Always poor,

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but always diligent and ambitious, Confucius studied intensely while working as a clerk and a zookeeper. As he famously remarked toward the end of his life, "When I was thirty I began my life; at forty I was self-assured; at fifty I understood my place in the vast scheme of things; at sixty I learned to give up arguing; and now at seventy I can do whatever I like without disrupting my life."

Very early on, Chinese wisdom acquired a practical, discreet, commonsensical, almost bureaucratic bent as people sought stability and pacifism. During Confucius's lifetime, the centuries-long reign of the Zhou dynasty in the western territories had collapsed, leading to great political instability, and with this came a period of intense social uncertainty and military strife. As civil order unraveled in this indifferent, feudal era, Confucius witnessed human misery on an epic scale. "This grounding in everyday horrors had a profound effect upon young Confucius," British author Paul Strathern has written. "It was to give a toughness and practicality to his thinking, which it seldom lost." This tough, unapologetic practicality is a reminder that our definitions of wisdom are shaped—and, perhaps, constrained—by unique local conditions of history and culture. And yet it is due to the power of wisdom that Confucian insights gestated in feudal China resonate instantly and effortlessly in twenty-first-century lives.

In numerous parts of the *Analects,* his collected sayings, Confucius reiterates a triad of foundational principles that he believes should guide the good life. Most important is goodness (or *gen*), which has become, arguably, one of the most powerful beacons illuminating human behavior in the history of civilization. In the Confucian hierarchy of virtue, even wisdom and courage were secondary to *gen*.

But Confucius's enduring greatness and influence derive from his understanding that in order to reduce the vast human misery he saw all around him, society needed to change, and in particular, it needed to reorganize its goals in order to seek the benefit of the many rather than the comfort of the few. He understood that this transformation might best be accomplished by the politic (in every sense of the word) and practical behavior of, in effect, civil servants. Hence, Confucianism often reads like a bureaucratic catechism about civic altruism or public comportment—or, more specifically, virtue or morality as it unfolds in the public arena.

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Many elements of Confucianism anticipate subsequent developments in Western philosophy—for example, the commitment to social justice in Greek society ("Not to act when justice commands, is cowardice," Confucius wrote), and a moralism grounded in public virtue, with obvious precursors to Christian loving-kindness. "For Confucius, morality was all about *involvement* in society," Strathern writes. Confucius also emphasized the primacy of emotion (as it was expressed in compassion and intuition) over reason, and the melding of personal moral behavior with the larger political order. This is one of the reasons that Confucian teaching still offers some of the shrewdest advice about wise behavior in a government bureaucracy or the corporate workplace.

Despite his enduring influence, Confucius, like Socrates, did not enjoy an abundance of loving-kindness from his contemporaries. The prince of Lu appointed the middle-aged Confucius to be the minister of crime, but his term in office degenerated into something of a reign of terror. He was said to have been hugely successful at eradicating crime, but his zeal sometimes exceeded his wisdom—purportedly, he condemned to death, for example, anyone guilty of inventing "unusual clothing." This ill-fated imposition of wisdom recalls Plato's equally zealous proposals to ban Homer, drama, and slow music for children. But encountering these bouts of bewildering silliness, it occurred to me that even the wisest people the world has ever known can do terribly unwise things, especially when they attempt to impose their version of wisdom upon others. Those who aspire to wisdom must be drawn to it, and seek it, not receive it as a government regulation, spiritual proclamation, or philosophic incitement to acceptable and virtuous thought.

Ultimately a polarizing figure who was relieved of his duties, and unemployed in his fifties, Confucius began a ten-year pilgrimage across China in a fruitless search for a job. Although history celebrates Confucius as one of the wisest human beings ever to have lived, none of his contemporaries would hire him, and he thought of himself as a failure. He died in 479 B.C., his last words reputedly:

The great mountain must crumble,
The strong beam bursts,
The wise man must wither away like a plant.

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known as mindfulness. As we'll see in a later chapter, neuroscientists have in the last few years measured the brain activity of Buddhist monks while they meditate, and indeed their neural activity *is* different—although what exactly that difference means remains, true to the deeper message of the Buddha, somewhat uncertain.

As distinct as these schools of thought are, it is their deeper congruences that begin to coalesce around a time-tested, culturally heterogenous, geographically far-flung, yet surprisingly universal concept of wisdom. East or West, they all embrace social justice and insist on a code of public morality. They embrace an altruism that benefits the many. They try to dissociate individual needs and desires from the common good, and strive to master the emotions that urge immediate sensory gratification. And in their choice to be teachers, Confucius and Socrates and the Buddha, each in his own way, asserted the central primacy of *sharing* their accumulated body of life knowledge. That impulse would culminate in the creation, back in Greece, of the first formal academy—a school in which, it might reasonably be said, everyone majored in wisdom.

To some degree, the natural history of wisdom can be seen as a never-ending battle between the forces of theology and those of secularization, between a top-down, benevolent, dispensed, and divine form of wisdom and a bottom-up, organic, hard-earned human form of wisdom. Put simply, is wisdom a human quality, achieved by human intelligence and insight? Or is wisdom a heavenly gift, bestowed by the gods (or God), utterly inaccessible to mortals who do not subscribe to one or another of the world's religions? This question was embedded in the earliest versions of the Hebrew Bible, in Eve's apple and Solomon's dream, but it became especially thorny with the rise of Christianity, which restored an era of authority, nonhuman agency, and religious mysticism. In such a setting, Wisdom (with a capital *W*) comes from on high, and wisdom (with a small *w*) contracts to the rather more modest spheres of familial and communal enterprise.

No single person embodied theology's recapture of wisdom more than Augustine, who single-handedly demoted secular wisdom to a lower, more inferior plane in the hierarchy of human achievement. Saint Augustine distinguished between *"sapientia,"* a timeless, eternal wisdom about human conduct and moral perfection bestowed by God, and *"sci-*

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entia," which reflected mere knowledge of the material world. Taking their cue from Augustine, religious authorities drew an increasingly sharp (and intolerant) distinction between the material wisdom based on reason and knowledge on the one hand and, on the other, the spiritual wisdom and knowledge associated with faith and ecclesiastical authority, a segregation marked most famously, if not first, in the story of King Solomon.

Solomon's iconic wisdom, after all, came to him in a dream, a divine gift from God; for Jews, wisdom arose out of a personal relationship with God. This important split between Science and Wisdom, between human-perceived material truths and human-*received* universal truths, dominated philosophy and religion for the better part of a thousand years, and it is a dichotomy that we're still working through. (Indeed, the John Templeton Foundation, which describes itself as "a philanthropic catalyst for discovery in areas engaging life's biggest questions," has begun to fund scientific and other scholarly research into wisdom, which in turn has led some scientists to complain that the foundation has an agenda to use science to promote and legitimize religious beliefs and values, including wisdom.)

The Augustinian notion of wisdom poses a fundamental challenge to us even today. On the one hand, there is growing evidence—although many scientists seem oblivious to the idea—that religion promotes precisely the kinds of communal values and interactions that social neuroscience is most keen to study: compassion, altruism, other-centered thinking. As a facilitator and mediator of responsible community interaction, the *culture* of religion can easily be seen as a force in cultivating the social dimension of wisdom. On the other hand, the relative inflexibility of religious doctrine is by its nature anathema to the contextual suppleness of wisdom. Which leaves us with an uncomfortable question: Does religion ultimately promote, or undermine, human aspirations to wisdom? This book won't come close to settling that nettlesome question. But Paul Baltes, the German psychologist and arguably the foremost scientific scholar of wisdom, wondered aloud late in life whether religion, because of its insistence on a fixed set of values, was an "intellectual enemy" of wisdom. While acknowledging that organized religion makes wisdom a cultural and spiritual priority, he concluded that "religions constrain how far wisdom is developed. In fact, there may be a

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point beyond which religion becomes a hindrance to the generalizability or transcultural validity of wisdom."

The Judeo-Christian tradition of wisdom thus leaves us with a paradox. It clearly regards wisdom as a divine gift. Yet it also promotes an understanding of human behavior, and the use of that understanding to guide (if not mold) the behavior both of individuals and, perhaps even more important in a cultural sense, of social groups ranging from immediate family to kinship groups to larger, nonconsanguineous social organizations. In other words, the religion-based strain of wisdom extended well beyond the "examined life" of Socrates and enlarged the circumference of its meaning to include family, community, ethnic group, creed group (for all his wisdom, Socrates does not come across as much of a family man). The book of Proverbs can be read as among the earliest of self-help manuals. Its mantric code of prescribed behaviors—the serial, repetitious injunctions against lust, infidelity, imprudent business affairs, and similar pragmatic advice—is packaged as a wisdom instructional; the rhetorical style of its narrative establishes one of the iconic modes of transmission for wisdom: father to son or, more generally, parent to child, elder to youth. Here, bald emotion—notably, the fear of transgressions that would invoke God's wrath—guides wise behavior.

It took many centuries (and, probably, the death of many "wise" contrarians), but Renaissance thought restored the central secular importance of wisdom, as well as its fundamental subversiveness. In a wonderful little book entitled *The Renaissance Idea of Wisdom,* the scholar Eugene F. Rice, Jr., wrote, "Augustine tied *sapientia* and Christianity together with knots which held a thousand years. The Renaissance patiently loosed them, and restored wisdom to its old autonomy and its purely human dignities."

Montaigne turned his pen into the biggest drill bit of the Middle Ages. He seized wisdom from the realm of received goods and turned it into a high-end, artisanal craft—individualized, even idiosyncratic, privately verified and ratified, and reflexively wary about disguising layers of artifice and authority. The *Essays,* to which I'll return again and again, were nothing less than the invention of the personal essay as a high-powered literary microscope, much as Galileo would later invent the telescope, an instrument used to discern, examine, and discover startling new truths about very familiar things.

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The wise person of the Renaissance needed to do her or his philosophic due diligence, to scratch beneath the surface of things to truly understand them, whether it was human nature or an aspect of physical reality. If conventional wisdom (in any age) represents a kind of authority, this was the rebirth of wisdom as a subversive, antiauthoritarian force. This newfound (or, more properly, rediscovered) commitment to use questions as a digging tool encouraged a behavioral ethic of challenging thought, authority, and, of course, conventional wisdom.

Wisdom has never ceased to be a formal and central concern of philosophy. "The Idea of wisdom," Immanuel Kant wrote, "must be the foundation of philosophy. . . ." Yet this foundation, in his view, rested on shaky, if not invisible, legs. Kant conceived of two different, mutually exclusive realms of reality that by definition constrain our embrace of wisdom: the phenomenal world, "where knowledge is possible," and what he called "the noumenal," "which is transcendent and to which there is no access." Once again, we can hear the echo of Eastern philosophy rattling around Kant's lonely room in Koenigsberg, with its very conscious acknowledgment of limitation. Kant also anticipated the life-span psychologist Paul Baltes (whom we'll meet in the next chapter) in his belief that wisdom was an ideal, always to be aspired to but essentially unattainable. Humans, Kant believed, "did not possess wisdom but only felt love for it."

The French philosopher Jean-François Revel argued that philosophy essentially abandoned wisdom as a worthy goal in the eighteenth century. Prior to Descartes and Spinoza, philosophy unified the pursuit of science with the pursuit of wisdom. Spinoza, he said, represents "the final appearance of the idea that supreme knowledge can be identified with the joy of the sage who, having understood how reality works, thereby knows true happiness, the sovereign good. . . . Over the last three centuries, philosophy has abandoned its function as a source of wisdom, and has restricted itself to knowledge." Indeed, by emphasizing the importance of knowledge—and thus its attainment—philosophy became midwife to astronomy, physics, chemistry, and biology.

And yet, wisdom still retains its grip—on philosophers and on us. Why? The contemporary philosopher Robert Nozick attempted to provide an answer in a 1987 essay entitled, "What Is Wisdom, and Why Do Philosophers Love It So?" His answer was quite simple. "Wisdom," he

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wrote in the very first paragraph, "is an understanding of what is important, where this understanding informs a (wise) person's thought or action." And then, as philosophers are wont to do, he went on for another ten pages qualifying that definition.

If the last few paragraphs seem like a whirlwind tour of philosophic name-dropping, I apologize—up to a point. The aim is not to be drearily comprehensive: that, in any event, would be both pointless and impossible. Rather, I'm trying to hint at, in as concise a method as "drive-by" citation allows, the extraordinarily long and rich intellectual genealogy for what is to come. Many of the "lovers of wisdom" whose names you have just read have been cropping up at a surprising rate in the scientific literature over the last decade or so, specifically in the field of neuroscience. From Antonio Damasio's immensely popular books, such as *Descartes' Error* and *Looking for Spinoza* to Joshua Greene's piquant essay "The Secret Joke of Kant's Soul" to the citations of David Hume (and Aesop, for that matter) in recent papers that have appeared in *Science* and *Neuron,* there has been a convergence of cutting-edge curiosity between those traditional "lovers of wisdom" and modern scientists about how the mind works. It is no stretch to say that many of the cognitive processes being scientifically pursued hew to this long philosophic history of thinking about wisdom.

But before we set out to see if there is a *biology* of wisdom, I want to invite one other field into the conversation. A decisive turn in the formal history of wisdom research occurred in the 1950s, when the psychoanalyst Erik Erikson suggested that wisdom was a defining feature of one of the last stages in human development. This seemingly modest observation—Erikson's first mention of wisdom amounted to a single word appearing in a graph about his eight stages of life; he initially prepared the graph in 1950 for a White House conference on childhood development—eventually had two enormous implications. One was that wisdom became a topic that could be experimentally tackled by the field of psychology. The other was that wisdom, however provisionally, became formally associated with a specific stage of life—namely, old age. Once Erikson left the door to wisdom studies ever so slightly ajar, a few brave psychologists rushed in.

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As Vaillant observed in his book *Adaptation to Life,* "Certainly, Shakespeare had said it all before, but most textbooks of human development associate changes in adult personality with external events." Remarkably, Erikson seems to be the first psychologist to have suggested that wisdom could be acquired through a stepwise, lifelong process of self-realization.

Erikson viewed wisdom as a central feature in what he called the "eighth stage" of psychosocial development. Certain individuals, he believed, achieve enough emotional resilience (or "ego integrity") over the course of a lifetime to overcome the despair that arises as the end of life approaches. Later, in *Identity: Youth and Crisis* (1968), Erikson elaborated—ever so slightly—on these ideas. Wisdom, he wrote, most likely arose during "meaningful old age," after nearly a full lifetime of accumulated experience but before "possible terminal senility" set in, when an individual could look back with perspective on an entire life. "Strength here," Erikson wrote, "takes the form of that detached yet active concern with life bounded by death, which we call wisdom in its many connotations from ripened 'wits' to accumulated knowledge, mature judgment, and inclusive understanding. Not that each man can evolve wisdom for himself. For most, a living 'tradition' provides the essence of it."

Several terms here are key because of their fecund psychological (and ultimately neuroscientific) implications: "detached" (with its implications for the regulation of emotion), "inclusive" (because it makes wisdom not only social but *encompassingly* social in understanding another's perspective), "tradition" (with its suggestion that ritual, culture, history, and family are all repositories of wisdom), and finally "bounded by death" (a dramatic demarcation reminding us that time and impending mortality impose a crucial temporal dynamic to any notion of wisdom). By invoking wisdom as perhaps the highest form of human psychosocial development in several books in the 1950s and 1960s, Erikson opened the door to its formal study by social scientists, with Vivian Clayton taking the lead. Erikson never scientifically defined wisdom, however, and in order to study a psychological phenomenon, psychologists need to "operationalize" the concept—figure out a way to study it quantitatively, beginning with a definition of what they propose to measure.

Clayton's modern consideration of wisdom began with a tremendous bias, but a good one, which counterbalanced an equally powerful bias that had soured the biomedical literature on aging in the 1960s and

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1970s. Half a century ago, gerontologists dominated the study of old people, typically conducting studies on elderly patients in hospitals and assisted-living facilities; although only 5 percent of the elderly lived in nursing homes, according to researchers, almost all the gerontological research focused on this frail and struggling institutionalized population. Like the proverbial drunk looking for his car keys under a streetlamp, these researchers looked for, and failed to find, anything positive to say about growing old.

One of the leading voices pushing for a broader, more balanced, and more global view of the aging process was Birren, a pioneering psychologist at the Ethel Percy Andrus Gerontology Center at USC. At the same time Clayton began her doctoral studies, Birren encouraged other of his graduate students to examine messy but important aspects of aging—not just wisdom but things like love and creativity. In what amounted to a battle between psychologists and gerontologists for the soul of aging research, Birren made a commitment to investigate positive aspects of aging, including wisdom, and was soon joined by another prominent social scientist: Paul Baltes. Then a psychologist at Pennsylvania State University, Baltes helped pioneer life-span development theory, an influential school of psychological thought that argues that in order to understand, say, the psychological state of a sixty-year-old, you need to take into account the person's biology, psychology, and social context, as well as the cultural and historical events through which she or he has lived. Life-span studies placed a new and sophisticated emphasis on the psychological significance—and this would be important to later conceptions of human choice, including brain-scanning experiments—of time in shaping people's behavior. It also promised a methodological way to focus on that sliver of life span that Erikson had identified as key to wisdom: after a lifetime of maturation and experience, but before senility.

In the early 1970s, when Vivian Clayton began to think about the topic, there was no "wisdom literature" in psychology. Birren sent her off to consult ancient accounts of wisdom, which introduced her to what is, in many ways, the most frustrating and yet fascinating aspect of the field: How in the world do you even define it?

Clayton flung herself into precisely the same nonscientific literature that represents the repository of human thought about wisdom: Eastern religion, Greek philosophy, and, perhaps most interesting to her, the

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