

Wiser

**THE SCIENTIFIC ROOTS OF WISDOM,
COMPASSION, AND WHAT MAKES US GOOD**

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Part I

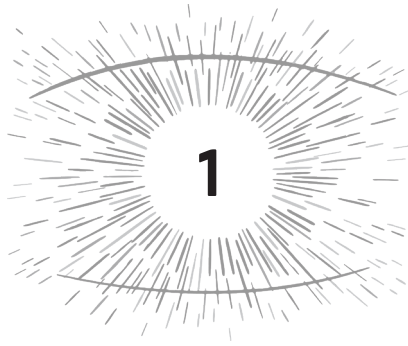
What Is Wisdom?

Here's the first rule of improvement, whether the matter at hand is installing a new sink, rebuilding a car engine, or becoming wiser: you need to know what you're working with, how it (the plumbing, car engine, or in this case, your brain) works, and how to know that what you've done is actually an improvement on the original.

Part I addresses these requirements and lays the groundwork for the chapters that follow. I recount the enduring constancy of the concept of wisdom, which surprisingly hasn't changed much in meaning over millennia, the neuroscience of wisdom (where in the brain its traits reside), and the emerging tools of science that have moved investigation and discussion beyond the salons of philosophy and into the lab.

I also discuss the intimate but not inevitable linkage of age with wisdom. Wisdom often comes with age but, to paraphrase Oscar Wilde, sometimes age comes alone. Likewise, wisdom is sometimes apparent in youth, although even in those lucky people it should increase with age and experience.

And I introduce a new, peer-reviewed measure of wisdom called the Jeste-Thomas Wisdom Index, which you can take online. It is the first measurement developed and based on the neurobiology of wisdom.



Defining Wisdom

*Of all the pursuits open to men, the search
for wisdom is more perfect, more sublime,
more profitable, and more full of joy.*

THOMAS AQUINAS

No man was ever wise by chance.

LUCIUS ANNAEUS SENECA

THE GREEK PHILOSOPHER SOCRATES, who lived twenty-five hundred years ago, is widely associated with the search for wisdom. He famously went looking for it among the citizens of ancient Athens, only to conclude that no one he met was any wiser than he (and often quite less so) and timelessly declared (purportedly according to Plato) that “the only true wisdom is in knowing you know nothing.”

But Socrates was hardly alone in his penchant for pondering the nature of wisdom. In Proverbs 4:7 of the Bible, King Solomon, immortalized as an archetype of wisdom, declared it to be “the

principal thing.” Wisdom is a favorite subject of the Sebayt—recorded teachings dating to the Middle Kingdom of Egypt, 2000 BCE to 1700 BCE—and the Bhagavad Gita, a similarly venerable Hindu text of religious and philosophical scripture (written 400 BCE to 200 CE, but based on the Vedas, which are perhaps five thousand years old). Writers in ancient India and China ruminated on the question, from Confucius to Buddha. So too have philosophers, priests, poets, and pundits from long ago Babylonia and the Akkadian empire through the European Renaissance and Age of Reason and into modern times.

But while discussions and debates might vary somewhat over time and in different cultures and places, definitions of wisdom have tended, by and large, to be ethereal, a bit beyond our grasp. Wisdom seemed to exist on a different plane. It was thought to be rare and aspirational. You might find wisdom, live it, be fortified by it, and do wonders through it, said Hermann Hesse, who penned the 1922 novel about the spiritual journey of self-discovery of a man named Siddhartha, but “one cannot communicate and teach it.”

I began my own quest to understand wisdom by asking myself: What is wisdom, really? How is it defined? How can it be measured? These sorts of hard metrics are how scientists think and assess their ideas and hypotheses, and for a long time, wisdom eluded such quantification. But that is changing as other intangible aspects of humanity—such as consciousness, stress, emotions, resilience, and grit—are beginning to be studied, calibrated, and described in deductive detail. As recently as a few decades ago, hard-core scientists dismissed these constructs as indefinable, immeasurable, and nonbiological.

“One could write a history of science in reverse by assembling the solemn pronouncements of highest authority about what could not be done and could never happen,” the great American science fiction writer Robert A. Heinlein once said.

It also turns out scientists lacked the tools to say otherwise.

Today, with advances in neuroscience, brain imaging, neurochemistry, as well as improved methodology in behavioral sciences, serious researchers accept that *all* of these aspects of the human condition, from how we manage our emotions to our resilience and fortitude, have a biological basis that underlies or runs parallel to psychosocial factors. It's another example of the old nature versus nurture debate, except there really is no "versus" here. The development of wisdom is indisputably dependent on what happens to you in life, but there is also an equal and inextricable biological element that profoundly influences how you learn and respond to life's lessons and events.

Take, for example, resilience. Thanks to the work of investigators like Eric Nestler and Dennis Charney, both in the Icahn School of Medicine at Mount Sinai in New York, we now know a lot about the neurobiology, genetics, animal models, and molecular pathways of resilience. And what's more, we're starting to get at behavioral and biological ways to enhance this most useful of personal traits.

Swap "wisdom" for "resilience," and that's my message too.

Wisdom is a product, not only of age and experience, but also of distinct behaviors and traits, all associated with discrete but connected regions of the brain.

The Emerging Science of Wisdom

Wisdom is the result of neurons firing in specific patterns in specific parts of one or more relevant neural circuits in the brain to produce behaviors that we deem to be "wise." It is biology and behavior that make it possible to separate wisdom from platitudes.

A scientific movement to define and explain wisdom began in earnest during the 1970s when a few scientists in different countries working in disparate labs started asking what wisdom is and whether it could be measured. In Germany, a psychologist named

Paul Baltes, with his wife, Margret, and other colleagues, began developing a theory of human development with respect to wisdom, one that examined and sought to explain how people changed biologically, cognitively, and psychosocially over the course of their lives. It was the first empirical attempt to parse the nature of human wisdom based on scientific principles and approaches, and to propose specific features that affect how we think and behave over time.

Baltes and his colleagues would compile a list of key characteristics, among them that development occurs throughout life, beginning to end; that it changes in all directions and dimensions; that it is a process of growth and decline, but is also fluid and plastic; and that social and environmental factors are powerful. Ultimately, their work would become the influential Berlin Wisdom Project, and their model of wisdom would define it essentially as proficiency in the conduct and meaning of life.

The Berlin model of wisdom placed great emphasis on knowledge and cognition. It was a good start, but more was needed because wisdom is clearly much more than simply cognition. It involves emotions too.

Halfway around the world from Baltes, a young University of California, Berkeley, graduate student named Vivian Clayton was asking similar questions. Her mentor, James E. Birren, one of the founders of gerontology, challenged her to conduct a scientific search for answers.

Clayton scoured the literature of wisdom, from ancient texts to contemporary treatises, for mentions, allusions, and evocations of wisdom, developing a crucial framework for thinking of wisdom as a psychological construct. Between 1976 and 1982, Clayton published several noteworthy papers establishing important markers for the scientific study of wisdom. She declared that wisdom fundamentally has three distinct components: cognition, reflection, and compassion. They could be defined and measured by scientists.

Others picked up and expanded on Baltes's and Clayton's groundbreaking work. Among them were inspired and inspiring scientists like George Vaillant at Harvard Medical School; Robert Sternberg at Cornell University; Judith Glück at University of Klagenfurt in Austria; Dan Blazer at Duke University School of Medicine; Monika Ardelt at University of Florida; Jeffrey Webster at Langara College in Vancouver; Howard Nusbaum at University of Chicago; Igor Grossmann at University of Waterloo in Ontario, Canada; and others.

These researchers deeply probed the nature of wisdom, primarily in terms of aging, intelligence, and happiness. But a wholly satisfying understanding of wisdom remained elusive. Ursula Staudinger, a Columbia University psychologist and a leading scholar in the field, once noted, perhaps wryly, that “most empirical research on wisdom in psychology has so far focused on further elaboration of the definition of wisdom.”

From Schizophrenia to Wisdom

My interest in wisdom and its relationship with aging is more tangible. And it started with an unexpected finding during my research on, of all things, serious mental illnesses.

In the 1990s, while conducting studies at the University of California San Diego School of Medicine in older people with schizophrenia, I was struck by a surprising research result.

Schizophrenia is a devastating mental illness. In essence, schizophrenia is a breakdown in the relationships between thought, emotion, and behavior. It has been described as a “cancer of the mind.” Unlike Alzheimer's disease, which typically develops in old age (it used to be called “senile dementia”), schizophrenia usually manifests in adolescence or young adulthood. From that point on, the disorder tends to spiral progressively downward.

People diagnosed with schizophrenia develop physical diseases much earlier in life, and they generally die 15 to 20 years younger than the general population—sometimes by their own hand. Among people diagnosed with schizophrenia, an estimated 20 to 40 percent will attempt suicide, 5 to 10 percent successfully.

But while the onset of schizophrenia often occurs in adolescence or the early 20s, many patients live with this disease for decades. In my research, I was studying hundreds of middle-aged and older adults living with schizophrenia, following their lives over a long period of time. The expectation of my colleagues and myself was that most of these patients would develop dementia (Alzheimer's or another form) early, with associated decline in neurological and biological function. The conventional thinking was that life after a diagnosis of schizophrenia would be nothing but a descent into dysfunction, disease, and despair. Indeed, the original German name for schizophrenia meant “precocious dementia.”

But our results were surprising. We discovered that many individuals with schizophrenia functioned *better* in later life. They were more adherent (compliant) with their medications because they had learned from hard experience that stopping treatment led to relapse and calamity. They were less prone to abuse illicit drugs. They had fewer psychotic relapses, and they were less likely to require psychiatric hospitalization than younger individuals with the same illness. With aging and continued therapy, many seemed to have become, dare I say, *wiser* about how to manage their disease, and how to live their lives. When we initially reported our findings, there was skepticism among researchers even about the diagnosis of schizophrenia in our patients.

Around this time, the movie *A Beautiful Mind* debuted, based on the 1998 biography by Sylvia Nasar of the late Nobel laureate John Nash, a brilliant mathematician who proposed a revolutionary game theory in his youth. This work led to his Nobel Prize in 1994.

Nash was among the most brilliant minds of his generation. He also had schizophrenia.

Nash was diagnosed in his early 20s and underwent multiple treatments, from electroconvulsive therapy and insulin coma to myriad medications and psychotherapy. He was often hospitalized. But these efforts seemed to have little sustained effect. Largely separated from family and colleagues, he would disappear at times, sending cryptic postcards, then return to Princeton, where he had once been an academic superstar, to wander the campus “a lonely figure scribbling unintelligible formulas on the same blackboards in Fine Hall on which he had once demonstrated startling mathematical feats.”

But as Nash entered his 50s, the course of his illness changed. His symptoms eased; he began to improve, and he gained new insights into his illness. By the time he turned 60, he had ceased all treatment for schizophrenia. He returned to research and teaching, joining the faculty at Princeton. For the first time in many years, he published papers in journals. People who knew him from his young days remarked that “the John Nash we knew is back again.”

He was not entirely free of symptoms. He still endured episodes of hallucinations and delusions, but he was now able to differentiate these from normal thinking. He developed new insights into his own mind. He learned how to catch himself when symptoms appeared, and instead of succumbing to the psychopathology, he would consciously seek to normalize his thinking and behavior. “I emerged from irrational thinking, ultimately without medicine other than the natural hormonal changes of aging,” Nash wrote in 1996 to Harold W. Kuhn, a Princeton professor and longtime friend.

Nash’s story mirrored some of our own findings in aging patients with schizophrenia. Many of these people who had suffered so badly at the hands of this insidious disease in their youth were slowly able to reclaim their mental health in later years. Even as their bodies

began to decline with age, their minds were becoming clearer than they had been for decades. Was the reason the emergence of wisdom? Years later, we published a paper showing that in people with schizophrenia, the level of wisdom was associated with the level of their well-being and functioning.

If people with a serious mental illness like schizophrenia could enjoy greater wisdom and improved mental function with age, despite worsening physical health, could the same thing also occur in the general population?

By this time, I had been appointed director of the Stein Institute for Research on Aging at UC San Diego School of Medicine. With colleagues, I began studying a cohort of several thousand older adults in the San Diego community. We sent out surveys. Some study participants visited our labs; some we visited in their homes, in senior housing communities, and elsewhere. Our findings among this general population echoed the earlier “paradox of aging” we’d seen among individuals with schizophrenia: as people get older, their physical health declines, but their mental well-being and satisfaction with life *increase*. It doesn’t happen with everybody, but many older adults—particularly those who take positive actions to manage their lives—become happier.

In a comprehensive 2016 published study of approximately fifteen hundred adults between the ages of 21 and 100 years, participants who felt they were aging successfully described higher levels of happiness, resilience, optimism, and well-being, even if their physical functioning was impaired by advancing age. The findings held true even after accounting for variables like income, education, and marriage. Like wine and good leather shoes, they improved with age.

A caveat: This was a cross-sectional study—a part of a multiyear investigation called the Successful AGing Evaluation, or SAGE—of a somewhat randomly selected group of adults from the community. All participants were residents of San Diego County in California.