Praise for *Wonderworks*

"I've been living in *Wonderworks* for several weeks now, dazzled by its innovations, wild surmises, gifts of insight, unlikely readings and—perhaps most of all—its inspirational force. Angus Fletcher is that rare critic who actually has something to say, who grabs us by the collar and hopes to shake sense into us. This may be one of the most important and truly *useful* books about literature written in the past decade. It opens a vista into reading that regards writing as a kind of continual experiment in human and societal engineering. That *Wonderworks* deserves a wide audience goes without saying. It's refreshing and remarkable on so many levels."

—Jay Parini, author of *Borges and Me: An Encounter*

"Aristotle's *Poetics* was new and brave but was left incomplete. Angus Fletcher finishes it in *Wonderworks* with some help from contemporary science and an abundance of penetrating analyses. Fletcher endorses storytelling as a foundational technology but he goes beyond that to illustrate its therapeutic value and centrality to cultural invention. *Wonderworks* is the perfect counter to our season in hell."

—Antonio Damasio, author of *The Strange Order of Things: Life, Feeling, and the Making of Cultures*; Professor of Neuroscience and Director of the Brain and Creativity Institute, University of Southern California

"Find one polymath. Take a profound knowledge of world literature. Add a deep knowledge of modern psychology and of neuroscience. Add a cupful of worldly wisdom. Stir in an enchanting prose style. Heat until bubbling. You have just baked a unique, marvelous treat: Angus Fletcher's *Wonderworks*."

—Martin Seligman, author of *The Hope Circuit* and *Learned Optimism*, Professor of Psychology and Director of the Positive Psychology Center, University of Pennsylvania

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Contents

Wonderworks

O for a Muse of fire, that would ascend
The brightest heaven of invention

—William Shakespeare, *Henry V*

moth tabernacle, high platformed and ziggedly asymmetric, stretched the oblong bedchamber where the moon had lain with the Queen of the Marsh, birthing the sun's hot rays and the ambisexual goddess of love. These heavenly beings were notoriously blood hungry, but they gave Enheduanna no pause. She docked calmly at the Ziggurat's silhouetted jag of angles, perfumed by scents of bloom weed and the river rose. And with her eyes aglow in midnight moonlight, she bade her clerics to chant in fevered tones: "She is the high lord of the moon." Or, as the chant went in its original syllables: "*En-hedu-'anna. En-hedu-'anna. En-hedu-'anna*."

This was the reason for Enheduanna's self-made name. It claimed for her the mantle of the city's astral overseer, crowning her as archpriest of the fifty thousand lunar worshippers now surrounding her on Ur's canal banks. It was a might invested through a word invented.

And the name was just the beginning of Enheduanna's inventions. Debarking her barge, she climbed a thousand pink-beige stairs until she reached the hidden shrine that capped the Ziggurat. There, upon a dais that seemed to touch the firmament, she bathed herself within a sacred pool, its sides cleverly leak proofed with bitumen caulk. And glistened bright by holy waters, she brought her congregation to its knees by lifting up her voice in incantation:

> O Feeder of life,
> Rising like a bull from snake shallows,
> Born from a great mother,
> Light above all.

As Enheduanna sang, the song answered back, glimmering the horizon with the milk fire of a thousand moons. In the heart of night, a new morn was breaking, unlike any imagined before.

Enheduanna had invented literature.

She wasn't, of course, the first to invent it. Her verses were preceded by other ziggurat canticles, such as *The Kesh Temple Hymn*, dating to a handful of generations earlier. And prior to that, there were many generations more of oral literature, generations that may have stretched back before our species to the *Homo erectus* hunter-gatherers of the

Afro-Asian Stone Ages, where perhaps upon the volcanic lakeshores of Kenya's Great Rift Valley or among the buzzing wetlands of Shaanxi, an archaic hominid bespoke the world's first myth or metaphor, a million years ago or more.

But Enheduanna is the first inventor whose name we know. She's the first author we can credit for an original piece of literature.

Partly, this is because she was lucky enough to be born into an age of literacy; the same cuneiform print that diligently logged Ur's dockyard traffic allowed Enheduanna to breathe her mind into pages of clay, passing her spark on to readers beyond. And partly, this is because her creations were so compelling that Sumerian city clerks copied them afresh for hundreds of years, long after Enheduanna's less adroit brothers had been bludgeoned to death by the stone writing seals of palace assassins—and her father's whole bloodline had been rolled under by mountain raiders from the east.

But mostly, this is because Enheduanna *wanted* to be known as an inventor. She flagrantly identified herself within her verses:

> O goddess, from my altar days,
> I, Enheduanna, sang your name.

And after she'd collected an anthology of her choicest poetry, she ended it by boasting:

> I, Enheduanna, created this booklet—
> a thing which no one else had ever created.

So, in Enheduanna, we have our earliest glimpse of what it was to invent literature. And although it's only a glimpse, it's enough to see why our ancestors did the inventing.

Why Literature Was Invented

Enheduanna coined her ziggurat verses for the same purpose that she coined her moon-catching name: to grab hold of forces above. And her belief in literature's almighty properties would endure long after, leaving

its trace in the ancient world's most holy writings. Eight centuries or so after Enheduanna, metaphoric similes danced across the Hindu *Vedas* as they praised the twin horse gods, Nasatya and Dasra. Another eight centuries after that, alliterations chimed through the Hebrew Torah as it told of death's coming to the Garden of Eden. And a half century later still, poetic repetitions latticed the Greek *Theogony* as it revealed how Sky and Soil immortally begat the titan Cyclopes.

So it came to be that in the world's earliest libraries, scripture and literature were joined. And indeed, so tight was the jointure that *literature* and *scripture* would be fashioned with identical root meanings: "that which is writ." They were two ways of saying the very same thing.

What prompted this ancient reverence for literature? What great powers did Enheduanna and our other ancestors detect within its pages? The powers were many, but two in particular stood out.

The first great power was narrative, or, more colloquially, story. Story connected events. And story provided beginnings—and endings. So, story could answer the question "Where did our universe come from?" As in this Mesoamerican parable, recounted by highland Anahuac peoples who predated the Aztecs:

> Amid darkness, the gods gathered together. To make light, they needed fuel, and a proud god, Tecuciztecatl, volunteered to burn himself. But at the heat of the flame, Tecuciztecatl faltered. So, before the flame could perish, Nanauatzin, a sick god and lame, jumped in, becoming the sun. Ashamed, Tecuciztecatl leapt after, becoming the moon.

And story could also answer "Where will we go when we die?" As in this Saqqâra pyramid text, fashioned around 2320 BCE in the Egyptian Old Kingdom: "The good soul will row the eastern sky-boat across the water of the Fields of Reeds."

The second great power of literature was the stirring of emotion: love, wonder, faith. For such was the strength of these feelings that they could fend off life's mightiest demons. Against the demon of loneliness, there was the "Love prayer to Shu-Sin," sung three centuries after Enheduanna upon another moony tabernacle at Ur:

O man,
I ask
you freely,
Master me;
Open up your temple to my touch,
And sweet my dark night with your love.

And against the demon of fear, there was India's Vedic Age *Samhita*, brushed with ash-tar ink upon a birch-bark choral sheet: "Great lightning god, fling wide the doors of strength, making us heroes."

These heart-raising, universe-explaining texts are the heirs of Enheduanna's belief that literature can support and guide us through the darkness: "O Feeder of life . . . Light above all." And literature's two powers of story and emotion aren't all that we can learn from Enheduanna. We can also discover how to pull those powers down from heaven, becoming dawn makers ourselves.

Enheduanna's Other Discovery

Enheduanna did more than treat literature as immortal scripture. She also treated it as an earthly invention. Which is to say: she treated it as a technology.

In our modern epoch, we tend to think of technology as gadgetries of steel and silicon. And even in Enheduanna's age, it was perceived not so differently by most of her father's subjects as contrivances of copper, bronze, and tin. But technology doesn't need to be forged from metal. It can be built of any substance: clay, paper, ink, or even breath. For if we look back to the very earliest beginnings of engineering, we can see that a technology is any human-made thing that helps to solve a problem.

To help solve the problem of cold, there's the technology of fire taming, such as the heating pits that Paleolithic humans dug out of Huang He limestone. To help solve the problem of hunger, there's the technology of meat scavenging, such as the quartzite knives that Pleistocene hominids flaked from Tanzanian creek rock. To help solve the problem of not knowing what lies ahead, there's the technology of signaling, such as the whistles that Paleo-Indians drilled into North American bird bone.

As Enheduanna saw, literature can also help to solve a problem. And indeed, part of what drew her to literature is that it tackles a different class of problem from the archaic technologies above. Those technologies seem wildly diverse, but beneath their branching actions lies a deeper mutual enterprise: domesticating our planet. By transforming cold nights, hungry landscapes, and uncertain futures into warmth, nourishment, and information, fire and knives and whistles bend the physical environment to our will.

This archaic task is such an omnipresent part of human existence that even today it remains the goal of our most futuristic engineerings. Our drones, our phones, our algorithms, our virtual realities, and our smart homes have all been built to shuttle around meals and data and other stuffs, turning space-time into an extension of our needs and wants. Yet if we work backward, we can see that life poses an even more basic challenge than the problem of being human in a nonhuman world. That challenge is: the problem of simply being human.

To be human is to wonder *Why?* As in, *Why are we here? What's the purpose of our hours? Does this life mean anything?* And to be human is to have irrational desires, and uncontrollable passions, and griefs that split us into pieces. Or to put it in the frank language of our scientific present: to be human is to be saddled with the problem of having a human brain. A brain capable of asking vast questions that it cannot answer. A brain fueled by emotions that propel us forward but that also cause us to crave things that harm, and to fear things that don't exist, and to rage against age and death and other parts of our nature that can't be escaped.

As scientists have recently discovered, this problem isn't unique to us humans. Our animal relatives share bits and pieces of our neural circuitry, which is why chimps suffer anxiety, elephants lament their departed, dogs get lonesome, and antelopes spook. Yet even so, the singular sophistication of the hardware in your head and mine means that the problem is particularly profound in us. We can achieve unprecedented success—and still feel that life is pointless. We can have a thousand friends—and be overwhelmed by loneliness. We can walk in daylight's brightest gold—and see all the world as gray.

So deep, so sprawling, and so intangible is this problem that it can seem beyond the grip of any technology. But it's the problem addressed

there was one special invention for lightening sorrow, another for banishing loneliness, another for diminishing anxiety, another for treating the symptoms of trauma, another for bringing hope, another for heightening joy, another for stirring love, another for ushering in tranquility, and so on and so on.

Since these inventions were all very different in both how they were built and what they did, our ancestors initially stumbled at random into finding them. But then sometime around 500 BCE, roughly a hundred generations after Enheduanna, a breakthrough occurred: our ancestors discovered an invention-finding method. The method was straightforward enough to be explained in a few moments yet versatile enough to be applied to any piece of global literature, no matter how original its design or far-flung its creation. And with the help of the method, our ancestors began scouring the world's libraries, gathering up a toolbox of literary inventions for improving daily mental health and happiness—when abruptly, a few short centuries after the project began, it was halted. No more inventions were added to the toolbox, while its existing inventions gradually fell into rusted neglect, until, at last, the technology of literature was lost.

If you're curious to learn how this loss occurred—and to explore why our modern schools and universities don't train us to use literature as an innovation for troubleshooting our humanity—you can discover the story in the coda that concludes this book. But our purpose over the following chapters won't be to dwell on the literary toolbox's demise; our purpose will be to undo it. We'll start by re-exhuming the original inventions unearthed by our ancestors, dusting off their dormant flywheels and patching their corroded circuitries so we can put their health-and-happiness boosters back to work. And then we'll go further. We'll expand the toolbox many times over by deploying our ancestors' old invention-finding method in a pair of fresh ways.

First, we'll turn to the vast abundance of literature created in the centuries since our ancestors departed the earth, using the method to excavate the inventions of modernist novels and Renaissance stage plays, nursery rhymes and superhero comics, crime sagas and computer-animated movies, love songs and prime-time soaps, slave narratives and space operas, cartoon memoirs and single-cam sitcoms, pulp fiction ad-

ventures and postmodern elegies, horror flicks and detective fictions, surrealist short stories and fairy-tale anthologies, and many, many genres more.

Second, we'll combine our ancestors' method with a more recent revealer of secrets: twenty-first-century neuroscience. Over the past decade or so, neuroscientists have begun using pulse monitors, eye trackers, brain scanners, and other gadgets to look inside our head as we consume novels, poems, films, and comic books. This scientific project is still in its infancy and is thick with unresolved questions and scholarly disagreements. But even so, its early findings have been tremendously revealing. And when they're combined with established areas of psychological and psychiatric research, they produce an intricate picture of how literature's inventions can plug into different regions of our brain—the emotion centers of our amygdala, the imagination hubs of our default mode network, the spiritual nodes of our parietal lobe, the heart softeners of our empathy system, the God's-Eye elevators of our prefrontal neurons, the pleasure injectors of our caudate nucleus, the psychedelic pathways of our visual cortex—to alleviate depression, reduce anxiety, sharpen intelligence, increase mental energy, kindle creativity, inspire confidence, and enrich our days with myriad other psychological benefits.

Remarkably, then, our ancestors were righter than they knew. Enheduanna's moonlit engineering feat was followed by countless more, filling literature with inventions for healing our heart and enhancing our mind, refreshing our lives and making us new.

So, let's go back to the future. Let's discover our ancestors' long-ago method and the modern science behind it.

Let's turn the page and see what followed the dawn.

INTRODUCTION

The Lost Technology

Out of the evergreen wilds of northern Greece, in the morning years of the fourth century BCE, walked a young man with dark, shaggy hair.

The young man hailed from a family of curious minds. His great-grandfather had plumbed the secrets of disease by dissecting wild dogs—and perhaps even the still-beating heart of a Barbary ape. His older sister had hungrily pestered their mother for tales of enchanted huntresses who rode blonde-antlered deer, and of resurrector goddesses who washed away death's ache with poppy blooms, and of titan queens whose boundless memory stored every song and story ever breathed. And he himself was determined to delve deeper still into the mysteries of medicine and myth, dedicating his days to a far-reaching quest that would lead him at last to a method for finding literature's inventions.

This young man from Macedon was Aristotle. Driven by his teenage ambition to learn, he quit the provincial ravines of his boyhood years, hiking east through forests of lynx, then three hundred miles south down the turquoise-watered Aegean Coast, to make his way to a vast circuit of white-marble walls—built from toppled temple arches and smashed-up statues of forgotten heroes—that guarded the city of Athens. Just outside the walls lay the ancient Mediterranean's most famous school, the Academy of Plato, where, amid a sloping olive grove, all the fabled wisdom of Babylon, Egypt, and Atlantis was studied—and superseded. So, Aristotle enrolled, and, making good on his lofty self-improvement scheme, he became a pupil of extraordinary renown; the only one, it was said in later times, who could comprehend Plato's abstruse theories of immortal

beauty and arithmetic afterlives. Until sometime around 347 BCE, the now middle-aged man from Macedon broke away from the academy, heading off to think in his own way.

It's not exactly clear why Aristotle decided to break away. At the time, it was whispered that he was just being a provocateur. That, after all, was the way of ambitious students: they came up with outrageous new ideas to make a name for themselves. And certainly Aristotle was fond of being the center of attention. He enjoyed expensive clothes, covered his fingers with glittering rings, and liked to announce in public places that he had a theory of *everything*.

Or perhaps Aristotle broke away from the academy because he was a born outsider. Unlike Plato, Aristotle wasn't a high-blooded Athenian aristocrat. He was a resident alien; a foreign son. So, he might have thought that it was simply in his pedigree to trouble the status quo.

Or perhaps Aristotle broke away because he was more practically minded than his great teacher. He was a man of the world, and not just because he took pleasure in clothing and rings. He also had an interest in the way things *worked*, and he delved into nature with a scientist's eye, searching for clues to how acorns sprouted and tongues tasted and heavens rotated.

But whatever the reason for Aristotle's departure, he most definitely went rogue. Renouncing the academy's commitment to reason and reason alone, he ambled off to chat with beekeepers, vivisect bird eggs, catalogue mortal emotions, classify wildflowers, and chronicle stage shows, laying the empirical foundations of zoology, physiology, psychology, botany, and dramaturgy. And somewhere in the course of these investigations into the nuts and bolts of life, he discovered the method for finding all of literature's inventions.

Aristotle wasn't the first to discover the method. In fact, he almost certainly learned it from a mysterious group of peripatetic instructors known as the literary Sophists, whose own history is sketched in the coda that concludes this book. But the writings of the literary Sophists and all their students except for Aristotle have since been scattered by the winds of passing years. So, without Aristotle's eager thirst to learn how literature worked, the method would have evaporated forever, like Atlantis and its misty genius, into the stuff of legend.

viewing audience, it produces *thaumazein*, lifting our mind with awe at the farseeing powers above.

And this isn't the only wonder that we can take from the plot twist. Because the twist contains a further twist: an invention for making wonder without any plot at all.

The Deeper Invention for Making Wonder

Buried within the plot twist is a more basic literary invention: the *stretch*.

The *stretch* is the taking of a regular pattern of plot or character or storyworld or narrative style or any other core component of story—and extending the pattern further. So, taking a great battle—and making it greater. Taking a bold girl—and making her bolder. Taking a blue lake—and making it bluer. Taking a star—and making it everywhere.

The *stretch* is the invention at the root of all literary wonder: the marvel that comes from stretching regular objects into metaphors, the dazzle that comes from stretching regular rhythms of speech into poetic meters, and the awe that comes from stretching regular humans into heroes.

And the *stretch* is also the invention at the root of the plot twist. The plot twist takes a story chain and *stretches* it one link further, as when *Oedipus Tyrannus* takes the old plot of a person who tries to outwit a prophecy and elaborates it into the mind bender of two people trying to outwit the same prophecy—and so double-negatively fulfilling it.

The *stretch* is a simple device, but its effects on our brain can be profound. It's been linked in modern psychology labs to a shift of neural attention that flings our focus outward, decreasing activity in our parietal lobe—a brain region associated with mental representations of our self. The result is that we quite literally feel the borders of our self dissolving, even to the point of "self-annihilation."

This neural feeling is why we can "lose ourselves" in a book or a film, forgetting our personal limits in horizons beyond. And although such forgetfulness has been dismissed by many an outside observer as idle escapism, it ushers our brain into what twenty-first-century psychologists term a self-transcendent experience, or what the early-twentieth-century founder of modern psychology, William James, described more vividly as a "spiritual" experience. These experiences are the mystic mental states

that sages from days immemorial have preached as the highest good of human life. And in the case of literature, at least, the good really exists. The *stretch* has been connected by modern neuroscientists to significant increases in both our generosity and our sense of personal well-being. Which is to say: fictional plot twists, metaphors, and heroic characters dispense a pair of factual benefits. By immersing our neural circuitry in the feeling of things bigger, they elevate our charity and our happiness, spiriting us closer to a scientific Shangri-la.

The literary blueprint for this mind-lifting experience is an extraordinary thing. It might even have made you feel a little burst of wonder yourself. But it's only half of the extraordinary contained in the *Poetics*. Because as Aristotle was staking out the theater, studying audiences, he realized that Greek tragedy contained another great invention. And that invention worked very differently from the *stretch*.

Its function was less spiritual. And more medical.

The Medical Function of Greek Tragedy

When Aristotle went to the theater, he saw that Greek tragedy didn't just make people feel good. It also made them feel less bad. The feeling good came from enriching the brain with positive experiences such as wonder and hope, while the feeling less bad came from the inverse: emptying the brain of negative experiences like grief and anxiety. Or to use modern psychiatric parlance: the feeling good came from boosted mental well-being, that neural condition of happy thriving where our life reaches its fullest potential, while the feeling less bad came from improved mental health, that psychological foundation for mental well-being—and for normal daily functioning.

Literature can improve our mental health in all sorts of ways, but in the particular case of Greek tragedy, Aristotle emphasized a therapeutic process that he called catharsis. Catharsis is an old doctorly term for purging something unhealthy. And as Aristotle recorded in the *Poetics*, one something purged by Greek tragedy is fear.

Fear isn't always bad. In fact, it can be very healthy, steering us away from cliff drops and crocodiles and other perils. But Aristotle noticed that unhealthy fear can build up in our brain when we suffer trauma.

That posttraumatic fear, as it's now termed by modern psychiatrists, is meant to be a form of emotional self-protection; a way of maintaining our distance from the world so that we don't get harmed again. But its frequent effect is to increase our suffering. It can disrupt our lives with pervasive feelings of helplessness, isolation, and hypervigilance. And it's often associated with generalized anxiety, anger, and depression.

Traumatic fear will be experienced by about 90 percent of us over our lives, and its posttraumatic residue will linger in roughly 10 percent of cases. There's no universally effective treatment for the residue; different therapies are more or less effective in different individual situations. But over the past two decades, psychiatric studies involving thousands of patients have yielded a pair of unexpected findings.

The first finding is that it can be therapeutic to revisit our memories of the trauma. This psychiatric process, known as autobiographical review, seems counterintuitive and doesn't always work; some of us find more relief, particularly at first, by instead focusing on forward-looking stress management. But in general, if we imaginatively play back our experience of trauma within a safe and supportive environment, then the "flashbulb" intensity of our remembrance will gradually decrease. This isn't the same thing as erasing our memory: the trauma will always remain part of our lived experience, kept within the long-term storage of our neural cortex. But autobiographical review can make the memory less emotionally raw and intrusive, receding the trauma into the background of our consciousness, and decreasing our symptoms of helplessness, isolation, and hypervigilance.

The second finding is that it helps to sweep our eyes from side to side while we mentally review the trauma. This curious fact was stumbled upon by the California psychologist Francine Shapiro in the late 1980s, and, at the time, it appeared so random, even magical, that it was regarded warily as a drift into pseudoscience. But recent studies on mice have suggested that side-to-side eye movement may stimulate a small region of our brain, the superior colliculus–mediodorsal thalamus circuit, which is involved in fear attenuation. And eye movement has proved effective enough in clinical trials to produce its own trauma therapy—eye movement desensitizing and reprocessing (EMDR) — that has been formally recommended by the American Psychiatric As-

sociation, the World Health Organization, and the Department of Veterans Affairs.

As surprising as these findings have been for many modern psychiatrists, versions of both autobiographical review and EMDR were incorporated into ancient Greek tragedy. Greek tragedy encourages us to revisit our past experiences of trauma by staging suicides, murders, and assaults that are interspersed with choral chants such as the ones found in Aeschylus's *Agamemnon*:

> The law of our world is pain,
> the scar that teaches
> the hardness of days
> and leaves its mark
> in every heart.

This chant was first performed in 458 BCE within the Dionysus Eleuthereus, an open-air theater hewn into the south cliff face of Athens's Acropolis. That rock enclosure turned its back on the city's marketplaces and legal forums, casting the eyes instead across the honeyed ridges of the Hymettos Mountains and the dolphin wavelets of the Saronic Gulf. So, as the audience sat upon long, curving pinewood benches, surrounded by thousands of neighbors and extended family members, they were prompted to recall their own past hardships—"The law of our world is pain . . . the hardness of days . . . every heart"—in a venue that removed them from life's daily pressures to enfold them in a greater community of care.

And the audience didn't just hear the chant of *Agamemnon*. They saw it too. The chant's words flowed from the twelve actors of the *koros*, or "chorus," a word that now simply means "song," but which was synonymous in Attic Greek with "dance." As the Greek warrior Ajax snaps in Homer's *Iliad*: "The Trojans are calling us to a fight, not a chorus dance!"

In the case of Greek tragedy, the space for that dance was an ample one. It was situated at the bottom of the Dionysus Eleuthereus in a semicircular area that spanned more than sixty-five feet in diameter. The area was known as the *orkestra*, or "orchestra," which in our own age has come, like *chorus*, to mean a thing of sound. But it translates literally

as "dancing place." To the ancient Greeks, the orchestra was seventeen hundred square feet for choreographed movement back and forth.

When *Agamemnon* premiered more than twenty-five centuries ago, it therefore gave its audience a chance to experience ancient literary versions of two modern psychiatric treatments for posttraumatic fear. Like autobiographical review, *Agamemnon* prompted spectators to review their posttraumatic memories in a physically safe and emotionally supportive environment. And like EMDR, the play's chorus delivered that prompt in a dynamic performance that shifted the eyes left and right. And although we cannot travel back in time to gauge the therapeutic effectiveness of these long-ago treatments, we have been able to observe their healing action on twenty-first-century trauma survivors. Over the past decade, performances of the chorus of *Agamemnon* and other Greek tragedies have been staged for combat veterans by initiatives such as Bryan Doerries's Theater of War Productions and Peter Meineck's Aquila Theatre Company (which places particular emphasis on the side-to-side movement incorporated into EMDR). And in response to these performances, veterans have self-reported a decrease in feelings of isolation, hypervigilance, and other symptoms of posttraumatic fear. Just as Aristotle describes in the *Poetics*, they've undergone an experience of catharsis.

This doesn't make Greek tragedy a miracle cure; ancient plays such as *Agamemnon* don't work automatically, in every case, to lessen posttraumatic fear. But perhaps the most remarkable feature of Greek tragedy is that its historical evolution suggests that its authors were aware of its therapeutic limits—and devised an innovation to address them.

The Innovation for Improving Greek Tragedy's Therapeutic Effect

The innovation was revealed to modern eyes by a twenty-first-century psychiatric discovery: therapy for posttraumatic fear is more effective when we possess "self-efficacy."

Self-efficacy is the inner conviction that we can deal successfully with posttraumatic fear, managing and eventually overcoming it. The conviction can be conscious; we might, for example, tell ourselves that unlike

larger cosmic pattern—and from which we can reach down to Oedipus and lift him up. This neural feeling of being able to support Oedipus is deeply therapeutic: when we experience our ability to assist others through their trauma, we increase our belief in our ability to cope with trauma ourselves. And, in fact, such is the boost to our self-efficacy that, in clinical group-therapy settings, it has been correlated with significantly higher rates of trauma recovery. So, even though we're no more able than Oedipus to stop the inevitable, the Hurt Delay strengthens our capacity to manage when the inevitable arrives. Shifting our tragic feeling of helplessness into a psychological sensation of help*ful*ness, it supplies our brain with a visceral belief in our power to heal.

In the *Poetics*, Aristotle credits this therapeutic innovation for elevating Greek tragedy to a state of perfection. That's an overstatement, at least as far as Greek tragedy's medicinal action is concerned; no work of literature has ever become a universal cure-all. But Aristotle is nevertheless right to claim that the Hurt Delay enhanced Greek tragedy's cathartic effect, and this fact of medical improvement is the most eye-opening of the many eye-opening details inscribed in the *Poetics*. It reveals the Greek stage as an experimental laboratory where new literary inventions could be developed. And it establishes Greek tragedy as a wonderwork that *stretched* to amplify its healing power over time.

Yet despite all this empirical research, ancient and modern, you might still be thinking: *Hold on, hold on. I've flipped through a Greek tragedy or two. But it didn't make me feel any better. And now that I think back, I also didn't find my way to Shangri-la.*

If you're thinking those thoughts, don't put down this book just yet. You can still reap all the psychic benefits of Greek tragedy. The invention-finding method can show you how.

Using the Method to Reap the Benefits of Literature

Not all our brains work the same. In fact, all our brains work a little bit differently. Some of the differences come from our DNA. Some from our culture. Some from our personal history and individual life choices.

All those differences are good for us as a species; they mean that humanity possesses an immense neural diversity that we can exploit to

adapt and grow through changing times and shifting environments. But they do present a problem for our everyday consumption of literature: if we're each a little bit different, then how can we all appreciate the same poems, novels, TV shows, and plays?

There are two broad answers to this question. The first is that our brain is flexible. Not infinitely flexible; our brain has its limits. But human gray matter has survived by being adaptable, so it's often able to adapt itself to different kinds of literature.

The second broad answer is that literature, too, is flexible. The same basic literary invention can be deployed in richly varied styles and genres. So, if we're not able to adapt our mind to literature, then literature is often capable of adapting itself to us.

The invention-finding method can help with both kinds of adaptation:

1. *Adapting Our Mind to Literature*. By providing us with the blueprints for how literary inventions are meant to operate, the method saves us from interacting with classic poems and plays in the way that we interact with alien technologies: randomly mashing at buttons to see what happens. Instead, we can work in sync with literature, clicking into its circuitry to become an active partner.

   In the case of the Hurt Delay, the blueprint guides us to (1) embrace the feeling of ironic God's-Eye triggered by our foreknowledge of Oedipus's disaster, (2) reach out with the chorus to affirm Oedipus's pain, and (3) feel Oedipus's reciprocal gratitude. If we take these three steps, we can boost Greek tragedy's cathartic effect.

2. *Adapting Literature to Our Mind*. By handing us the deep blueprints for literary inventions, the invention-finding method enables us to locate versions of those inventions in contemporary literature that more organically suits our taste.

   In the case of the Hurt Delay, there are shelves full of modern novels, from F. Scott Fitzgerald's *The Great Gatsby* (1925), to Kazuo Ishiguro's *Remains of the Day* (1989), to John Green's

> *The Fault in Our Stars* (2012), that contain the time-bending device of a trauma that happens *before* it's acknowledged, providing our brain with the lightly empowering feel of cosmic irony. And Greek tragedy's interactive experience of supporting another living soul through trauma can be found in many moments of modern drama, as when nurse Sue Monahan plays the part of the chorus at the end of Margaret Edson's *Wit* (1999), or when Mama Cates makes her lonely phone call in the final moments of Marsha Norman's *'Night, Mother* (1983), or when we turn to the person in the seat next to us at the curtain drop of Eugene O'Neill's *A Long Day's Journey into Night* (1956). In all these instances, we're able to feel another person's gratitude for our physical presence in their moment of tragedy, dosing ourselves with a neural boost of self-efficacy.

That's the adaptive power of the method. It can deepen our appreciation for the world's ancient classics—or direct us toward newer works that have the same psychological benefit, enriching our lives with a vast catalogue of time-tested literary inventions.

Inventions like the Hurt Delay that can improve our mental health.

Inventions like the *stretch* that can enhance our greater well-being.

The Plan for the Following Chapters

Aristotle was a pragmatist. He viewed literature as a multipurpose tool for making life better. So, this book will be equally pragmatic, expanding the *Poetics* with a catalogue of twenty-five literary inventions that you can put to work right now.

Some of these inventions target what modern psychiatrists have identified as common forms of mental distress: grief, grudges, pessimism, shame, heartbreak, rumination, reactive thoughts, self-doubt, numbness, loneliness. Some impart what modern psychologists have identified as well-being boosters: courage, love, curiosity, belief, energy, imagination. And some indirectly support our mental health and well-being by nurturing practical life skills: freethinking, problem solving, de-biasing, counterfactual speculating, cognitive flexing, relearning, introspecting.

These benefits are by no means replacements for modern psychiatry. They're supplements, just as a healthy diet and regular exercise are supplements for doctor visits and blood pressure medications. But no less than the daily food we eat, the daily literature we consume can have significant benefits, and to convey a broad selection of those benefits, each of the following chapters delves into a different literary invention, giving you all three things you need to use it: (1) *why* the invention matters, (2) *how* the invention works, and (3) *where* you can find a copy of the invention for yourself.

The *why* comes in the form of the invention's origin story, or in other words, the historical reason that humans developed it. This origin story, like all excursions into history, is a best guess. The invention's earliest maker may have been lost to record, her creative genius forever hidden in the later songs and stories that we now praise for her discovery. And even when we do have a high degree of certainty about who the first inventor was, there's inevitably a shroud of mystery around her process of engineering. Was it driven by conscious intention or subconscious intuition? Individual brilliance or cultural inheritance? Careful experiment or happy accident? Sometimes the inventor might have stumbled into one pharmacology while pursuing another; sometimes she might never have realized her invention's psychological benefits: they may have been uncovered only by later generations. But when the issue lies in doubt, as it almost always does, this book will err on the side of generosity and credit the inventor's volitional intelligence. By doing so, it will celebrate the undeniable fact of human literary inventiveness, which forms the deeper hero of our story.

The *how* is the invention's operational blueprint, including the basic neuroscience behind it. Since neuroscience is a specialized field rife with arcane terminologies and byzantine complexities, the following chapters will not belabor the technical. They will fold in the highlights of what we know, doing so as colloquially as possible, with a view to assisting you in using the invention more effectively.

The *where* are reading recommendations to help you locate the invention in a novel, poem, film, or comic book, so you can experience its effects firsthand.

The chapters are interconnected but independent, like books on a

shelf. So, if you're seeking a particular benefit from literature, you can jump to reading that chapter now. If you like to be surprised, you can browse out of order. And if you're a committed bibliophile, you can start at chapter 1 and read right through.

We'll begin by recovering more inventions that were known in Aristotle's day, from courage boosters hammered together on Mediterranean isles, to love increasers constructed in Chinese river valleys, to empathy generators engineered amid biblical kingdoms. And as we proceed, we'll move on through history to uncover later inventions: medieval, Renaissance, and modern.

Learning the literary secrets of our ancestors.

And then a library beyond.

Achilles, Hector, Ajax, Aeneas, Odysseus, Agamemnon, Menelaus, Patroclus, Diomedes—the list goes on and on and on.

This epic list has dazzled audiences for almost three thousand years. Yet the *Iliad*'s real triumph isn't its heroes. The *Iliad*'s real triumph is a literary invention that doses our brain with the courage to face down lightning and death and even Zeus, transforming us into heroes ourselves.

The Origins of the Invention

The courage started with the literary technology that we now call the narrator.

The narrator is the mind behind a story. It's the feelings, memories, instincts, attitudes, enthusiasms, desires, and beliefs of the story's teller. That storytelling mind, like all minds, is hidden from view. It reveals itself only through its public acts, and in the case of a story, those acts take the form of the narrator's *voice*.

Back at the very beginning of stories, perhaps on Stone Age Moroccan shrublands or in the red-tinged firelight of Daoxian caves, the voice was a literal voice. All storytelling was oral, uttered by living mouths. Those mouths were richly diverse, and they could inflect stories in many vibrant ways, but the main two were the *tone* and the *taste*:

> The tone was the ring and timbre of the voice. Maybe the voice trembled when it spoke of terrible creatures or chuckled when it spoke of ridiculous coincidences. Maybe the voice was rich with empathy when describing the pains of the poor, or deep with wonder when talking of the gods.
>
> The taste was the subject matter preferred by the voice. Maybe the voice liked to concentrate on nature and the seasons. Maybe the voice preferred to speak at length about love, or war, or urban architecture, or sea leviathans.

Every storyteller had her own tone and taste, filling the world with different voices. And then astonishingly, the world became even more full. Because there was a storytelling breakthrough.

The breakthrough began in an indistinct era that predated 8000 BCE. During that era, at sites such as India's Bhimbetka sandstone juts and Indonesia's island of Sulawesi, storytellers discovered how to translate their oral voices into the visual media of painting, sculpture, and dance. To translate tone from oral into visual, storytellers devised the endlessly inventive characteristics of individual *style*. And to translate taste, they engineered the remarkable tool now known as narrative *focus*, enabling them to narrow and sharpen their story like a movie-camera lens, zooming tight on some objects and events—while turning others into background scenery.

The next stage of the storytelling breakthrough occurred a little more than five millennia ago, with the advent of writing. Writing, like painting, was a form of visual media, set down as Sumerian cuneiforms upon mud tablets, or Egyptian glyphs upon stone blocks, or Chinese oracle scripts upon cloth strips, or Mesoamerican logographs upon wood planks. And when the ancient authors of this visual media availed themselves of the painters' tools of style and focus, they engineered a brand-new kind of narrator: the literary—that is, literally, the "written"—narrator.

The literary narrator was a seeming impossibility. It existed as inertly monotone script upon a printed page, and yet through the tools of style and focus, it could warmly emote, or solemnly articulate, or fearfully whisper, or dryly remark, or do anything else that a living mouth could do.

We don't know who the very first literary narrators were; the mud, stone, cloth, or wood upon which they were written has long since passed into oblivion. But we can hazard a guess that they were psychological extensions of the human minds who birthed them. If those minds took a wryly detached view of life's impermanence, then their narrators' style might have coupled cosmic *we*-speak with gentle irony, as in this modern rendition of an age-old Akan tale:

> We do not really mean, we do not really mean that what we are about to say is true. A story, a story; let it come, let it go.

If those minds believed in Nature's cosmic import, then their narrators' focus might have blurred (or even excluded) supernatural forces while sharply delineating the desires, actions, and memories of natural charac-

ters, as in this nineteenth-century transcription of an ancient Cherokee creation story:

> When all was water, the animals were above in Galûñ'lăt, beyond the arch; but it was very much crowded, and they were wanting more room. They wondered what was below the water, and at last Dâyuni'sĭ, "Beaver's Grandchild," the little Water-beetle, offered to go and see if it could learn. It darted in every direction over the surface of the water, but could find no firm place to rest. Then it dived to the bottom and came up with some soft mud, which began to grow and spread on every side until it became the island which we call the earth. It was afterward fastened to the sky with four cords, but no one remembers who did this.

From these organic beginnings, our ancestors then used further innovations of style and focus to engineer original literary narrators who sounded nothing like their human authors. Narrators who spoke in the voices of trees or rivers or beasts. And narrators who did something more extraordinary yet.

Narrators who spoke in the voices of gods.

The Narrator God

"Let there be light."

This is the voice of a supreme God. Its style is declarative, simple, absolute. And its focus is galactic: the light-shine of stars.

Gods don't need to speak like this; gods are gods, so they can speak however they wish. But the basic "Let there be light" blueprint is the one adopted by the narrators of the world's most ancient scriptures, from the Old Egyptian *Pyramid Texts* (circa 2400 BCE), to the Sanskrit Rigveda (c. 1500 BCE), to the Hebrew book of Genesis (c. 750 BCE). The style of these scriptures is forceful, austere, and unequivocal. And the focus is giant entities: Life, Truth, Heaven, Beauty, Law. This combined style and focus creates the impression of an almighty being who sees into the deepest nature of things. Which is why we usually refer to the almighty being as the "God's-Eye Narrator," or more concisely, the "God Voice."

The God Voice is an extraordinary literary invention. It allows anyone with a pen to sound like a deity. And by sounding like a deity, that anyone can touch the minds of audiences with two powerful emotions:

1. *Wonder*. Wonder, as we saw in the introduction, is generated by the *stretch*. And *stretch* is what the God Voice does. It *stretches* truth into Truth, and law into Law, and light into cosmic brightness, making all the stuff of life feel bigger, expanded from the familiar to the divine.

2. *Fear*. Fear is a near cousin to wonder; things that inspire awe were once said to be "awe-full" or "awful," because the same bigness that *stretches* our brain can easily alarm. So, it's only to be expected that a narrator who booms like an omnipotent deity would make us nervous. Its gigantic size is scare inducing; it skips our pulse and sends a light chill down our spine.

Both these emotions, wonder and fear, were actively cultivated by the earliest known authors of God Voices. The cultivation of wonder wasn't especially remarkable; almost all literature, regardless of its historical era or cultural origin, uses wonder to entice us to listen. But the cultivation of fear *was* remarkable. Fear is often unpleasant for audiences: it can be upsetting and even traumatizing, lodging in our memory to cause recurrent distress.

And indeed, just such distress seems to have been the goal of many ancient God Voices. *The Epic of Gilgamesh* (c. 2100 BCE) offered this glimpse of Death: "His brow of darkness, his hands of a lion, his claws of an eagle, he walks the path to the Temple of Dust." The Egyptian *Book of the Dead* (c. 1500 BCE) warned: "The heaven-house of Osiris is guarded by a mouth of flame, and a spirit of knives, and a destroyer of hearts, and an eater of blood."

Some ancient authors may have thought that the sweating terror inspired by these God Voices was good for us. But other authors had a more sinister intent. Fear was (and remains) a common tool of psychological control: in the Egyptian noondays of the twentieth dynasty, amid the golden valleys of the Theban Necropolis, the gruesome spook of the *Book of the Dead* was wielded by the high priest Ramessesnakht to ag-

grandize himself above even the pharaohs, and many another ancient tyrant and ecclesiastic similarly employed a God Voice to dispossess his subject peoples.

But then was built the *Iliad*. And its builder (who, for simplicity's sake, we'll call Homer) revealed that the God Voice could do the opposite of treading us down with fear. It could lift us up with courage.

Courage—and Its Neural Source

Our word *courage* derives from the Old French *cuor*, which itself goes back to the classical Latin *cor*, both of which mean: "heart." So, to Old French and Latin wordsmiths, courage wasn't a stoic virtue or a rational choice. It was a feeling that collided with the terror that rushed through our veins in times of danger, counterbalancing one emotion with another, and rousing us with the psychological desire to hold our ground.

The wordsmiths' old insight into courage has been extended by modern neuroscience. The neural origins of courage start deep in the primordial center of our brain, where there sits, ensconced upon a drop-shaped double throne, the coward despot known as our amygdala. As soon as our amygdala senses danger, it panics. Hastily overruling whatever else we're doing, it triggers our sympathetic nervous system, our periaqueductal gray matter, and the other components of our brain's threat-response network to release a mix of adrenaline and natural opioid painkillers, boosting our heart rate, numbing our hurt, and filling us with energy. This heated feeling of fearful strength isn't courage; in fact, its original biological purpose is to help us flee danger. But it can be converted into bravery through the addition of one more neural ingredient: oxytocin.

Oxytocin is the hormone that bonds mothers to newborns, and as neuroscientists have discovered, it can also be released in response to threats. The release is made by our pituitary gland, a more courageous part of our inner brain that sits just below our amygdala in a bone command bunker, the *sella turcica*. From that bunker, our pituitary carefully gathers intel on our surroundings. And when it learns that there are other endangered humans in our vicinity, it releases oxytocin.

This oxytocin release prompts us to respond to threat differently from most animals. Most animals, be they a lion or rodent, respond to

twelve-thousand-line battle hymn designed to stir the latent courage of our heart.

By itself, the sheer size of this hymn is remarkable. Yet the *Iliad* is more than just a long song. It's also a new kind of song, one that would revolutionize global literature by reengineering the paean to release oxytocin without requiring us to sing. This seems a flat-out contradiction: How can there be a song unsung? But the contradiction is resolved by the tools of style and focus. These tools, as authors before Homer had shown, make it possible to convert a power of oral voice into a narrator. So, to replicate the valor boost of a battle hymn, Homer simply needed to create a narrator who did what a sung paean did: give our brain the feeling of joining a holy chorus that sensed danger nearby.

Which Homer achieved by beginning the *Iliad* like so:

"Sing, goddess, of the anger."

To read these five short words is to feel instantly involved in a greater hymn amid the encroachment of a furious violence. With a bare handful of syllables, the *Iliad* has tricked our pituitary into a tend-and-befriend warming of our bloodstream.

And the beginning of the *Iliad* isn't a one-off trick. It's the first stroke of a grand blueprint for courage.

The Blueprint for Courage

We can uncover the blueprint by contrasting the style and focus of the *Iliad*'s opening lines with the style and focus of the "Let there be light" from the book of Genesis.

Genesis

In the beginning God created the heaven and the earth.

And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

And God said, Let there be light: and there was light.

Iliad

Sing, goddess, of the anger, the anger of Achilles born of Peleus,
the anger all-a-damaging that brought countless pains to men,
sending many stout souls to Hades before their time,
making heroes into food for dogs and vultures.

Both these beginnings boom with God Voice. Yet their booms are different. In the beginning of Genesis, there's "the heaven and the earth." In the beginning of the *Iliad*, there's "the anger, the anger." So, Homer's narrative doesn't spring from Light or Law or some other higher Truth. Instead, its origin and purpose are a mortal emotion. Or to be technical: its focus is the human heart.

The style of the *Iliad* achieves the same human-heartedness through its use of adjectives. Adjectives are absent from the opening lines of Genesis, which unfurls as a succession of galactic nouns: *God, heaven, earth, form, void, darkness, the face, the deep, the waters.* These nouns, like all nouns, are objects, so they feel object-ive.

Such objectiveness isn't unique to nouns; many adjectives (such as those used later in Genesis) can feel objective too: *round* or *living* or *blue* present a thing more or less as it really is. But adjectives can also reflect the subjectiveness of how something seems from our personal perspective: *tall* and *fast* appear that way only because we're shorter and slower.

You can feel that subjectiveness in the *Iliad*'s initial adjectives: *all-a-damaging* and *countless*. These communicate the experience of being too astonished by Achilles's anger to accurately quantify its destructive effect. The narrator can say only that the anger seems to be ruining everything and killing too many people to count. Which is exactly how we, too, would feel if we saw Achilles raging in full massacre. So, just like Athena, Apollo, and the other anthropomorphic deities of the Greek pantheon, the God Voice of the *Iliad* is huge but human. It's not a divinity aloof. It's a vaster version of ourselves, an "Almighty Heart" that echoes our emotional response to the spectacle of war and death.

This human God Voice is Homer's great invention. Prior to Homer, literary narrators had spoken in the voices of humans or gods. But the

Iliad hybridizes the two species of voice, blending mortal sentiment and cosmic scope into an anthropomorphic far-sightedness.

Throughout the *Iliad*, this style-and-focus blueprint for courage is maintained by a litany of smaller literary inventions, including Homer's most legendary stylistic device: the "Epic Simile." The Epic Simile was known to authors before Homer; one appears in the book of Genesis when a dying Jacob prophesizes to his sons:

> "Judah is a lion's whelp; from the prey, my son, thou art gone up: he stooped down, he couched as a lion; and as an old lion, who shall rouse him up?"

But even though Homer didn't invent the Epic Simile, he became its most famous practitioner by doing what he'd done to the God Voice: anthropomorphize it. You can experience the anthropomorphizing in Homer's own man-lion comparisons, such as this one from the *Iliad*'s book 3:

> Like a lion is glad to find the carcass of a wild deer or goat
> When he is hungry, and devours it greedily
> Even as eager hunters and their quick dogs rush upon him,
> So was Menelaus glad to see Alexander.

This simile flips the narrative structure of Jacob's biblical simile. The biblical simile starts on the human and proceeds to the lion, so it begins where we are and then *stretches* toward a mystery beyond, amazing us with a vaster Truth that we can't quite fathom in our here and now. (For more on how this literary technique can generate religious awe, see chapter 6.)

The Homeric simile does the reverse. It starts on the lion and proceeds to the human, comprehending an outside being through one of our mortal sentiments: gladness. So, when we look at the lion—or at any of the trees and birds and boars and fires and bugs and stars and deities contained in Homer's Epic Similes—what we see is not the work of an inscrutable God, but the emotion of a fellow Heart. We and the lion and all of nature are a part of a greater human pulse that animates the world. Sky and leaf and light and life: all of it is us.

This feeling of connection to a cosmic human community triggers our pituitary in the same way as singing in a battle chorus or praying to a sympathetic deity. So, it replicates the physiological effect of a paean, prompting a rise in our blood oxytocin. And as you can discover first-hand, the *Iliad* can go even further than a paean: its printed speech can produce an oxytocin boost even when we're reading silently, alone.

This seems an impossible sleight, but its imaginative effect is no different from the one that inspires a soldier in a lonely foxhole to find bravery in remembering loved ones back home. In the *Iliad*, that imaginative effect begins when the epic's fearsome war depictions trigger our brain's threat-escape dyad of adrenaline plus opioids. And it reaches its fullness when Homer's Almighty Heart adds courage's third neural ingredient, turning fear into its blood opposite and giving us the heated strength to stare down death.

Using the Almighty Heart Yourself

In 1915 a red-bearded British soldier-sailor by the name of Patrick Shaw-Stewart returned to the Aegean shores where the Trojan War had raged.

Those shores had again become a war zone, and perhaps even worse: *We wear our gasmasks because of the smell of the dead* and *shrapnel took his head away* and *flies clog our mouths by millions*. But into that place of horror, Shaw brought the *Iliad*, and as he remembered how Homer's verses had once braced his mettle, he picked up a pen to compose his own poem, "Achilles in the Trench."

Was it so hard, Achilles,
So very hard to die?
Thou knowest, and I know not;
So much the happier am I.

I will go back this morning
From Imbros o'er the sea.
Stand in the trench, Achilles,
Flame-capped, and shout for me.

In the first stanza, we feel our distance from Achilles, and when we think of death, we are afraid. But in the second stanza's last lines, we imagine the hero's booming voice with us at its heart, and out of fear, the note of courage comes.

If you're not feeling that paean note in your copy of the *Iliad*, you can find Homer's invention in thousands of later poems, novels, films, and more. Start by searching your bookshelf for a far-seeing narrator with a human heart, such as the sentimental God Voice of Charles Dickens's *A Tale of Two Cities*: "It was the best of times, it was the worst of times." Or the Epic Similes spoken by the narrator of Toni Morrison's 1987 novel, *Beloved*: "like a child's house, the house of a very tall child."

And you can also venture beyond the printed texts of your library into literary works that, like Homer's original recitations of the *Iliad*, take a dramatic form. Many modern films and TV shows, from battle epics such as Ridley Scott's *Gladiator* to primetime soaps such as *Peyton Place*, achieve the neural effect of an anthropomorphic God's-Eye by marrying the objective sight of the camera lens to a human focus and a soundtrack rich with oxytocin-releasing musical effects.

Once you've spotted a few Homeric narrators on the page or on-screen, find one that's woven into a tale that lays bare your deepest dread. If you dread that life is empty of purpose, watch *Game of Thrones*. If you dread that we're all doomed to end as strangers inhabiting the lives of others, watch *Gray's Anatomy*.

Then feel the greater voice connect with you.

And in this world of fear, take heart.

silver tongue lived in the land of Sumer, and these were the instructions *he* bestowed to his son."

And in *The Epic of Gilgamesh*, the epic voice begins even more thunderously:

> The gods made Gilgamesh, and *they* made him perfect. The sun god gave him glory and the storm god gave him valor.

For century after century, the *I* voice continued to exist like this inside the epic *he-she-they*. Quite likely, there were authors during those ancient times who dared to write stand-alone *I* poems. But none of those poems has survived, seeming to prove that the *I* could not endure on its own.

And then among the mulberry trees and cucumber patches of eastern China, about a thousand years after *The Epic of Gilgamesh*, a woman whispered out:

> The great cart hud-huks past,
> With its judge robed green like new grass.
> It is you I remember;
> But I see the law and I tremble.
>
> The great cart hud-huks by,
> With its judge robed bright like ruby.
> It is you that I want;
> But I know the law and I halt.
>
> We must live in separate rooms,
> But in death, we will have one tomb.
> Do you think that I lie?
> I swear it by the sun's unending light.

That this ode has endured, all the way down to our here and now, is extraordinary. The only other *I* poems to survive from so ancient an era are the Hebrew Psalms. And those Psalms, like *The Instructions of Shuruppak* and *The Epic of Gilgamesh*, are infused with epicness. They're part of a divinely inspired scripture, uttered by a biblical king.

The Chinese ode is different. It's authored by a mortal woman who's terrified of being punished for an illegal act of love. Unlike the Psalms, her poem wasn't written to be shared in public; it was slipped to her lover on a folded note. And unlike the Psalms, her feelings aren't condoned by some higher authority; in fact, they're *condemned* by a lofty judge in his great hud-huking cart. The only thing backing up the poet is the strength of her own word: "I swear."

We might believe that oath. Or we might not. But either way, the ode allows us the choice. It doesn't attempt to compel our mind with an epic declaration such as "This woman spoke true." It is entirely and only the voice of an *I*.

How did this individual voice survive? How is it with us still?

As we'll see, there are two reasons that the Chinese ode has managed to bob across time's deep waters. But let's start with the more exciting one: the ode reaches into our cold neural circuits and warms them with the touch of love.

The Neuroscience of Love

You might have heard that, scientifically speaking, love is a matter of chemical attraction: *Invisible pheromones, manufactured by subdermal glandular factories, waft off the skin of our prospective mates to seduce the hedonic centers of our brain. . . .*

It's all very unromantic—and probably untrue. There's no evidence that human pheromones actually exist. If they did, wooing would be a much simpler matter. But even so, there *is* a scientific formula for love. It doesn't involve yohimbe bark, chocolate, or any other physical stuff. It involves speech. Not magic speech. Just regular speech that you already know.

The scientific speech formula has two parts. Its first part is: self-disclosure.

Self-disclosure is revealing things about yourself. Anytime you share the details of your personal life, you're making a self-disclosure. If you tell people where you were born, or how old you are, or what happened to you on Tuesday, that's a self-disclosure.

Any and all self-disclosures can be a source of love. But some self-disclosures have greater potency than others. Those self-disclosures are

more hidden, more private. They're not your birthplace or your birthday. They're secrets you don't ordinarily confess. Perhaps they make you feel embarrassed or awkward. Perhaps they're goofy quirks that aren't of public interest. Perhaps they're treasured memories that you like to hold close to your chest. Perhaps they reveal private hopes or desires or fears or mistakes.

Whatever these secrets may be, they're powerful sources of love. And their power increases with their secrecy. If there's a deep secret that you've carried for years, never sharing it with anyone else, that's a tremendously potent ingredient for love.

But don't go out and use that potent ingredient just yet! Because it'll be wasted if you don't combine it with the second part of the scientific speech formula. That second part is: wonder.

Wonder is a feeling of awe, of specialness. It's not always easy to engineer. But as we learned back in the introduction, it does have its own reliable blueprint, known as the *stretch*: the taking of a regular pattern of style, or character, or story, or any other literary element, and extending the pattern a step further.

Without the *stretch* of wonder, self-disclosure can often be less love-exciting than off-putting. If someone inundates us with unwonderful personal details, it makes us feel uncomfortable. We don't want to retire with that someone to a perfumed bower. We want to flee.

But when someone woos us with a self-disclosure that's mixed with *stretch*, the combination has a potent neural effect: it primes dopamine neurons in the reward centers of our brain, sweetening our thoughts with a touch of pleasure. Our brain is happy—and knows that it will become even happier if it can get its primed neurons to fire.

What causes those primed neurons to fire is another self-disclosure, yet not from the wooer this time. To complete the circle of romance, the second self-disclosure must come from us. By wooing back the wooer, we release our brain's cued-up dopamine, delighting ourselves with its chemical sweet. This self-gratifying experience isn't love; it's an infatuation, a flirt, a prelude to more. But to get that more, we don't have to do anything different. We can keep on exchanging wonder-enriched self-disclosures with our wooer, creating a reciprocal cycle of dopamine prime and release that makes us feel increasingly happy together and

encourages us to disclose more personal details to each other until we've built an intimate emotional bond.

This happy state of emotional intimacy is love. Admittedly, as just explained by science, it's not much more romantic than glandular pheromones. It's all formula and molecules, and it reveals that a great deal of love's bliss comes from the pleasure of our own self-disclosures, so that our brain is rather egoistically swooning for itself: *I like myself more when I'm with you.*

But as unromantic as this all might be, science has at least revealed that as love deepens, the second part of the blueprint, the *stretch*, becomes less important. We no longer have to seduce our loved one with dazzle; we can simply confess our intimate secrets in all their humdrum ordinariness, and we'll still deepen our emotional bond. That's the real wonder of love: not needing anything more wondrous than ourselves.

Now that you know science's love blueprint—self-disclosure married with wonder—you can go out and woo the world. Just marry some intimate revelations to a bit of *stretch*. And if that sounds uncertain work, or if you'd rather just be wooed yourself, don't fret: you can get all the love you need from poetry.

Because long before science, poets figured out the two-part blueprint. And they folded it into heart catchers like the ode of the ancient Chinese poet.

The Two-Part Blueprint in Poetry

The ancient Chinese poet opens her ode with a self-disclosure: "It is you I remember; but I see the law and I tremble."

And she then enriches this disclosure with poetic *stretches* that extend our mind to the time after death and the space past the night: "In death, we will have one tomb . . . by the sun's unending light."

By revealing a secret that fills us with a quiet awe, the Chinese poet deploys the scientific formula for amorous attraction. She catches our brain's dopamine reward centers. She stirs us to imagine a reciprocal self-disclosure—a silent thank-you for her honesty, a dreamful admission of our own hidden desires, a requited promise to be faithful always—that glads our thoughts with love.

That love is why the poet's ode was retold in its day. It whisperingly seduced its listeners. It made them feel the personal power of the *I*. But as powerful as that love was, it still wasn't enough to save the Chinese ode by itself. The second, and rather less exciting, reason why the ode has survived to our modern age is that it attracted the attention of Zhou dynasty scholars who admired the ode's romance-quashing judge: "It is you that I want; but I know the law and I halt."

Impressed by this love halt, Zhou scholars copied down the ode into a Confucian guidebook, the *Shijing* of the Five Classics, whose precepts on lawful behavior were passed along dutifully to the present day. (For more on these precepts, see chapter 10.) Which meant that, really, the *I* of the Chinese ode didn't endure through its own power. It endured because of an epic *he* who blocked the *I* from acting.

But the *I* wouldn't remain in this disempowered state forever. A century or so after the Chinese ode, another poet would sing from the heart. That poet was Sappho. And her song wasn't preserved as part of a greater epic voice.

It endured entirely through love.

The Power of Sappho

Sappho's life is largely a mystery. We think that she was born on Lesbos, an arch-shaped island in the northeastern Aegean, right across from the sandy plains where Hector and Achilles fought their Trojan War. And we think that she lived her life in the mid-seventh century BCE, which was probably a little more than a hundred years after Homer composed the *Iliad*.

The *Iliad* was well known to Sappho. And she rejected its epic style. Instead, she wrote in the *I* voice. Or as the ancient Greeks called it, the lyric, which literally means "sung with a lyre."

Sappho wasn't the first Greek poet to write in the lyric. A generation or so before, the warrior-poet Archilochus had become famous for lyrics such as:

> The fox has many tricks; the hedgehog has one big one.
> Don't boast in victory or weep in defeat. Life is always up and down.

Sappho's Second Innovation

The two Englishmen who voyaged to Egypt in the winter of 1905 were the papyrological archeologists Bernard Pyne Grenfell and Arthur Surridge Hunt. And the poem they discovered runs like so:

Some say that horsemen,
or soldiers, or ships,
are the most beautiful things on earth—
but I say it's your love.

Isn't that why
Helen, the most beautiful
of women,
left the best of men
and sailed to Troy?

Forgetting her child
and her mother, because
in a glance she felt

Love.

With elegant brevity, this lyric retells the *Iliad*. The *Iliad* had spun a tale of horsemen, ships, and soldiers that warred at Troy over a stolen woman: Helen, queen of Sparta, wife of Menelaus. But according to Sappho's lyric, Helen wasn't stolen. She sailed freely after desire. So, the real story of Troy isn't war. The real story is love.

If we were dry and dusty philosophers, we could debate Sappho's lyric redo of Homer. We could say, "Yes! A love story! Sappho has given voice to the silenced heart of the Trojan War!" Or we could say, "Harrumph! How daft! War is war; there's nothing romantic about it!" Or we could even say, "It can be both! The truth is always multiple! The greatest wisdom sees both sides!"

But Sappho doesn't want us to be dry and dusty philosophers. She doesn't want us to riff intellectually about the rightness of her lyric. She

wants to *feel* the love that launched the Trojan War. Which is why she touches our heart with an intimate disclosure.

That disclosure is about Helen. And it comes as a surprise because, at first, Sappho's poem is anything but disclosing. Instead of giving us Helen's lyric voice, the poem presents her in the *he-she-they* voice of epic. And instead of revealing Helen's inner heart, the poem glides across her exterior: "Helen, the most beautiful of women."

This "most beautiful" woman is the Helen from the *Iliad*, the Helen who was kidnapped because of how she looked. But having provided us with that familiar picture, Sappho's lyric then does the unprecedented: it guides our eye beneath Helen's famous surface. And what we discover there is something so deeply socially unacceptable that any Greek mother would have been mortified to confess it: Helen forgot her own child, the long-haired, horse-cantering Hermione.

This is exactly the opposite of what the *Iliad* tells us. In its third book, it booms that Helen is "torn with longing for her husband and her family." Such familial longing is what the ancient Greeks expected every woman to feel; why else did a woman exist, if not to be a dutiful caregiver to her children and a loyal wife to the man her father selected? So, really, even though the *Iliad* pretends to lay bare Helen's heart, it doesn't make a private disclosure. It does the reverse, establishing Helen as a public stereotype.

Sappho breaks this stereotype to reveal the true secret of Helen's heart: she was so struck by love that she no longer remembered the child she had born. This revelation would undoubtedly have repelled some of Sappho's initial Greek readers. Deep personal secrets are often unsocial; that's why they've been kept secret. But in the same way that our friends and lovers come to care for us *because* of the things that we don't like to admit about ourselves, so would some of Sappho's readers have been moved by Helen's feeling of being more than a mother. In that feeling, they'd have discovered what was special about Helen's heart. They'd have touched the hidden rhythm of her love.

This feeling of closeness to Helen was a revolution in poetry, and not just because it challenged the old feeling of the *Iliad*. It also dramatically expanded the prior blueprint of the lyric. In the past, that blueprint had been used by poets to make intimate disclosures about themselves. But now Sappho was using it to make an intimate disclosure about someone

else. Innovating the *he-she-they* voice of epic to reveal a hidden *I* of history, she conjured up feeling for a character who never spoke herself.

With this, Sappho did far more than rewrite the *Iliad*. She threw open a vast new horizon for literature. For if literature could make self-disclosures on behalf of Helen, then it could make self-disclosures on behalf of every epic *she* or *he* or *they*.

It could take any story and make it a love story.

Using the Secret Discloser Yourself

Love isn't the only way that we can care about others. We can also feel empathy, or sympathetic identification, or friendship (the literary recipes for which are laid out in chapters 3, 19, and 25, respectively).

But love is an enormously rich emotion. It can come in many different shades and varieties, from the erotic love of Sappho, to the ethereal love of the Chinese poet, to the familial love of Dylan Thomas's "Do Not Go Gentle into That Good Night," to the social love of Emily Dickinson's "I Should Not Dare to Leave My Friend" and Walt Whitman's "Crossing Brooklyn Ferry."

And love is also one of the most powerfully rewarding emotions that our brain can experience. It's been shown scientifically to improve our mood, increase our energy, and make us enjoy everything more. (Although you probably didn't need science to tell you that.)

And if you ever want more love in your life, you can find its blueprint of intimate disclosure mixed with wonder in poetry that spans the ages, from the early-ninth-century outlaw verses of the Abbasid princess Ulayya bint al-Mahdi . . .

I have tucked our love inside this lyric
Like silver in a pocket

. . . to the epic inverse of e. e. cummings:

here is the deepest secret nobody knows
I carry your heart (i carry it in my heart)

You can also find love's blueprint in the first-person narration and dialogue of novels, from the elegantly swift disclosure of Charlotte Brontë's *Jane Eyre* ("Reader, I married him. A quiet wedding we had"), to the painfully tender disclosure of nurse Catherine Barkley in Ernest Hemingway's *A Farewell to Arms* ("I'm not brave any more, darling. I'm all broken. They've broken me. I know it now"), to the wistfully romantic disclosure of teenage Jim Burden in Willa Cather's *My Ántonia*:

> One dream I dreamed a great many times, and it was always the same. I was in a harvest-field full of shocks, and I was lying against one of them. Lena Lingard came across the stubble barefoot, in a short skirt, with a curved reaping-hook in her hand, and she was flushed like the dawn, with a kind of luminous rosiness all about her. She sat down beside me, turned to me with a soft sigh and said, "Now they are all gone, and I can kiss you as much as I like."
>
> I used to wish I could have this flattering dream about Ántonia, but I never did.

And finally, you can journey with Sappho into love beyond the lyric. Her epic-changing invention of disclosure on behalf of someone else endures in modern musico-poems such as Percy Sledge's 1966 rhythm and blues ballad "When a Man Loves a Woman": "When a man loves a woman / Can't keep his mind on nothing else."

And it endures, too, in every awe-rich moment where a novel uses its narrative focus, or a film deploys its camera closeup, to reveal a character's untold secrets. Including perhaps the most devastatingly potent love scene in literature, the at-last togetherness of Elizabeth Bennet and Mr. Darcy in Jane Austen's *Pride and Prejudice*:

> Elizabeth, feeling all the more than common awkwardness and anxiety of his situation, now forced herself to speak; and immediately, though not very fluently, gave him to understand that her sentiments had undergone so material a change, since the period to which he alluded, as to make her receive with gratitude and pleasure his present assurances. The happiness which this reply

> produced, was such as he had probably never felt before; and he expressed himself on the occasion as sensibly and as warmly as a man violently in love can be supposed to do. Had Elizabeth been able to encounter his eye, she might have seen how well the expression of heartfelt delight, diffused over his face, became him; but, though she could not look, she could listen, and he told her of feelings, which, in proving of what importance she was to him, made his affection every moment more valuable.

Like Helen of Troy, Elizabeth and Mr. Darcy feel too awkward to share exactly how they feel. But then the narrator discloses for them, summoning love.

Literature brims with more of these moments than your lifetime can exhaust. Any lyric voice that lays bare a private feelings can make you feel a close affection. Any *he-she-they* story that makes a personal disclosure about its characters can spark an emotional connection. And that connection can come in endless fresh varieties, each as queer and unique as the secrets kept inside an individual heart.

So, every day, you can be like those two Englishmen in Egypt.

And discover wonder intimate.

upon the righteous Jerusalemites to avenge every dead Hebrew infant with a slain Babylonian child, nursing an uncompromising fury that escalated the conflict with eye-for-an-eye reprisals.

To get back the life of nonviolence that the invasion had disrupted, justice therefore had to be tempered with something else: forgiveness. Forgiveness released the injured heart from anger, halting the back-and-forth killings and returning the lost days of harmony.

So it was that the Hebrew poet decided to invent a new forgiveness technology and install it in the old Gentile story about Job, enriching righteousness with peace.

The Poet's New Lines

To preserve justice, the Hebrew poet left the original prose story of Job intact. But to imbue forgiveness, he inserted a thousand new lines of poetry. Those new lines expand the story to twenty times its original length, transforming a prose parable into a verse epic.

In the expanded story, Job is not so stoically patient in the face of God's test. Instead, he demands, "Wherefore is life given to him that is in misery, and life bitter unto the soul?" And when no answer is forthcoming, Job becomes frustrated, complaining, "I cry unto thee, O God, and thou dost not hear me: I stand up, and thou regardest me not."

With this challenge to God, Job strays from the strict path of righteousness. So, our brain begins to feel that Job has failed his test. And our feeling is confirmed when God responds to Job in sudden anger:

> "Hast thou an arm like God? Or canst thou thunder with a voice like him? Canst thou draw out leviathan with an hook?"

This rebuke tells our brain: *You were right to think that Job did wrong. So, now Job must be punished; justice demands it.* But then, just when our heart is fixed against Job, the poet adds his new technology: "I abhor myself, and repent in dust and ashes."

These words are uttered by Job. They don't seem like much, nor do they seem especially original. Job isn't expressing a novel theology or conjuring up a fresh philosophical argument. He's just repeating what

our brain has already concluded: Job is a sinner who deserves to end in dust and ashes.

Yet even though Job's words seem utterly familiar, they do something that no known work of literature had done before: they temper our brain's desire for justice with the forgiveness bringer that modern neuroscientists call empathy.

Empathy is the feeling of understanding another person's actions. That feeling doesn't make us *condone* those actions. It doesn't make us *identify* with the person, or share the person's values or beliefs. Instead, it allows us to disagree with the person while simultaneously accepting that the other person's actions weren't wrong.

How is it possible for us to feel this way? And how do Job's words trigger this experience in our brain? To see, let's take a quick tour of the neuroscience of forgiveness, starting with where forgiveness itself begins: our brain's desire for justice.

Justice and Its Neural Origins

Our brain has a natural desire for justice.

The desire runs so deep inside our nature that it predates our species. Chimps, gorillas, and macaque monkeys all possess an innate hunger for fairness, hailing from some archaic simian who swung the jungles ten million years before the first human judges created justice instruments such as the widow-protecting Laws of Urukagina (Sumer, c. 2400 BCE) and the eye-for-an-eye Code of Hammurabi (Babylon, c. 1750 BCE).

And our brain's desire for fairness isn't just ancient. It's also very, very strong. So strong that, as modern psychologists have discovered, we're willing to trade our wealth and our health to enforce fairness, even when the wrongdoing isn't against us. If someone cheats our neighbor, then we feel the wrongness in our own heart, and, indeed, can feel it with such emotional intensity that we risk our own safety to bring the perpetrator to justice.

To understand why our brain has evolved to crave fairness this powerfully, imagine a village where you and I forsake justice to act instead in our own immediate self-interest, ignoring any cheating that doesn't affect us directly. If I get defrauded, I go after the perpetrator; but if you