In praise of Herman Wouk's

THE LANGUAGE GOD TALKS

On Science and Religion

"*The Language God Talks* is a seminal read. In this book there is a true-to-life drama: it is Wouk himself, torn between two worlds, and reconciling them both." —Lee Chottiner, *Jewish Chronicle*

"Wouk is a great storyteller, and his anecdotes about meeting with brilliant thinkers such as Feynman are entertaining. With Wouk's conversational writing style and humble approach to his subject, *The Language God Talks* is a fun, intellectually engaging book."
—Doug Childers, *Richmond Times-Dispatch*

"A humble, understated little book. It leaves one more cause for wonder: that Herman Wouk, author of two massive novels on the worst war ever fought, finds belief not an idiocy, not an obscenity, but rather a kind of listening."
—John Timpane, *Philadelphia Inquirer*

"Masterful....In this wonderful book, Herman Wouk tells us about his life experiences, in the context of science and religion. His conversations with Richard Feynman play a central role, especially in addressing his religious beliefs, tying into the creative process of writing *War and Remembrance*. In setting the stage, he ranges from NASA's quest for the moon to the size of our galaxy and Hubble's discovery of the expanding universe, all in his inimitable style. After several readings, I keep finding new treasures in this fascinating book."
—Maarten Schmidt, Francis L. Moseley Professor of Astronomy, Emeritus, California Institute of Technology

"*The Language God Talks* provides a beautiful self-portrait of a man who has sought to engage the world and his faith."
—David Michael, *Books and Culture*

"A kind of compact philosophical autobiography and a unique opportunity for readers to glimpse the innermost musings and intimate experiences that prepared Herman Wouk for the many books that he has bestowed upon us."
—Jonathan Kirsch, *Jewish Journal*

"*The Language God Talks* is simply and wonderfully an old and gifted writer's fascinating look back on a world that, for ninety-four years, he has called home." —*Seed Magazine*

"With ease and intensity, Wouk leads us deep into the shadows between religion and science and shows us they are not separate mountains but one luminous, interconnected landscape. And yet, like the best of guides, he urges us to see and discover with our own eyes. A stunning rumination on life's important questions by a masterful storyteller."
—Marisha Pessl, author of *Special Topics in Calamity Physics*

"Herman Wouk is one of the wisest men I have ever known. In aviation the best information comes from pilots themselves, in airplanes, not from air-traffic controllers or meteorologists on the ground, in some big air-conditioned office. In *The Language God Talks,* Herman sends us all a most valuable pilot report."
—Jimmy Buffett, *Vanity Fair*

"*The Language God Talks* is not so much about God, but the gentle philosophical musings of the author as he looks back on his life."
—BookVisions

"In a crowded book market filled with self-serving and redundant theories about humankind's place in the grand scheme, it is rare to encounter an original, honest, charming voice. Such is the case with Wouk's latest work.... Wouk's humility, humor, and insight make the book a joy to read and a wonder to contemplate. What the book lacks in pages, it makes up for in soul. Authentic, accessible prose mixed with real insight." —*Kirkus Reviews*

"A pleasure to read.... Mr. Wouk is still actively writing and speaking from the heart. His sincerity and ability to relate to people of all walks of life are evident throughout his writings.... Mr. Wouk has used his gift of longevity to enrich our lives with his meaningful work." —Hannah M. Heller, *Baltimore Jewish Times*

"A short, satisfying read. Wouk's writing is so captivating, still as elegant as ever. It demonstrates that Wouk hasn't lost a whit of his storytelling genius." —Dinesh Ramde, Associated Press

"Ever so faithful to his Jewish heritage, Herman Wouk discusses how research in the scientific and secular world strengthened his faith. This book will interest any person of faith who has followed Wouk's storied career and read his fiction." —*Publishers Weekly*

"In this book, as in his previous ones, whenever Herman Wouk speaks of God it is always with both exquisite curiosity and warmth." —Elie Wiesel

"In *The Language God Talks,* Herman Wouk has provided an entertaining and thought-provoking essay intended to both unsettle the complacent and plant a defiant flag of deathless belief."
—James E. Person Jr., *Washington Times*

"As engaging as Wouk's megaselling historical novels. Hard not to like." —*Booklist*

"This is an extraordinary book about science in its most human form. Wouk's recounting of conversations with Richard Feynman is not to be missed."
—Stanley B. Prusiner, Nobel Laureate, Director of the
Institute for Neurodegenerative Diseases,
University of California, San Francisco

BOOKS BY HERMAN WOUK

NOVELS

Aurora Dawn
City Boy
The Caine Mutiny
Marjorie Morningstar
Youngblood Hawke
Don't Stop the Carnival
The Winds of War
War and Remembrance
Inside, Outside
The Hope
The Glory
A Hole in Texas

PLAYS

The Traitor
The Caine Mutiny Court-Martial
Nature's Way

NONFICTION

This Is My God
The Will to Live On
The Language God Talks

THE LANGUAGE GOD TALKS

On Science and Religion

HERMAN WOUK

BACK BAY BOOKS
Little, Brown and Company
New York Boston London

It doesn't seem to me that this fantastically marvelous universe, this tremendous range of time and space and different kinds of animals, and all the different planets, and all these atoms with all their motions, and so on, all this complicated thing can merely be a stage so that God can watch human beings struggle for good and evil—which is the view that religion has. The stage is too big for the drama.

—Richard Feynman

Remember, Herman Wouk, we are storytellers. Stories, pictures, people! No thoughts!

—S. Y. Agnon

CHAPTER ONE

The Language God Talks

More years ago than I care to reckon up, I met Richard Feynman. I was then out to write a sort of *War and Peace* of World War II, and early on in the moonstruck enterprise I realized that if I were at all serious about it, I had to learn something right away about the atomic bomb. Tolstoy could not consult Kutuzov, the general who drove Napoleon out of Russia, because the canny old one-eyed field marshal was long since dead; but when I started to work on my unlikely notion nearly all the men who had created the bomb were alive, and several of them were at the California Institute of Technology, including Feynman. President Truman, who had been an artilleryman in World War I, said of the bomb, "It was a bigger piece of artillery, so I used it," a striking remark which shows up in my *War and Remembrance* but surely something less than the whole story. So I went to Caltech to talk to those who knew the whole story.

This may seem monstrously pushy, and no doubt it was.

Like many novelists I have spun my books out of my own experiences when I could, but in attempting work far outside my own relatively jog-trot existence I have had to pick other men's brains. My World War II service, three years on destroyer-minesweepers in the Pacific, gave me the substance of *The Caine Mutiny,* but taught me nothing at all about the world storm that had swept me from Manhattan to the South Pacific like a driven leaf. When the bomb fell on Hiroshima my ship was a bobbing speck on picket duty in the rough waters off Okinawa, and we had just survived a kamikaze attack unscathed; so I joined heartily in the merriment aboard ship, very glad that I had survived the war and would soon go back to my free civilian life and marry my sweetheart. As to the larger issues of dropping a whacking new bomb made of uranium on a Japanese city, I was innocent and indifferent. The radio said that our scientists had "harnessed the power of the Sun," and that was quite enough for me and for all of us aboard that old four-piper, halfway around the world from home.

The Caltech scientists received me cordially, and talked freely about their adventures in working on the bomb. I remember one physicist telling me, for instance, how he drove to the Trinity test site in New Mexico with the dread plutonium core in the back seat of his car. But to a man, one after another, they warned me so earnestly not to try to see Richard Feynman, that I began to think of him as a human plutonium core. However, I had nothing to lose

so I did try, and somehow I found myself in his office, talking to a lean guy in white shirtsleeves, with long hair and a sharply humorous countenance calling to mind a bust of Voltaire. It didn't go well at first. "You know," he said, as I groped to explain my purpose, "while you're talking, you're not learning anything." So I blurted out baldly, any old way, my vision of a fiction work throwing a rope around the whole global war. As I spoke an enigmatic look came over that strong face, something like remote tolerant amusement. "Well, that's the sort of thing genius reaches out for," he said, and he took over the conversation.

In swift strokes Feynman brought the entire Manhattan Project to life, the excitement and the perils alike, mentioning that once in a laboratory corridor he passed uranium materials stacked so carelessly that a chain reaction was within a whisker of going off. His main point was that the whole enterprise was gigantically messy, and that the atomic bomb was by no means at a frontier of science. He put it so: "It wasn't a lion hunt, it was a rabbit shoot." There was no Nobel Prize, that is to say, in the concept or the calculations; it was just a challenge, if a huge one, to audacious innovative technology and brute industrial effort. This formidable fellow walked out of the building with me, and said as we were parting, "Do you know calculus?"

I admitted that I didn't.

"You had better learn it," he said. "It's the language God talks."

Calculus

I never forgot Feynman's admonition, promising myself that I would get at calculus once I had written my big war novel, which I thought might take four or five years. It became two novels, each about a thousand pages long, and the task engulfed my life from my late forties well into my sixties, the better part of two decades. Toward the end I had a strong sense of racing the calendar to finish it before I died. All that while, the language God talks had to wait.

After that I did make several separate attempts to learn calculus, all recorded in a loose-leaf notebook which I still have. I tried self-teaching out of books with titles like *Calculus Made Easy*. I picked up and skimmed freshman texts in college bookstores, hoping to come across one that might help a mathematical ignoramus like me, who had spent his college years in the humanities—i.e., literature and philosophy—in an adolescent quest for the meaning of existence, little knowing that calculus, which I had heard of as a difficult bore leading nowhere, was the language God talks; or as one noted Jewish microbiologist, also a Torah scholar, commented to me with a grin, "His other language." I even engaged a tutor, an Israeli, figuring to improve my spoken Hebrew while learning calculus. A dumb idea, and I advanced in neither. Lastly, desperately, I got permission to audit a high-school course in

calculus. I actually hung on with the teenagers for a couple of months, but I fell too far behind and had to withdraw, with a few farewell words to them about the preciousness of knowing calculus. As I was walking out of the classroom, a patter of applause surprised me; a sympathy hand, in showbiz parlance, for the defeated departing old codger.

In short, calculus remains a thick glass wall between me and most truths in Feynman's world where he hears God talk.

Gell-Mann

The Nobel laureate Murray Gell-Mann, Feynman's colleague and rival at Caltech, was no man to mince words, and he once observed that the gap between a person who understood quantum mechanics and one who did not was arguably wider than the difference between a human being and a great ape. On the other hand, Feynman is on the record as having said, "Nobody understands quantum mechanics." We have here what is called in Talmudic discourse, which I know pretty well, a sort of *Plugta d'tanoi,* that is, a standoff of the sages. Obviously I have to hope that the weight is with Feynman. As it happens, I know Murray Gell-Mann, and we have chatted some in a social vein. I did try once or twice to raise serious matters with

him, but gave up. His responses, while not impolite, hinted that an orangutan was getting a bit too familiar.

Feynman was kinder. We met one summer years later at the Aspen Institute, a think tank high in the Colorado Rockies, and we took to lunching together and going on long walks. He did most of the talking: about his own work in physics, about quantum mechanics (making it seem momentarily almost understandable), and about philosophy, of which he was acidly scornful. His father, a dealer in uniforms, evidently a man with a restless inquiring mind, had greatly influenced him. Not much interested in novels or novel-writing, he perked up when I mentioned that I studied the Talmud daily. Feynman respected the Talmud as a "wonderful book," though he knew little about it. So I laid out for him an obscure abstruse problem that I had just struggled through. He listened keenly, thought for a moment, then rapped out the correct classic solution, and when I said he had hit it he was mighty pleased with himself. Would that Gell-Mann, with his imposing mind, had been inclined to loosen up like that. I treasure the memory of those illuminating lunches and walks.

My library contains whole shelves of science books for the common reader. I have read an amazing amount of the stuff. I may know nearly as much about modern science as one of Gell-Mann's anthropoids can grasp. Gell-Mann himself has written a long generous book in that vein, *The*

Quark and the Jaguar, which I have read cover to cover with much interest, and some labor. There is a book by Feynman, too, *Six Easy Pieces,* treating opaque topics like gravitation and quantum theory in his brisk native New York style. These pieces are excerpted from his renowned *Feynman Lectures on Physics,* a three-volume work impenetrable to untrained minds. I know, because I bought the oversize red paperbacks of the *Lectures,* and butted at those stone walls for weeks. *Six Easy Pieces* is deceptively accessible; in some swift turns of the talk one has to hang on for dear life.

Einstein too wrote such books, not very good ones. Explaining himself to the laity was not the forte of this man of the ages. Followers like James Jeans and Arthur Eddington voiced his epochal views in popular books, and scientists can even put out big bestsellers, like James Watson's *The Double Helix* and Stephen Hawking's *A Brief History of Time.* Hawking heeded his editor's warning, "Every equation you include cuts your readership in half," and his book contains only one, $E = mc^2$. Sure enough it sold like hotcakes. I bought a copy myself. The going gets pretty bumpy in Hawking even without equations, and when I slogged through to the end, I wondered how many other book buyers had honestly made it all the way. Still, I had gotten more than my money's worth in hard-won glimpses of the new cosmology.

Science writing is standard newspaper fare today.

Science magazines and websites abound, some sober, some jazzy, compacting the latest advances in cosmology and the biosciences into digestible English. It goes without saying that from the Nobel laureate like Gell-Mann who stoops to write a book for plain folk, to the columnist who scavenges *Nature* and *Science* to bang out his or her humble Sunday stint, they all know calculus. One and all, they have the advantage, in that respect, of the author of this little book which, adopting Feynman's metaphor, aspires to suggest that the stage may not be too big for the drama. Clearly I will not be talking down to the reader, not one bit, for by and large I address those like me on the wrong side of the mathematical glass wall.

What I write here is rooted in what I know of God's other language. Like many a Jewish Nobel laureate, Feynman speaks about religion from the wrong side of a very different glass wall, the Bible. There he has most of today's Jewry as company, including Murray Gell-Mann, for the Bible has long been waning as the core of a Jewish upbringing, a way of life once handed from father to son down the millennia, rooted in an epic history and an encyclopedic literature; a practical guide to the insoluble mysteries, brief joys, harsh blows, and everyday workings of a human existence. That upbringing survives here and there among our people, but most Jewish babies—in Israel, in America, in all the diaspora—are born today into the world view of Feynman and Gell-Mann; and a Nobel colleague of theirs,

the physicist Steven Weinberg, has written lucid books in which the insoluble mysteries loom especially large, most of all the old agnostic paradox of an orderly universe without seeming purpose.

Order and Purpose

The world begins for a baby, so says William James, as "a big blooming buzzing confusion," a convincing surmise, though what is really going on in a baby's mind we know mainly by the screaming or the smiling. The baby has to sort out the confusion all by himself, little by little, experience by experience. He is bound to discern, very dimly at first, some kind of order and purpose in things, such as a nearby warm nipple when he feels hunger. This sense of order and purpose deepens and broadens as he picks up the basics of being alive. In time he starts to respond to baby talk. He obeys or balks at commands. The great day comes when he stands erect and takes a few faltering steps, his eyes agleam with wholly human pride which he can't yet express.

Once he does find his tongue, the sorting out process races ahead. He hounds both parents with one word, his prime sorter-out of order and purpose, "Why?" Sooner or later comes the leap to the big, the inexorable *Why,* which occurs to only one animal on earth: "Why am I here?", or

in a more usual phrasing, "Where did I come from?" If you are an up-to-date liberated parent you are apt to leave God out of it, nor will you employ—it goes without saying—the antiquated dodges of stork or cabbage leaf. You will no doubt explain about sperm and ovum, and perhaps about penis and vagina, also about DNA, and maybe a little about natural selection. All that time your child will be looking you in the eye with a pure trusting gaze, and if you have a truthful bone in your body you will be embarrassed. With all the stunning modern discoveries in cosmology and the biosciences, you really don't know the answer. Nobody does. Not the unbeliever, not the believer. Faith is hope, not fact.

Yet every generation has to make a pass at an answer, and so does every father or mother. Feynman's rejection of religion as an answer to the child's question exhilarates me, and has in fact sparked this book, because I so largely agree with him. He is awed and exuberant, as I am, at the grandeur of the far-reaching universe, full of love, as I am, of our tiny enchanting Earth. He is my kind of agnostic, a votary of Democritus, the laughing philosopher who saw the world as a product only of "atoms and the void," which was quite enough to his Greek taste, because he found the world as it exists so pleasurable and beautiful. Like Democritus, Feynman finds the world as such "fantastically marvelous."

Weinberg

Now Weinberg, in his widely read book, *The First Three Minutes,* has put the bleaker agnostic picture with stark oft-quoted eloquence: "The more the universe seems comprehensible, the more it also seems pointless.... The effort to understand the universe is one of the very few things that lifts human life a little above the level of farce, and gives it some of the grace of tragedy."

No laughing philosopher, Weinberg. The human quest for Order and Purpose, which begins with the infant at the comforting nipple, ends for Weinberg in bafflement at the wondrous Order he sees in the universe, and despair at the comfortless absence of Purpose. The wondering child's ultimate sorter-out—WHY?—has haunted and hunted this eminent scientist to a dead end.

In *Facing Up,* a book of his essays, a photo of a granite statue serves as both jacket art and frontispiece.* Massive and stiff, the figure stares straight at the sky, head tilted far back, a defiant unshattered Ozymandias. This is Tycho Brahe, the sixteenth-century astronomer, memorialized in stone on the remote Danish island where he worked. The image resonates in Weinberg's spirit, for he calls himself a "devout secularist," and in his sardonic essay "A Designer Universe?"

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* *Steven Weinberg,* Facing Up: Science and Its Cultural Adversaries *(Cambridge, MA: Harvard University Press, 2003).*

he sets out to inflict mayhem on the Argument from Design, theology's old fall-back proof of God's existence. He himself has not only discerned the Order in the cosmos, he won his Nobel Prize by more exactly defining it. He knows whereof he speaks, and here is how he concludes the essay: "One of the great achievements of science has been, if not to make it impossible for intelligent people to be religious, then at least to make it possible for them not to be religious. We should not retreat from this accomplishment."

I would shake hands on that accomplishment with Steven Weinberg.

My Lame Paws

As a Columbia undergraduate, imbibing the Greek philosophy, comparative religion, and general humanism of the noted core curriculum, I rode the subway to the Bronx once a week to study the Talmud with my grandfather. The Talmud is a hard grind in Aramaic, and to lighten up things I would now and then venture an agnostic prod at some tender point of our faith—say, Joshua's stopping the sun and the moon. Grandpa would respond with good-natured scorn, stroking his full gray beard, "Where are you creeping with your lame paws?" It was more pungent in Yiddish, but you get the idea. That question has been occurring to me as I write these words. Disqualified

as I have described myself for getting into these deep murky waters—no academic credentials to speak of, no mathematics beyond half-forgotten algebra—where am I creeping with this venturesome causerie?

Fair question, reader, so let me invite you into the workshop of an old author still creating stories, my work, my intermittent despair, and my lifelong fun. With a new novel recently published and another on the stocks, I have stepped back from my desk, drawn breath, and glanced around the shop for overlooked items. One folder labeled *A Child's Garden of God* lies to a side, more scuffed than most, in which for years I've been stashing false starts on the answer offered by the Bible (insofar as I can grasp it) to the grand *Why* of the child and of stumped agnostics. No wonder I have kept putting it off! A big bite.

Newton summed up his lifework in well-known words:

> I know not what I seem to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell, whilst the great ocean of truth lay all undiscovered before me.

It was this child having fun on the beach who came upon the smoother pebble called the calculus (oddly, the word means "pebble"), enabling thinkers after him to venture

far out on that ocean of truth, toward a distant shore of final theory which, as they keep learning to their gloomy puzzlement, ever recedes. Isaac Newton not only found Feynman's "language God talks," he also mastered God's other language, and studied and wrote on the Hebrew Bible, a fact that embarrasses some scientists. Newton put Feynman's dictum on calculus, which he called "fluxions," in plain words suited to his own faith, *"God created everything by number, weight, and measure."* An agnostic paraphrase for our day might be, *"All that is truly knowable is knowable only by number, weight, and measure."* Or as James Jeans put it, *"God is a mathematician."*

God as Irony

A byname for God in Aramaic is *Atik Yomin,* Ancient of Days. Einstein now and then spoke of his work as wresting secrets from *Der Alter,* the Old One. He was being puckish, of course, and so no doubt was Feynman in calling calculus "the language God talks." Neither savant meant the God of the Bible, the God of Abraham, Isaac, and Jacob, my grandfather's God, and his father's, and my father's, and mine, and Pascal's, and Faraday's, and Newton's. The God of modern scientists by and large is a figure of speech, an ironic flourish. Darwin himself sometimes wrote of God in a religious mode, but in the present day such literal usage

tends to fade out. Feynman, Gell-Mann, Weinberg, and their peers accept Newton's incomparable stature and shrug off his piety, on the kindly thought that the old man got into the game too early. He did not even know for sure that light travels, for in his *Opticks* he refers to the travel of light as an interesting conjecture, based on the equations of a Danish astronomer for the orbit of Jupiter. To the real numbing size of the universe, the naive time-bound giant was blind.

Feynman in three lectures on science and religion dances lightfoot around this grand theme, and ends by endorsing the ethics of a papal encyclical while waving off its pious core. As for Gell-Mann, he seems to see nothing to discuss in this entire God business, and in the index to *The Quark and the Jaguar* God goes unmentioned. Life he calls a "complex adaptive system" which produces interesting phenomena such as the jaguar and Murray Gell-Mann, who discovered the quark. Gell-Mann is a Nobel-class tackler of problems, but for him the existence of God is not one of them.

Weinberg is different, a quarreler with God in the vein of Job, who confronts the Lord straight on with that everlasting religious challenge, the existence of senseless evil in the world of an omnipotent Creator. Weinberg goes further and tells Newton's Creator to his face that on the available evidence, he is a figment. Stendhal put the agnostic view so, "The only excuse for God is that he does not exist," but Weinberg is too serious a thinker to let the Creator off with a Gallic witticism. He is angry at the horrible record

of fanatic deeds done in God's name down the generations, and he will not tolerate facile philosophizing of God back into existence. Better tell it like it is! Newton's God is not there, so no supernatural being can be blamed for the evils of the meaningless human condition, which rises to tragedy only in mankind's dogged gropings for final truth, as in the Book of Job and in Weinberg's writings.

The Stage and the Drama

In dealing with ultimate mystery, one is thrown back on irony and metaphor: the stage and the drama, the quark and the jaguar, the boy and the pebble, the child and the garden. Here is one more metaphor that emboldens me, ill-equipped as I am, to take on at last the big bite. Picture a man who has lived most of his working life in exile, say an American mining engineer in Western Australia. He marries a Perth lady, and forty years slip swiftly and pleasurably by. Comes time for retirement. On balance he decides to live out his years in his native Nevada, and knowing that he may never look on Australia again, he takes one last tour around this remote island continent he has come to love. For the rest of his days he will cherish his memories of that bittersweet farewell.

This lovely sunlit Earth is an exile all of us must leave, one after the other, to return whence we came. I embark

here on a tour of our beautiful little Australia in space, this child's garden of God, at a pause in my storytelling, anticipating a sure farewell at an uncertain time. I invite the reader to join me. On the wing as I am, it behooves me to write out these thoughts while I can, and I won't pretend I write to please only myself. All my working life I have written for readers, and I do so now, be they many or few.

Is the stage really too big for the drama, as Feynman asserted? I believe it's possible to disagree, and that is the main theme of this book. At the outset, let us take a fresh look at the stage, and start with a grand moment in the drama.