

*DEEP INTO **N**NATURE*

(WORKING TITLE)

What We Can Learn from the Tree of Life

Discoveries from a Secret World Around Us

Look deep into nature, and then you will understand everything better.

— Albert Einstein

What can we learn about optimal aging from a 300-year-old Greenland shark that's nearly blind?

Do woodpeckers demonstrate how to protect the brain from head trauma?

How can we improve our education system by studying apes?

Will a fist-size clam show us how to treat Alzheimer's disease?

How do bees practice the ultimate rules of successful teamwork?

What can narcoleptic dogs teach us about weight loss?

Jellyfish are practically immortal; what's their secret?

Should termites and fungi be our mentors in agriculture?

Lions, tigers, and bears don't get depressed, so why do we?

How do naked mole rats, whales, and elephants evade cancer?

By examining a giraffe's neck, can we eradicate cardiovascular disease?

Why do dogs sleep all day, and what can we learn from this to help our sleep?

Trees cannot talk like we do, but they communicate in astounding ways that can help us...

...if we listen.

Welcome to an eye-opening look *deep into nature* from bestselling author David Agus. But unlike Agus's previous works, **DEEP INTO NATURE** takes a radical detour from offering health advice and instead, turns to exploring phenomenal stories of biological wizardry, masterful adaptations, and unparalleled intelligence and mental prowess among outliers in nature from both the plant and animal kingdoms. It's E.O. Wilson meets Jennifer Ackerman meets Lewis Thomas. It belongs as much in category Health as it does in category Science and Nature.

Evolution is the most powerful force on Earth. We humans arrived two seconds ago on the timeline and have been under the same laws of natural selection that have governed life for the past four billion years. But many species pre-date us by a long shot and have had the advantage of many more millennia (eras, really) to exquisitely attune themselves to their environment. We may be able to write computer code, erect complex, sophisticated cities and societies, and contemplate spacefaring, but there is a lot that we cannot do and, relative to other creatures, we don't live that long. And most of our physiological tricks take a lot of energy. Imagine walking into a bar and sitting next to a praying mantis who turns his alien-esque

triangular head 180 degrees to look squarely in your direction (indeed, they are the only insects able to swivel their heads and stare at you; those piercing eyes are much like yours, equipped with 3-D vision and a concentrated area of light receptors to focus on and track you). He would win many bar bets against you, even though your brain is five orders of magnitude bigger. What could you learn from him? A lot.

In **DEEP INTO NATURE**, Dr. Agus takes readers on a richly researched, engrossing tour of nature's best developed blueprints across systems, senses, and survival mechanisms, proposing a provocative question for us all to ponder: Can we recapitulate the biologic adaptations of others for our benefit? To survive another 2 million years, we may need to turn to the innate genius of other species rather than our own.

In addition to highlighting fascinating biology in other life forms that rival science fiction, he also covers little known facts about human capabilities among an extraordinary few—such as those who never get cancer, who have the cleanest arteries, who can't feel physical pain, who carry genetic mutations for devastating illnesses that never materialize, or who never become overweight no matter how hard they try. What can we glean from these wonders? Moreover, Dr. Agus weaves emotive stories into the narrative from his own encounters as a physician who often treats patients facing the end of their life, as well as a leading scientist searching for strategies to prolong healthy lifespan. While it may be hard to relate to a praying mantis, it's not hard to commiserate with the frustrations of a cancer patient, someone who needs a new heart, or a family suffering from the ravages of Alzheimer's disease. These stories help make the connections between our own sapient world and those of other beings that can enlighten, entertain, and perhaps inform and inspire future scientific endeavor.

Readers will finish the book with not only a new appreciation and understanding for the living world around them (much of which is a lot smarter, older, and deftly more cunning than humans), but surprising insights on how they, too, can live better. The goal of the book is also to inspire new ways of thinking and learning so that we can solve greater challenges. Equal parts suggestive and elucidating, **DEEP INTO NATURE** hopes to help shape the frontier of our own scientific inquiry and, ultimately, improve the human condition.

In the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed.

— Charles Darwin