

CHANGE YOUR BODY, CHANGE THE WORLD

REFLECTIONS ON HEALTH AND
THE HUMAN PREDICAMENT



FRANK FORENCICH

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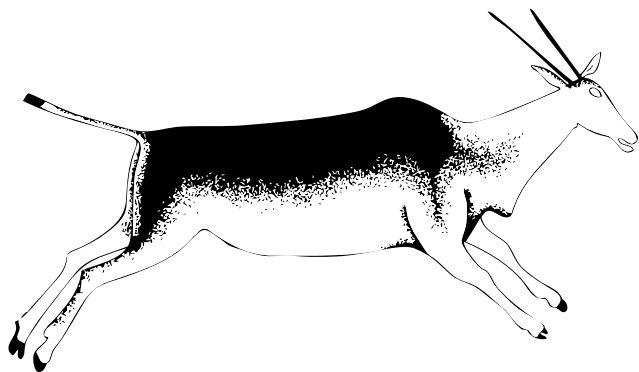
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WARNING

Before beginning a program of sedentary living and isolation from the natural world, see your physician, your therapist and your insurance agent. While you're at it, check with your family and friends. You are about to embark on a perilous lifestyle that is dangerous not only to yourself, but also to those around you.

A truly good book teaches me better than to read it. I must soon lay it down, and commence living on its hint. What I began by reading, I must finish by acting.

Henry David Thoreau





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THE BODY IS VAST

We are ignorant about how we work, about where we fit in, and most of all about the enormous, imponderable system of life in which we are embedded as working parts. We do not really understand nature, at all.

Lewis Thomas
Lives of a Cell

Opinions about the body are like bodies—everybody's got one. We're all intimately familiar with the experience of living in a body and almost everyone believes that they know what they're talking about. We live in our bodies all day, every day and we're quick to suppose that we understand what they are and how they work.

It's an easy trap to fall into of course, but our presumption of understanding erodes at an astonishing rate when we begin to study the body in depth. After a few years of looking at the myriad relationships in and around the body, the familiar starts to look incredible, beautiful, and on some days, completely miraculous. The deeper we look, the more detail we see, the more dynamism we discover and the more astounding the totality becomes. Finally, just as we feel that we're about to grasp the thing itself, we realize that we know almost nothing about it. Ultimately, there's only one appropriate reaction to a deep study of the human body and that is *awe*.

Even the short story is incredible: Each of us is home to some 10 trillion somatic cells, each one a marvel of sophistication in its own right. Within each nucleus lie some 25,000 genes, layered with powerful epigenetic mechanisms that turn genes on and off in response to environmental conditions. At a macro level, we are home to dozens of organs, hundreds of bones and muscles, the whole system orchestrated by a nervous system of dizzying intricacy—dozens of neurotransmitters and uncountable billions of synapses, each in a dynamic dance of growth and decay.

If this was the full extent of our physical complexity, we might be able to get our minds around the body, so to speak. But this inventory of component parts, mind-blowing as it is, is only the simple stuff. The real complications come into play when we begin to understand that all this complexity is massively influenced by personal history, psychology and placebo effects. Belief can have a profound impact on our physical experience and in turn, the function and structure of our bodies.

Even if we could somehow comprehend the effects of individual beliefs on individual bodies, we're still left with the confounding influences of society and culture. As we're now beginning to realize, socio-cultural effects on health can be powerful and highly contagious. In a very real way, our bodies don't even belong entirely to us; to some degree, we actually create one another as we live our lives together. And if our bodies are all linked and interdependent, how will we ever sort out the chain of causality?

Will Durant once observed that "Education is the progressive discovery of your own ignorance." Nowhere is this truer than in matters of the body. It is even more the case when we attempt to study the body in a larger context of natural history, environment and culture. And so it is that I've come to this investigation of the body and the earth, filled with a sense of awe and a nagging, persistent awareness of my ignorance. Fortunately, I belong to a tribe of truly exceptional friends and colleagues who have helped me to hold my own against the forces of confusion and complexity:

Dawni Rae and Alia Joy Bugaboo Shaw, the light of your love has blessed me beyond measure. Sam Forencich, rock of dependable counsel and good humor. Stuart Brown, inspiring mentor and guide. Kwame Brown, co-conspirator in mischief and social activism. Sebastien Alary, extraordinary mountain partner. Susan Fahringer, grounded friend for life. Jeri Helen, expert wordsmith and guardian of language. Jamie Wheal and the EA Alchemists: Josh Leeger, Charlie Reid and Colin Pistell. Tara Wood, Edward Drax and the tribe at Wildfitness.

Other exuberants have stepped up as well: Dave Wilson, Jackie Endsley, Scott McCredie, Martha Peterson, Skye Nacel, Steve Myrland, Mary Collins, Steve Laskevitch, Gary Avischious, Mariah Burton Nelson, J.R. Atwood, Kelly Lambert, Wolf Brolley, Danny McMillian, Erwan Le Corre and Barefoot Ted.

And finally, a special appreciation to my friend and teacher, the Barefoot Sensei. You are a wise guide and powerful visionary; your walk and your talk are strong. My gratitude is immense.

MISMATCH

It may well be that more and more of what people bring before doctors and therapists for treatment—agonies of body and spirit—are symptoms of the biospheric emergency registering at the most intimate levels of life. The Earth hurts, and we hurt with it.

Theodore Roszak
The Voice of the Earth

The year was 1962, the setting a small alpine valley near Lake Tahoe in the Sierra Nevada Mountains of California. I was but a young creature, a curious mammal of no particular distinction. It was a glorious summer day and my first real exposure to an alpine habitat. Our family was camped beside the Carson River and for the first time, I was cut loose to explore the banks of a nearly pristine mountain stream.

My mother kept a vigilant watch as I scrambled up, down and along the stream bank. I soon discovered the boulders—gorgeous granite blocks that were both smooth and rough, clean and inviting. As I climbed and scrambled, I had the most powerful realization of my young life, a personal Zen moment that has stayed with me for almost 50 years.

At first contact with the granite, I was overcome with pleasure as my hands, feet and knees touched the gorgeous orbs. I was instantly delighted with a profound sense of exuberance—astonished that something could feel so good and so right for my body. My muscles rejoiced; these shapes were perfect for pushing, pulling, climbing and jumping. It was like the playground at my elementary school, only a thousand times better. It struck me as a wonderful coincidence: these boulders, this river—this world—was made just for me, for my body. Or, I was made for it. But no matter; every detail of the outer world seemed a ideal match with every detail of my anatomy and physiology. My joy was boundless; I belonged to this place. My body, mind and spirit were happy.

Not surprisingly, the boulders continued to draw me back, even after my family returned home to what would later be called Silicon Valley. As my body matured, I returned to the Sierras at every opportunity and touched the alpine habitat in every way possible: hiking, scrambling and climbing the walls in Yosemite. I loved the granitic world and it loved me back. My body became strong and my spirit soared.

But sadly, the joy of my first alpine contact was later eclipsed by an equal and opposite experience, a toxic event that has repeated itself thousands of times over my adult life. This time I was stuck in traffic somewhere south of Oakland, boxed in by a pod of monstrous 18-wheelers, incarcerated in a cage of sheet metal, glass and plastic. The summertime heat was intense and the exhaust savaged my lungs and eyes. All I could see were cars, trucks, concrete retaining walls and outdoor advertising—no plants, no animals, no color, no texture. Not only was my world lifeless, noisy and hostile, I was utterly powerless to change it or escape. Stress hormones flooded my bloodstream and my spirit raged.

I sought refuge in the radio, but all I could hear were annoying advertisements and yet more noise. As I fought back against my predicament, a voice rose up through the stress of my frantic consciousness: “My body is not made for this! This place is not made for my body.” My tissue screamed, “This is profoundly, fundamentally wrong. It is wrong by a million years. It is a mismatch for every cell of my being; I hate it and I am right to hate it.”

Unfortunately, there have been many such instances of environmental mismatch in my adult life, days in which the moments of distress and alienation far outnumber the Zen moments of perfect fit. Increasingly, as modernity grows ever more tyrannical, my sense of psychophysical alienation grows as well.

This experience is much more than my own neurotic drama, however. My sense of mismatch is now shared by an increasing number of people around the world. We may not put it precisely in these terms, but our bodies know the truth: our modern world is an increasingly unfriendly and alien place. Something is drastically, spectacularly wrong with the world that we have created.

For some, this connection between personal and environmental health is an abstraction; they see no association between a sick biosphere and a sick body. They feel terrible, but can't say why. They see no relationship between the pain in their bodies and the accelerating destruction of habitat around

the world. Others are more sensitive to large-scale planetary influences. Dave Foreman, founder of Earth First!, describes his experience this way:

I am an animal! A living being of flesh and blood, storm and fury. The oceans of the Earth course through my veins, the winds of the sky fill my lungs, the very bedrock of the planet makes my bones. I am alive! When a chain saw slices into the heartwood of a two-thousand year old Coast Redwood, it's slicing into my guts. When a bulldozer rips through the Amazon rain forest, it's ripping into my side. When a Japanese whaler fires an exploding harpoon into a great whale, my heart is blown to smithereens. I am the land, the land is me.

This is not just the poetic raving of a frustrated activist. Say what you will about Dave Foreman and his utopian band of Earth First! eco-criminals, I have no question that Mr. Foreman literally feels these things in his body. I also have no question that these events are likely to have adverse effects on his health and our health as well.

Over the last several decades, many people have had experiences similar to Dave Foreman's and my own. Many of us have felt the extreme physical distress of the body-environment mismatch. Locked in climate-controlled buildings, working around the clock, stuck in cars, eating food-like substances of unknowable origins, living in ambiguous networks of constantly shifting alliances, our bodies begin to squirm, our teeth begin to grind and our spirits suffer. Disease creeps into our tissue.

We write off our anxiety in various ways. Perhaps it is our fault for being unhappy in this modern world. Perhaps we are maladjusted; maybe we need psychotherapy or medication. Perhaps a doctor can help us feel better. Maybe some alternative methods will get us back on track. Maybe we just need to train harder and push through the adversity.

But increasingly, many of us are beginning to realize that, in one sense, it's not our fault at all. We feel an incredible sense of physical and psychological angst, not because there's anything wrong with us, but because there is something profoundly wrong with the world we have created for ourselves. We are OK; it's our human-engineered environment that's killing us.

If you've been suffering this deep primal angst, this sense of environmental-existential pathology, you are not alone. In fact, your suspicions are now being validated by scientists across the spectrum. Paleontologists, evolutionary

biologists, physicians, psychologists, zoologists and animal behavior specialists are all beginning to see our predicament with greater clarity. All animals, including humans, do best in their native environment. Change that environment drastically—as we have done—and you’re bound to see distress. It doesn’t matter whether you’re fish or fowl, buffalo or biped: life in a mismatched habitat is bound to be difficult for flesh and for spirit.

The good news is that the body is set to make a comeback, and not a moment too soon. For centuries the human body has been locked up in a Cartesian prison, stifled by a Puritan-Victorian value system, punished by workaholism, pushed off the land and isolated from the natural world. We’ve disempowered ourselves by putting our bodies into the hands of a professional expert class. We’ve medicalized every dimension of physical living: birth, exercise, food and death. We’ve professionalized youth sports and taken away recess for both children and adults. The body has been incarcerated by its own hand and is now beginning to suffer the consequences in epidemic levels of psychophysical disease and unhappiness: obesity, heart disease, diabetes, depression and physical apathy.

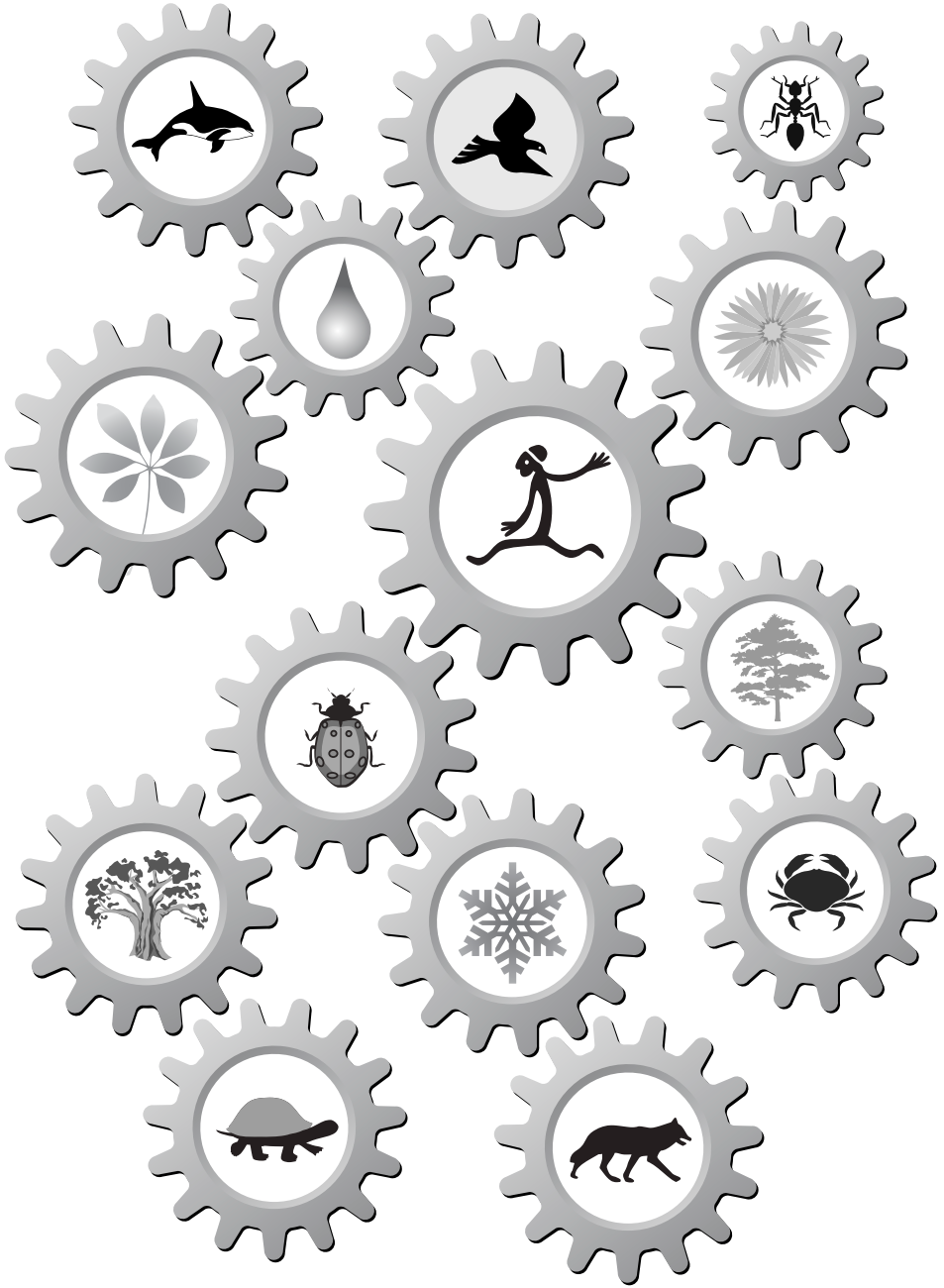
But there’s a change in the air and on the ground. The body’s comeback is being driven by discoveries in neuroscience and social psychology that prove beyond question that the body is deeply and intimately involved at every level of human experience. These discoveries tell us something that is at once ridiculously obvious and profoundly counter-cultural: the body is essential to our lives. Its health is crucially important to the vitality and function of the brain, to social cohesion, creativity, decision-making and in turn, to prosperity and a sustainable human future. It has now become clear that our conventional “brain on a stick” approach to education, management and living is outmoded, ineffective and extremely dangerous.

It’s time for the body to get back into the act.

PANORAMA



Change Your Body, Change the World



THE VERY FIRST THING

I am I plus my surroundings, and if I do not preserve the latter, I do not preserve myself.

Jose Ortega y Gasset

So, you want to change your body? Of course you do. Almost everyone in today's world has some sort of complaint about the state of their body: too fat, too slow, too weak, too funny-looking, too painful. Many of us feel uncomfortable, alienated, isolated and physically unhappy. The human body has become a focal point of discontent and suffering, both real and manufactured.

It's no surprise, of course. We're bombarded with reminders of our physical inadequacies throughout the day, each one drawing attention to our flaws and encouraging us to shape up. The messages are incessant: We need to be skinnier, younger and more muscular. We need to be skinnier, stronger and faster. We need to be more athletic, more stylish, sexier and above all, skinnier.

So, we gather up our resolve, drag ourselves off the couch and look around for a path. But where do we begin? What do we need to get started on the road to health?

It's a common question and lots of experts are standing by to provide the ultimate answer. Depending on what we read, we might discover that we need:

- a doctor's clearance
- a good pair of running shoes
- a gym membership
- a yoga mat and a fashionable set of lycra
- a water bottle and a box of supplements
- an electronic gadget with a software solution

Unfortunately, all of these answers are wrong. Not only are they wrong,

they also distract us from our most fundamental need in the quest for health and physical happiness. That is, if we want to get started on a program for improving our health, the first thing that we need is *a functional habitat*.

Habitat is every animal's life support system. It provides our air, food and water, as well as a sense of identity and meaning. We are completely, utterly dependent upon it. Without a healthy, functioning habitat, there can be no fitness, no athletic excellence, no wellness and no sex appeal. There can be no exuberance, no happiness and ultimately, no life.

In the end, the fundamental principle is as simple as it is stark: *no habitat, no health*. If your life support system doesn't work, your body isn't going to work either, no matter how sophisticated your training program might happen to be. If the biosphere is sick, we are going to be sick as well. If we can't solve our problems of habitat, all the health advice in the world is worthless.

Clearly, our predicament calls for an integrated approach, one that puts the body into context and supports our efforts from both ends of the spectrum. What we need is an orientation that honors both the personal and the global, the physical and the ecological. The age of isolation and separation is over.

WELCOME TO "BIG HEALTH"

This book is a tale of two predicaments. On one hand, our bodies are suffering with an incredible burden of disease, dysfunction and unhappiness. Obesity, diabetes, heart disease, cancer and depression are ravaging the human body. These afflictions, described by the World Health Organization as non-communicable diseases (NCDs), now account for an immense disease burden worldwide. And even among people who are not strictly "diseased," there is a widespread sense of psychophysical suffering and anxiety.

At the same time, we are face-to-face with an unprecedented global ecological breakdown. Habitat is disintegrating all around us. Biodiversity is shrinking before our eyes and natural systems are eroding at a terrifying pace.

Some readers might wonder what these two domains have to do with one another. What does personal health have to do with the state of the world? Why should my fitness, obesity, diabetes, lethargy or depression have anything to do with global warming, oil spills, destruction of rainforests and oceans or the loss of biodiversity? Why should a health and fitness book have anything to say about ecosystems, biodiversity or habitat? Isn't health and fitness something that happens in a gym or a studio?

Conventional approaches address these two domains independently, as if

personal health and environmental health were two entirely different specializations; In conventional practice, doctors work on bodies and biologists work on habitat. But in fact, these two realms are massively interconnected and interdependent. There is a powerful relationship between the way we experience our bodies and the way we relate to the wider world. The process works in both directions, for better and for worse.

This understanding and appreciation for human–habitat interdependence leads us towards an orientation I call “Big Health.” Instead of seeing humans as a stand-alone, isolated species, Big Health recognizes the continuity of all life and the massively interconnected nature of health itself. When we talk about the health of people in habitat, it’s not enough to look at isolated organisms, conditions or variables; we must include the continuous traffic between bodies, minds, environment and society.

In the early days of medicine, physicians could only focus on the health of individuals. Shamans, mystics and broad-minded doctors surely guessed at the health relationships that existed outside and beyond the body, but there was little hard evidence to make such a case. Today however, we have an enormous body of knowledge that proves without question that human health is tightly intertwined with other people, microorganisms, soil, plants, animals and the biosphere at large. Just as our sense of history has expanded by orders of magnitude over the last two centuries, so too has our understanding of health and disease.

This modern orientation towards Big Health is strikingly reminiscent of the holistic orientations described by so many indigenous cultures, from the Ju Wasi of the Kalahari to the aboriginals of Australia. Almost without exception, native peoples describe a comprehensive philosophy that includes mind, body, spirit, land, ancestors and tribe. In aboriginal cultures, all of these elements are essential to a complete human experience and to the health; it simply makes no sense to think of the body in isolation.

Today, we see a rapidly-growing body of scientific verification for many of these linkages. In fact, we are now seeing a powerful trend towards multi-disciplinary and trans-disciplinary studies that cross the circle from body to mind, land, tribe and spirit. There has been a proliferation of such academic alliances in recent decades—an effort to knit and weave previously isolated knowledge specialties into a more comprehensive view of the body and the world. Here’s a brief list of such integrative disciplines:

- biopsychosocial medicine
- medical anthropology
- psychogeography
- sensory ecology
- cognitive ecology
- cognitive geography
- social endocrinology
- social neuroscience
- psychoneuroimmunology
- psychocultural studies
- social psychology
- body-centered psychotherapy
- evolutionary psychology
- evolutionary health and fitness

Taken individually, each of these disciplines is plenty fascinating and well worth exploring in its own right. But taken together, they demonstrate a powerful trend towards an integrated world view, a Big Health, Big Knowledge synthesis that promises to illuminate the myriad ways that our minds, bodies and spirits are connected to the social and living world.

CULTURE JAM

As we set out to explore the perplexing state of the human animal, it's inevitable that we'll be drawn into a discussion of origins. Where did modern disease and atrophy come from? What is the ultimate source of our physical discontent?

These are questions of causation, a study formally known as "etiology." The word is derived from the Greek *aitiologia*, or "giving a reason for." Few of us use this word in casual conversation, but in fact many of us love to talk etiology. We are naturally curious about disease and injury and we want to avoid becoming victims ourselves. And so we study, formally or informally, working the threads backwards from our various afflictions, always trying to get to the root. If we can identify the ultimate cause, maybe we can devise an antidote,

or at least uncover a satisfying explanation that will set our minds at ease.

So what is the ultimate cause for today's lifestyle disease, our physical atrophy and malaise? The knee-jerk answers are familiar and by now, intensely boring. According to popular accounts, sedentary living, bad food choices, stress and toxins are the usual suspects. People eat too much, drink too much and sit on the couch too much. People just need to exercise more, start eating better and learn to relax, right?

This standard explanation is correct, but it's not nearly ultimate enough for our purposes. Yes, sedentary behavior and toxic food-like substances are important contributors to our condition, but these are matters of lifestyle and are often a matter of choice. And this begs a deeper question: why do people make the health choices that they do? Not because of some rational evaluation of costs and benefits; nobody I know reads the scientific literature before eating at the mini-mart or deciding to skip out on physical movement. Rather, we make lifestyle choices because of social contagion. We make poor health choices because we see others around us making similar choices. We are lifestyle mimics; we adopt destructive lifestyles because our friends, families and neighbors inspire us to do so. And in this sense, lifestyle diseases are the product of the culture that we live in.

If we follow the chain of causation backwards far enough, it soon becomes clear that culture has a lot to do with health and disease. It also becomes clear that, if we're going to get serious about health in the modern world, we're going to have to take our culture to task. We're going to have to get outside or beyond our immediate culture. In other words, our inquiry must be meta-cultural.

After all, if our culture is in fact the problem, it does little to remain at its own level. It makes little sense to seek health guidance from within the mindset that created the problem in the first place. As Einstein put it, "You can't solve a problem on the same level that created it."

FROM ME TO WE

As you'll soon discover, this book takes issue with the prevailing "me industry," especially as it appears in the world of pop health, fitness and fashion. In magazines, TV shows and other media, this industry relentlessly promotes the experience of the individual, completely without regard to community, tribe or habitat. Paradoxically, this orientation is proving to be increasingly destructive, not only to community and relationship with the world at large, but to

the very individuals that the industry supposedly champions.

One look at the magazine rack is all it takes to get the picture. We see beautiful individual bodies on display in their Photoshopped glory: gorgeous, fantastic bodies, completely devoid of background, context, environment or habitat. These bodies are spectacular, but they lack a life-support system. They are wonderful, but doomed. Beautiful, but irrelevant.

The “me industry” is built on the misguided belief that the human body is a stand-alone organism and that health is all about individual function, performance and well-being. Before-and-after pictures look like evidence of success, but this is a temporary illusion at best. By isolating individuals from their environment, the “me industry” actually sabotages the health that it claims to promote. Even in the world of holistic health—a practice dedicated to mind, body and spirit—attention is typically focused on the individual’s mind, the individual’s body and individual’s spirit. It’s all about *me* or it’s all about *you*, but it’s never about *us*.

In fact, things that happen outside of our skin have powerful effects on the state of our bodies and lives. Our health waxes and wanes with changes in climate, flora, fauna, soils and habitat. We are deeply embedded in our biological and social worlds; isolation is a dangerous illusion.

By shifting the focus from “me” to “we,” we can actually improve the health of our bodies and in turn, the world at large. Our task is to challenge the culture that produces today’s body-destructive lifestyle and create a new, life-promoting alternative. And so, this book is intentionally subversive and counter-cultural. It points to the folly of the “me industry” and when possible, exposes its oversights and extremity. It recommends that we throw off the myopic focus on single individuals and concentrate instead on relationships, systems and processes. It takes on convention, assumptions and tradition. So be forewarned: This is not a safe book.

WHAT’S IN IT FOR US?

Since books are purchased and read by individuals, it seems sensible to inquire as to how an individual might benefit from reading this one. But in light of what we now know about the human body, the question seems paradoxical and gets us started off on the wrong foot. It asks, in effect, “How will taking the focus off *me* benefit *me*?”

So we begin with a caution: Yes, you’ll find ideas here that will improve the condition of your body. You may even pick up some clues that will help

you look and feel better. You just might discover ways to improve your performance, recover from injury faster or live a little bit longer. If you take these suggestions to heart, you'll probably lose a few pounds, gain some muscular strength and enjoy a renewed sense of vitality.

But these are inadvertent, tangential benefits. The real goal is to explore the way we create our bodies in relationship to culture and our world. It's all about creating a virtuous circle: If we can take a few steps towards creating a healthier *we*, we're likely to create a healthier *me* as well. Along the way, you'll enjoy some tangible benefits to body and health. In the process, you'll

- create a more meaningful sense of health
- increase your physical happiness
- expand your sense of possibility in human movement
- align your quest for health with the pressing issues of the modern world
- broaden and extend your vision of what it means to be healthy
- contribute to a healthier habitat

It's all about creating cycles of positive causality, life-affirming ideas, memes and behaviors that feed back on themselves to generate even more of their original essence. Do some vigorous movement for a few weeks and you'll enjoy an elevated mood and improved cognitive function. In turn, your elevated outlook will give you the incentive to pursue more ambitious challenges. You'll not only feel better, but you'll want to get out explore and engage the world.

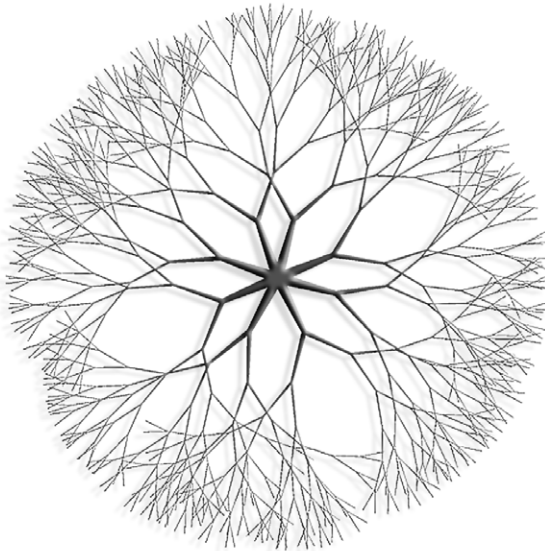
This process naturally ripples outward to broader levels of society, culture and environment: Healthier people tend to create healthier organizations. They are less depressed, less hostile and make better decisions. They are more ambiguity-tolerant and stress-resistant. This adds up to improved social and organizational performance, which in turn brings more benefits to everyone involved.

INTO THE BUSH

So off we go on our walkabout, into this terrain of essays and commentary. Our journey will take us deep into a bushy habitat of bodies, health, physical training, culture and lifeways. As with any journey into the bush, the trail will branch off several directions, wandering its way into a mosaic landscape of hills, mountains, river valleys, marshes and vistas.

As you read these essays, don't expect a linear sidewalk with bright lines, mileage markers and GPS coordinates. This book is not a linear narrative. Rather, it's the creation of a wild animal mind coming to grips with its predicament. You won't find curbs, escalators or handrails on your path; you won't be able to download a map onto your smartphone or get real-time position reports of your progress. Instead, expect to find a good many roots and rocks, even some downed trees, snowfields and cliffs. Don't be surprised if the trail takes you in some new and surprising directions.

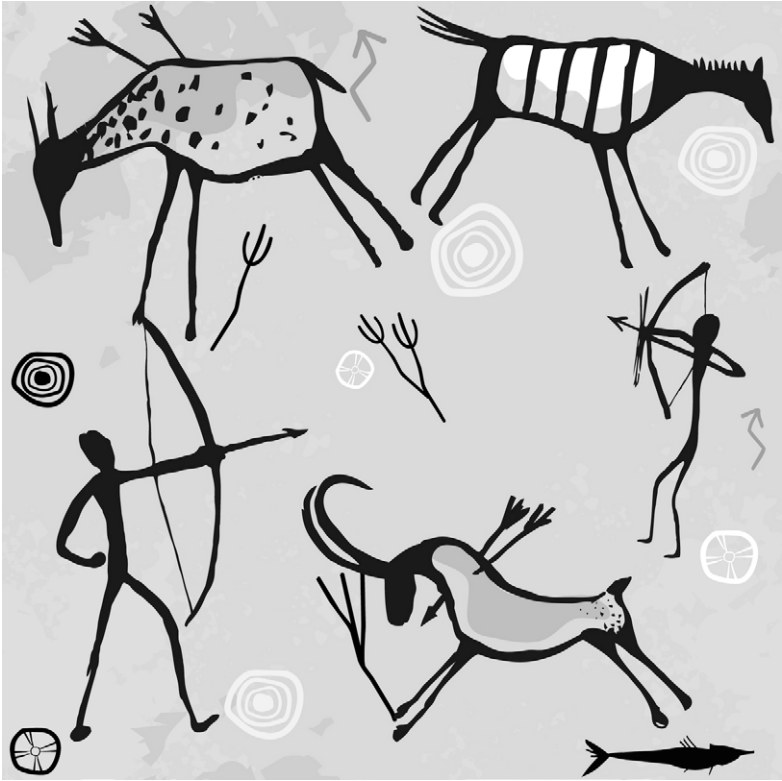
And this is precisely the point. Natural travel is always a negotiation between body and terrain. So use your senses and stay alert for opportunity. Follow the path as you see it, but craft your own story and meaning as you go. Get your body involved in the process of observation and understanding. Pay attention to the lay of the land and you'll find your way.



BODY TALK



Change Your Body, Change the World



PRIMATE'S PREDICAMENT

The deviation of man from the state in which he was originally placed by nature seems to have proved to him a prolific source of diseases.

Edward Jenner

He who conceals his disease cannot expect to be cured.

Ethiopian Proverb

So what's the state of the animal in the modern world? Is he living large or just getting by? Is his body happy and powerful or is he suffering in a state of injury and disease?

Opinions vary, but it's starting to look like a "good news, bad news" situation. The good news is that lifespans are up. People are living longer than ever before in recent history and for many, the quality of life is comfortable, even wonderful. If you have the resources, modern life is not only easy, it's filled to bursting with opportunities for experience, learning and growth. If you have the resources, you can get excellent food year-round, expert medical care and access to education that is absolutely mind-blowing. If you have the resources, you can live a life of incredibly robust health and vitality.

But sadly, there's also a lot of bad news for the human body and for human life as a whole. For all the increases in lifespan and life quality for the affluent, too many of our bodies are suffering. A quick look around our public spaces tells the story: an enormous percentage of us are obese and for all practical purposes, physically disempowered—unable to run, jump, play or enjoy our native physicality. Surveys consistently reveal high levels of body dissatisfaction, even among people who are otherwise healthy. The paradox is striking: the human body, living in the midst of the greatest health opportunities in

human history, has become weak, dysfunctional and physically illiterate.

By almost any definition or measure, serious disease is rampant. Obesity, heart disease, diabetes, metabolic syndrome, depression, neurological disorders and cancer are not just widespread; they are quickly becoming the norm. Only a few thousand years ago, humans were robust, vibrant, highly functional wild animals, but today, we are chronically diseased and in nearly constant need of pharmaceuticals, surgery and other heroic treatments.

Actual physical disease is obviously a major problem, but it's just the tip of an enormous psychosocial iceberg. Unhappy bodies pull our spirits down into vicious cycles of decreasing vitality, weakened immunity, poor decision-making and further physical unhappiness. Even worse, ill health ripples throughout society; as lifestyle disease becomes widespread, ever more people succumb to its pull.

Of course, humans have always faced injury and disease. Physical pain and injury have long been part of the human experience, indeed part of the experience of all animals. Throughout the grand scope of human history, our species has always faced physical and health challenges, no doubt going back to our history as tree-dwelling primates. But what we're seeing in the world today is something different, unique and profoundly disturbing. If present trends continue, *Homo sapiens* is soon to become a chronically diseased animal.

ACT ONE: THE PALEO

The history of human disease plays out in three main acts. To get the picture, let's begin by going back a million years or so to the world of our primal, hominid ancestors. In this Paleo world, insults to the hominid body were physically dramatic, sometimes acute. Infant mortality was probably high, exposure and dehydration were not uncommon. Hunters and gatherers probably suffered bruises, sprained ankles and lacerations, not to mention the dramatically life-threatening challenges of snakebites and predation.

Nevertheless, primal peoples enjoyed generally robust health and high levels of physical capability. Infectious disease epidemics were either rare or unknown. When people live in small, widely dispersed tribal bands, virulent microorganisms simply do not have the opportunity to circulate and multiply. If pathogens take hold in a small tribe, they might well very well wreak havoc, but the tribe would either die out or disperse, leaving other tribes unaffected.

ACT TWO: THE AGE OF INFECTION

As humankind entered the age of agriculture around 10,000 years ago, patterns of physical affliction changed dramatically; we began to experience a radically new threat of infectious disease. Increasingly crowded conditions, poor sanitation and active commerce between regions combined to produce drastic increases in infectious disease mortality.

A quick Wikipedia search reminds us just how lethal microorganisms can be:

The Black Death of 1347–1352 killed 25 million in Europe. (25–50% of the populations of Europe, Asia, and Africa).

The introduction of smallpox, measles, and typhus to Central and South America by European explorers during the 15th and 16th centuries caused pandemics among the native inhabitants. Between 1518 and 1568 the population of Mexico fell from 20 million to 3 million.

Smallpox killed an estimated 60 million Europeans during the 18th century. (approximately 400,000 per year)

In the 19th century, tuberculosis killed an estimated one-quarter of the adult population of Europe.

The Influenza Pandemic of 1918 killed 25-50 million people (about 2% of the world population).

ACT THREE: LIFESTYLE DISEASE

Given the sheer carnage inflicted by microorganisms, it's not surprising that the survivors of infectious disease stepped up to create a range of countermeasures. We developed vaccines, sanitation and education to keep most of infectious epidemics at bay. Today, the threat of infectious disease continues to linger in the background, but it tends to be far removed from day-to-day consciousness, especially in the affluent West. Few of us worry about smallpox, polio or the plague anymore.

What's different today is the rapid increase in "lifestyle disease," afflictions that have nothing to do with microorganisms: obesity, heart disease, diabetes,

metabolic syndrome, depression and, to some extent, cancer. These are the so-called “non-communicable diseases” or NCDs.

The death toll from these largely preventable conditions is enormous and growing. According to the World Health Organization website more than 35 million people died of NCDs in 2005 — this represented 60% of all deaths worldwide.

This figure is appalling of course, but it doesn't begin to reveal the true extent of the catastrophe: for every person who dies of obesity, diabetes or heart disease, thousands more live lives of diminished movement, vitality and joy.

PALEO BODIES IN AN ALIEN ENVIRONMENT

To get to the root of our predicament, we need to understand that we are, in a very real sense, living out of context. Our bodies have a long history of evolution and adaptation in natural environments, but today we live in an entirely different world.

Many anthropologists, biologists and physicians have made this observation, but most individuals in our society have yet to feel the true extent of the mismatch. Without an appreciation for our deep physical history, many of are duped by the modern world. We adapt quickly to the circumstances of our birth and may even come to believe that things have always been the way they are today—that a world of cars, couches, concrete and computers is normal and natural.

But when we take the long view of human history, we begin to realize that our modern industrialized world is neither normal nor natural. Today's challenges are unique and we are ill-prepared to deal with them. Our aboriginal impulses, once a powerful force for survival and health, have now become threats to our vitality and our well-being.

To really understand the depth of mismatch between our physical heritage and the modern environment, it's essential that we imagine human prehistory in detail. When we do, we begin to realize that until quite recently, we were highly intelligent wild animals living in natural outdoor environments. We lived outdoors all day, every day, squeezing out a living from the land.

Thousands of generations of evolution sculpted our bodies and brains to fit the conditions of the natural world. In fact, every detail of our anatomy and physiology is the way it is because it helped us to survive on the semi-wooded grasslands of East Africa. In our essential form, our bodies are all aboriginal, all African, all indigenous. Our bodies and brains are run by legacy programming

from this not-so-distant past. And now we find ourselves living in a world of radically different character: an alien environment.

WELCOME TO YOUR ALIEN WORLD

The modern environment is alien to the human body in many ways. Most conspicuously, it is clear that we now live in an alien kinetic environment. We are no longer required to move our bodies in any significant or sustained way. Walking, once the gold standard of human movement, is now almost entirely optional for the modern American. The hunter-gatherer daily average, often estimated at 5-10 miles, now seems like an outrageous hardship to most.

It's also clear that we live in an alien nutritional environment. Only a few thousand years ago, all food was wild, organic, local and unprocessed. Today, almost everything we find on our grocery store shelves is processed, refined and trucked in from some remote location. No longer do we eat real food obtained by our own hands or by those of a tribe member; we eat "edible food-like substances" that are completely divorced from the land. Not only do we eat immense quantities of food, we have no idea where most of it comes from.

Our sensory environment is also alien. Because we no longer walk the land, our vision is distorted. Instead of scanning a three-dimensional world for danger and opportunity, we fix our vision on a single point in space, either a computer cursor or the bumper of the car in front of us. Hearing is under constant assault by noise almost everywhere we go. Skin is protected from all manner of heat, cold, sun and contact. Indoor textures have been smoothed down to featureless, plastic monotony. Natural odors are masked by (often toxic) airborne chemicals wafting through our homes, cars and workplaces. And our feet, bound up in shoes almost from the day of our birth, no longer feel the tones of the earth.

Our circadian experience is profoundly alien as well. We no longer pay much attention to the master physiological regulator, sunlight. Instead, we substitute a weak, artificial imposter that plays havoc with every metabolic process in our bodies. Distorted light-dark cycles, jet lag and shift work punish our bodies in ways never before experienced by human beings.

We also live in an alien choice environment. All across our experience, from the mall to the office to the household, we face an explosion of options. There are thousands of decisions to be made each day in matters of commerce, education, finance, technology, administration and medicine. We have more tools, more methods, more information and more complexity than ever

before. This crushing load of choice is profoundly abnormal and extremely stressful.

To make matters even more challenging, we now live in an alien social environment. By nature a hyper-social tribal animal, we have lived the vast majority of our time on earth in small bands of 20 to 100 people. Our social brains, awareness and sensitivities are all wired for small group living. But today, our “tribes” are either very small or extremely large by comparison. We suffer from loneliness or are overwhelmed with social stimulation, or both. Workplace “tribes” are organized around corporate priorities, not human social needs. Online networks bring us into patterns of relationship that are entirely without precedent.

INVERTED PERSPECTIVE

Depending on your childhood experience, this claim that the modern world is “alien” will seem either obvious or preposterous. If you’ve grown up in the outback of Australia or the rural backwoods of North America, the wild outdoors is your reference point for how the world looks and feels; the natural outdoor world is “normal” and the shopping mall is “alien.” But if you are one of the millions who have grown up in a shopping mall-cubicle-SUV world, you may come to the opposite, unconscious conclusion that the mall is “normal” and the natural outdoor world is “alien.”

Of all the tragedies of the modern world, this is perhaps the most disturbing and dangerous. Not only have we positioned ourselves outside the source of life, many of us now feel that nature itself is alien. Too many of us, especially young people, now feel comfortable only in insulated, artificial circumstances and are reluctant to expose their bodies to the very things that would promote health and happiness. Our native habitat of land, water, plants and animals now feels like an unfamiliar and hostile world: nature now feels like other. Woody Allen spoke for far too many of us when he described his relationship with the natural world: “Nature and I are two.”

A PARADOXICAL PREDICAMENT

Like it or not, we live in a world that is profoundly dangerous to our bodies, minds, spirits and our future. This statement, of course, sounds odd to many modern ears. After all, unless you live in a war zone, today’s world doesn’t look or feel particularly hostile. On the contrary, we see ample

evidence of body-friendly conditions everywhere we look. Modern buildings keep us warm, dry and cool. Modern clothing keeps us clean and comfortable. Modern vehicles take us where we want to go. Our modern food industry delivers ample calories to us virtually on demand.

Yet this is precisely the problem. The hostility of the modern world doesn't come in the form of extreme heat and cold, lightning strikes or predator attacks. Rather, it comes in the form of excess ease, insulation and affluence. The modern environment is hostile precisely because it's too comfortable. It's hostile because it no longer challenges our bodies to sweat, strain or struggle. And without physical challenge, our tissue quickly breaks down. Physiology and psychology begin to drift, unable to find a relationship with the world at large. Without challenge, the organism loses focus and becomes susceptible to disease and dysfunction.

This is one of the most striking ironies of modern civilization: by engineering our environment to take care of our every physical need and desire, we have simultaneously disempowered ourselves and brought disease upon our bodies. What makes our modern epidemic so perplexing is that it's self-inflicted—not consciously, intentionally or masochistically, but engineered by our own hands nonetheless. This makes our challenge doubly difficult. Not only do we have to deal with the actual physiology and biochemistry of the diseases themselves, we also have to alter the strategies, institutions, behaviors and values that brought us to this point. Far more is required than simply healing individual people; we have to transform the culture that brought us here.

ON THE BRINK

Unfortunately, we are completely unprepared to meet this challenge. We lack knowledge, ideas and orientation. In this sense, we are like peasants of the Middle Ages, standing in our fields and villages, watching in horror as infectious disease ravages our communities. People are sick and dying in vast numbers all around us, but we feel powerless to save them.

The magnitude and severity of today's lifestyle diseases may not be as dramatic or lethal as the Black Plague, but they are deadly serious all the same and like our peasant ancestors, we are woefully unprepared to deal. The naked fact of public health in the modern world is that, for all our advice and pronouncements about what needs to be done to support human health, we really have no experience to work with. We are at the zero point in this epidemic and it's time for us to learn fast.

A CALL FOR CREATIVE DISRUPTION

As we stand on the brink of this unique and disturbing public health catastrophe, one thing becomes obvious: our situation calls for radical and disruptive creativity. Given the paradoxical and urgent qualities of this modern day lifestyle plague, we cannot hope to make progress with conventional, culture-as-usual solutions.

The body, when left to its own devices, will commit a form of slow-motion suicide. Our paradoxical challenge is to save the human body from its Paleolithic impulses and inclinations. Those things that feel easy—sloth and high-calorie foods most notoriously—lead towards disease. To save the body, we need to do things that may feel wrong, things that feel challenging and uncomfortable.

Conventional solutions merely rearrange the deck chairs on our public health Titanic. It's not enough to say that people need to exercise more and eat less. And it's clearly not enough to seek a techno-pharmaceutical solution to every physical and psychological ailment.

What we need is disruptive creativity and paradoxical prescriptions. In other words, we need some crazy-sounding ideas, ideas that run counter to our conventional impulses and institutions. Instead of seeking ever more efficient ways to make our lives easier, we need to find creative and interesting ways to make our lives harder, in some cases much harder. We need to find ways to reintroduce meaningful and sustained physical challenge into modern life. We need more exposure to the natural world: more heat and cold, more sweat and shivering, more contact with dirt, plants and animals, more scrapes and bruises, more heavy loads and long days. And above all, more physical risk. This means going against the grain of hundreds of years of Western industrial culture and commerce.

Naturally, this proposal will be a hard sell and opposition will be instantaneous. We are heavily invested in physical comfort, ease and insulation from the natural world. Entire industries are dedicated to taking physical effort out of human life. People will protest and claim their right physical apathy, but the challenge remains and it's time to step up, both literally and symbolically. It's time to expose our bodies to the natural world and walk the path of physical hardship. The body needs some tough physical love.

ESCAPE FROM THE CAVE

As we ponder the state of the modern human animal and our increasing isolation from the natural world, we're reminded of Plato's famous Allegory of the Cave. In *The Republic*, Plato imagined a group of people chained in a cave all of their lives, facing a blank wall. These people watched shadows projected on the wall by a fire, and began to ascribe forms to them. According to Plato, the shadows are as close as the prisoners get to seeing reality.

The allegory is a spot-on description for the alienated and denatured consciousness of the modern world. The cave, of course, is the insulated world of the shopping mall, airport, cubicle and SUV. Young people grow up in this cave and come to perceive it as normal. They watch transfixed as the digital shadows flicker on the walls of these caves, oblivious to the wider world outside.

Because we are a highly adaptable species, we are good at adjusting to life in the cave and we may even come to see it as "normal." But ultimately the cave is dangerous to our health and even our sanity. Our minds and bodies can adapt to almost anything, but the cave insulates us from the very forces that sustain our vitality.

To preserve our health, vitality and happiness, it is essential that we get out of the cave and integrate ourselves back into the natural, outside world. This suggests a new, more expansive role for today's trainers, leaders, teachers, therapists, coaches and senseis. For Plato, the philosopher was like a prisoner who is freed from the cave and who understands that the shadows on the wall do not represent reality. The philosopher's purpose is to show the path out of the cave, back to the land, back to habitat and back to vitality and health.

Today's trainers, leaders, teachers, therapists and coaches can take a similar role. We may be in the business of teaching specific skills, knowledge and ideas, but beyond this content lies a larger and more compelling purpose: showing people the way out of the cave, into the natural physical and living world. Open the door for people to reconnect with the forces, qualities and elements that give our bodies life. Let's lead by example and show our students what "normal" really is.



THE PRIMAL SCHOLAR

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- Featured presenter: First Annual Conference on the State of Play Science, Stanford University, October 2008
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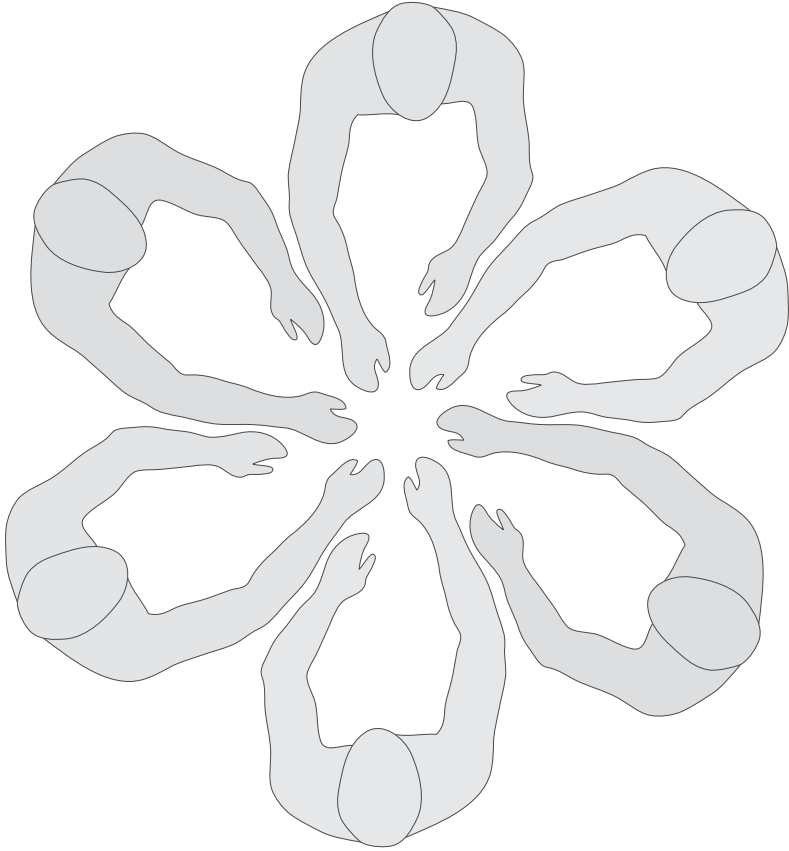
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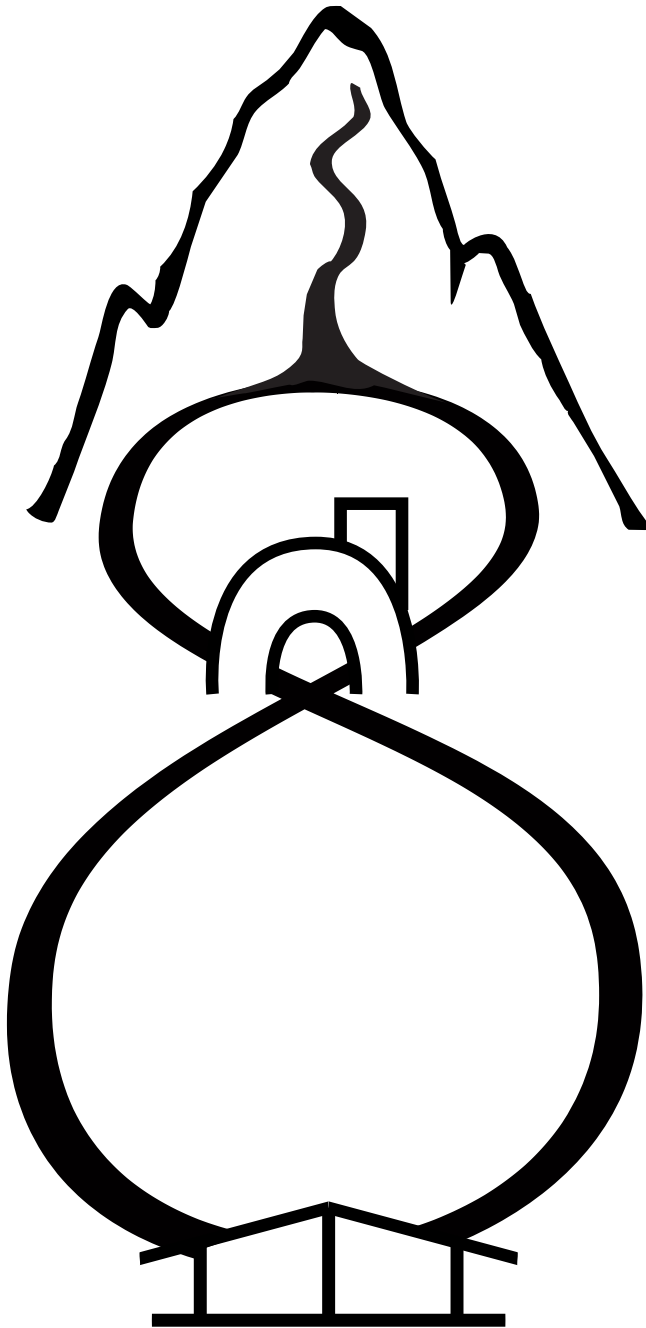
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