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"A useful and fascinating read for climbers at all levels of ability." —Lynn Hill

Maximum Climbing

Mental Training for Peak Performance and Optimal Experience

HOW TO CLIMB™ SERIES



ERIC J. HÖRST

Maximum Climbing

“For anyone interested in learning more about how the mind works and how important psychological factors are in determining the quality of our experience and performance, *Maximum Climbing* is a useful and fascinating read. In this powerful text, Hörst presents an impressive collection of mental training techniques, practice exercises, and insights for climbers at all levels of ability.”

—Lynn Hill, first woman to climb 5.14

“There are volumes of books on how to train your body for climbing, but *Maximum Climbing* teaches you how to climb better by flexing the most critical muscle—the three-pound one between your ears. Using a highly detailed step-by-step process that is clearly presented for beginner to expert climbers, Eric Hörst instructs on mental training. His book runs that gamut from A to Z, but my favorites include how to manage fear, build confidence, and focus—three areas all of us need to work on but, until now, didn’t even know where to begin.”

—Duane Raleigh, Publisher/Editor-in-Chief of *Rock and Ice*

“Eric Hörst’s new book, *Maximum Climbing*, provides climbers with a clear path to athletic mastery. As a climber and performance coach, I’ve sought out every piece of information I could find on improving athletic performance. Use the methods put forth in this book, and you will improve; not just as a climber, but as a human being.”

—Steve Bechtel, CSCC, Elemental Training Center

“Eric Hörst’s *Maximum Climbing* fills a deep need for a training book that explores the broad array of elements that make a climber and fully integrates the physical, technical, mental, and spiritual. This is a book as much about soul as grit, as inspiring as it is educational.”

—Susan E. B. Schwartz,

author of *Into the Unknown: The Remarkable Life of Hans Kraus*

“Dissolving the illusion of mind/body separation, Eric Hörst’s *Maximum Climbing* shows the way to achieve what I like to call one’s Vertical Path: a completely holistic state of being in which the spirit—the essence of climbing—is woven into the tapestries of our lives.”

—John Gill, legendary boulderer and master of rock

“I’ve been climbing forty years and studying it as long, yet a great deal of this book was new and, even better, helpful to me personally. *Maximum Climbing* is in part the author’s personal manifesto, and it is worth reading on that basis alone.”

—Dr. Mark Robinson, veteran climber
and doctor to the climbing stars

“In this fascinating work, Eric Hörst reveals many of the secrets to rock climbing your best by tapping into the vast potential of the human brain. Soundly based in scientific research, *Maximum Climbing* is both user-friendly and interactive, drawing the reader into the book’s ideas and concepts through self-tests and exercises. I will strongly recommend this groundbreaking work to every one of my climbing students.”

—Alli Rainey, professional climber,
writer, and climbing coach

“Do you really want to be the best climber that you can be? Then read all of Eric Hörst’s how-to books and, in particular, read *Maximum Climbing*! Get out your highlighter for this powerful book. I did!”

—Hans Florine,
El Cap speed climbing record holder and
author of FalconGuide’s *Speed Climbing*

“As both a neuroscientist and avid climber, I can’t help but love this book! I found *Maximum Climbing* to be a fascinating amalgamation of both the intellectual and athletic parts of my life. As a result, not only do I now look at climbing differently, but surprisingly, I now look at neuroscience a bit differently as well. *Maximum Climbing* is a profound text that will revolutionize how you think about climbing, how you train for climbing, how you experience climbing—and perform—whether in the gym, or out at the crags!”

—Courtney Behnke, Cognitive Neuroscience
Lab manager, University of Michigan

“As someone who has spent a lot of time and energy with mental training, I can say with confidence that *Maximum Climbing* is your best tool for taking control of your most powerful asset as a climber: your mind.”

—Kevin Jorgeson, highball sendmaster

“Eric Hörst is one of those exceptional individuals who radiates positive energy virtually wherever he goes. Just to be in his presence recently I felt the urge to train again, to go up to the rock and once again try to conform my hands and fingers to the holds.”

—Pat Ament,
legendary climber, poet, and author of
Master of Rock: The Biography of John Gill

H O W T O C L I M B™ S E R I E S

Maximum Climbing

Mental Training for Peak Performance and Optimal Experience

Eric J. Hörst

Foreword by Richard Fleming, PhD

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*To Todd Skinner, one of my greatest climbing influences.
And to my parents, Bob and Ethel Hörst, for their
unconditional love and support.*

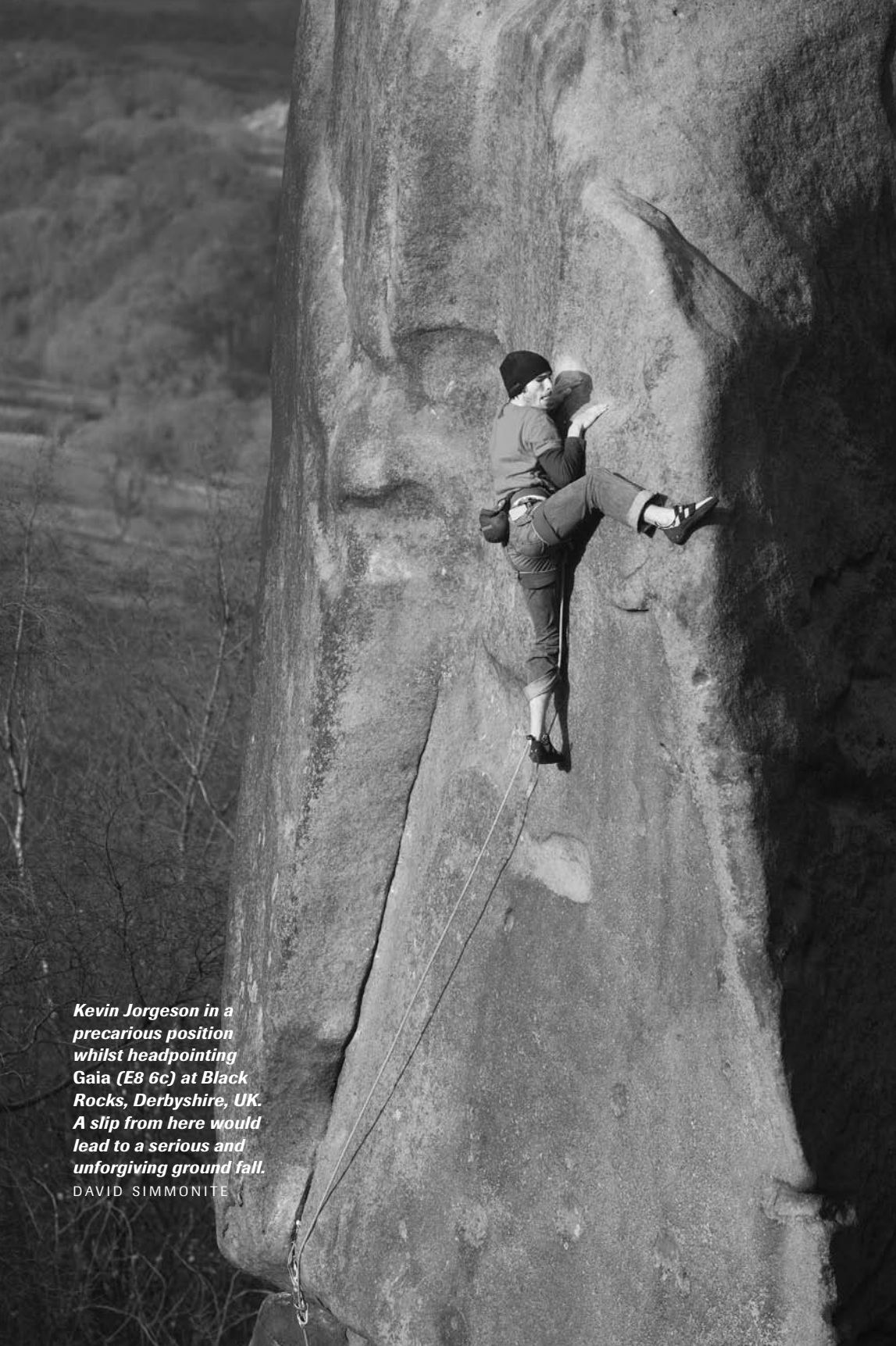
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This is an instruction book about rock climbing, a sport that is inherently dangerous. Do not depend solely on information from this book for your personal safety. Your climbing safety depends on your own judgment based on competent instruction, experience, and a realistic assessment of your climbing ability.

The training advice given in this book are the author's opinions. Consult your physician before engaging in any part of the training program described by the author.

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Kevin Jorgeson in a precarious position whilst headpointing Gaia (E8 6c) at Black Rocks, Derbyshire, UK. A slip from here would lead to a serious and unforgiving ground fall.

DAVID SIMMONITE

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Foreword

The book you hold in your hands is a first. Sure, other climbing authors have delved into the psychology of rock climbing and have offered credible programs for improving climbing performance. What's different here is that Eric Hörst has gone many steps deeper than his predecessors to give us a comprehensive and up-to-date guide on how we can apply the findings from research on brain science and human performance to our own rock climbing (and life) pursuits.

Mental training may well be the final frontier for climbers, as physical limits are reached. But it's a relatively new frontier. Whereas many cognitive-behavioral performance improvement strategies have been validated, much research is still needed on the underlying psychology of brain-behavior relationships, and on the practical approaches that will come from that research. *Maximum Climbing* represents a solid starting point for teaching us in depth about what is known about the psychology of performance applied to climbing, and for exploring and interpreting "works in progress" in the area of brain and behavior science.

Eric Hörst has climbed at a high level for thirty years, and he has written authoritatively on the sport for nearly as long. Eric penned his first article on mental training for *Rock and Ice* in 1988, and in 1990 he wrote a series of three articles on developing "mental muscle" for *Climbing*. If you've read some of the many books he's written since, including *Training for Climbing*, *How to Climb 5.12*, *Learning to Climb Indoors*, and *Conditioning for Climbing*, you'll probably agree that when it comes to mental and physical training, Eric Hörst is climbing's most authoritative author.

I, too, am a longtime student and researcher of climbing performance with a focused interest in the psychology of human performance. I began climbing in 1974 and spent the late 1970s as a full-time climbing instructor based in North Conway, New Hampshire. In 1980 I was pleased to do the FFA of *Heather* (5.12b) on Cathedral Ledge, one of the first 5.12s in the northeastern United States. Shortly after, I took an eight-year hiatus from climbing, during which I went to grad school, got married, launched an academic career, and had two beautiful daughters. When I returned to the game, sport climbing, sticky rubber, and climbing gyms had livened things up, and bouldering was soon to flourish again. I got re-addicted and, as a psychologist, also became fascinated with the mental and behavioral aspects of climbing and training—in recent years I came to engage Eric in numerous discussions and collaborations relating to physical and mental training for climbing.

Before returning to talk about *Maximum Climbing*, I want to share a current and relevant psychological perspective on the development of expert or elite-level performance. It concerns yet another chapter in the age-old debate over nature versus nurture, and it goes like this: While genes certainly play a role in what individuals can achieve, when you look more objectively it is hours of deliberate practice that actually distinguishes top experts from otherwise reasonably

accomplished performers. Deliberate practice refers to a persistent (many hours), structured, and disciplined approach (goals, monitoring, and feedback) to engaging in the full range of mental and physical activities needed to improve performance in a certain area. The power of deliberate practice has been shown to apply to music, art, and a host of sports. It is transferable to rock climbing, and indeed supports much of what Eric offers in *Maximum Climbing*. In short, while spending many hours engaged in climbing is important, at the higher levels it is not the mere volume of effort that matters most; it is how we configure our climbing and training activities that will lead to the maximum result. Training deliberately, in a manner that fully engages our brain–behavior system, is what will see us through to the next level. Throughout *Maximum Climbing* you will find well-reasoned, scientific information that will guide you to plan, think, and act deliberately in your quest to improve your performance.

Maximum Climbing proceeds from the premise that “we climb with our minds.” While it’s true that external environmental events such as peer pressure and competition can influence our climbing, for better or worse, it’s how we come to understand and command our internal environment—our thoughts, feelings, and emotions—that sends us on the path to our biggest breakthroughs as climbers. Eric brings us on a trek that begins in the brain. We learn about complex neurodevelopmental processes that underlie and, reciprocally, are affected by the acquisition of complex action. There are plenty of practical tips on how to train for optimal brain development, so science and practice are nicely melded. Eric then moves on to present a highly engaging discourse on the cognitive, emotional, and behavioral factors that influence our performance, again supported throughout with a full complement of practical strategies from sport psychology that we can use to take charge of our own personal climbing trajectories. Finally, Eric serves up three basic programs, so we can each find our place on the novice-to-expert continuum. Once you have established and tailored your program, you will find that *Maximum Climbing* will be your “go-to” resource as you advance and find even greater enjoyment in this amazing world of climbing.

RICHARD FLEMING, PHD
Associate Professor in Psychiatry
University of Massachusetts Medical School

Acknowledgments

I've been thinking about writing this book for more than twenty years. In fact, I remember drafting a brief outline for a book on mental-fitness training while on a road trip out West in 1990. In the preceding years I had read several books on sports psychology, and I felt that I had recently broken some personal barriers via mental training. And while I went on to write a trilogy of articles on mental training for *Climbing* magazine that summer, I really had no idea how to write a book, nor did I have the subject figured out well enough to write a comprehensive how-to guide.

You could say that I spent much of the next two decades learning how to write a book and researching and experimenting with methods of mental training. However, it was not until an illness shut me down for most of a year that I had the time—and felt the urgency—to solidify my ideas into words on a page. Today you are holding the final product of this arduous year (of writing and getting well) and a twenty-plus-year inward journey!

This book integrates a vast array of information that I've gathered through my extensive studies and by way of conversations with many climbers as well as professionals in the field of psychology and human performance. Most important, in recent years, has been time spent climbing and discussing all things performance with Rick Fleming, a PhD psychologist and researcher with University of Massachusetts Medical School, and neuropsychologist Dr. Jim Sullivan. Add in dialogue with motor learning and performance researcher Dr. Richard Schmidt, and you can see that I have been blessed with three excellent “consultants” during this multiyear writing endeavor. I am also fortunate to have numerous veteran climbers, both rock stars and climbing coaches, who reviewed the manuscript to provide feedback and advanced reviews, including Pat Ament, Courtney Behnke, Steve Bechtel, Han Florine, John Gill, Lynn Hill, Kevin Jorgeson, Dougald McDonald, Alli Rainey, Duane Raleigh, Mark Robinson, and Susan E. B. Schwartz. So it is with deep gratitude that I thank the aforementioned friends of mine, as well as the countless climbers with whom I've talked training over the years.

After the writing is done, my manuscript was crafted into this nifty book by the good people at FalconGuides and Globe Pequot Press. Therefore, I'd like to extend a sincere thank-you to Scott Adams, John Burbidge, Laura Jorstad, Casey Shain, and all others of the Falcon team. I must also thank the photographers whose fantastic imagery adds another inspirational dimension to the book. Kudos to Danno Brayack, Jimmy Chin, Bill Hatcher, Keith Ladzinski, Andy Mann, Celin Serbo, David Simmonite, Eric McCallister, and Jorge Visser for the great pix! Finally, I am grateful for the climbing companies that continue to support me and my many projects, including Nicros, La Sportiva, Verve, and Sterling Ropes.

Many thanks to my small circle of close friends and family who provide aid and comfort and, most important, tolerate my obsessive tendencies toward work,

working out, writing, and climbing. In particular I must acknowledge my parents, Bob and Ethel, my wife, Lisa Ann, and my sons, Cameron and Jonathan, for supporting me and sharing in the activities that I'm so passionate about. I love each of you more than words can express.

Finally, I thank all the readers of my previous books who have written to me, or communicated in person, about their successes and breakthroughs both on and off the rock. Such feedback, expressing how my work enhances a reader's climbing and life, helps me justify spending so much time writing about an activity that could be viewed as meaningless and self-centered. Of course, we all know the truth—climbing is a rich, magical activity that shapes our characters, strengthens our minds and bodies, and allows us to experience nature's wonder . . . and occasionally even touch the sky. Given this perspective, it's my hope that you will find this book to be educational, inspirational, and beneficial in all your endeavors in the mountains and beyond. I welcome your correspondence via my Web site TrainingForClimbing.com.

Part One

*In Pursuit
of Maximum
Climbing*



*Ethan Pringle climbing
Five-Year Plan, a 5.13+
roof crack on Dinosaur
Mountain in the Flatirons,
Boulder, Colorado.*

ANDY MANN

Introduction

As physical as climbing is, it is even more mental. Being technically sound and physically honed is not enough to navigate a highball boulder problem, personal-best lead, intimidating big wall, or treacherous mountain. Ultimately, we climb with our minds—our hands and feet are simply extensions of our thoughts and will. Becoming a master climber, then, requires that we first become a master of our mind.

Actually, this book is about more than mental training—it’s about brain training. From the three pounds of brain matter between your ears emanate not only your thoughts, but also all motor skills, muscular recruitment, and the mystical forces of intuition and willpower. Given this broad purview it becomes clear that the brain is the epicenter of all aspects of climbing performance and that brain training is of paramount importance to participants in all climbing subdisciplines. No matter if your preference is bouldering, sport climbing, traditional climbing, or mountaineering, the quality of your performance and experience arises from the hundreds of billions of neurons and synapses in your brain. Consequently, the brains of master climbers (of every kind) run a most complex “software” that facilitates execution of highly refined motor and mental skills, and gives rise to the intangible psychic forces of intuition and willpower. You might consider *Maximum Climbing*, then, to be your user’s guide to the software of your brain.

The brain is the epicenter of all aspects of climbing performance, and therefore mental training is the ultimate—and most powerful—method of training for climbing.

The prospect of brain training may initially trigger some thoughts of apprehension and perhaps even skepticism. After all, you’ve made it this far in climbing by way of your current program of climbing and training, so why venture into the unknown of Hörst’s brain-training program? The answer should be self-evident given a bit more thought. First, consider that breaking barriers and performing at a higher level demands that you not only train differently, but also learn to think and act more effectively. Furthermore, why do you choose to venture up an unknown climb? Because you wish to partake in a novel experience and in doing so explore your potential to achieve. These are the very reasons you must embark on a brain-training program—to discover a new level of life experience and to realize your true potential to perform and achieve.

I’ve arranged this book in four distinct parts that make up the full scope of what I call brain training. After chapter 1, which sets the stage for your maximum climbing journey, part two begins with a study of brain physiology and the fascinating process of neuroplasticity (how your brain physically changes as a result of your thoughts,

actions, and experiences) in chapter 2. Given this basic knowledge of brain function, chapter 3 delves into the specific processes by which the brain assimilates, learns, and directs skilled movements. No matter how skilled or technically sound you are right now, I guarantee that you can improve your technique and efficiency of movement by applying the material in this chapter. Chapter 4 goes on to explore how the brain governs the recruitment of the muscles and in doing so grossly restricts your maximum level of strength and stamina as a protective mechanism. The powerful implication of this overprotective “central governor” is that you can recalibrate (upward) the maximum threshold via specialized training techniques to enhance strength, power, muscular endurance, and stamina.

Part three ventures into the cognitive realm of thoughts, fears, concentration, habits, strategy, and much more. Master climbers think vastly differently from the mass of climbers. Elevating your performance and maximizing experience thus demands that you elevate all aspects of your mental game. Chapter 5 begins the mental-training process with instruction on improving self-awareness. In climbing, the pinnacle of self-awareness is an acute on-demand monitoring of your internal climate and outward efficacy. Given this high level of self-awareness, you are

In the past I trained like a fiend. I could do something like 150 fingertip pull-ups in five minutes, and as a gymnast I preceded that with all sorts of hollow-back presses off the floor. They tell me I invented the one-arm mantel—a skill I applied to a few actual boulder problems.

So maybe I know a little about training and climbing. That was all a long time ago, however. We live in a new age, and climbers more and more transcend our modest achievements of the past. To get to the new levels, the new generation employs secret methods. I mean, some have almost literally mastered the art of levitation. In my day it was simply our weak arms and fingers against the world. We expended all sorts of energy in the wrong ways. We wasted effort, and there was more we didn't know than what we did.

Maximum Climbing is full of novel ideas and how-to instruction to empower climbers to achieve the next level and beyond, while at the same time it speaks about other important values, such as how to love life and celebrate good friendships. Eric Hörst shows us ways to better direct whatever level of focus we have, to make it a more productive focus, not simply work out, not merely to do mindless numbers of pull-ups. One of the goals is to find certain freedoms—in terms of strength—that involve mental control.

Maximum Climbing presents what one might call the new philosophy, the way to best bring mind, body, and spirit together to enhance both performance and experience. This book will help climbers go far beyond what they could do simply by hook or crook, as did the old guard. It will show eager hearts and minds some of the key skills, and enable them. All that much quicker they will be able to get to the most intense experience they can imagine. The climber who wants to push the limits will, in these pages, gain the training tools to be a Greek god, to conquer the world, and then move on.

—Pat Ament, author of
Master of Rock: The Biography of John Gill

empowered to make tiny course corrections on the fly that will maximize your chances of completing the climb. Toward this end, chapter 6 provides numerous self-regulation strategies for optimizing your mental, physical, and emotional states.

In chapter 7 the process of organizing and focusing your psychic energy moves on to goal setting and goal pursuit. Get ready to be engaged by a hands-on process of identifying your values, establishing some compelling goals, and analyzing what step you can take today to move closer to those goals. And since any worthy goal is likely to challenge you in unexpected ways, chapter 8 will arm you with ten indispensable strategies for overcoming adversity and problem solving. In exposing yourself to challenging situations, you must also come prepared with the mental skills needed to maintain concentration and manage fear in the face of technical difficulty, physical stress, and unexpected adversity. To aid your journey, chapter 9 serves up twelve powerful strategies for improving concentration and focus, while chapter 10 provides fourteen must-know techniques for managing fear. Perhaps nothing is more elemental to climbing than fear; learning to control fear (instead of letting it control you) is essential to performing your best. Part three then concludes with chapter 11's broad study of mind-programming and behavior-modification techniques for improving conscious and unconscious brain function. By learning and steadfastly applying these techniques, you will come to perform and achieve—in climbing and beyond—at a level that you can hardly imagine today!

Part four of *Maximum Climbing* dovetails the many topics covered in parts two and three into a complete mental-training program. Chapter 12 details three stages of mental training that roughly correspond to beginner, intermediate, and elite levels of experience and commitment to climbing. While you will certainly need to develop a personalized mental-training program to address specific goals and constraints, the three program stages that I outline will serve as a robust template to build upon. The book then comes to a close with what I hope will be inspiring sections on finding your own path in the sport of climbing, becoming a climber for life, and sharing your climbing power with the world.

Into this book I've folded three decades of experience, study, and experimentation, as well as countless discussions with climbers (and minds) that are far greater than I. *Maximum Climbing* is thus a content-rich text with enormous information flow, and it has the astonishing potential to change and serve you in new ways as you change in the years to come. I encourage you to frequently reference this text, and perhaps even re-read it annually, in search of new distinctions and strategies to help you prevail over evolving challenges and reach for higher goals.

Ultimately, it's your dedication to learn and apply the individual mental-training exercises that will determine how great an impact *Maximum Climbing* will have on your future. Knowing this, I hope you will begin a consistent, disciplined mental-training program and strive to exert greater mental control in all you do. Persist patiently in your training, and trust that the long-term cumulative effects of your efforts will yield a seismic shift in who you are and what you will accomplish and experience in the future.

The journey starts now!



The Maximum Climbing Program

All climbers share a love of recreating in the vertical world, whether they are ascending a 10-foot boulder problem or 8,000-meter peak. In deviating from the flatlands of everyday existence, we take life to another dimension that bonds mind and body in a highly distinct way. Our senses and emotions are amplified as we experience the acute pains and pleasures, and heightened awareness unique to our crucible of the vertical world. But this outward journey is led by a profound inward journey of mind and spirit that only the master climber comes to fully understand and leverage.

The premise of this book, then, is that we climb with our minds—our hands and feet are simply extensions of our thoughts and will. And thus the pursuit of maximum climbing is ultimately an inward journey to gain mastery of the mind. In essence, becoming a master climber requires that we first become masters of our minds.

This journey toward mastery of the mind is arduous and never-ending. You must trust, however, that through disciplined training you will develop powerful mental skills that few climbers possess. Unlike physical capabilities that plateau with middle age and degrade thereafter, disciplines of the mind offer unlimited potential for growth throughout your lifetime. With regular “mental exercise” you will gradually discover a higher level of consciousness in which you climb with single-pointed focus, detachment from concerns about results, and unstoppable confidence and willpower. This rare state will give birth to experiences that transcend the ordinary and reveal your true potential to do great things. Like wielding a sword with empty hands, your mind will lead your body to new summits. The profound experience that unfolds—in which thought and action merge in a powerful and transcending union—is what maximum climbing is all about.

Maximum climbing is born from the will and skill of the brain, and in spite of our physical limitations.

Chris Sharma working on his revolutionary 250-foot overhanging route on Clark Mountain, California. After more than a year-and-a-half of working on and training for the climb, Chris established Jumbo Love (5.15b) on September 11, 2008, perhaps the world's hardest rock climb. JORGE VISSER

Upcoming in this chapter, you'll learn the basics of the maximum climbing program, discover the infinite power of brain-centered training, and ponder the far reaches of your own climbing potential. The chapter concludes with a ten-part self-assessment questionnaire to score your current command of brain-based skills.

An Overview of the Maximum Climbing Program

Next time you visit a crowded crag or climbing gym, invest some time in observing the climbers around you. Imagine that you are a TV sports analyst and mentally break down their game. Take note of their preclimb rituals and demeanor; assess their quality of movement and confidence; gauge their attitude and emotions when challenged with a crux or a fall; assess their level of physical conditioning and how effective they are at utilizing their energy reserves. Perform this analysis on as many climbers of varying experience levels as possible.

Given a large enough sample of climbers (say, a dozen or more), you will discover a quality-of-movement continuum ranging from coarse, hesitant, and lumbering at one extreme to smooth, decisive, and flowing at the other. This continuum is the ultimate metric by which we should gauge climbing prowess. It's quite easy to subjectively assess quality of movement in others—we all know an

efficient and elegant climber when we see one. Unfortunately, it's often difficult to assess our own level of movement quality, and there's no easy way to measure these attributes empirically (although fast climbers who touch the fewest holds tend to exhibit high movement quality).

What sets great climbers apart from others is not their physical prowess (amazing as it may be), but their brains.

By contrast, physical aptitude, including strength, power, and endurance, is easier to measure. Consequently, many climbers are

quick to compare their physical capacity with others', and there's a strong tendency to train obsessively to improve these parameters as if they were the ultimate secret to climbing. While proper physical conditioning (which I have written about extensively in previous books) certainly is a central component of climbing, the point here is that a singularly body-centered paradigm to improving performance represents a gross handicap. In fact such a narrow approach is the antithesis of the maximum climbing program outlined in this book.

Let's return for a moment to your analysis of the various climbers you observed at the gym or crags. Chances are you will identify a person who climbs harder than you despite the fact that she appears to possess a lower level of physical fitness. Assuming that this climber does possess less absolute strength, power, and endurance than you, then what are the reasons she climbs harder? The answer lies in the many, often subtle, skills of the mind. Actually, it's the brain we should credit for her prowess, since it directs all motor skills and technical movement, in addition to yielding all thoughts, mental skills, intuition, and willpower. From this perspective it should be clear that the purview of brain-based skills is broad (see table 1.1), and that a brain-training program is the most practical approach to improving climbing performance.

The bottom line: What sets great climbers apart from others is not their physical prowess (amazing as it may be), but their brains. The same is true for you, me, and every other climber. Whatever our physical strengths and limitations, maximum climbing is born from the will and skill of the brain.

Table 1.1 Purview of Brain-Based Skills

Motor Skill and Movement Control

- Skill development
- Technique improvement
- Muscle recruitment
- Motor control
- Unconscious and preconscious movement
- Intuitive movement control

Cognitive Processes

- Self-awareness and arousal control
- Goal setting and strategy development
- Problem solving and memory
- Concentration and focus
- Fear control and confidence
- Behavioral modification and skill programming
- Risk management and intuition

A Definition of Maximum Climbing

I’ve mentioned the concept maximum climbing a couple of times already, and since it is the title of the book I feel it’s important to expound further, rather than risk misinterpretation of this unique pursuit.

For some climbers, the goal is to climb as difficult a grade as possible. While I admit to having owned this perspective on a few occasions, I have come to discover that the very best climbers—and the happiest, as well—do not possess this as a primary intention. Certainly great pleasure can be gained by achieving a rare, difficult climb. In making this your sole intention, however, you diminish the experience and quite possibly set yourself up for failure.

One of the greatest ironies of the performing arts—and one that all climbers should recognize—is that the mind-set of needing to succeed at a difficult task and the mind-set required to effectively undertake that endeavor are mutually exclusive. Climbing your best, then, comes only by replacing outcome-oriented thinking with a focus on the process of climbing, an enjoyment of the dance, and a becoming one with the experience.

Master climbers, past and present, tend overwhelmingly to emphasize quality of experience, self-discovery, and attaining oneness with the climb and nature over pure difficulty of achievement and an absolute need for success. Consider these quotes:

- *Your achievements in climbing are a lot less relevant than what you learn in the process.*
—Lynn Hill
- *For me climbing is moving meditation. To focus so single-pointedly that the self melts away, and pure awareness, energy, and emotion are the only things left remaining.*
—Chris Sharma

- *On certain routes I achieved a mind/no mind state of mystical connection to the mountain. I was not affected by gravity. I became the mountain.*
—Mark Twight
- *In the lessons of the vertical lie the power of conscious connection to spirit—in the rock, air, water, trees, and each other.*
—Ron Kauk
- *Climbing is so magical, but it's so easy to lose that and get caught up in the numbers game . . . climb because you love it.*
—Katie Brown
- *The goal with climbing is to keep it fun; and to make sure that it continues to be a game. When I climb my best, it's because I'm in that state of mind.*
—Robyn Erbesfield-Raboutou
- *Climbing transports you to the realm of a truly human experience . . . the lacerating familiarity under your fingers doesn't matter because the adrenaline and joyfulness compress it into the experience.*
—Kevin Jorgeson
- *The unity of mind and body is one reason why climbing is so compelling . . . the powerful integration of thought and action, emotion and performance.*
—Mark Robinson
- *Mastery lies not in the capturing of a summit, but in a oneness with each detail of the experience.*
—John Gill
- *Climbing has shown me the existence of force beyond the seen world.*
—Steph Davis
- *The best climber in the world is the one having the most fun!*
—Alex Lowe

Take these masters' words and internalize them with the new high-held belief that it is better to focus on self-development and accumulating experiences than a pursuit of maximum difficulty. This process of accumulating experiences will reward you with many valuable lessons and keepsake memories in addition to your share of difficult ascents along the way, whereas the MO of focusing only on climbing difficulty will provide a far more shallow experience. Don't you agree that climbing solely for the pursuit of absolute difficulty reduces climbing to little more than a quest to break your record at some meaningless race?

Let's examine this concept further considering the physical, mental, and spiritual dimensions in which we engage the world. In the physical world, we have definite limitations; we are only so strong and can endure only so long, as set by our

DNA, nutritional habits, and training practices. Therefore by primarily focusing on development and achievement in the physical realm, we naturally approach a ceiling in ability and unknowingly limit our potential for experience and self-exploration. Conversely, the mental and spiritual realms have no limits. Our ability to learn, imagine, and discover is essentially infinite; the only limitations are self-imposed. So, what can you imagine yourself climbing, achieving, and experiencing? These are important questions to answer, because you—and only you—are the designer of your future!

Of course, to live only in the mental realm is to be a dreamer, not a doer. Our volition to act on a dream is what transmutes a mental image into a physical reality. Masters in sports, science, and the arts live and learn in both in the mental and physical realms, and their would-be creations and achievements are leavened in the spiritual realm. So while modern culture worships physical image and possessions, masters know that great things are born in the infinite realm of the mind and spirit. Therefore the pursuit of maximum climbing can be aided by dismissing the trappings of modern culture.

Surely the master climbers quoted earlier eschew many aspects of popular culture, in particular things that might quell their mental and spiritual growth.

In summary, the maximum climber is not the one who climbs the hardest. He is instead the climber most engaged in the moment, most open to gaining a deeper understanding of his present situation, and most willing to embrace each experience—whatever it may be—knowing that it is the stuff of life.

In the mountains climbers can discover the Truth, when beauty, danger, and a rich, novel experience combine to etch our souls in a way that will last a lifetime. This is maximum climbing.

The History of Mental Training for Climbers

While Olympians in ancient Greece were probably the first athletes to ponder the cognitive aspects of physical performance, it was the Russians who first researched and applied formal mental-training protocols in the 1950s. Along with leading-edge physical-training techniques and performance-enhancing drugs, disciplined mental training enabled the Eastern Bloc countries to dominate the Olympics from 1956 through 1980.

In the early 1970s Thomas Tutko, the father of American sports psychology, famously observed that American athletes were “physically overeducated and emotionally undereducated.” Tutko went on to develop and popularize mental training, as used increasingly among collegiate and professional athletes, and the field of sports psychology began to gain traction across America during the 1980s. For climbers, however, mental training remained a mainly self-directed matter of forging the essential mental skills via the red-hot experiences of the vertical world.

Among climbers, the first widely read texts on the mental domain were Carlos Castaneda’s series of books on the teachings of Don Juan. Viewed by academics

The mind-set of needing to succeed at a difficult task and the mind-set required to effectively undertake that endeavor are mutually exclusive.

to be mainly fictional tales, these books describe Castaneda's experiences under the tutelage of a Yaqui Indian named Don Juan. Aided by psychotropic plants and harrowing desert journeys, Castaneda gained heightened awareness and gleaned wisdom and truth amid the sandy, rocky landscapes along the Mexico–Arizona border. Interestingly, the hardman climbers of the 1970s found some value in the lessons of Don Juan—a few of that era's greatest Yosemite climbs even bear the names of Castaneda books—and reading these books became somewhat of a rite of passage for an aspiring hardman during the 1970s and early 1980s.

Fortunately, the 1980s bought a growing body of athlete-oriented, cognitive-behavior research and the release several excellent books. Then, in my second decade as a climber and after years of rigorous physical training, I read my first few books on sports psychology. While I had read the Castaneda books years earlier, it was these more scientific, sport-oriented books that connected with me and opened my mind to the limitless potential of mental training. In May 1988 I wrote what was perhaps the first climbing magazine article on mental training for *Rock and Ice*; two years later I wrote a trilogy of articles on “mental muscle” for *Climbing* magazine. Based on feedback from these articles, as well as my own successes in pushing out personal limits via mental training, I continued to study and write on the subject. My 1994 book, *Flash Training*, included a full chapter on mental training, and my follow-up books, *How to Climb 5.12* (1997) and *Training for Climbing* (2002), included ever-expanding treatments that have ultimately given birth to this book.

The first full-length book on mental training for climbers, Arno Ilgner's *The Rock Warrior's Way*, was published in 2003. Ilgner's book presents a Castaneda-inspired, awareness-based examination of the psychology of climbing—the tome is recommended reading for every serious climber. In writing *Maximum Climbing*, then, it was my goal to provide an innovative new perspective that not only incorporates the latest in sport and exercise psychology, but also adapts powerful concepts from the exciting fields of neuropsychology, motor learning and performance, and total quality management.

It seems that future climbing breakthroughs—technical and experiential—will be more mental than physical. Thus I imagine a not-so-distant future when avid climbers engage in as much mental training as they do physical workouts. It's my hope that this book will help lead the way by instructing and inspiring all climbers to leverage their brain power for peak performance and optimal experience, both on and off the rock!

What Is Brain Training?

The late, great Wolfgang Güllich was fond of saying that “the brain is the most important muscle for climbing.” Nearly twenty years ago Wolfgang piqued my interest in the subject; much study and exploration ensued, and I am now gratified to present climbers with this book on brain training, which was in small part inspired by my discussions with Wolfgang. But what exactly is “brain training” and how does it relate to “mental training”?

The Difference Between Brain Skills and Mental Skills

In this text I divide the broad subject of brain training into two highly distinct, yet not completely independent, areas that require targeted training.

- Brain activity that controls involuntary body functions such as heart rate, temperature regulation, and other vital protective mechanisms, as well as conscious and unconscious brain functions that direct motor control and skilled movement via the central and peripheral nervous systems. These important topics—largely overlooked by climbers—will be covered in the breakthrough chapters on brain training upcoming in part two.
- Cognitive, emotional, and volitional states of consciousness that spring forth from the brain. These are the common areas of traditional mental training that include increasing self-awareness, improving thought control, and modifying behavior, among other things. These disciplines of the mind will be explored in great depth in part three.

Given this purview, it should be clear that nothing is more fundamental to enhancing performance and maximizing experience than improving the “fitness” of the three pounds of gray matter between your ears! In the pages and chapters to follow, you will learn numerous methods for training your brain to improve climbing movement, as well as dozens of mental-training techniques to improve self-awareness, increase confidence, manage fear, control your emotions, and more. So while many climbers—and the majority of flatlanders—let their brain run on an autopilot programmed by past experience, negative life events, peers, and popular culture, you will be empowered to direct the show. Train the brain and your body will follow!

The Stages of Brain Development

In this section we’ll examine the general stages of brain-based motor learning and cognitive development that a climber would experience over many years (and not the literal neurobiological stages of brain growth).

For many climbers, brain-directed motor skills are rough and inefficient, and mental control ebbs and flows with little notice or control. The result is inconsistent performance and a relatively poor experience on the rock. The goal, of course, is to constantly improve in both areas of brain development—in fact, the combined effects of increasing mastery of technical motor skills and mental attributes can yield a remarkable advance in climbing ability in a single season. Let’s examine the three stages of brain-skill development.

Beginners naturally lack the motor programs needed to execute many climbing moves, while cognitive focus centers mainly on dealing with fear and basic risk management. During this stage motor skills tend to develop quickly, especially when the climber emphasizes learning of proper technique over simply struggling sloppily up a climb. Rate of cognitive-skill development tends to lag in many cases, perhaps influenced by global factors of self-concept and personality, in addition to lack of instruction on mental aspects of the game.

Table 1.2 Summary of Benefits and Methods of Brain and Mental Training

Brain Training

(see Part Two)

- **Accelerate learning of motor skills.**
Use practice drills to accelerate skill development and coordination.
- **Facilitate performance of novel moves on-sight.** Broaden skill sets and vary practice conditions to develop motor programs and schema.
- **Improve “feel” and quality of movement.** Foster awareness of proprioceptive cues to aid development of optimal climbing technique.
- **Develop intuitive sense.** Solidify and deepen experience base by broadening outdoor climbing horizons.
- **Boost strength and power.** Employ reactive training to recruit high-threshold motor units and synchronize motor unit firing.
- **Improve neuromuscular efficiency.** Train to reduce tension in antagonist muscles to facilitate smoother, more economical movement.
- **Elevate fatigue-signaling thresholds.** Train the brain to allow for physical performance output nearer absolute limit.

Mental Training

(see Part Three)

- **Increase self-awareness and quality of action.** Engage in regular metacognition and self-coaching to optimize effectiveness of goal-directed actions.
- **Improve thought control, focus, and volition.** Take control of self-talk and use cue words to improve focus and initiative.
- **Modify behaviors.** Train to reduce bad habits and forge new habits and rituals that enhance performance.
- **Manage fears and risk.** Learn to assess whether fears are legitimate or bogus. Take action to mitigate real fears and dispel bogus fears.
- **Increase mental toughness.** Develop coping skills that empower you to persevere in adverse situations.
- **Boost motivation and confidence.** Manage physiology and thoughts to elevate mood and confidence.
- **Preprogram the brain for ideal outcomes.** Use visualization and other programming techniques to prepare the brain and body for performance.

Intermediate-level climbers exhibit increasingly smooth, more efficient movement and a calmer, more confident demeanor. Motor programs are refined and expanded as a function of hours invested in practicing skills and exploring new types of climbing (crack climbing, overhanging terrain, and the like). Cognitive abilities also exhibit remarkable growth, particularly in individuals who begin to engage in

lead climbing. Whereas top rope climbing allows for safe, low-pressure ascents, the risks and challenge of the sharp end better develop and stretch cognitive abilities. There is value and enjoyment in both styles of climbing, but the intermediate will develop valuable cognitive skills more quickly via the crucible of the sharp end.

The hallmark of the advanced climber is mastery of many styles of climbing and the ability to climb confidently on-sight. Some gifted individuals may reach this advanced stage in just a few years, while others may require a decade of more of dedicated effort to achieve this level of prowess. Undoubtedly many advanced climbers exhibit impressive physical attributes, yet it's their brain development that's ultimately to credit for their prowess on the rock. Mental agility, masterful on-sight intuition of severe sequences, and awesome physical strength are all born of a long-term conscious effort to develop capabilities without prejudice and to train up weaknesses, be they mental, technical, or physical. Clearly, developing such a high skill level takes effort, discipline, and, at the highest ability levels, much sacrifice. The very best climbers are able to push out boundaries only by identifying and breaking free from things—both mental and material attachments—that limit dedication and divert focus from training and climbing.

This book on brain training, then, strives to lead you on a more direct journey through these stages of development. Simply reading this book, however, will do nothing for you. It is in understanding and applying the material that you will accelerate your rate of improvement above that of the common trial-and-error approach of learning to climb. What's more, by integrating daily mental training and a never-ending pursuit of technical mastery with intelligent physical training, you will discover a profound new level of experience and unknown potential, which I guarantee is far greater than you can imagine.

Pursuing Your Limitless Potential

I believe that human beings are “success machines” that possess unlimited potential to create and do. By leveraging our endowments of imagination and intelligence, and through consistent disciplined application of free will, we can achieve truly remarkable things. Consider the once-thought-impossible ascents of Mount Everest without oxygen or free climbing El Capitan. Or look up at the night sky and imagine man flying to the moon and scrambling over those remote lunar mountain ranges—this feat was achieved over forty years ago, and it still boggles the mind! Each of these “impossible” feats became possible because a human being dared to dream big, and then conceived and executed a plan with intelligence and the power of will. You, too, can do great things—perhaps greater than you can even imagine right now—if you embrace a brain-centered approach to training and performance.

In this section you will learn about the Law of Imperfection, the maximum climbing training model, and the X-Factor behind all great climbing achievements.

The Law of Imperfection

Despite having an nearly unlimited potential, humans do possess physical limitations, and we are in fact inherently imperfect in all we do—this is the essence of the Law