NURTURING OUR HUMANITY

How Domination and Partnership Shape Our Brains, Lives, and Future

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Contents

1
Our Story

For millennia, humans have imagined a peaceful and just world. Sometimes we only imagined this world in an afterlife. But over the last centuries, many of us have imagined it right here on Earth. Not a utopia, not a perfect world. But a world where peace is more than just an interval between wars, where dire poverty, brutal oppression, insensitivity, cruelty, and despair are no longer "just the way things are."

Now there is a new urgency to our wish for a more humane world. Every day we are bombarded by news of barbaric human rights abuses, terrorist attacks, proliferation of nuclear weapons, and a drift back to strongman rule. The destruction of our natural environment continues at an accelerating pace, endangering our global life-support systems. New technologies, from artificial intelligence to biological engineering, could have catastrophic results if guided by cultural values of greed, megalomania, and disregard for human rights.

From all sectors—religious and secular, philosophical and scientific, and thousands of small groups worldwide—come calls for cultural transformation: for building a truly humane culture. The pivotal question is whether such a culture—one that supports rather than inhibits human well-being and our capacities to love, create, and prosper—is possible.

Nurturing Our Humanity offers extensive evidence that we *can* construct this humane culture. Based on findings from both biology and social sciences, we today know that the cultural environments we create affect nothing less than how our brains develop and hence how we think, feel, and act. But *Nurturing Our Humanity* takes bioculturalism further. It examines our cultural environments through a powerful new analytical tool: the Biocultural Partnership-Domination Lens.

Rather than viewing societies through the lenses of familiar social categories such as religious versus secular, Eastern versus Western, rightist versus leftist, or capitalist versus socialist, which only describe a particular aspect of society, the Biocultural Partnership-Domination Lens uses two larger cultural configurations at opposite ends of a continuum: the *partnership*

system and the *domination system*. This broader frame makes it possible to identify the conditions that support the expression of our human capacities for caring, creativity, and consciousness or, alternately, for insensitivity, cruelty, and destructiveness. It upends age-old assumptions about human nature and the supposed impossibility of improving the human condition, showing how we can bring about fundamental change. The new interdisciplinary perspective of the Biocultural Partnership-Domination Lens reveals how cultural beliefs and social institutions such as politics, economics, and education affect, and are in turn affected by, childhood and gender relations; highlights the impact of these early experiences and observations on how our brains develop; and shows how we can use our knowledge of human development to construct equitable and sustainable cultures that maximize human well-being.

Nurturing Our Humanity re-examines vital matters ranging from sex, love, intimacy, parenting, and romance to human rights, social justice, politics, economics, violence, and values from this integrative perspective. It sheds new light on critical current issues, all the way from climate change, scapegoating, authoritarianism, racism, and other forms of in-group versus out-group thinking to contemporary disputes about biological and cultural evolution, economics, national and international politics, religious fundamentalism, and the uses and potential abuses of technological breakthroughs.

We explore how our capacities for caring, creativity, and consciousness go way back in evolutionary time and are integral to human nature, and we show that there have been, and continue to be, cultures that orient to the partnership side of the continuum. We look at how domination systems produce high levels of stress—from stressful early family experiences to the artificial creation of economic scarcity—and how this plays out in the neurochemistry of the brain, tending to keep people at a less advanced level of overall human development that interferes with the full flourishing of those very qualities that make people happiest: security, empathy, consciousness, creativity, and love. On the other hand, partnership-oriented environments—as illustrated by conditions in contemporary societies ranging from the Minangkabau in Southeast Asia to European Nordic nations—enhance the expression of our human capacities for health, happiness, well-being, consciousness, and creativity.

We draw from recent studies showing that the difficulty some people have in dealing with change (with its implications for denial of climate

change and other present threats) and the tendency of such people to support punitive political agendas (such as capital punishment, heavy investment in prisons and the military, and scapegoating of minorities, women, and gays) are associated with a particular kind of brain development in people who are taught early on that dominating or being dominated are our only alternatives. We explore how patterns of touch, intimacy, and sexuality differ at opposite ends of the domination-partnership continuum and how the confluence of caring with coercion and pain is one of the most effective mechanisms for socializing people to suppress empathy and submit to domination as adults. We examine how the erotization of domination and violence lies behind mass shootings of women in the United States and Canada by some men who call themselves incel (involuntarily celibate) and behind the enslavement of women by fundamentalist groups like ISIS (the Islamic State of Iraq and Syria). We then contrast these unhealthy interactions with healthy ones supported by partnership-oriented cultures and look at how we receive neurochemical rewards of pleasure when we give or receive empathic love.

Covering a wide swath of prehistory and history, we take a fresh look at many conventional assumptions about religion and science. We see, for example, how Western science came out of a hierarchical, conformist, misogynist, all-male medieval clerical culture (a world without women and children) and how it took more than 700 years for women's, men's, and gender studies to emerge in universities; how Freud's secular theories replicated the earlier religious ideology of original sin and male supremacy; and how in all spheres (from the family, politics, and the academy to mainstream and popular culture worldwide), the underlying tension between movement toward partnership and the resistance/regressions to domination has played out over millennia.

But our focus is primarily on our present and future, on how we can draw on our enormous evolutionary gifts—our extraordinary capacities for empathy, creativity, caring, cooperation, and conscious choice—to build the missing cornerstones that support a more equitable, caring, and sustainable partnership future.[1] In this introductory chapter, we share some aspects of our personal histories, orientations, and goals and also place the central message of this book within the context of our past work. Then we discuss the key concepts of *partnership systems* and *domination systems* and introduce the ways they are integral to the Biocultural Partnership-Domination Lens. We close the chapter by highlighting the need to exchange a

domination-oriented narrative for a completely different story, one based on life-enhancing partnership principles such as equality, care, compassion, and sustainability.

Early Influences and Insights

When Riane was six, the German and Austrian Nazis took over her native Vienna. Riane's father was dragged off by the Gestapo. Her mother miraculously obtained his release, and the family fled to Cuba. They were on one of the last ships before the *MS St. Louis*, carrying 930 Jewish refugees from Europe, was turned back by Cuban authorities. Because neither Cuba nor the United States nor any other country in the Western hemisphere let the *St. Louis* dock, it was forced to return to Europe, where many on board eventually died in Nazi death camps.

Riane remembers standing at the Havana waterfront watching how, after long days of waiting and hoping they would be permitted to disembark, the doomed families on the *St. Louis* disappeared over the horizon. As she looked out at sea and listened to her parents' anguished conversation, she could not understand how people could be so cruel, so indifferent to the suffering of others.

There were other formative experiences for Riane: fleeing Vienna at night with only what they could carry, the plunge from affluence to dire poverty in cockroach-infested Havana tenements, radical changes in languages, equally radical changes in beliefs and customs.

That is how Riane learned that what people consider givens are not universal. It is also how she learned about the power of cultural narratives, including popular myths and scientific theories, to shape what people consider normal and right. The foundations of a small girl's existence were demolished overnight by the resurgence of myths and theories about Jews as subhuman and dangerous. From one day to the next, Riane was transformed by the Nazi's anti-Semitic cultural narratives from a cute little girl whom people smiled at into a hunted and despised "other."

With her move to the United States in 1946 came further formative experiences. As she and her parents arrived at last to the promised land of American liberty and equality, they found in Miami, their port of entry, yet another disempowered out-group, or "other." In the rigidly segregated US South of that time, they discovered one more variation of the

all-too-familiar use of cultural narratives to justify the persecution and subordination of "inferior" beings.

The accumulation of these kinds of experiences brought recurrent questions: Are patterns of prejudice, cruelty, and violence inevitable? Are they human nature? Or is something else at work?

As time went on, these questions came up again and again. They came with shattering force after World War II when the world saw the newsreels of the Nazi death camps, the mountains of piled-up bodies, the hollow-eyed skeletal survivors. These questions became more insistent when Riane later read *Treblinka*, the harrowing account of life and death in one of the "better" Nazi camps. They erupted when she looked at the photo of a happy-looking crowd of men in *Life* magazine and discovered they were not at a football rally but at a lynching party, smiling into the camera after sadistically murdering a black man. When Riane studied sociology at the University of California, these questions were at the back of her mind. They were there as she became involved first in the civil rights movement and then in the feminist movement.

At that point, Riane became aware of yet another devalued "other." This "other" had been there all the time, center stage. But because she had been taught to take it for granted, its inferior status had been invisible. Her awakened consciousness—that she was part of a female "other," split off from and at the same time subsumed by the in-group of "mankind"—again shook the foundations of Riane's existence. She realized that this prototypical in-group/out-group division had profoundly influenced her entire life. It had shaped her sense of self, relations, thoughts, feelings, everything.

This consciousness came to Riane relatively late, after much of her formal and informal education in history, archaeology, and the study of myth; after law school; after employment as a social scientist and attorney; after activism in the civil rights and anti–Vietnam war movements; after marriage, motherhood, and divorce. It came to Riane suddenly in the late 1960s when, like thousands of other women, she awoke as if from a lifelong trance.

It was only then that Riane fully understood that our consciousness, or lack thereof, is largely a function of our cultural contexts, and particularly of cultural myths and theories about "human nature." What until then had been abstract—the influence of myths and theories on how we relate to ourselves and others—became of intense personal significance.

Riane then understood that theories are not abstract, academic playthings irrelevant to our day-to-day lives. On the contrary, theories

have enormous power in shaping how we think, feel, and live—just ask any African American who came of age during an era when theory held that whites are innately superior intellectually, morally, and every other way. Riane also understood that the myths and theories about femininity and masculinity, which we all internalized without much consideration, shaped how she saw herself and how others saw her. Gradually she began to suspect that the widespread internalized sex roles and myths about femininity and masculinity were responsible for much that ails our lives and our world.

In the process of making all this conscious, Riane felt a need for new ways of thinking and feeling that could help her make better sense of, and find better guidance for, her own life and that of her two daughters. Riane was also impelled in her search by the urgency of humanity's situation.

As an inhabitant of a planet whose life-support systems are being systematically undermined by human activities such as carbon emissions, excessive population growth, irresponsible resource exploitation, and other threats to our environment, Riane saw the critical need for new ways of thinking and living. And the magnitude and rapidity of cultural, social, and technological change made it clear that transformative shifts—such as what she herself had been experiencing—are realistic possibilities. In short, both Riane's personal experiences and our common human experiences at this critical time in history led to the research that defined her work over decades.

Like Riane, Doug's early life experiences shaped his perceptions and concerns as well as his choice to become an anthropologist focusing on peace and human nature. Although a boy at the time of the Cuban missile crisis in October 1962, the near destruction of the world made a huge impression on his young mind. He recalls how his parents, like many people in the early 1960s, considered digging a fallout shelter. Their anxious discussions sparked Doug to contemplate what a world filled with poisonous radiation would be like, as his family huddled in a cement pit underground, eating canned tamales, sardines, and spam for months, maybe years. Doug questioned his parents about radiation and was not happy with the answers they gave about the poisonous, invisible fallout that would cause cancers, sickness, then death, not only of people but also of all the birds and animals. To a child's mind, having a nuclear war was the scariest and stupidest idea imaginable.

About a decade later when Doug discovered anthropology at the university, he began looking at humanity from a macroscopic perspective that

makes comparisons across cultures and millennia. He fell in love with anthropology and how it widens our view beyond our own culture and beyond current-day events. This broader perspective, Doug thought early on, could be useful for understanding warfare and also our human capacity for peace.

In fact, as key lessons, anthropology shows that while humans have the capacity to be violent, we also possess a powerful potential for peace.[2] In theory, any human might commit murder, but in reality, most of us never do. Anthropology holds some true treasures relevant to human survival, including documentation that nonwarring peace systems can be created, descriptions of how peaceful societies successfully keep the peace and promote cooperation and well-being, and the solid evidence from prehistory and the comparison of social systems showing that war is not inextricably bound up with human nature.[3] Yet, beginning with debates with members of his own family, Doug realized that a substantial number of people assume war to be just part and parcel of human nature. This erroneous view in and of itself is an obstacle to achieving peace.[4]

Doug has lived in Mexico conducting anthropological fieldwork among Zapotec speakers of Oaxaca (1981–1983), has lived and taught in Finland (1995–2014), and has conducted cross-cultural research on numerous cultures. Living outside his native US culture has taught Doug firsthand lessons about cultural differences in values, beliefs, and institutions. His work also has taught him about the myriad ways that people keep the peace or, in those cases where the peace has been broken, about the paths that people take to mend damaged relationships and restore social harmony. For example, across diverse cultural settings, third parties intervene, sometimes in dramatic ways, to restore the peace. In their fields near the Nile, two Nubian brothers regularly argued about how to share the irrigation water.[5] Their uncle overheard the shouting. He found a flat stone and placed it in the middle of the irrigation ditch, where offshoots of water went to each man's land, thus dividing the irrigation flow equally. "Putting a stone in the middle" was a structural solution to this conflict, grasped by someone who was not involved in the dispute, and humans practice this type of conflict resolution all the time. It is so normal that it rarely makes the news.

In recent research, Doug has focused on archaeological and nomadic forager studies showing that war is a rather recent social invention, arising under particular circumstances that correspond with the rise of domination systems. Later in this book, we will examine the evidence in more

detail. The archaeological sequences show transitions from originating nomadic foraging conditions of warlessness to war at different locations at different times, as well as how war became more common and destructive a mere 4,000 to 6,000 years ago.[6] Furthermore, a careful examination of nomadic forager societies suggests the evolutionary deep roots of partnership systems, rife with sharing, caring, cooperation, reciprocity, and equity, suggesting that humans may be primed for developing social relationships of this nature.[7]

Doug's motivations for teaming up with Riane in the writing of this book stem ultimately from a deep concern for the future of humanity, coupled with a great appreciation for Riane's work.

Doug first heard of Riane in the late 1980s from his father, psychiatrist C. Brooks Fry, who praised Riane's work. He had just attended one of her lectures and had exchanged a few words with her afterward. At the lecture, the elder Fry had purchased *The Chalice and the Blade*, which he later gifted to Doug.[8] This particular copy has Riane's telephone number written inside the front cover, along with Brooks' pronunciation mnemonic for her name, and printed on the front cover is a laudatory quotation from luminary Ashley Montagu that reads, "The most important book since Darwin's *Origin of Species*." As Brooks realized decades ago, Doug would appreciate this innovative book. Perhaps he also realized that Riane and Doug were kindred spirits in key ways.

First, Riane and Doug both have a tendency to step back from an issue to gain a macroscopic view. Riane talks of systems and cultural configurations, and Doug writes about patterns and social models. Whereas both authors recognize the crucial importance of data and details, they share an aim of seeing the forest *and* the trees as they draw on research findings from multiple fields to paint their interpretations across a wide canvas.

Second, both Riane and Doug are motivated to do everything possible for the improvement of the human condition. We have already told how Riane's early experiences shaped her work for peace, human rights, and social justice. When Doug was growing up, his grandmother, psychologist Ruth Thacker Fry, would sometimes remark that the family consists of caregivers and humanitarians. Doug took on the humanitarian charge, engaging in peace education and activism over the course of his life.

Third, Riane and Doug could be called *realistic optimists* in that they recognize the magnitude of the challenges faced by humanity and yet believe that even huge problems can be solved. As President Kennedy said in 1963,

"Our problems are manmade. . . . No problem of human destiny is beyond human beings."[9]

The Importance of Systemic and Macroscopic Views

Riane's research addresses the *big picture* questions. It uses a new method of analysis: the study of Relational Dynamics. These dynamics are, *first*, what kinds of relations—from intimate to international—a particular culture encourages or discourages; and, *second*, how key elements of a culture interactively relate to shape and maintain its basic character.

Riane notes that this method owes a great deal to one of her early professional experiences. Although she holds a degree in sociology, she realized that her courses did not concern themselves with interactive dynamics. What opened her eyes was working at the Systems Development Corporation, an offshoot of the Rand Corporation, at a time when scientists were just beginning to talk about "systems analysis." Riane did not like the work because her employers were only interested in military systems, but she learned a basic principle of systems thinking: that looking at how different parts of a system interact makes it possible to see more than just the sum of the system's parts.

Systems thinking is at the core of this book. The study of Relational Dynamics draws from a much larger database than customary studies of how humans behave individually and in groups. Much of Doug's research also focuses on systems. For instance, he studies *peace systems*, clusters of neighboring societies that do not make war with each other, and sometimes not at all.[10] The key questions are: How do people create peace systems? How are they maintained? Peace systems exist in various parts of the world from Malaysia and Australia to Brazil and Canada. The European Union also is a peace system because it was formed out of the ashes of war with the explicit goal of preventing future conflagration on the continent. A mere 70 years after the end of World War II, war within the EU system has become virtually unthinkable. This success story demonstrates that constructing other peace systems, including ultimately a Global Peace System, is conceivably possible.[11]

Riane's approach has always included the whole of humanity, both its female and male components. Her analytical lens also captures the whole of our lives, not only the so-called public sectors such as politics and

economics but also the more intimate spheres of family and close relations. In addition, her perspective takes into account the whole of our history, including the thousands of years we call prehistory.

Sources for the multidisciplinary study of Relational Dynamics have included cross-cultural anthropological surveys[12]; anthropological and sociological studies of individual societies[13]; writings by historians, analyses of laws, moral codes, art, literature (including fiction, biographies, and autobiographies), scholarship from psychology, economics, education, political science, philosophy, religious studies (including the study of "mystery cults" around the Mediterranean from before the rise of Christianity), archeological studies (primarily of Western prehistory because of greater availability of materials, but also some of Indian, Latin American, and Chinese prehistory), and the study of both Western and Eastern myths and legends; and data from more recently developed fields, such as primatology, neuroscience, chaos theory, systems self-organizing theory, nonlinear dynamics, gender studies, women's studies, and men's studies.[14]

Looking at this larger picture made it possible to see patterns: interactions among key elements of social systems that keep repeating themselves cross-culturally and historically. Riane identified two contrasting configurations: the domination system and the partnership system.

In contrast to conventional social categories such as religious versus secular, Eastern versus Western, rightist versus leftist, or industrial versus preindustrial or postindustrial, the categories of the partnership system and the domination system show that the social construction of the roles and relations of the two basic forms of humanity—males and females—is of central significance for a society's beliefs and institutions, all the way from the family, education, and religion to politics and economics. These categories also show the crucial importance of the early years of life: that what people in a society consider normal or abnormal, moral or immoral, and even possible or impossible is profoundly affected by the kinds of relationships children experience and observe.

In other words, unlike most studies of human societies, as well as the social categories we have been taught, the social categories of domination and partnership systems do not split off matters relating to the majority of humanity as "just" women's or children's issues. They show interconnections between these critical matters and politics, economics, religion, and other areas that are the focus of conventional approaches.

We believe that within the next decades these interconnections will be generally recognized as key to understanding human societies. We also believe that at this point in human history, such an integrated analysis is essential.

Fortunately, we are now at the point where, for the first time, the data for such an integrated systemic approach are beginning to be available. If we, for example, view gender historically, we see that it only began to gain attention during the 1700s and 1800s, and then only in treatises dealing with feminism. It was not until the late 1960s that the subject of gender began to break into research and education, but again it was segregated into the academic ghetto of women's studies. Even the more recent men's studies, gender studies, and queer studies are marginalized in our siloed universities.

It was also not until recent times that gender entered popular discourse. So in the media we now find topics such as discrimination against girls and women, sexual assault and harassment, male anger against loss of what sociologist Michael Kimmel calls "aggrieved entitlement," and so forth.[15] And not until recently have the neurochemical effects of childhood experiences and observations received both scholarly and media attention.

The Biocultural Partnership-Domination Lens

Riane first presented the partnership-domination continuum in *The Chalice and the Blade: Our History, Our Future*.[16] The title uses the symbols of the chalice and the blade as metaphors for power: one appropriate for partnership systems and the other for domination systems. This book introduced cultural transformation theory, a new reading of both history and prehistory. Cultural transformation theory takes into account matters omitted in earlier narratives. It probes otherwise invisible connections, for example, whether a society is more warlike or peaceful and whether or not violence is part of childrearing, whether the female and male forms of humanity are considered equal or unequal and whether a society is more generally equitable or inequitable. In subsequent books, Riane used the partnership-domination frame to examine different ways of structuring families and education, sexuality and spirituality, healthcare and environmental sustainability, technology and economics.

This book starts where these earlier volumes left off, by exploring fully a host of synergetic biocultural interactions among

evolutionary-neuroscientific-developmental and social-cultural-institutional variables, always with an eye turned toward their application for human betterment and survival on our troubled planet.

For those readers unacquainted with the partnership-domination perspective, we want to quickly provide some familiar examples. We have seen the domination system historically in the rule by terror of Genghis Khan and the autocratic family patriarch of earlier times. Nowadays, we see it in despotic rulers, such as the religious heads of ISIS or a secular Kim Jong-un, and at the familial level in abusive parental behavior. Whether within a family or more generally within a society, social systems that orient closely to the domination side of the continuum are ultimately held together by fear and force, as illustrated by customs of child and wife beating, persecution of minorities, threats or displays of torture and death, and wars of conquest. In this system, beliefs and social structures support rigid top-down rankings, and the closer a culture or subculture orients to it, the more stressful it is. In contrast, the partnership configuration is more peaceful, egalitarian, gender-balanced, and environmentally sustainable. As in the strivings of countless families, businesses, and communities today, the partnership system consists of beliefs and structures that support relations based on mutual benefit, respect, and accountability. Fear and force are *not* woven into the cultural tapestry of the partnership system because they are not needed to maintain rigid top-down rankings, whether it is man over man, man over woman, race over race, religion over religion, or nation over nation. Instead of hierarchies of domination, some partnership societies have what Riane calls hierarchies of actualization, where parents, teachers, and leaders use power to empower rather than disempower. So love, care, nurturance, and creativity can flourish.

As noted, we adopt a *biocultural perspective* to examine human possibilities, especially the enormous capacities made possible by our human brain. Biological and social sciences have now amply documented that the polarized nature versus nurture divide is a nonissue, an unrealistic model that befuddles rather than enlightens.[17] As neuroscientist Cordelia Fine writes, "The new neuroconstructivist perspective on brain development emphasizes the sheer exhilarating tangle of a continuous interaction among genes, brain, and environment."[18]

The Biocultural Partnership-Domination Lens provides an integrative perspective that reveals critical connections between parts of social systems that have generally been studied in segregation from one another.[19] While

many studies show the enormous impact of what children experience and observe on the rest of their lives, the focus of these studies has been on the role of families, without taking into account that families do not spring up in isolation from the larger cultures in which they are embedded. Moreover, how a society constructs the roles and relations of the two basic forms of humanity is in most social analyses still only a sidebar.

By contrast, the social categories of the partnership system and the domination system show that the different ways human societies socialize the male and female halves of humanity for "masculine" and "feminine" roles is how people learn to view themselves and others. These new social categories also factor in extensive evidence from psychology and neuroscience that children's early experiences and observations powerfully affect brain development—and with this, how people think, feel, and act, including the kinds of cultures they construct. They further take into account the impact of stories, especially stories about human possibilities.

Even now, there are many global good news stories that do not get as much attention as coverage of war and terrorism. For instance, nuclear testing has been halted by the holders of the major nuclear arsenals, Russia, the United States, Britain, France, and China; smallpox has been eliminated from the globe; after the nations of the world took action under the Montreal Protocol in 1987, the gaps in the Earth's ozone layer have begun to recover; through concerted cooperative action among all the countries with Mediterranean shorelines, the Mediterranean Sea has not become a dead sea as was predicted in the 1970s; nonviolent "people power" has over the last decades ousted dictatorial regimes in Chile, Argentina, Poland, former Czechoslovakia, Tunisia, Serbia, and elsewhere; and following centuries of bloody strife, peace is now a reality within the European Union. As we will see in this book, these kinds of stories show that humanity can form a successful partnership for human well-being and survival.

Creating a New Narrative: Beyond Dark Tales about Humanity

Because stories are major transmitters of culture, fundamental change requires new narratives—especially about human nature. In poet Matthew Arnold's depiction of a martial nightmare, the world:

> . . . Hath really neither joy, nor love, nor light,
> Nor certitude, nor peace, nor help for pain;
> And we are here as on a darkling plain
> Swept with confused alarms of struggle and flight,
> Where ignorant armies clash by night.[20]

Indeed, wherever we turn, in magazines and newspapers, on television, or in bestselling books, the hackneyed message is the same: human nature is bad. Look at the evidence—greed, murder, rape, endless war. That is just how it is, always has been, and forever will be.

Despite all the evidence to the contrary, these kinds of stories about an innately flawed human nature persist. A familiar brand of narrative describes our species as so defective as to require supernatural redemption; for instance, through the sacrificial death and resurrection of a god or through a series of earthly reincarnations. Another brand solves human defectiveness by imposing strict social controls, as illustrated in Plato's philosopher kings or Freud's superego.

In addition to these powerful normative narratives, other storylines claim that we have only gradually, and at best partially, emerged from an original condition of savagery that still persists under a thin veneer of civilization. This evolutionary narrative holds that our savage natal condition still lurks just under the skin—and accounts for the chronic injustice and barbaric violence of recorded history. "Scratch an altruist, watch a hypocrite bleed" captures this idea that goodness is only skin-deep.[21] And while most social scientists have rejected religious dogmas of original sin and simplistic notions of killer instincts, selfish genes, reptilian brains, Id monsters, or the shadow, this brotherhood of demonic constructs continues to present domination relations as inevitable.

Another regular feature of our normative narratives is that they generally ignore the majority of humanity: women and children. Even sociology, anthropology, and history have ignored the fundamental importance for human behavior of the formative childhood years—an omission that is astonishing. Similarly amazing is the omission of one half of our species from depictions of the human adventure, such as when museum dioramas present male apes gradually transforming into human males, while females are simply left out of the picture.

In these narratives, the female half of humanity appears in a footnote, if at all, in connection with the family, sex, love, or peripheral "women's issues." Even where women are included, they have rarely been protagonists. It has been like a play with a cast of gender stereotypes, where men are active superiors and women passive inferiors in what is often accurately termed "the story of man."

For far too long, humanity has been mired in the "darkling plain" of such tales."[22] So strong is their grip that, like the internal censor Freud postulated, they have often blocked out everything that contradicts them, not only in popular but also in scientific thinking and writings.

It is encouraging that, despite all this, we are beginning to gain a deeper and more hopeful understanding of ourselves and our world. Especially encouraging are the insights emerging from paleoanthropology, primatology, forager research, and gender studies as well as chaos theory, nonlinear dynamics, and neuroscience.

In this book, we consider how evidence from these and other fields supports a new narrative about both biological and cultural evolution. Instead of a unilinear progression from savagery to civilization, this is a multilinear, open-ended narrative.[23] We look at evolution, not as the result of simple causes and effects, but in terms of interactive processes, taking into account that this is how complex living systems, including human beings and human societies, actually operate, and that living systems are capable of fundamental change or transformation.

There is strong evidence that over the millennia of human biocultural evolution, most societies were constructed along partnership lines. Yet domination systems—with their inherent exploitation of people and nature, social and economic inequities, and direct and structural violence—came to predominate on the global stage.

To borrow the words of the former head of the Worldwatch Institute, Lester Brown, "this is no way to run a planet."[24] As we will detail, the domination system has held humanity back—and through today's ever more fearful, frenzied, and greed-driven technologies of destruction and exploitation, it may lead to our species' extinction.

There is, however, nothing inevitable about the Apocalypse. We *can* change our course. It is our hope that this book will help support this change, demonstrating that a more peaceful, equitable, and fulfilling way of life—a truly advanced humane society—is biologically possible and culturally attainable.

Notes

1. Frans de Waal, *The Age of Empathy: Nature's Lessons for a Kinder Society* (New York: Broadway Books, 2009); Douglas P. Fry, "Life without War," *Science* 336 (2012): 879–884, doi: 10.1126/science.1217987; Douglas P. Fry, *The Human Potential for Peace: An Anthropological Challenge to Assumptions about War and Violence* (New York: Oxford University Press, 2006); Ashley Montagu, *Growing Young* (New York: McGraw-Hill, 1981); Riane Eisler, *The Chalice and the Blade: Our History, Our Future* (San Francisco: Harper & Row, 1987).
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2

Evolution, Ideology, and Human Nature

Brain scans. Functional MRIs. Neuroscience. Everywhere we turn these days, these words leap out at us. The information is potentially revolutionary. But for many of us it is just another stream of factoids coming at us in disconnected bits and pieces.

So we tend to miss the most important fact revealed by neuroscience: that the neural patterns for our minds are greatly influenced by our environment, particularly in our early years. In other words, who we are is shaped through the interaction of our genes with our environments over the course of early development and into adulthood.[1]

But it is not only information overload that makes it hard for this key message from neuroscience to register. The cultural barriers are strong and deep and involve all-too-familiar tales of an unchangeable, innately selfish, violent "human nature."

These narratives appear again and again in popular books and articles; in the movies, TV, and on the Internet; and in everyday conversations and political discourse: our genes are in a no-holds-barred battle for survival. Rape, warfare, murder, and other cruelties are what allowed our ancestors to triumph in the survival-of-the-fittest contest. These "evolutionary imperatives" shaped the genes we carry, which in turn direct our behavior.

While most scientists do not take such an extreme position, there are definite battle lines about whether or not our genes keep us trapped in destructive behaviors. And this is not only an academic debate. It pits those who believe we can change human behavior through personal and cultural choices against those who believe our brains are largely hardwired to obey millennia-old genetic programming. Deterministic thinking is reflected, for example, when Michael Ghiglieri asks, "Are men born to be lethally violent? The answer is yes. Aggression is programmed by our DNA."[2]

If we believe we are governed by nasty evolutionary imperatives, we cannot solve problems such as violence and oppression. If our genes trap us in ruthlessly selfish and cruel behaviors, there is no point in trying to build more humane societies. By such reasoning, we are doomed from the

moment sperm meets egg and mixes the age-old DNA into a new being, making each individual a prisoner of genes carried forward in time from the era of our ancient hominin ancestors. To counter these ideas, we have to understand the biases behind them and the scientific data that refute them.

Nurturing Our Humanity adopts a very different evolutionary perspective, a view that recognizes the human capacities for change and choice and emphasizes biocultural interaction over determinism. This emerging perspective on human origins and behavior hypothesizes, on the basis of much data, that the default tendencies in our very social species are toward prosocial helping and caring behaviors and concludes that, although we cannot create a world that is totally free of violence and cruelty, we can construct cultures with low levels of violence and oppression where our human capacities for creativity, caring, and consciousness are allowed to develop and flourish.

From Creation to Evolution

Most cultures have origin myths that explain how life and humans appeared on Earth. In an ancient Sumerian account, the Goddess Nammu births Heaven and Earth.[3] According to a Hopi story, Hard Beings Woman breathes life into male and female effigies.[4] According to a Chinese myth, a female deity called NuWa creates the world.[5] In Japanese mythology, the creators are the goddess Izanami and the god Izanagi.[6] In a Persian story, a male named Gayomart begets life by himself: when he dies, his semen falls on Earth, and the first human couple is born from two rhubarb shrubs.[7] In the Judeo-Christian Bible, a powerful male deity called Yahweh is the creator of life: land, sea, sun, moon, animals, and humans spring into existence in response to his commands; later, when humans disobey his orders, Yahweh sentences them to eternal misery and condemns woman to be subordinate to man.[8]

All these very different accounts tell us that life and then humanity were created by powerful supernatural beings. These supernatural beings are projections of particular cultures and social structures, reinforcing prevailing ideas of what is normal, right, and inevitable.

Today, scenarios of supernatural creation coexist with scientific theories of evolution. While these evolutionary theories are in part based on

deductions from observations and laboratory experiments, they, too, can reflect particular cultural assumptions.[9]

The landmark book for the Western scientific approach to evolution, Charles Darwin's *Origin of Species*, was published in 1859 during a time of great cultural and intellectual ferment. Other naturalists had questioned the idea that all Earth's creatures were created in one fell swoop by an all-powerful God. In 1794, Erasmus Darwin, Charles Darwin's grandfather, and again, in 1809, Jean Baptiste Lamarck, proposed that the many life forms on our planet, including our own, gradually developed through natural processes. But Charles Darwin's work provided the controversial breakthrough that triggered the research and theorizing that continues today.[10]

Darwin proposed that when environments change, species either adapt accordingly or die out. The key process of adaptation through natural selection entails three interrelated principles.[11] First, within a breeding population, variation exists. Second, some variants in the population are more successful at survival and reproduction than are others and hence contribute relatively more offspring to the next generation. That is, they have higher reproductive fitness. Third, this fitness is inheritable, at least to some extent. Darwin provided examples of protective coloration to illustrate the process of natural selection, explaining that:

> It may metaphorically be said that natural selection is daily and hourly scrutinizing throughout the world, the slightest variations; rejecting those that are bad, preserving and adding up all that are good; silently and insensibly working, *whenever and wherever opportunity offers*. . . . When we see leaf-eating insects green, and bark-feeders mottled-gray; the alpine ptarmigan white in winter, the red-grouse the colour of heather, we must believe that these tints are of service to these birds and insects in preserving them from danger.[12]

As Darwin's theorizing predated an understanding of genetics, he necessarily left open questions about how characteristics are transmitted from earlier to later generations. Then, in 1937, Theodosius Dobzhansky, an experimental geneticist, published *Genetics and the Origin of Species*.[13] He and a number of other scholars forged what is called the neo-Darwinian synthesis, or simply neo-Darwinism, combining genetics with the study of evolutionary processes.

From Darwinism to Determinism

During the last decades of the 20th century, a new field called sociobiology gained popularity, especially through the writings of Edward O. Wilson and Richard Dawkins.[14] Gradually, sociobiology morphed into evolutionary psychology, but despite this name change, like sociobiologists, most evolutionary psychologists argue that how we behave today is largely the result of hominin/human adaptations to ancestral environments. They further argue that, regardless of how maladaptive this may be under present circumstances, the behaviors of modern humans are still driven by this millennia-old evolutionary legacy.[15]

Many sociobiologists and evolutionary psychologists are ingenious, even brilliant, theory builders. Some of their explanations for how selection operates in nonhuman species have inspired important research. When they insist that human behavior is not shaped solely by experience and learning, that we have to look at biological factors, they are, of course, right. When they point out that human biology developed over many millennia of evolution, they are correct. There is no question that genes must be considered in explaining human behavior, both individually and collectively.[16] There is also no question that in the course of evolution, living organisms developed behavioral patterns for self-preservation that we still carry today, for example, preprogrammed reactions to danger triggered by the sight of a snake or an unanticipated loud noise.

One goal of this book is to balance evolutionary psychology that favors selfishness, competition, and self-interest with a consideration also of the prosociality, cooperation, and caring that generally has been overlooked, minimized, and denied despite its obvious importance during human evolution and in human societies around the world.[17] We question the negative view of human nature that runs through some evolutionary psychological writings: a view that readily lends itself to justifying injustice and violence as "just the way things are."[18]

We also question the linear deterministic thinking that runs through some of this literature. Although they may not intend to do so, some evolutionary psychologists give the impression that human behavior is the product of a one-way genetic process, rather than synergetic interaction of genes and experience.[19]

Even when they recognize that learning affects behavior, these theorists contend that influencing human behavior through education is an

uphill struggle if it runs into what they claim are evolutionary imperatives embedded in human nature. And either explicitly or implicitly, according to many evolutionary psychologists, these evolutionary imperatives boil down to one implacable, overriding motivation: selfishness.

In explaining the thesis of his famous book *The Selfish Gene*, biologist Richard Dawkins summed up this view vividly: "We, and all other animals, are machines created by our genes. Like successful Chicago gangsters, our genes have survived, in some cases for millions of years, in a highly competitive world. This entitles us to expect certain qualities in our genes. I shall argue that a predominant quality to be expected in a successful gene is ruthless selfishness."[20]

After *The Selfish Gene* came out in 1976, Dawkins was widely criticized for equating self-interest, which is certainly a major factor in human behavior, with ruthless selfishness. So in the 1989 edition of his book, Dawkins responded by adding a chapter on how, in his words, "even with selfish genes at the helm, nice guys can finish first."[21]

In this later edition, Dawkins acknowledged that cooperation can be a good evolutionary strategy. But in his scheme of things, cooperation, love, kindness, and other "soft" behaviors are still only products of selfish genes striving to replicate themselves or related genes that carry the same pattern of information.

A number of evolutionary psychologists make still a further argument.[22] They claim that because of biological imperatives that developed in the course of evolution, our behaviors are driven by specialized, inherited genetic responses to particular environmental stimuli. Jerome Barkow, Leda Cosmides, and John Tooby contend that we are like computers with complex software programs. "What is special about the human mind," they assert, "is not that it gave up 'instinct' in order to become flexible, but that it proliferated 'instincts'—that is, content-specific problem-solving specialization." These writers maintain that to understand human behaviors, we have to look not at learning but at a "superstructure of evolved functional specializations."[23] In other words, they propose that our minds do not grow through learning, but that our heads are like robots, filled with millions of cognitive cubbyholes programmed for reactions to the circumstances we happen to come across.

Other evolutionary psychologists even claim that "the increasingly sophisticated human capacity for deceiving one another is what eventually gave rise to that entirely new level of representational activity we call

symbolic culture."[24] In other words, language, art, music, and so much of what we enjoy as beautiful, meaningful, and humane are the result of nastiness and deceit.

The Power of Ideology

Although in other respects evolutionary psychologists reject religious explanations, the notion of an innately flawed, ruthlessly selfish human nature is very similar to the religious dogma of original sin that for centuries justified strict top-down controls and punishments. It is also parallel to a strong strain in Western philosophical tradition. The British philosopher Thomas Hobbes saw the life of "man" (the life of women did not count) as "solitary, poor, nasty, brutish, and short."[25] In his parable of the master and the slave, the influential German philosopher Georg Wilhelm Friedrich Hegel saw only the possibility of dominating or being dominated.[26] Another celebrated German philosopher, Friedrich Nietzsche, denounced the Christian ideal of caring and compassion as slave morality.[27] Even the iconic Immanuel Kant could see nothing good in "man's" nature, claiming that only the transcendent qualities of pure reason and practical reason account for morality.[28] The point is that sociobiology and its offspring, evolutionary psychology, have arisen within the larger frame of this cultural milieu and reflect a decidedly biased view of human nature.[29]

Current theories focusing on selfishness and violence also follow the tradition of 19th-century social Darwinists. Herbert Spencer, from whom Darwin took the phrase "survival of the fittest," was a great favorite of the robber barons of unregulated capitalism. This should not surprise us. If the "fittest" are the most brutal and callous, and this results from natural selection, one can easily argue that exploitive and unprincipled economic arrangements are inevitable results of the laws of nature. This view is reflected by scholars and lay people alike, as in a letter to the editor of *Time*, which reads: "Modern psychology tells us it is the genetically determined, typical male aggression, the 'dark side of man,' that helps men climb the corporate ladder."[30]

Most evolutionary psychologists try to distance themselves from social Darwinism. Like Dawkins, they make a point of distinguishing between selfish genes and selfish behaviors, arguing that selfish genes can lead to unselfish, even altruistic, behaviors if these help genes pass themselves on

to the next generation. Usually, however, this important point is merely given lip service, whereas the bulk of what evolutionary psychologists write contradicts this distinction.

For instance, Dawkins writes that we must teach our children altruism because "we cannot expect it to be part of their biological nature."[31] He does not explain why, if altruism is not part of our biological nature, we are able to learn it.

Again and again, in these writings the emphasis is on the dark and dire side of human nature.[32] Melvin Konner writes, for instance, "I will argue that there is in human nature a natural tendency to violence and, additionally to war." David Livingstone Smith also assumes that humans have a warlike nature and then proceeds to construct an imagined evolutionary scenario to explain that which he assumes: "We inherited our warlike nature from prehistoric bands that were able to kill their neighbors and acquire their resources. These groups flourished while the pacifists withered on the evolutionary vine."[33]

These writers also claim that there are what they call evolutionary payoffs for cruel and violent behaviors.[34] Michael Ghiglieri opines, "because rape is so widespread and rampant around the planet, by males both human and nonhuman, it is clearly a male biological adaptation."[35] In the same vein, Randy Thornhill and Craig Palmer argue that rape was specifically selected for, as in certain insects that have an appendage with no function other than restraining a female during forced copulation.[36]

Thornhill and Palmer hasten to add that they deplore rape. But deplorable or not, according to them, rape is simply a successful evolutionary strategy that helps men pass on their genes—an argument that ignores, among other things, that rapists sometimes kill their victims or target women who are too old or too young to conceive, which are hardly ways to pass on genes. This argument also is contradicted by the existence of numerous societies where rape is either very rare or not known to exist—refuting the knighting of human rape as an evolved adaptation.[37]

Numerous evolutionary psychologists maintain that, like rape, warfare is adaptive and originated because of evolutionary payoffs to fitness.[38] They, too, brush over the fact that caring, sharing, nurturing, and loving, as well as helping, forgiving, conflict-resolving, and acting nonviolently, predominate in the human repertory of behavior.[39]

These writers do *not* say that caring and nonviolence are part of our biological human nature, or else we would not be capable of them. Instead,

they give the impression that what is really natural, indeed inevitable, are violence and cruelty—as reflected in their book titles: *The Murderer Next Door, Demonic Males, The Darker Side of Man, The Most Dangerous Animal: Human Nature and the Origins of War*, and *A Natural History of Rape: Biological Bases of Sexual Coercion*.[40]

What these authors are actually expressing is an *ideology* that serves to justify the direct and structural violence of hierarchies of domination and the rigid ranking of some people over others. Theirs is an authoritarian worldview in which no real agency is given to the individual, where humans are controlled by powerful forces, be they genes or those at the top of a domination hierarchy.

Control by Selfish Replicators

The value of theories lies in their power to explain and predict. The theory of adaptation through natural selection explains and predicts how species evolve, survive, or die out. A huge amount of data support this powerful theory, which has helped us understand the history of life on the planet.

However, the argument that our cultures and behaviors can be explained by selfish genes ruthlessly seeking to replicate themselves and that rape, murder, and warfare are reflections of this goes way beyond the concept of natural selection and is infused with ideology.[41] While writers taking this position may say that they are only using metaphors, their message is clear: we act, not out of our own will, but according to the will of invisible selfish replicators.

There is a difference between the *description* of what happens through natural selection and the *attribution of will and motive* to invisible forces. It is one thing to say that some genes get passed on and others do not because some women and men survive, reproduce, and leave more offspring compared with others. It is quite another to say that "the individual is a survival machine built by a short-lived confederation of long-lived genes,"[42] that, driven by selfish genes "selfish greed seems to characterize much of child behavior,"[43] or to compare genes to Chicago gangsters.[44] Such phrasing suggests that genes *want* to be passed on and that they ensure this by getting people to do violent and ruthless things.[45]

It is like saying that there are storms because gods of wind and water cause them. Just as people used to attribute nasty motives to spirits, deities,

or demons—as in the old saying, "the devil made me do it"—such thinking attributes nasty motives to genes. Instead of being told we are possessed by devils, we are informed that we are puppets of our selfish genes.

Amazingly, Darwinism and neo-Darwinism are often invoked to support this position that genes drive us to cruelty and violence—when in reality neither Darwin nor the prime architects of the neo-Darwinian synthesis held this view. As David Loye documents, these interpretations completely ignore what Darwin actually asserted in *The Descent of Man*: that in human evolution natural selection declines in significance, with learning, mutual aid, love, and what he called the development of the moral sense becoming primary shapers of who we are and can become.[46]

Likewise, Dobzhansky, Julian Huxley, and Ernst Mayr, three of the fathers of neo-Darwinian theory, emphasized that human evolution transcends prior evolutionary dynamics.[47] As John O'Manique writes in *Origins of Justice*, for Dobzhansky the human species is a transcendental product of evolution that has powers of creativity whereby it innovates within parameters which it itself constantly pushes outward.[48] Dobzhansky especially emphasized the importance of culture in human affairs. "The most significant product, and the paramount determining factor, of human evolution is culture," he tells us, and "culture is not transmitted biologically through some special genes; it is acquired anew in every generation by learning and instruction, in large part through the medium of the symbolic language."[49]

The Mounting Challenge to Determinism

By now we hope it is clear that we are not anti-evolutionary but rather anti-deterministic and that we are pointing out how ideology can masquerade as science. When comparing what Darwin and neo-Darwinists actually say with the selfish gene script, one has to be amazed at the disconnect. And the notion that ruthless genes drive our behavior seems all the more bizarre in light of many real-world observations to the contrary.

For instance, if humans were simply driven by selfish genes, how do we account for the people who saved Jews during the Nazi occupation of Europe? The Nazis made it clear that they would summarily execute not only the people who helped the Jewish population but also their entire families. So why would anyone endanger the lives and genes of their loved ones

and themselves to protect nonrelatives? The eminent Harvard design artist Krzysztof Wodiczko, born in Warsaw in 1943, once remarked, "It takes 47 people to save one Jewish family."[50] When asked what he meant by 47, Wodiczko explained that everyone in a Warsaw building, all 47 neighbors, cooperated to hide and provide food for his family during the Nazi occupation. In Denmark, through a massive cooperative effort, more than 90 percent of Danish Jews were hidden and then smuggled out of the country to Sweden before Hitler's Third Reich could round them up for deportation to concentration camps.[51]

Moreover, if humans were simply motivated by evolutionary imperatives that drive us to purely self-centered acts, why have millions of people throughout recorded history worked to change unjust and cruel customs and policies—sometimes at the cost of their lives? And if our cultures were just the product of ancient self-interested evolutionary imperatives, how could many cultures over the last centuries have succeeded in making fundamental cultural changes that we today take for granted—from abolishing slavery to ending witch-burning? If selfish genes hardwire our brains, how could people develop new ways of thinking and new social structures in so short a time?

The answer is that rather than being hardwired for ruthless selfishness and violence, a huge corpus of evidence, as we will explore in this book, indicates that humans have also evolved powerful capacities, indeed proclivities, for empathy, equity, helping, caring, and various other prosocial acts.[52] Today, some evolutionary psychologists such as Jonathan Haidt acknowledge the importance of these human capacities. Others, such as Steven Pinker, are taking note of how behaviors and social institutions can and do change in just a few hundred years.[53]

In his 2002 bestseller *The Blank Slate*, Pinker denied that the cultural environments we create make any difference, arguing that neither families nor peer groups count and that the only factor to consider, in addition to genes, is chance. He wrote that violence is "a near-inevitable outcome of the dynamics of self-interested, rational social organisms."[54] But a decade later, in his *The Better Angels of Our Nature*, Pinker takes a very different stand. Arguing that violence has actually decreased over recent centuries, Pinker now asserts that these behavioral changes are far too recent to be attributable to genetic changes, and therefore we must look at factors such as better government, the Enlightenment, greater prosperity, health, education, trade, and improvements in the status of women to explain them. In

this 2011 book, Pinker proposes that a civilizing process, a humanitarian revolution, and a rights revolution—in other words, changes in culture—are key to changes in behavior.[55]

But lest we think that Pinker made a complete turnaround, it is by no means clear that he has changed his mind about the primacy of genes because he has not repudiated his earlier assertions. Nor has Pinker reversed his stance that prehistoric human societies were racked with violence "in a state of nature."[56] So the path toward a more balanced perspective for explaining human behaviors and institutions will not be quick or easy.

Nonetheless, the evidence challenging deterministic assumptions of human selfishness and violence is accumulating at an ever-faster pace. This makes what the historian of science Thomas Kuhn called a scientific paradigm shift an increasing possibility.[57]

Study after study drawing from archaeology and observations of contemporary nomadic foraging societies—analogs for life among ancestral nomadic forager groups over the course of human evolution—are demolishing popular notions of our species as inherently warlike naked apes. As Doug has realized, "the often expressed idea that members of one nomadic band regularly raid other bands to steal women, gain territory, or simply to kill as many people as possible is for the most part a misconception not substantiated by a visit to the facts."[58] Other scholars point to archaeological findings showing that warfare, male dominance, and rigid social stratification (the configuration of domination systems) only began to appear a few millennia ago.[59] As we will consider in more detail later, even the arrival of agriculture did not always bring warfare.

For instance, Brian Ferguson reports what appears to be a 10,000-year period of peace in the Southern Levant of the Near East.[60] From about 15,100 years ago until 5,200 years ago, there are only a handful of skeletons showing lethal violence over thousands of years, with no mass casualties, no sacked settlements, no fortifications, and no placement of settlements in naturally fortified locations—in short, none of the usual indicators of war. Ferguson opines, "The people of the Southern Levant domesticated nature. It is a pessimistic view indeed to presume they were not also capable of domesticating conflict."[61]

Another example of enduring peace comes from an early agrarian settlement called Çatalhöyük in Anatolia. Here there are no convincing signs of destruction through warfare for 1,000 years.[62] Houses and grave goods show no signs of large disparities between haves and have-nots. And

verifying its more partnership-oriented social configuration, Ian Hodder, the archaeologist currently excavating Çatalhöyük, notes with some amazement, "even analyses of isotopes in bones give no indication of divergence in lifestyle translating into differences in status and power between women and men," suggesting "a society in which sex is relatively unimportant in assigning social roles, with neither burials nor space in houses suggesting gender inequality."[63]

There are similar findings from the Minoan civilization that flourished on the Mediterranean island of Crete until about 3,500 years ago, contradicting the view that centralized, complex, technologically and artistically advanced cultures require massive inequalities and control through violence.[64] Findings such as these do not bear out the notion of evolutionary imperatives that drive us to inequity and violence.

New Evidence about Human Nature

There is now a plethora of evidence from many fields, ranging from ethnography, history, and psychology to genetics, neuroscience, and ethology, that provide a shock-and-awe set of counter-arguments to the assumption that selfishness and violence are central to what it means to be human. Certainly human beings are capable of engaging in atrocities, brutality, and mayhem. That is obvious. But, as we will explore in this book, our "better angel" capacities, to borrow Pinker's phrase, for empathy, mutuality, caring, and restraint against violence, actually manifest themselves across cultures; occur far more frequently than physical violence in any society; are critical for the raising of the young; and have clear survival value.

Proposing that humans have a proclivity for prosocial behaviors such as caring for and connecting with others over raw violence and selfishness may seem like heresy in face of popular and scientific writings that focus on the darker sides of human nature. However, viewed from an evolutionary perspective, as biologist Frans de Waal documents in *The Age of Empathy*, helpfulness, mutuality, and empathy actually have a long and deep evolutionary history.[65]

Caring, sharing, tending, and befriending may have originated in relations between kin and other group members—especially between mother and child. But in the course of evolution, these prosocial proclivities not only extended to others but also left a deep mark on the human brain.[66] To

illustrate, experiments show that babies cry more when they hear the taped cries of other babies than when they hear recordings of their own crying, suggesting that they are responding empathically to someone else's distress, not just to a certain pitch of sound.[67] Babies also seem to want to assuage the pain of others: once they have enough physical competence, starting at about 1 year old, they soothe others in distress by stroking and touching or by handing over a bottle or toy.[68]

Toddlers, too, have a basic impulse toward mutuality and helpfulness that has been experimentally verified. Felix Warneken of the Max Planck Institute for Evolutionary Anthropology did an experiment where 18-month-olds watched him "struggling" with ordinary tasks such as hanging towels with clothespins or stacking books. Over and over, as he "accidentally" dropped a clothespin or knocked over books, every one of the 24 toddlers participating in his experiment offered him help within seconds—but only if Warneken appeared to need help. When he threw a pin on the floor or deliberately knocked over a book, they did not respond. However, if it looked like he needed help, they quickly toddled over, grabbed the object, and eagerly handed it back to him.[69] To test the toddlers' motivations, Warneken made a point of *not* thanking them, much less rewarding them. This indicates that their motives stemmed from empathy and altruism rather than an expectation of praise or a reward. They were simply responding to a stranger's need by coming forward to help.

Theories that people are only helpful when they are related or expecting a payback ignore the evidence.[70] And this evidence not only is about human helpfulness but also is about that of other species.[71] For example, dolphins and gorillas have rescued humans: creatures they are clearly *not* related to, and from whom, as Warneken found with the toddlers he studied, they are not expecting a reward.

This leads to a very important finding from neuroscience: our impulses toward empathy, helpfulness, and mutuality are linked not to extrinsic rewards but to rewards intrinsically embedded in our brain's neurophysiology.[72] In later chapters, we will look at brain scans studies showing that when we engage in mutually beneficial behaviors, even with strangers, the "pleasure centers" of our brain light up.[73] Even more striking is that neural reward areas light up *more* when we care for others than when we only look out for ourselves.[74]

What these kinds of findings indicate is that in the course of evolution humans developed a brain primed more for living in partnership-oriented