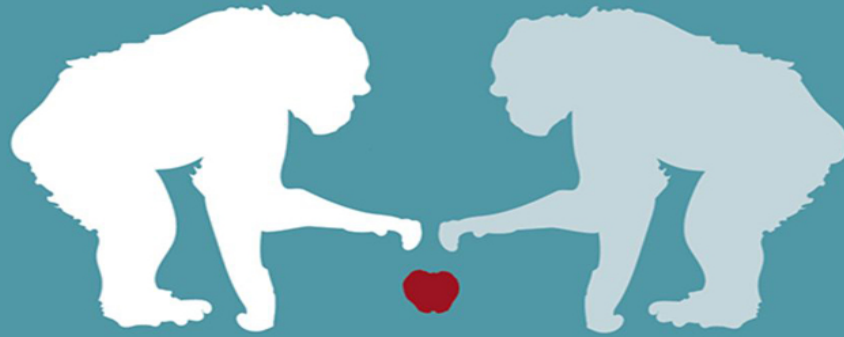
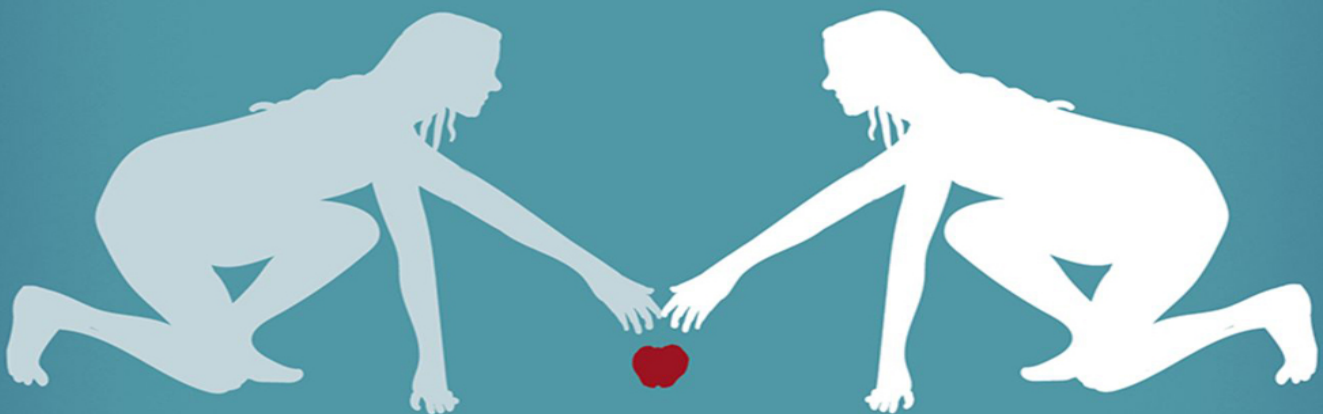


Victor Kumar & Richmond Campbell



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The Evolution of the Moral Mind
and How it Made us Human

A Better Ape

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*The Evolution of the Moral Mind and How It Made
Us Human*

VICTOR KUMAR AND RICHMOND CAMPBELL

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“There is grandeur in this view of life . . .”

Charles Darwin, *On the Origin of Species*

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Preface: Origins

In the beginning, strands of organic material floated on the face of the deep. A cellular fortress, once found, offered protection from the lawless, ravaging forces in the wilderness beyond, yet granted entry to those heathens who could be converted to the earliest doctrines of procreation. Life was fruitful and increased in number. The waters teemed.

Half of life's history passed with only simple cells to bear witness. Then, two billion years ago, some cells began to engulf others. Cells within cells were delegated such tasks as storing designs and producing energy. It would take another half a billion years for complex cells to join forces en masse—to assemble a new superorganism.

Eventually, multi-cellular life became multi-functional. A division of labor was contracted between cell groups, leading to the evolution of plants, fungi, worms, and fish, less than a billion years ago. Within a few hundred million years of their first appearance, all of these organisms gained the wherewithal to leave the ocean and colonize the once-empty land.

Starting only thirty or forty million years ago, some animals took another step by establishing social collectives, banding together into troops, packs, and pods. They protected one another, shared food, and raised offspring together. Cooperation gave rise to elephants and wolves, dolphins and whales, monkeys and apes.

Finally, on a single branch of the tree of life, within just one small family of social primates, a new kind of ultra-cooperative animal evolved. During the last few moments of life's immense history, nature created humankind.

And was it good?

Too soon to tell.

* * *

The Earth in its bounty brings forth an overabundance of life. In the struggle for existence, the laws of natural selection favor individuals who

happen to possess superior abilities to survive and reproduce. In general, nature does not look after organisms that do not look after themselves, much less those that sacrifice their own interests for the sake of rivals.

Yet, during major evolutionary transitions in the history of life, individuals joined forces, the parts enlisted in the service of the whole. The activities of complex organisms began to subsume the activities of their constituents. And so, evolution slowly expanded its focus: the units of natural selection were no longer just individual cells but also groups of individuals, groups of groups, and so on.

Strife was inevitable. Individual units developed persistent conflicts of interest. The heedless pursuit of parochial self-interest was fatal to collective unity.

Within a complex organism, most possibilities for advancing self-interest have long been foreclosed. Cells cannot generally survive outside their designated home (cancerous cells being an unfortunate exception). Within a group of cooperative animals, however, individuals confront a recurring temptation to advance their own interests at the expense of the group.

A cooperative animal usually depends on fellows, its interests yoked to theirs. But the risks of spurning or exploiting the collective are sometimes worth the opportunity of lucrative personal gains in reproductive fitness. Cooperative species are therefore uncommon in nature. Capable of deeply flexible and open-ended cooperation, ultra-cooperative species are so rare that only one now remains.

* * *

We exist, alongside every other living human, because our ancestors found a way to sustain a wide range of interdependencies. They became moral. Deep within our family tree, feelings of kinship expanded in scope. Our ancestors left surviving descendants by caring consistently for one another. But this was only the beginning.

Humans became intensely cultural creatures, capable of transmitting prodigious amounts of adaptive information through language and observation rather than only by replicating genes. Through cultural evolution, human bands inherited and refined moral rules and reasons for reducing conflict and sustaining cooperative ventures.

Eventually, complex culture accumulated and gave rise to elaborate social institutions like politics and religion that fostered dramatic revolutions in knowledge, technology, and social organization. What's more, by scaling up morality, social institutions allowed humans to live in societies that were large, diverse, and unified—albeit often at the price of devastating violence and oppressive social hierarchy.

None of this was the result of intelligent design. Like the simplest cells that founded life on Earth, human morality is a product of slow but ceaseless evolution by natural selection.

Morality is a bio-cultural adaptation. Its evolved function is to resolve problems of interdependent living and preserve collective unity. And so, morality promises, for better or worse, to bring about the next major evolutionary transition in the history of life.

* * *

We're going to tell a story about the evolution of morality, one supported by empirical research in a wide range of scientific fields. We'll explain how morality evolved. More than that, though, we'll explain how morality was vital to many other breakthroughs in human evolution.

It's morality that enabled one group of cooperative animals to evolve incredibly complex social structure; morality that led to the evolution of their capacious intelligence and extensive knowledge. Morality isn't simply one facet of human nature. It's why humanity grew out of nature.

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Introduction: Morality

Until Charles Darwin published *On the Origin of Species* in 1859, it was reasonable to believe that all life's origins are supernatural. Each and every plant and animal found in nature seems to bear the mark of a higher intelligence. There can be no design, ostensibly, without a designer. No timekeeping without a divine watchmaker.

Well before the 19th century, it was possible to grasp that physical laws of cause and effect govern inanimate objects. But the biological world still appeared quite different. The activities of living creatures seemed to be governed not just by material causes but by their goals or purposes, fixed by the intentions of a Creator.

If God designed humans, so it has seemed, it must be that His intentions fix our purposes, too. And so, many people could once reasonably believe that God's will determines what makes human life meaningful, what ends we should pursue, and what we owe to one another.

None of this theology survives Darwin.¹

It took a while, but evolution would eventually fashion a creature that was smart enough to understand evolution itself. Before Darwin, no human ever truly knew their origins. Other thinkers had hypothesized the tree of life before him, but Darwin was the first to substantiate the hypothesis by identifying a mechanism.

The mechanism that makes life possible, in all of its profusion and diversity, is remarkably simple: living beings are complex physical and chemical systems designed blindly by competition to make increasingly abundant and resilient copies. Like all other life that still exists on Earth, we are simply the newest buds on this grand and ancient four-billion-year-old tree.

More than any philosopher, Darwin transformed our shared understanding of the natural world and the place of humankind within it. But evolutionary science does more than explain where we came from. It also promises to show us who we are and why.

1. The Moral Mind

In this book we'll try to convince you that Darwinian evolutionary science explains what morality is and what it might become. Humans have an *evolved moral mind*. We'll shed light on the moral mind by explaining how it arose, how it has been shaped by the evolution of cultural practices in human societies, and how it continues to evolve today.

To make our case, we'll rely on a general model of human evolution that is still relatively new but already ineliminable from serious evolutionary science: gene-culture co-evolution. Genes and culture are two distinct mechanisms of inheritance, both subject to the influence of Darwinian selection. Genes are passed to offspring; culture is more promiscuous.² Our species exists, moreover, because genetic evolution and cultural evolution fueled one another.

Genes and culture evolved in tandem. As a consequence, hardly any sophisticated human traits are strictly genetic in design. From the beginning of development, human traits are the product of nature and nurture. Thus, few capacities in the human mind are exclusively biological and pre-cultural such that every human being inescapably possesses them.

The evolved moral mind is partly cultural rather than purely biological. But it is still nearly universal among living humans, due to ancient and entrenched culture. Received wisdom has it that just because a trait is biological does not mean that it is inevitable. But another piece of wisdom, not yet widely received, is that just because a trait is cultural does not mean that it is optional.

Culture is essential to human biology. Development cannot unfold unless children receive cultural input from parents, elders, and peers. Humans severely deprived of love, friendship, or instruction may lack a full-fledged moral mind. But moral culture is a part of normal human development. It is, as much as anything else, an aspect of human nature.

Human morality is a legacy of primeval times, yet it was not fixed forever in a setting sometimes called the "environment of evolutionary adaptation." The moral mind did evolve during the Pleistocene. But the Pleistocene is past. Because morality is partly cultural, nothing of it is pristinely biological or closed to variation and change. The subject of this book is thus the contingent, bio-cultural moral mind and its family patterns of similarity and variation across societies.

We'll use the latest Darwinian science to identify and shed light on three main ingredients in the moral mind. The first and oldest is a set of *core moral emotions* that control behavior, expression, and learning. Other animals have moral sentiments, but humans possess richer and more complex emotional capacities. As the philosopher David Hume grasped, feelings paint the social world around us with moral value.³

The second ingredient of the moral mind is a set of *core moral norms* that flexibly guide expectations, cooperation, and punishment. Humans alone have a psychology that is primed to learn and internalize normative rules. The philosopher Immanuel Kant felt wonder and awe at these moral laws that arise partly from within, though he may not have been fully alive to their multiplicity and potential discordance.⁴

The third and final ingredient of the moral mind is a *core capacity for open-ended moral reasoning*. Scientists often downplay moral reasoning; philosophers are known to aggrandize it. In our own scientific and philosophical theorizing, published in academic journals over the last decade, we've explained how moral reasoning works "on the ground." Moral reasoning is not an individual faculty but a social capacity and cultural practice. Human moral beings are designed to deliberate with kith and kin about what to do and how to feel.

Other cooperative animals, such as chimpanzees and elephants, have traits that resemble human morality. For instance, they share with us a capacity for sympathy. But it's because they lack all the complexity of the moral mind that none of these otherwise singular creatures are able to cooperate on elaborate, large-scale, long-term projects—as humans do and have done for hundreds of thousands of years. Humans alone are capable of negotiating peace with their enemies, articulating and obeying moral principles, and creating more inclusive and more egalitarian societies.

Humans are also the only cooperative animals capable of demonizing outsiders they have never met, boasting about principles but paying them only lip service, and subordinating others from a position of presumed moral superiority. Don't assume human nature is necessarily good. To call a trait uniquely human is not to award it a badge of honor.

That said, this book develops an evolutionary explanation for a trait that philosophers and other students of the human condition have often seen as ennobling. Humans have an evolved moral mind that underwrites the possibility of peace and justice. And yet, by the end of the book, we'll see

that human morality also has a dark side. Some of the greatest threats to human progress and survival come from within morality itself.

2. Darwinian Explanations

If nature is “red in tooth and claw,” then it may seem impossible for morality to be a product of Darwinian evolution.⁵ On first blush, it’s true that natural selection demands only ruthless competition. Upon more careful reflection, however, it’s clear that cooperation can be adaptive. Cooperation is what fueled major evolutionary transitions in the history of life, as simple cells became complex, single cells merged into multi-cellular organisms, and individuals formed tight-knit groups.

Millions of years ago, our ancestors were just another group of cooperative animals. They lived in groups to defend themselves from external threats. They shared resources, energy, and affection. In these respects, they weren’t much different from present-day wolves, dolphins, or chimpanzees. Everything changed when the earliest humans evolved and intelligence took its first great leap.

Humans engaged in complex forms of collaboration that rested on broad divisions of labor. An extensive web of interpersonal relationships helped our ancestors to hunt more daunting prey; to prevent would-be tyrants from dominating comrades; to manage sometimes violent, sometimes peaceful relationships with neighboring bands; and to feed, protect, and apprentice precocious offspring through a prolonged childhood and adolescence into adulthood. Human intelligence evolved in tandem with this complex social structure. So did morality.

The central driving force of human evolution is interdependence. In a demanding and fluctuating environment, nature cultivated friendships and alliances. Those humans who were sufficiently benevolent and trustworthy to give and repay favors were preferred by natural selection because they were able to reap the benefits of cooperation. Living free of social bonds meant dying off.

Differences between humans and other cooperative animals mounted once our ancestors began to accumulate culture and evolved social norms. Norms are shared rules about how we should and shouldn’t behave. They are also backed by sanctions against individuals who violate them. Culturally transmitted norms offered more precise and flexible tools for

cooperation. Humans evolved distinctively moral norms entwined with moral emotions. Equipped with an open-ended plurality of emotions and norms, humans also evolved a capacity for moral reasoning to reduce moral uncertainty, resolve conflict, and coordinate behavior.

The bio-cultural evolution of emotions, norms, and reasoning set the stage, inadvertently, for the cultural evolution of social institutions. These intricate cultural adaptations bound small bands together into large tribes and thereby set human history on a new and radically divergent course. Ever since humans gained cumulative culture, Darwinian selection began to emphasize the success of groups in competition with other groups, sometimes at the expense of individuals within them.

We've just given you an initial sketch of the Darwinian explanation of morality offered in this book. However, some evolutionary narratives are guilty of telling tales. A "just-so story" is a Darwinian explanation for a trait that is seemingly plausible but lacks the empirical evidence needed to back it up. Not all human traits are adaptations, notwithstanding the eager availability of just-so stories hungry to explain them. Some traits are capricious effects of random evolutionary drift, or by-products of developmental constraints, or acquired through experience and learning.

The scientists most often accused of telling just-so stories are evolutionary psychologists who theorize about gender differences. One common trope is that men are innately more promiscuous than women because they had a higher upper limit on their reproductive fitness. Women can bear children no more than once a year, while men can potentially breed much more often.⁶ However, it is at least as likely that relative promiscuity depends on a patriarchal culture that enhances men's privilege while limiting women's safe options. Because it's often easy to tell a just-so story, even for traits that aren't truly adaptations, the initial likelihood of any given one is low.

Darwinian explanations are inescapable, however, for traits that exhibit "adaptive complexity," like the cardiovascular system, visual perception, or any number of other biological systems. Adaptively complex traits are composed of a set of interlocking mechanisms that could not exist except for the fact that they perform a crucial function—because they contributed one way or another to evolutionary fitness.⁷

The moral mind, we'll show, is also adaptively complex. Despite much cultural diversity, humans share a bio-cultural core: moral emotions, moral

norms, and moral reasoning. These three core elements of the moral mind do not operate in isolation from one another. As will emerge in the first half of this book, the moral mind is an interlocking set of affective and cognitive capacities that perform a crucial function. The original function of morality, in the broadest sense, was to resolve problems of interdependent living. Morality therefore begs to be seen in a Darwinian light.

Since the moral mind is adaptively complex, it is very likely a product of natural and cultural selection. But that doesn't mean that any old Darwinian explanation is good enough. Empirical evidence is necessary to separate the wheat from the chaff, to distinguish scientifically credible Darwinian explanations from fanciful just-so stories. Our next task in this introduction is to explain the methodology that will enable us to develop a credible Darwinian explanation of human morality in the rest of the book.

3. Evolutionary Science

The most plausible theories of human evolution are informed by a wide range of evidence from many scientific fields: primatology, comparative animal cognition, genetics, developmental psychology, cognitive psychology, social psychology, behavioral economics, game theory, formal modeling, paleontology, anthropology, and archaeology.

These scientific fields can be used to construct a credible case about our remote past. Plausible theories of human evolution draw an "inference to the best explanation," as philosophers of science often put it. A theory is the best explanation only if it explains diverse scientific evidence culled from disparate sources. The aim is to triangulate.

This book is an attempt to triangulate from the triangulators.

We are philosophers, not scientists. We don't run experiments in the lab or conduct fieldwork in the wild. But we are avid and critical consumers of science. Well-confirmed scientific theories are our data. We sift through multidisciplinary evolutionary science, find ideas that are empirically robust, cast aside ideas that are unsupported or clouded by bias, build on what's left, and construct a single, coherent picture of human evolution.

As philosophers, we seek the best explanations of all relevant evidence. Trained to think about abstract ideas and logical coherence, we also root out unseen implications of existing theories and explore the ethical and political ramifications of science. In sum, then, this book develops a scientifically

grounded narrative about morality by searching for the best thought on human evolution, weaving it into a coherent web, and extending it into unexplored spaces.

Scientists and philosophers sometimes say they only want to explain how morality and Darwinism are compatible in principle. That is, they wish to explain “how-possibly” morality evolved. On the contrary, however, we think that Darwinism doesn’t merely tolerate morality: it richly explains it.

By drawing on convergent evidence from many different sources, our evolutionary hypotheses about the moral mind in [Parts I](#) and [II](#) of this book aspire to “how-probably.” But we’ll be clear when, by contrast, we’re offering a more conjectural “how-maybe.” For example, to explain the cultural evolution of pre-historic institutional moralities in [Part III](#), we project from empirically well-grounded theories, since direct empirical evidence happens to be scarce. Nonetheless, our evolutionary hypotheses and conjectures are plausible because they issue from a new framework that offers the best explanation of a wide range of evidence.

Books on human evolution often explore One Big Idea. For instance, Richard Wrangham argues that humans evolved because they managed to tame fire.⁸ Sarah Hrdy, another central figure in the science of human evolution, argues that humans evolved because they found a way to raise offspring collaboratively.⁹ It’s exceedingly likely that several such theories of human evolution are true. There is no single, fundamental force in human evolution, no “magic bullet.” Fire and cooperative parenting, for example, were both critical. Each credible theory provides one piece of the larger puzzle of human origins.¹⁰

This book also explores One Big Idea. Our theory is designed to be synthesized with ideas from Wrangham, Hrdy, and others. But it also unifies Darwinian theories of human cooperation under a bigger picture. Our Big Idea is that *morality helped drive human evolution*.¹¹ Humans exist because of a recurring evolutionary dynamic between three broad factors: *morality*, *intelligence*, and *complex sociality*. This dynamic shaped not just our family, genus, and species before and during the Pleistocene, but also our tribes and societies in the Holocene and Anthropocene.

Our ancestors survived in new environments, both natural and artificially constructed, because they developed a complex and interdependent social structure. Nature selected for individuals who were smart enough to navigate increasingly complex social environments. But complex sociality

was possible only because humans had moral feelings and thoughts that stabilized the social relationships within their communities. Without morality, complex sociality and intelligence would have collapsed. Morality is thus one central character in a tangled co-evolutionary story that culminated in you and us and everyone we know.

As we'll see, the co-evolution of morality, intelligence, and complex sociality helps explain the accumulation of human knowledge and the institutional structure of our societies. Yet, our principal focus in this book lies with morality itself. We want to understand how this co-evolutionary process created our moral minds and then continued to re-shape them. Groups of clever humans were capable of wide-ranging and flexible cooperation because they evolved a series of increasingly complex moral adaptations—in feelings and behavior, rules and reasoning, institutions and ideology. We'll integrate the most credible scientific and philosophical work in multidisciplinary evolutionary theory to develop a rich and novel moral psychology, one that explains how human societies arose in the first place and how they continue to evolve.

4. Moral Psychology

Are humans purely selfish or are they sometimes altruistic? What motives lead people to do the right thing? Is emotion the master of moral behavior and reason only its servant? Do societies have fundamentally different moralities?

The study of questions like these has occupied the most significant figures in the history of Western moral philosophy: from Plato to Aristotle, Hobbes to Hume, Kant to Mill. All of these philosophers, however, lived in eras when the science of morality had yet to flourish. Present-day thinkers are luckier. Contemporary research in cognitive science, social science, and biological science has the potential to shed new light on old philosophical questions in moral psychology.¹²

From ancient philosophers to 20th-century scientists, traditional thought in moral psychology has frequently overlooked culture.¹³ The science of morality in the 21st century shows how badly mistaken they were. Hardly anything in morality makes sense except in the light of culture.¹⁴

To begin with, moral norms were transmitted culturally for hundreds of thousands of years, imposing deep and persistent selection pressures on

human bodies and minds. For example, moral norms did not tolerate violent alphas or conniving freeloaders. In norm-guided, ultra-cooperative groups, members of our family tree who retained juvenile traits thrived, becoming friendlier and more docile, dogs to our former wolves.

We used culture to domesticate ourselves—albeit unwittingly—long before we did something similar to other animals.¹⁵ Thus, self-domestication favored brains prepared to feel moral emotions and suited to learn and internalize culturally inherited norms. Our ancestors cultivated descendants who were sentimental rule-followers.¹⁶ Through long gene-cultural evolution, we changed our own moral biology.

Through evolution, we also changed our own moral culture. Starting as early as 100,000 years ago, humans started to become “behaviorally modern” and technologically inventive. This major evolutionary transition seems to have been enabled by another adaptation for resolving conflicts between individuals and between groups: social institutions. Arising through culture, the earliest social institutions facilitated broader interdependencies but also more hierarchical divisions of labor and status, precipitating the slow and yet accelerating evolution of other cultural adaptations, including complex knowledge and technology evidenced in the archaeological record.

Social institutions also co-evolved with culturally constructed moral minds to create *institutional moralities*. Thus, in modern humans, moral feelings and thoughts are shaped by their connections with social institutions like politics, religion, and family. Institutions such as these domesticated our cultural minds without augmenting our innate psychological endowment.

Philosophers have many differences of opinion (to put it mildly). And yet, many philosophers have long shared a view according to which the moral mind is unitary. Morality has been thought to consist fundamentally in a single capacity universal to all human persons—like empathy or practical reason. What we now know about the biological and cultural evolution of morality offers powerful reasons to abandon this traditional view.

Human moral psychology is radically pluralistic, even just considering the moral mind that had formed by the time our species spawned 300,000 years ago. Emotions, norms, and reasoning are three distinct cores of morality. Each core, itself complex, provides capacities for moral thought

and motives for moral behavior. Moral values and virtues are therefore always plural and potentially at odds, reconciliation never guaranteed.

Like every other modern human, you contain moral multitudes. Furthermore, as inhabitants of one or another modern tribe, you belong to various eclectic social institutions. Culturally variable institutions give rise to different patterns of moral reasoning, produce distinctive moral ideologies, and radically re-shape emotions and norms through early development and adulthood. Family, religion, and politics create wildly diverse moral minds, related only through family resemblance.

[Parts I](#) and [II](#) of the book advance a pluralist theory of the complex moral mind. We'll see how each bio-cultural component evolved as our family, genus, and species were born. [Parts III](#) and [IV](#) develop an underexplored institutional perspective in moral psychology. This perspective explains rich moral diversity across societies. As we'll discover, the cultural co-evolution of moral minds and social institutions seems to be a major source of momentous psychological and social change.

Evolution matters. After millennia of religious fog about our origins, Darwinian evolutionary theory finally gives us a clear view of ourselves and our place in the natural world. It can even help us understand human culture. But evolution also matters in another way, as we'll see in [Part IV](#) of the book. It can help guide our ethical responses to the world that we have inherited. Understanding where we come from and who we are promises to shed light on where we might go and who we should become.

5. Evolution and Ethics

The first and most prominent marriage between evolution and ethics was a nightmare. Under Social Darwinism, “survival of the fittest” mutated from credible scientific theory to abhorrent political ideology. Nature favors individuals who are best able to confront their environment, and therefore—supposedly—we should favor them too. Those who cannot survive without charity should be left to die or hurried toward their natural fate.

Social Darwinism no longer has much currency, thankfully, but it was once a very popular moral and political outlook. It undergirded the hideous eugenics movement that took hold during the first half of the 20th century, not only in Germany but also in America, Britain, and Canada (among

many other countries). Individuals thought to be “defective” were sterilized or exterminated for the presumptive good of the species.

One of many problems with Social Darwinism is that it erroneously projected a political doctrine of individualism and class privilege onto nature. In fact, the fittest humans have always relied on others, and not just in childhood. The fatal flaw of Social Darwinism, though, is that it confused how the natural world actually works with how it ought to work. Nature’s purposes are not necessarily ours.

This brings us to a fundamental distinction that is a central and enduring insight of moral philosophy: the difference between descriptive ideas and evaluative ideas. That I fell is descriptive. That you shouldn’t push me is evaluative. Thus, on the one hand, some ideas describe what the world is like. If the description and the world do not match, then the description must be changed. On the other hand, some ideas evaluate how the world should be. In case of mismatch with evaluation, it is the world that begs to be changed.¹⁷

Philosophers have long recognized that a barrier separates description from evaluation. Descriptive ideas alone do not entail evaluative ideas. For example, a social practice may be designed by biological or cultural evolution, but it does not follow that the social practice should be sustained—not if it harms or oppresses people. Thus, Social Darwinists failed to see that just because a social arrangement favors the “fit” (descriptive) does not make it ethically justified (evaluative).

As philosophers say: heed the “is-ought gap”¹⁸ or else commit the “naturalistic fallacy.”¹⁹

We’ll be careful in this book to avoid slipping illicitly from descriptive ideas to evaluative ideas. For example, we’ll argue that morality evolved because it enabled humans to live together interdependently. It does not follow that morality should always serve the end of cooperation. Sometimes the right thing to do may well be to disrupt a cooperative scheme that systematically disadvantages some of its participants.

If evolutionary science is descriptive and if ethics is evaluative, then it may seem as though evolution is irrelevant to philosophical ethics. It’s true that evolutionary science does not by itself entail any ethical conclusions. So far as we know, there is no way to get from natural “is” alone to ethical “ought.”

Nonetheless, descriptive evolutionary ideas can be ethically relevant: they can be combined with evaluative ideas that are independently plausible. If we start with some plausible ethical assumptions—plausible at least to us and to most readers of this book—evolutionary science can provide enough empirical leverage to arrive at new ethical conclusions.

We'll argue that the moral mind co-evolves, in cultural evolution, with institutional social structure. Evolutionary science that explains how psychological and institutional dynamics have furthered worthy ethical goals in the past can offer clues about how they can be effectively pursued in the future. Conversely, evolutionary science explains how cycles of institutional hierarchy and subordinating ideology breed and sustain immorality, and so it can suggest how they can be effectively overcome.

Science is a descriptive enterprise and therefore does not evaluate which ends are worth pursuing. But science does have the power to discover instrumentally valuable means to our ends. In a nutshell, that's how evolutionary science can help us answer evaluative questions in philosophical ethics, as we'll see in the fourth and final part of the book.

6. Science and Philosophy

Some topics in science and philosophy are highly technical. To be credible and advance knowledge in their fields, articles and books on these topics must adopt a form and vocabulary accessible only to audiences with a great deal of academic training. We've written many essays like that in the past.

The subject matter of this book isn't technical. It's about the secret moral drama in our family tree.

We'll cover the many different scientific and philosophical topics touched on in this introduction, but we'll approach each topic one at a time. We'll rely, necessarily, on evidence from complex scientific research and abstract philosophical arguments. But citations, technical details, and context within ongoing scientific and philosophical debates are deferred to notes at the end of the book.

This book isn't just for specialists. But it does grapple with the latest theories of human evolution and attempts, in its own modest way, to advance knowledge in the field. We'll synthesize a range of multidisciplinary ideas in evolutionary science and use them to explain the evolution of morality and build an original moral psychology. For that

reason, the book should also be of interest to scientists, philosophers, and other researchers who study either human evolution or morality.

Scientists will be especially interested in two things. The first is our general framework about the co-evolution of morality, intelligence, and sociality. We'll develop this powerful Darwinian framework and apply it at different stages of human evolution and at different levels of biological and cultural organization. Scientists will also be interested in the payoff: a series of nested and progressively more abstract empirical hypotheses about evolved moral architecture in our bodies, minds, and cultures.

Philosophers will be especially interested in our moral psychology. We'll offer new philosophical theories of moral emotions ([Chapters 1 and 2](#)), moral norms ([Chapters 3 and 4](#)), moral reasoning ([Chapter 5](#)), and institutional moralities ([Chapters 6 and 7](#)). Our moral psychology will also seed ideas in ethical theory about how institutional moralities can either improve or deteriorate over time ([Chapters 8, 9 and 10](#)).

The book you are reading is the product of an intellectual partnership that began more than fifteen years ago. We've worked together to understand the mutual relevance of ideas in moral philosophy with research in the science of morality. Much of our collaborative research has centered on a form of moral reasoning that we dubbed "moral consistency reasoning."²⁰ This type of reasoning pervades legal systems and everyday moral conversation. It's imbued with feeling and oriented toward concrete cases rather than abstract moral principles. And it typically unfolds through social dialogue rather than inside one person's head.

A strikingly large number of scientists and philosophers hold that moral reasoning is usually only "post-hoc rationalization" of gut reactions.²¹ Our work has sought to fracture this false consensus. We've argued that, in the right social contexts, moral consistency reasoning has a powerful effect on moral thought and feeling.

This book builds on our earlier work by showing that consistency reasoning was critical in the evolution of morality because it sustains open-ended and flexible cooperation. As we'll see, though, moral reasoning isn't just of historical interest. Positive feedback loops between reasoning and social institutions not only fostered morally evolved societies in the recent past but promise to do so in the future as well.

7. Roadmap

All that remains is an explicit roadmap of the book, a trip in four stages. [Part I](#), “Moral Apes,” covers the evolutionary origins of morality from our common ancestors with great apes to the birth of the *Homo* genus. We’ll uncover the moral capacities that unite chimpanzees and humans ([Chapter 1](#)) and those that differentiate them ([Chapter 2](#)). These primeval moral capacities arose through natural selection and paved the way for the dramatic impact of culture on human evolution.

[Part II](#), “Moral Minds,” covers the development of morality during the flowering of our genus (*Homo*) and the birth of our species (*Sapiens*) through gene-culture co-evolution. We’ll identify three cores of the bio-cultural moral mind and explain how each was integrated with the rest. Core moral norms distinguished us from older members of the *Homo* genus ([Chapter 3](#)). Core moral emotions co-evolved with these norms and gave rise to moral intuition ([Chapter 4](#)). Core moral reasoning enabled human bands to interpret intuitive emotions and norms and render them consistent ([Chapter 5](#)).

[Part III](#), “Moral Cultures,” uses our account of the moral mind to shed light on more recent, cultural evolution of human societies, beginning with the birth of behaviorally modern humans ([Chapter 6](#)) through social revolutions engendered by agriculture and urbanization ([Chapter 7](#)). We’ll use our Darwinian theory of cultural evolution to explain institutional moralities: the cultural re-shaping of the moral mind through social institutions such as family, religion, and politics. Institutions, we’ll argue, underlie the complex and diverse expression of moral thought and feeling across societies.

[Part IV](#), “Moral Progress,” explores the psychological and social mechanisms that underpin moral progress, moral regress, and moral stasis during the last few centuries. In the aftermath of industrial and post-industrial revolutions, both technological and social, human societies made progress and regress of various kinds ([Chapter 8](#)). They became, in different ways, more and less inclusive ([Chapter 9](#)), more and less egalitarian ([Chapter 10](#)). We’ll draw on lessons from [Parts I–III](#) to explain how the moral mind and social institutions can drive moral progress and resist moral regress. The key is institutionally scaffolded moral reasoning among diverse communities. This is just one vector of progressive moral change, but we’ll

argue that it's the most reliable and durable way of fostering the evolution of morally progressive human societies.

This whole book is one long argument that morality evolved and continues to evolve. Morality co-evolves with intelligence and complex social organization. This Darwinian process explains the structure of our moral minds and the existence of humanity itself. It can also explain and predict moral improvement and moral decay in modern human societies.

Are we a good ape?

Hard to say. But we might become a better one.

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I
MORAL APES

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1

Altruism

Human beings were not made in God's image. We are great apes, members of a family that includes chimpanzees, bonobos, gorillas, and orangutans. The most recent common ancestors of this family were inveterate tree climbers. Our lineage took a different path, walking out of the forests and into surrounding woodlands and grasslands, often near lakes and rivers. The cradle of humanity was a new ecology in which we stopped climbing, began walking upright, and pursued a nomadic lifestyle.

After splitting off from our closest living relatives six or seven million years ago, an early and prolific member of our lineage was *Australopithecus*.¹ This diverse genus evolved roughly four or five million years ago, persisted for millions of years, and radiated into numerous species.² Although they walked on two legs like us, the brains of Australopiths were no bigger than those of modern chimpanzees or our last common ancestor with them.³

Nearly two million years ago, one Australopith species evolved into *Homo erectus*.⁴ Erectus was perhaps the first ape with a valid claim to be called "human."⁵ With a body designed to walk long distances, it forged a novel lifestyle of hunting and gathering.⁶ Erectus also had a much larger brain than its predecessors, which gave it the behavioral flexibility needed to explore and occupy novel environments.⁷ It may have been the first species among our ancestors to not only use tools but also construct them as a matter of course, ushering in a new era of advanced technology and expertise.⁸

Roughly 800,000 years ago, Erectus produced *Homo heidelbergensis*, a missing link between anatomically modern humans and more primitive ancestors.⁹ Heidelberg had a larger brain than Erectus.¹⁰ It was behaviorally

even more flexible than its forerunner, thanks in part to a longer childhood and adolescence, and it constructed new forms of material technology. Heidelberg gave rise, in turn, to even larger-brained and more prolific descendants, including Neanderthals and the more recently discovered and much less famous Denisovans, both born on the Eurasian continent.¹¹

Neanderthals and Denisovans are our long-lost cousins. We can all trace our ancestry to Heidelberg forebears in Africa no earlier than 800,000 years ago. Long after the lineages split, distinct human species sometimes mated with one another.¹² Analyses of ancient and modern genomes show that present-day non-Africans share 2% of their DNA with Neanderthals; Aboriginal Australians and Melanesians also share 5% of their DNA with Denisovans.¹³

After leaving Africa, Erectus and its descendants spent hundreds of thousands of years exploring the furthest reaches of Eurasia.¹⁴ Our main ancestral line still had not left home. The Adams and Eves of humanity were born around 300,000 years ago, their Eden fringing the forests of eastern Africa.¹⁵

Homo sapiens would eventually spread across the African continent, deposing their forebears. For a long time, however, their range was limited.¹⁶ This was probably not for lack of wandering but more likely because they were stymied by other *Homo* populations well established across the borders from home. Sapiens colonized Eurasia en masse only roughly 70,000 years ago.¹⁷ From there, they traveled to Australia 50,000 years ago,¹⁸ Western Europe 40,000 years ago,¹⁹ and the Americas 15,000 years ago.²⁰ As their territory expanded, Sapiens displaced Neanderthals, Denisovans, and other distant cousins now lost to ancient history.

Human evolution was powerfully shaped by culture. Brute physical strength gave way to an alternative means of survival: new cognitive abilities to acquire and share information about their environments and the beings inhabiting them. Beliefs, habits, skills, technologies, etc. were enormously valuable cultural toolkits, which had to be passed along faithfully to the next generation if they were to survive.

All cooperative animals have some culture, but humans alone have such complex, cumulative culture. Our bodies and brains have been shaped by culture for hundreds of thousands of years, well before any hint of Sapiens. However, in the Middle to Upper Paleolithic, beginning roughly 100,000

years ago and accelerating over a period of 25,000 to 50,000 years, our ancestors sparked an explosion in culture and material technology: they invented powerful tools, lethal weapons, sturdy domiciles, and a staggering array of novel artifacts.²¹ During this period, too, they created music, painting, sculpture, and other forms of art, along with religious rituals, spiritualism, and elaborate burial ceremonies.

Human culture continued to snowball. In the Neolithic era, beginning 12,000 years ago, farming and herding impelled some human groups to increase food production, undergo dramatic population expansions, and give up their nomadic lifestyles for the first time since leaving the forests millions of years earlier.²² Many human tribes organized themselves into long-term settlements. These growing settlements would eventually produce powerful city-states; extreme divisions of labor and status; and diverse, elaborate, and interweaving cultures that nearly all humans find themselves born into today.

In this book we'll explore the evolution of the moral mind and its role in the cultural developments that transformed our ancestors. Morality enabled the formation of new human species, their migration across the world, and the creation of new technologies and new ways of life. Morality, indeed, has shaped human culture from our earliest human ancestors and all the way up to modern societies.

1.1. The Possibility of Altruism

We are in danger of getting ahead of ourselves. We need to start where morality began. Any evolutionary genealogy of humanity has to begin with the great apes in whose image we were made. Like us, great apes and other social primates are cooperative animals who feel for others and are motivated to act in their interests. Altruism in our closest living cousins is, perhaps, the most significant clue to the ancient origins of human morality. Humans share with chimpanzees the roots of morality.

In this chapter we'll offer a theory of the rudiments of *ape morality*, common to humans and chimpanzees, and therefore likely possessed by our last common ancestor six or seven million years ago (though perhaps also in an even more ancient social primate). At the heart of ape morality, we propose, are capacities for *sympathy* and *loyalty*. Apes are altruistic: they experience sympathetic concern for the members of their group and enjoy

even deeper emotional bonds of loyalty with their family and friends. We'll explain, step-by-step, how altruism of this kind evolved in our ape family tree, in a Darwinian world devoid of intelligent design.

In [Part I](#) of the book ([Chapters 1 and 2](#)) we'll identify the moral emotions we have in common with other apes as well as those moral emotions that are distinctively human. We'll uncover the affective capacities that stabilized ape social organization and intelligence millions of years ago and upon which human moral psychology is founded. We'll then be able, in [Part II](#), to understand how evolution went on to build other moral traits unique to our species.

Our evolutionary history of morality starts with the early origins of sympathy and loyalty in our ape family tree. But to begin our journey into moral origins, we must reach even further back in the history of life. We must inquire into the very possibility of altruism in nature.

The existence of altruism in the natural world is paradoxical. It's so paradoxical that some scientists deny that any creature is genuinely altruistic. These scientists insist that self-interest is always at the root of behavior. Since nature is "red in tooth and claw," supposedly, evolution by natural selection does not allow for any other possibility.²³

As Darwin figured out just over a century and a half ago, natural selection has three main ingredients: variation, heritability, and differential fitness.²⁴ When organisms vary in heritable traits that affect their ability to survive and reproduce, the frequency of fitter traits increases in the population over time. Hence the slogan: survival of the fittest.²⁵

Darwin's theory implies that *biological egoism* is the original state of nature: within a local population, evolution tends to favor strategies that boost an individual creature's fitness and reduce the fitness of others. In a Malthusian world, limited space, resources, and reproductive opportunities establish a zero-sum game. Your gains, in other words, are inversely proportional to mine.

If a creature possesses a trait that promotes the fitness of others at a cost to its own fitness, the Darwinian principle of natural selection seems to imply that the trait will eventually be eliminated from the population. Altruism, then, seems to be another word for low biological fitness. If that's true, then the cynical scientists are correct: altruism cannot evolve through natural selection.

And yet, there are good reasons to believe in the possibility of altruism: as we'll see in the following pages, altruism is present across the animal world. In this chapter we'll distinguish between two types of altruism—biological and psychological—and unpack evolutionary mechanisms that have selected for altruism in animals. With these conceptual tools in hand, we'll be able to explain how evolution gave rise to altruism in the family of apes that begat humans.

One aim of this chapter is to confirm the possibility of altruism in nature. The chief aim, however, is to identify moral capacities shared by apes and to explain how they evolved. These moral capacities are why, many millions of years ago, the common ancestors of humans and chimpanzees were able to behave altruistically and thereby sustain the complex, cooperative groups that fostered the evolution of intelligent apes.

1.2. Biological Altruism

In the natural world the hyper-sociality of humans and apes is surpassed by only one group of organisms: eusocial insects. Many species of ants, bees, and wasps live in intensely social colonies. One of the most curious aspects of insect colonies is the high proportion of members disposed to utterly renounce their own interests for the sake of their queen and her progeny. These individuals tend to be sterile, producing no offspring of their own. Instead, they devote their lives to foraging for the colony; feeding the queen; tending to the queen's larvae; constructing the colony's nest; and fighting off intruders, even to the point of sacrificing their lives.

The activities of social insects are among the most striking examples of *biological altruism*: an organism increases the reproductive fitness of others at a cost to its own fitness.²⁶ Biological altruism is pervasive in social insects, but it's also present in other species. Some birds regularly help raise their neighbors' young.²⁷ Vampire bats regurgitate blood to others who fail to find a meal on their own.²⁸ Vervet monkeys give alarm calls to warn their fellows about predators, even though sounding an alarm makes them more conspicuous and raises the likelihood that they will be singled out as prey.²⁹

In all these organisms, nature does not appear to be only red in tooth or claw. How is that possible, given the Darwinian principle of evolution by

natural selection? The answer lies in three evolutionary mechanisms, through which biological altruism won the test of survival of the fittest.

The first way biological altruism can evolve is through *kin selection*.³⁰ If a gene leads an organism to sacrifice its own fitness for the sake of biological relatives, the gene will have a tendency to increase its frequency in the population over time. The organism itself may not flourish, but kin who possess its self-sacrificial genes are likely to. For example, cooperative parenting is common in some birds partly because taking care of nieces and nephews is a good way of passing along one's genes, albeit indirectly.³¹

In kin selection the units of natural selection are genes rather than individual organisms. Individuals can therefore be altruistic even while their genes are "selfish."³² Kin selection explains why many animals help relatives to a degree that is roughly proportional to the quantity of genes they share. As John B. S. Haldane, an early-20th-century biologist, put it: "Would I lay down my life to save my brother? No, but I would to save two brothers or eight cousins."³³

A second way that biological altruism can evolve, this time via individual-level selection, is through *reciprocal altruism*.³⁴ If one organism helps a second organism at a small cost to itself, but this leads the second to return the favor for a net gain, helping is beneficial to both organisms in the long run. Rather than futilely attempting to scratch my own back, I scratch your back now and you scratch mine later.

In reciprocal altruism biologically altruistic activities evolve because they are part of a broader strategy that is biologically egoistic. The unit of natural selection is the individual, but selection unfolds over a protracted time scale. For long-term reciprocal altruism to outweigh short-term egoism, individuals must interact repeatedly, and each must be able to keep track of the other's past behavior. Thus, the discerning back-and-forth of reciprocal altruism seems to explain the generosity of vampire bats. Researchers find that a bat who regurgitates their own food to a nest mate is more likely to be fed in turn when they find themselves in need of a meal.³⁵

A third evolutionary mechanism that can produce biological altruism is *group selection*.³⁶ Sometimes, groups in which organisms help one another tend to survive longer and reproduce more frequently than groups in which each organism tends only to its own needs. In that case, groups of altruists are fitter than groups of egoists and propagate at a faster rate: teamwork

helps a team compete against other teams. In group selection nature's unit is not the individual or its genes, but the local group as a whole.

One clear and compelling example of group selection involves artificial selection among egg-laying chickens.³⁷ If a farmer is trying to increase egg production, they could try selecting for hens that produce the most eggs. However, the most productive hens in the flock are often the most aggressive. The result of such breeding would be an aggressive flock in which each hen reduces the productivity of others. A more effective strategy is to select for the most productive group.³⁸ Hens then lay more eggs overall because rates of mortality and morbidity in the flock are lower.

In the natural world (outside the chicken coop), group selection was responsible for the evolution of eukaryotic cells and multi-cellular organisms. In both cases, what's now a single unit was the product of rivals laying down their arms and joining forces.³⁹ Group selection is also likely responsible for the evolution of social insects.⁴⁰ Colonies with altruistic members generate more daughter groups than colonies with selfish members.

Some biologists think group selection is relatively uncommon in animals because it is susceptible to subversion from within. In other words, group selection is defeated by the problem of "free riders."⁴¹ To understand this problem, suppose that altruistic groups tend to be fitter than egoistic groups. Within altruistic groups, however, egoists who take a free ride and benefit from the efforts of their more generous groupmates tend to be fitter than altruists. Since individuals reproduce more quickly than groups, individual selection will outpace group selection. So, Darwinian principles imply that egoists will eventually replace altruists within a group.⁴²

Group selection works only if there are robust structures in place that suppress individual-level biological egoism. As we'll see in [Parts II](#) and [III](#) of the book, human culture created these very structures and thereby enhanced the power of group selection to drive the evolution of morality. For now, though, we'll examine the power of the other mechanisms discussed earlier to select for altruism in the natural world. To do that with any clarity, we need to understand a form of altruism that is psychological rather than biological, and to think more deeply about the ever-present war between altruism and egoism.

1.3. Psychological Altruism

Biological altruism is defined in terms of reproductive fitness. It is therefore distinct from the more familiar notion of “altruism” that is central to morality and is defined instead in terms of psychological motives. An action is *psychologically altruistic* if it is motivated by feelings or desires for another being’s interests as an ultimate end, rather than purely as a means to some further, egoistic end. If I’m helping you for your own sake, my act is psychologically altruistic. If I’m angling for personal dividends in the long run, not so much.

Biological altruism doesn’t require psychological altruism, only behavior that enhances another being’s fitness and/or reduces one’s own fitness. Thus, for example, biological altruism exists among organisms that lack psychological states entirely. A bacterium can be altruistic, in this sense.⁴³ What matters for biological altruism is the impact of behavior on fitness. What matters for psychological altruism is the motive that lies behind behavior.

Given the original state of nature, it’s almost certain that the earliest forms of psychological altruism evolved because they were straightforwardly biologically egoistic. Consider, for example, parents devoted to their children—the original altruists. Many animals will go hungry to ensure that their children are well fed. In cases such as this, psychological altruism enhances individual fitness. Across many animal lineages, parents who cared about their own children for their own sake were favored by natural selection because they produced more healthy offspring than less devoted parents, thus increasing the individual fitness of the parents.

Among cooperative animals, however, psychological altruism isn’t exclusively biologically egoistic. For some mammals and birds, psychological altruism enhances the ability of other individuals to survive and reproduce at a cost to personal fitness, at least in the short term. Caring about other creatures can be favored by natural selection, nonetheless, either because those other creatures are kin who share the same genes (think birds who babysit) or because they reciprocate altruism in the long run (think bats who share blood).

Later, we’ll see that our ancestors evolved capacities for psychological altruism first through individual selection and kin selection, then through

delicate reciprocal altruism, and finally through even more delicate processes of group selection. Individual selection, kin selection, and reciprocal altruism underlie the evolution of the earliest moral capacities (discussed in this chapter and the next).

To understand morality and how it evolved, however, it's necessary to recognize its limits. Although one finds psychological altruists in the natural world, one does not find saints. Survival of the fittest makes *psychological egoism* the rule rather than the exception in most animals. Behavior is psychologically egoistic if it is motivated ultimately by self-interest. For example, violent competition with other members of the same species—to secure food, territory, or mates—is widespread in the animal kingdom. Apes like us are certainly no exception.⁴⁴

One theory of human motivation privileges egoism and is strangely popular in some circles. According to “psychological hedonism,” humans are always and without exception motivated ultimately by pleasure. This view seems to be inspired by gratifying cynicism rather than actual scientific evidence.⁴⁵ Nothing that scientists know about the nature of the human mind entails that pleasure is the only source of motivation. In fact, psychological research suggests that humans sometimes chase sources of reward even if they reliably cause displeasure.⁴⁶

First appearances notwithstanding, evolutionary theory does not lend any support to psychological hedonism. Biological self-interest may be the *ultimate* cause of behavior (the reason it evolved long ago, by increasing survival or reproduction). But psychological altruism may yet be the *proximal* cause of behavior (the reason it happens now, through an individual's reasons or motivation). Caring sincerely about others for their own sake can be a less costly and more reliable way of advancing one's own reproductive fitness.⁴⁷ Altruistic parents are a clear case in point, but they aren't the only example.

In cooperative animals the forces of natural selection tend to produce a mix of altruistic and egoistic psychological motives. Nonetheless, as we've begun to see, some animals act in ways that are psychologically altruistic. The motives that underlie this behavior can arise through kin selection or reciprocal altruism, but also through straightforward biological egoism. Earlier in this chapter, we highlighted the paradox of altruism. We've now seen that the paradox is an illusion. Altruism therefore survives Darwin.

At this stage in [Chapter 1](#), we've grasped how biological and psychological altruism can evolve, through a number of different ultimate evolutionary mechanisms. Now it's time to put these ultimate evolutionary mechanisms together with the proximal psychological capacities that produce altruistic behavior in social animals. This step, from evolution to psychology, reveals the moral capacities that sustained complex forms of interdependence among the ancestors of modern apes.

1.4. Sympathy

The origins of psychological altruism lie in sympathy, an ancient capacity that is rife across the animal world. The word “sympathy” is potentially ambiguous, but what it means in this context is a feeling of emotional concern, i.e., caring or feeling for another creature. Sympathy, then, is tied intimately to care and compassion. It's that warm feeling that motivates kindness and generosity. (“Empathy” means something different, roughly, experiencing the same feelings or thoughts as another creature. We'll discuss empathy later and in the next chapter.)

Long ago, sympathy made its first appearance in animals—primarily females—that increased parental investment in their young.⁴⁸ Remember, this behavior is not generally altruistic in the biological sense: a mother who cares for her children increases their fitness, but this of course tends to increase her own fitness too. Sympathy arose initially because it promotes individual fitness, i.e., through straightforward biological egoism. But sympathy was then co-opted for other relationships. Thus, as philosopher Patricia Churchland argues, moral altruism is rooted ultimately in the relationship between mother and child.⁴⁹

In some animals, sympathy is not limited to offspring. These animals feel emotional concern for other group members, beyond just a wider range of kin. Broadened capacities for sympathy are found mainly in bands of affiliative mammals that live together to guard against predation or to obtain food cooperatively.⁵⁰ Even herd mammals, for example, exhibit a general softening of temperament and greater forbearance toward other members of the herd.

Sympathy is pronounced among mammals that cooperate more richly. It flourishes, in particular, among animals that engage in cooperative

parenting, i.e., that rely on one another to raise their young.⁵¹ Sympathy and rich forms of cooperation are paired in wolves and elephants, in dolphins and whales.⁵² To survive together, cooperative animals care emotionally about their fellows for their own sake. And to do that effectively they must have a basic understanding of others' mental states.

The idea that apes and other non-human animals have the capacity to grasp their fellows' mental states and care emotionally about what happens to them will strike some readers as an error of anthropomorphism. Like sentimental pet lovers, we run the risk of attributing more psychological sophistication to animals than the evidence can support. However, we'll see later that this attribution is supported by scientific research. Furthermore, biases are just as likely, if not more so, to lead to the opposite error. Humans have a history of exploiting and torturing other animals, especially on farms and in labs. As ecologist Carl Safina argues, these practices are sustained by attributing less psychological sophistication to our victims than is warranted.⁵³

We won't survey the scientific literature suggesting that wolves, elephants, dolphins, and whales have capacities for sympathy. We will, however, highlight evidence for the existence of these capacities only among living species most closely related to us, on whom there also happens to be far more scientific research. Our focus here will be on chimpanzees, not because they are psychologically more altruistic than other cooperative animals but because the roots of human morality lie in the common ancestors we share. Humans descended from an ancient family of apes who lived interdependently in social groups. The primordial nuclei of human morality are capacities for psychological altruism in ape morality.

So far in this chapter, we've offered a general framework for thinking about the Darwinian mechanisms underlying biological and psychological altruism. We've also identified the earliest psychological capacity in animals that makes altruism possible: the emotion of sympathy that animals felt toward offspring, first their own and then others'. We'll apply our framework to apes generally in this chapter before applying it to humans specifically in the next. That is, we'll rely on individual selection, kin selection, and reciprocal altruism to explain the evolution of psychological capacities that underlie cooperation in our ape ancestry.

1.5. Ape Cooperation

Why are apes social creatures? If apes are like most animals that live in groups, communal life was attractive to their ancestors because it afforded more effective protection from dangerous animals.⁵⁴ When large, lethal carnivores are lurking, it's better to have more companions even just to act as passive lookouts. Sometimes apes will also rally together to actively fend off a predator.

Even more important, perhaps, are more familiar threats. Intergroup violence between members of the same or related primate species is common, especially when groups have an interest in defending scarce territory and resources. Some apes cooperate in order to compete violently with neighbors.⁵⁵ So, living in cooperative groups offered competitive advantages over other primate groups—so long as members could find a way to avoid spiraling cycles of violence arising from within.

Sociality persisted and flourished because it enabled richer forms of cooperation, beyond just protection from violence. Apes share food and labor.⁵⁶ Many ape species engage in some amount of cooperative parenting, helping one another feed and care for their offspring.⁵⁷ This is important when young creatures are dependent on their mothers for an extended period of time. According to anthropologist and primatologist Sarah Hrdy, the evolution of “alloparents,” i.e., parents other than mothers, was a critical innovation in primate evolution.⁵⁸ A longer period of immaturity in apes is necessary for learning to unfold, but it also increases demands on mothers. Alloparents picked up the slack.

As Hrdy argues, in some primate species female alloparents frequently act as babysitters. They protect and provision food for children to whom they may or may not be biologically related. Their genes may benefit through kin selection. But they also gain practice that is crucial for rearing their own children. Thus, individual selection also favored babysitting.

Another way some apes cooperate is by forming coalitions for the purpose of competing against others within their own groups.⁵⁹ Alpha male chimpanzees regularly cultivate alliances in order to prevent themselves from being usurped.⁶⁰ Coalitions are also useful for betas. If a male chimpanzee isn't strong enough to achieve dominance on his own, he may

form alliances with other males in order to rise within the social hierarchy in their group.⁶¹

Alliances between female chimpanzees are equally important to social survival.⁶² Females rely on coalitions in order to elevate their status within a social hierarchy. This helps them secure resources, welcome or reject newcomers to the group, and protect themselves from male domination and violence. Contrary to many evolutionary psychologists, status seeking in apes is not exclusive to males.⁶³

Coalitions were a boon to individual fitness. They frequently transcend kinship. They also require keeping track of past behavior. For these reasons, it's likely that coalitions also evolved through reciprocal altruism. Coalitions were therefore the ultimate source of friendship among apes like us. Thus, parenting and friendship provided the conditions under which ape morality evolved.

Let's summarize the reasons apes evolved to be social creatures. Cooperative group living evolved in apes because it offered protection from external threats, enhanced violent competition against other primate groups, provided a context in which to help raise one another's young, and enabled coalitions that transcended kinship. But how exactly did apes manage all this cooperation? We now know why cooperation paid, but what are the proximate psychological mechanisms underlying ape cooperation? In the rest of this chapter we'll provide an answer to this question by looking at evidence for moral capacities in our closest living cousins and explaining how they evolved.

Relying on Darwinian reasoning, evolutionary game theory, and behavioral evidence from primatology, we'll next argue that apes evolved capacities for altruism toward a wide range of others, but only within their own groups. Sympathy and loyalty make up ape morality. First launched in the next few pages, the central aim of this book is to develop a more thorough moral psychology than is currently available, one that explains the evolutionary trajectory of humans and other apes.

1.6. Ape Altruism

Among primatologists, there is no universal consensus about the extent to which non-human apes are psychologically altruistic.⁶⁴ However, many

primatologists who have lived and worked closely with chimpanzees or bonobos, like Jane Goodall, believe that the existence of altruistic capacities is plain and that their range is wide.⁶⁵ Frans de Waal has recorded numerous observations showing that chimpanzees care about one another, especially their friends, and understand what others are thinking and feeling.⁶⁶

Rigorous studies also suggest that altruistic behavior in chimpanzees is ubiquitous.⁶⁷ Chimpanzees notice when their friends are in distress and comfort them.⁶⁸ They aid allies in competitions for food and status. Controlled studies in the wild indicate that chimpanzees comfort victims of aggression and reconcile after fights.⁶⁹ In the lab chimpanzees prefer when food is supplied to another chimpanzee too rather than only to themselves.⁷⁰ They will help another chimpanzee in their group even when there is no direct personal benefit.⁷¹ Chimpanzees also show unmistakably warm feelings toward the dead.⁷² In captivity, furthermore, chimpanzees are known to extend concern across species lines—even to humans.⁷³

Some altruistic behavior is less common but all the more striking. Among his many observations, de Waal describes the behavior of one bright chimp, “Jakie,” toward his aunt and former alloparent, “Krom”:

One day, Krom was interested in a tire in which water had stayed behind. Unfortunately, this particular tire was at the end of the row, with six or more heavy tires hanging in front of it. Krom pulled and pulled at the one she wanted but couldn't remove it from the log. She pushed the tire backward, but there it hit [a barrier] and couldn't be removed either. Krom worked in vain on this problem for over ten minutes, ignored by everyone, except Jakie, a seven-year-old Krom had taken care of as a juvenile. Immediately after Krom gave up and walked away, Jakie approached the scene. Without hesitation he pushed the tires one by one off the log, beginning with the front one, followed by the second in the row, and so on, as any sensible chimp would. When he reached the last tire, he carefully removed it so that no water was lost, carrying it straight to his aunt, placing it upright in front of her.⁷⁴

As de Waal says after recounting the story, Jakie's nifty problem solving is fairly unremarkable among chimpanzees. Assisting a friend is also quite typical. What's more striking is Jakie's evident ability to understand precisely what Krom wanted and his willingness to complete the task for no other apparent reason than altruistic concern.

A great deal of chimpanzee behavior, of course, is prompted by egoistic motives. Feelings of anger and pride lead to aggression and violence. Males and females both fight and scheme for social standing.⁷⁵ Males, though, are especially aggressive and violent toward females. They are known to

assault females and coerce them into sexual partnerships. They also sometimes kill infants fathered by other males.⁷⁶

These types of aggression are common among cooperative animals generally, but another type of aggression is rare. In the wild, chimpanzees form raiding parties led by males in which they attack and kill lone individuals from other groups. These attacks are not simply defensive. Chimpanzees hunt other chimpanzees. They seek out and dispatch those with adjoining territories, typically as a means of expanding their own.

Of course, the very same types of aggression and violence are endemic in humans. Male human aggression toward other males, females, and outsiders would seem to have ancient roots (more on this topic in the next chapter).⁷⁷ Humans and other apes are altruistic, but their altruism also has clear limits, i.e., the boundaries of their group. In fact, warm feelings toward friends evolved in part because they helped apes work together to carry out cold-blooded murder of strangers.

All that being said, chimpanzees are skilled altruists. And they do not merely feel for other beings. They also understand their feelings and thoughts. That is, they have at least a rudimentary “theory of mind.” The word “theory” might be misleading here, since making inferences about other minds is often implicit and automatic. Theory of mind, in this sense, includes “empathy,” i.e., the capacity to vicariously experience what others think and feel.⁷⁸

Researchers who study animal cognition and behavior once tended to deny that great apes had theory of mind.⁷⁹ But the clear trend now is to accept its existence, at least in some rudimentary form.⁸⁰ For example, recent studies seem to confirm that chimpanzees pass the “false belief task.”⁸¹ That is, they can distinguish the truth from what another chimpanzee only believes is true, showing that they have at least some grasp of other minds.

The capacities underlying altruism and theory of mind may have evolved even earlier in primate evolution. While most clearly evident in chimpanzees, they also seem to be present in other social primates. Rhesus monkeys, for instance, will forgo meals for days if obtaining food will deliver painful electrical shocks to friends or neighbors in adjoining cages.⁸² To many believers in the existence of fellow feeling in animals, none of the evidence from controlled scientific studies is as striking as

witnessing their behavior up close. Far more convincing than scientific studies is Jakie helping Krom.

In sum, primatological research on chimpanzee behavior confirms the existence of primate altruism and also highlight its limits. As we'll argue next, the proximal psychological explanation for their behavior lies in capacities for ingroup sympathy and loyalty. Favored by several different Darwinian mechanisms, these moral emotions arose through biological evolution in ancestors that are common to humans, chimpanzees, and other apes (living and extinct).

1.7. Ingroup Sympathy and Loyalty

To cooperate effectively, apes needed to care about others in their groups and to be especially loyal to their friends. This is why living great apes closely related to us have moral capacities to feel *ingroup sympathy and loyalty*. Sympathy and loyalty, we contend, are the two moral emotions shared universally within our ape family. (In the next chapter we'll turn to moral emotions that are fully expressed only in humans.)

Among scientists and philosophers, it's widely believed that sympathy is the wellspring of human morality. But, with few exceptions, researchers fail to notice that loyalty—a more selective emotion that binds together family and friends—is nearly as important. In the previous section we highlighted patterns of altruistic behavior in our closest living primate relatives. In this section we'll lay out a hypothesis about these two underlying moral emotions and how they evolved.

Through intensely bonded friendships nurtured by grooming, apes felt sympathy for other group members for their own sake.⁸³ They also felt emotional bonds of loyal attachment to friends in the face of strangers and enemies. Both sympathy and loyalty facilitated cooperative parenting and defense against external threats, while loyalty was particularly important in sustaining small coalitions. Sympathy and loyalty also helped reduce net violence, though only within the group. When it came to between-group relations, these two moral emotions helped apes wage more effective warfare on their neighbors. Sympathy and loyalty were extended to fellow group members, but no further than that.

Ingroup sympathy and loyalty seem to have evolved through a combination of individual selection, kin selection, and reciprocal altruism.

Evolutionary theorists sometimes claim that one such mechanism was key to the evolution of morality and that others were inadequate. However, there's every reason to believe that all of these mechanisms were at play.

First of all, ingroup sympathy is often biologically egoistic. Connection to others in a group allows individuals to avoid danger, to benefit personally from cooperation, and to acquire the abilities needed to raise their own young. To see this clearly, it's helpful to use evolutionary game theory to think about the general form that cooperative interactions sometimes take.

Imagine a *stag hunt*.⁸⁴ Two individuals need to hunt for food. They can hunt either a hare or a stag. Each can capture a hare on their own, if they choose. But a hare is smaller and therefore less nourishing than a stag, which they can capture only by cooperating. If the two individuals can communicate with each other, then it's better for each to hunt a stag but to do it together. Self-interest favors cooperation.

The point of this scenario isn't about hunting, though. In fact, meat is peripheral to the diets of most apes. Rather, a stag hunt is a formal way of describing the payoffs of many different types of social interactions that are "non-zero-sum," including intergroup warfare, coalition formation, and cooperative parenting. These activities are non-zero-sum in the sense that gains for one party within a cooperative group do not entail corresponding losses for the other party. Indeed, they are win-win.

By feeling sympathy and loyalty toward other group members, apes gained the opportunity to form partnerships. This let them "hunt stags."⁸⁵ Those who did not have partners to cooperate with gained only small, hare-sized payoffs, while those who did gained larger, stag-sized payoffs. So, when social interaction fit the model of a stag hunt, ingroup sympathy and loyalty were favored by individual-level selection because they enabled biologically self-serving cooperation.⁸⁶

Sympathy and loyalty were likely reinforced through kin selection. The genes that helped produce these capacities enhanced the fitness of biologically related kin. Not all members of ancestral ape groups were related, but enough of them are that it was often easier simply to care for others in the group in a relatively indiscriminate way.

Reciprocal altruism was necessary too. Ingroup sympathy and loyalty also evolved because helping coalition partners in the short run paid dividends in the long run. Coalitions likely couldn't have evolved through short-term individual selection or kin selection alone, since they involve

give-and-take between non-kin. Apes keep track of friends and enemies, as evidence from primatology suggests.⁸⁷ They are loyal to their friends but only if their friends are loyal too. Because reciprocal altruism favored loyal friendship, fitness between individuals became positively correlated instead of negatively correlated.

We've learned in this chapter that altruism is real. We've also learned how it came to exist as a result of several different Darwinian mechanisms, the bloody teeth and claws of nature notwithstanding. In particular, apes feel sympathy and loyalty toward their fellows, but not to strangers. These early moral capacities explain how apes cooperate and thus also help explain how they evolved, as they navigated complex social worlds and became more intelligent than many other animals.

Across many branches on the tree of life, the evolution of intelligence seems to be powered by environmental complexity.⁸⁸ When an animal's world becomes more complex and therefore uncertain, it pays to have more sophisticated cognitive capacities in order to predict and respond to opportunities and threats in the environment. For apes and other cooperative animals, environments became more complex mainly via sociality.⁸⁹ Greater biological fitness was therefore bestowed on apes smart enough to navigate their complex social environments.

Some evolutionary theorists accept this theory about the connection between intelligence and sociality but give it a Machiavellian twist: nature selected for intelligence because it allowed apes to deceive and manipulate their fellows.⁹⁰ This is one part of the story, no doubt. However, cooperation was far more important than exploitation in ape evolution. Cooperation is more profitable and more sustainable. Much deceit and manipulation are possible, indeed, only against a broad background of mostly reliable expectations of cooperative behavior.

To reap the benefits of cooperation, and to undergo powerful selection for intelligence, apes needed to stabilize their large and complex groups. They needed morality. With capacities for sympathy and loyalty, apes helped others and refrained from hurting them at some personal cost. They gave and returned favors, cooperated to defend themselves against predators and rival groups, shared food and the labor of parenting, and formed coalitions. As morality stabilized cooperative social groups, evolution favored smarter apes who were better able to survive within them.

1.8. Summary

Are humans altruistic? Yes and no. Humans are not purely altruistic (obviously). We possess deep-seated egoistic motives, especially when it comes to outsiders. However, humans also have some altruistic motives (perhaps less obviously). One of the best sources of evidence for this idea is that altruistic behavior is found in other apes and its existence can be explained by Darwinian mechanisms. The evolution of altruism in apes is strong evidence that humans are genuinely altruistic too.

Does this mean that chimpanzees and other apes are full moral beings? Have we been arguing in this chapter that humans share with chimpanzees the exact same “moral building blocks”?⁹¹ No. Human morality is not identical to ape morality. But neither is human morality a capacity that arose out of nowhere after humans passed some threshold of self-awareness. These two extreme positions are equally untenable.

What we have been arguing is that human morality and ape morality are evolutionary “homologies.” That is, they evolved from an earlier and similar collection of altruistic capacities possessed by our common ancestors. Humans and chimpanzees share two psychological capacities: ingroup sympathy and loyalty. These moral feelings were selected for through individual selection, kin selection, and reciprocal altruism. Sympathy and loyalty enhanced fitness at the level of individuals and at the level of genes because, in our ape ancestors, they enabled protection from predators, intergroup competition, cooperative parenting, and coalitional friendships.

What’s next? We need to investigate how human morality diverged from ape morality. This chapter has focused on the deepest origins of human morality in our ape family. The next chapter turns to moral emotions unique to human beings. The first sparks of human morality were feelings of sympathy and loyalty that arose between kin and friends. When humans evolved these sparks grew into a fire. A suite of moral emotions thus became the first core ingredient in the human moral mind.

In [Chapter 2](#) we’ll argue that humans possess feelings of trust and respect, along with guilt and resentment, that are absent to the same degree in other apes. These emotions may have begun to evolve at the dawn of our genus *Homo*, roughly two million years ago. In our own species, moral emotions are a functionally complex psychological system that sustains

even more complex forms of cooperation by controlling motivation, expression, and learning. Humans are capable of moral change, potentially enormous, because their moral feelings are flexible as a matter of evolutionary design.

Eventually, we'll explain how humans evolved moral norms ([Chapter 3](#)), alongside moral emotions ([Chapter 4](#)), a capacity for moral reasoning ([Chapter 5](#)), and elaborate social institutions that re-shaped our moral minds ([Chapters 6–7](#)), for better and worse ([Chapters 8–10](#)). In the first Part of the book, however, our task is to study the affective capacities that we have in common with other apes (here in [Chapter 1](#)) along with those that set us apart (next in [Chapter 2](#)).

2

Emotions

Over the last few million years, natural selection engineered numerous modifications in our lineage. Our groups became larger and more complex. We constructed new tools and technology. Our bodies became slender and gracile, our previous build for strength and ferocity abandoned. Already bipedal and walking, muscles and tendons in our legs evolved to support long-distance running. Hands, arms, and shoulders became suited to precision gripping and throwing. Human intelligence exploded. All of these remarkable developments began to unfold among the earliest humans two million years ago, the original members of our genus *Homo*.

Mother to all other human species, *Homo erectus* was the child of Australopith ancestors. Its introduction to the world was marked by expansion in brain size,¹ especially gray matter in the neocortex,² and a longer and more protected childhood.³ Bigger brains and greater developmental flexibility evolved mainly because they allowed these “early humans” to understand and negotiate more complex social relationships, primarily by enhancing theory of mind, self-control, planning, and abstract reasoning. Social complexity bred cognitive complexity and vice versa.⁴

The main reason apes or their primate ancestors lived in groups in the first place was likely to protect themselves from predators, mainly large cats like lions and leopards. But an increase in the size and complexity of ape collectives created further opportunities. Larger groups that arose during the origins of our genus were able to meet a wider set of ecological challenges through cooperation. Members of the same group shared food, labor, and assistance. In addition, large groups were more effective at raiding other groups for resources and territory and defending themselves against raids. More companions also meant wider trading networks.⁵ Early humans

gained numerous advantages by welcoming more comrades into the fold and building cooperative relationships.

As groups became bigger and more complex, however, a number of problems intensified. Social conflict flared up more frequently.⁶ Large groups escalated competition for food and mates. They also offered enhanced cover for free riding, for example, by foregoing participation in threat defense or shirking alloparental care.⁷ Early humans needed a way to negotiate the assorted perils that arise in large, complex groups if they were to reap the benefits.

Chimpanzees and other apes resolved social conflict mainly through dominance relationships and emotional bonding mediated by grooming.⁸ However, the struggle for dominance threatened to become destructively violent in larger groups that arose in the earliest *Homo*.⁹ As a mechanism for bonding, grooming was unfeasible once the number of social relationships ballooned exponentially.¹⁰

Our main idea in [Chapter 1](#) was that humans and chimpanzees share evolved moral capacities to feel sympathy for their groupmates and emotional bonds of loyalty toward family and friends. But these emotions, while sufficient for other living apes and the ancestors we share, weren't enough to sustain cooperation in the larger, complex groups of early humans. To solve the escalating problems of complex sociality, we propose here in [Chapter 2](#), early humans evolved new and more powerful moral emotions.

Sympathy and loyalty are what we call “binding emotions.” They bind apes together for the sake of mutual assistance. But a distinctively human morality has a richer emotional core. Perhaps as early as when the first members of our genus were emerging in Africa millions of years ago, humans evolved new “collaborative emotions” of trust and respect. Collaborative emotions are different from binding emotions in that they enable more complex forms of cooperation. Humans also evolved new “reactive emotions” of guilt and resentment that reinforced assistance and collaboration.

Our theory is that binding emotions, collaborative emotions, and reactive emotions comprised a new emotional core. This core is distinctive to human morality and would become the first ingredient of the human moral mind (see [Chapters 3](#) and [4](#)). Each of these emotions was designed to be plastic,

as we'll see, and thereby facilitated novel and diverse social relationships. Guided by a new set of flexible moral emotions, humans cared for fellow group members more consistently; collaborated on childrearing, hunting, warfare, and defense; reliably settled conflicts for resources and dominance; and, more generally, enjoyed relatively peaceful and cooperative lives within their local communities.

Absent in other apes to the same degree, moral emotions allowed humans to reciprocate with one another on terms of relative equality. The evolution of distinctively human varieties of cooperation explains how these emotions came into existence. In this chapter, we'll use the Darwinian tools forged previously in [Part I](#) to explain the evolutionary origins of core moral emotions. The original and most general function of core moral emotions is to allow intelligent humans living in large, complex groups to resolve problems of interdependent living.

We'll review scientific evidence suggesting that the emotional core of human morality appears very early in childhood development. Sympathy and loyalty, we know from [Chapter 1](#), are exhibited by our closest living relatives. Along with their early developmental appearance, the presence of moral feelings in other apes is a credible sign that they are innate. Nonetheless, an overarching aim of [Chapter 2](#) is to show that humans have a richer emotional life than chimpanzees.

Humans have a wider range of moral emotions. Like those possessed by chimpanzees, human emotions seem to be moderated by parochialism and social hierarchy. But we'll argue that sometime during the evolution of the *Homo* genus, human morality gained a flexibility, or plasticity, that is absent in other apes. To make good on these claims, we must begin by describing new forms of cooperation in early humans, and explain how they led to the evolution of moral emotions unique to humankind.

2.1. Trust and Human Cooperation

Our common ancestors with chimpanzees faced numerous ecological challenges they met by living in groups. Predation and intergroup violence continued, thereafter, to be a menace in the human lineage. Unlike other apes, however, early humans began to engage in more extensive cooperative parenting. According to the multidisciplinary psychologist Michael Tomasello, this happened for two reasons.¹¹

One is that emerging divisions of labor allowed some humans to care for children exclusively while others searched for food or took on other burdens. The other reason is that humans became pair bonded, which produced a more reliable signal of paternity. This gave fathers—as well as their kin—a biological incentive to contribute more substantially to childcare. Those that did left more healthy offspring, which inherited the same childrearing proclivities.

Humans take longer than other great apes to reach maturity. This was possible only because of the extensive parenting communities supporting mothers. These parenting communities included not just fathers but, even more importantly, maternal grandmothers, aunts, and older sisters. Family members were available to provision children with food and to protect them from danger. In the earliest populations of humans, alloparents began to play another, newer role: helping children soak up all the information with which they had to fill their large brains.¹²

And so, early humans faced ecological challenges that were extensions of those that their ape ancestors faced, like predator avoidance, intergroup competition, and the need to share childcare. But as Tomasello goes on to argue, early humans also faced additional, utterly distinct challenges.¹³ As humans confronted new environments, they had to develop flexible problem-solving abilities, suited to different contexts. To thrive in these contexts, they needed to cooperate in new and myriad ways.

During the origins of our genus, the climate in Africa was drying out and forests began to recede in the face of encroaching savannahs. As a result, competition for resources increased, especially competition with other primates for fruit.¹⁴ Humans therefore needed to work together to find food. They foraged for fruits, tubers, seeds, and nuts together, locating the best sources and sharing what they collected. More importantly, they also hunted together, which allowed them to take down larger prey, often by running them to exhaustion over long distances. Earlier and perhaps more frequently, humans scavenged together by using rocks and clubs to chase off larger and fiercer carnivores that had done the bloody work for them, employing stone tools to excavate the meat hidden in bones.

As Tomasello puts it, cooperation was “obligate” in the sense that humans had no choice but to work together. The tasks of parenting, foraging, hunting, and scavenging were necessary for survival, and they could not be accomplished alone. To successfully complete an open-ended

variety of more complex tasks, early humans needed a souped-up morality. Supported by Tomasello's work, we can now construct a hypothesis about the underlying moral capacities. We'll begin by identifying new moral emotions, following that up by explaining how these emotions evolved and giving evidence for their biological underpinnings, deferring until the end of the chapter a full account of their flexible functional roles.

To begin with, forms of cooperation new to our genus are why humans have feelings of mutual *trust* that extend beyond immediate family members. Trust is different from sympathy and loyalty; it can be described as confidence, surety, or reliance. Trust is an emotion that leads individuals to rely on others—defeasibly—and place their faith in them. I trust you when I am comfortable that you won't act contrary to my interest. If you do not reciprocate in turn, then my trust is revoked.

Like earlier social adaptations, mutual trust evolved through a combination of individual selection, kin selection, and reciprocal altruism. First of all, an individual increased their own fitness by trusting others in cooperation, since the personal benefits of cooperation outweighed the costs of going solo or remaining within a less cooperative relationship when an alternative presented itself.¹⁵ To put this in the terms of evolutionary game theory, trust let humans hunt “stags” instead of only “hares.”¹⁶ Trust also benefited genetic relatives, evolving too through kin selection.

In the evolution of mutual trust, however, reciprocal altruism played a more important and, indeed, ineliminable role. Trust is not a one-way street, since those who fail to maintain trust by not being trustworthy in return would pay a cost by not benefiting from cooperation down the line. So, trust was selected for through what is called “partner choice”—that is, bringing individuals future benefits by being chosen as cooperative partners.¹⁷ Put simply, I trust you now to your benefit, and you trust me later to mine. To help accomplish trusting and trustworthy cooperation, humans also began to evolve more sophisticated cognitive adaptations for tracking the reputations of others and managing their own.

So far, we've begun to explain how one new collaborative emotion—trust—evolved once new opportunities for cooperation were presented to early humans. We'll soon offer more detail about the role of natural selection in this process. We'll show how reciprocal altruism works in activities that have the structure of a *prisoner's dilemma*. And we'll have a lot more to say about the range of moral emotions in human morality, their

scope, and how they function. But first we need to introduce the other collaborative emotion in human morality.

2.2. Respect and the Prisoner's Dilemma

Among other apes, along with the ancestors we share with them, dominance by one or two males over their peers is ubiquitous. The entire troop, males and females, must follow strict dominance structures between and within the sexes. Once humans began to cooperate more extensively, however, the old dominance hierarchies became untenable. If dominants could take all the spoils of cooperative foraging, hunting, and scavenging, continued cooperation is tenuous. What incentives are there to cooperate with you if I can't share in the fruits of our labor? Any incentives that still remained declined sharply once subordinates could regularly form stable coalitions to challenge would-be alphas.

In response to the problem of domination, a further moral innovation was sprung. Human cooperation began to embody greater equality. As anthropologist Christopher Boehm argues, hunter-gatherer communities throughout the world are extraordinarily egalitarian. Not in all respects—not typically across gender lines—but certainly in comparison with humans in modern, large-scale societies.¹⁸ Boehm's insight is that equality increased, and domination declined, through coalitions that opposed alphas. However, Boehm fails to identify a key psychological mechanism that evolved to manage egalitarian relationships.

Equality is undergirded in humans by feelings of mutual *respect*.¹⁹ This collaborative emotion evolved because it attenuated the old dominance hierarchies in which respect flows only in one direction: up. Early humans, like other great apes, still cared deeply about power and status. This tendency never disappeared. Indeed, it is re-invigorated in modern human societies. But equality became an equally important force in structuring human groups. Humans thus evolved the capacity for mutual respect. Bullies who sought power and control over their groupmates risked being killed.²⁰ They might only have been ostracized, but in the context of obligate cooperation that also usually meant death.

In [Chapter 1](#), we discussed one type of social interaction that is formalized in evolutionary game theory. In a stag hunt cooperation is win-win. By cooperating, individuals stand to benefit more than by going solo.

However, another game is trickier to solve because it is not win-win: the prisoner's dilemma. The formal structure of this game is essential to understanding the evolution of both of the collaborative emotions, mutual trust and mutual respect.²¹

Consider one vivid illustration of the prisoner's dilemma, from which it gets its name. Imagine that you and I have committed a crime and are then arrested. The police isolate us in separate rooms. Because the evidence is only circumstantial, they offer us a deal. If either of us defects on the other person by confessing, they'll get a lighter sentence or go free. If you care only about your own future, it's obvious that you should accept the deal.

To be more specific, let's say that if both of us stay silent, we'll each be sentenced to one year in jail. If only one of us defects, then they'll be set free and the other will be sent to jail for ten years. But if each of us defects on the other we'll both be sent to jail for five years. The key takeaway is that no matter what the other person does, each is better off defecting. If you defect, I should defect too because I'd be sentenced to five years instead of ten. But even if you stay silent, I should defect because I'd get no prison sentence instead of one year. The frustrating result is that you and I are both driven to defect, dooming each of us to five-year sentences, when we could have cooperated to get only one-year sentences instead.

In a prisoner's dilemma, the players' interests do not align, in contrast with a stag hunt. So, rational decision-making leads players to defect on each other and end up with a poor outcome. The best joint option, overall, is cooperation. However, each person benefits by unilaterally defecting no matter what the other person does. Whether or not you scratch my back now, I am better off refusing to scratch your back later. Since you know that, there is no point in scratching my back now. In our illustration, each player ends up spending longer in jail. When the payoff involves number of offspring rather than reduced jail time, and when outcomes are determined by natural selection rather than rational decision-making, the result is that evolution works against people disposed toward cooperation.

Stag hunts are not really about hunting; prisoner's dilemmas are not really about avoiding jail. The point of these scenarios is that they concretely illustrate game theory models of cooperation. And, in fact, many real-life social interactions have the formal structure of a prisoner's dilemma, like sharing food from a hunt or a harvest. Cooperation is better overall, but defection is better for each person.

Eventually, humans evolved norms that punished people for defecting in these types of situations (as we'll see in [Chapter 3](#)). However, the earliest solution to prisoner's dilemmas was to play them repeatedly and keep track of who was likely to cooperate and who was likely to defect.²² Defection entailed being deprived of future opportunities to cooperate, via partner choice. If you defect, I won't play with you in the future. So, it paid to refrain from defecting on your partner now in order to gain more opportunities to cooperate with them later.

As a result, the best way to look out for number one was to extend, conditionally, emotional attitudes of trust and respect to others. That is, individual fitness was advanced by reciprocating with others (trust), through give-and-take as equals (respect). This engendered a willingness to cooperate in iterated prisoner's dilemmas so long as the other individual cooperated too. Thus, reciprocal altruism favored humans with collaborative emotions of trust and respect that enabled more elaborate forms of open-ended cooperation.²³

What have we uncovered so far about the emotional core of human morality? The four "basic" moral emotions are binding emotions of sympathy and loyalty (described in the last chapter) and collaborative emotions of trust and respect (introduced in this chapter). Together, these emotions comprised a novel and more complex system of psychological altruism, one that had never existed before. Sympathy and loyalty are shared with other apes, while trust and respect seem to be distinctively human (more on which later in this chapter). The reason these emotions exist is that they facilitated the cooperation that apes and humans, respectively, needed for the sake of mutual survival.

However, we haven't finished dissecting the emotional core of human morality. For starters, we haven't yet mentioned what some philosophers and scientists take to be the most obvious examples of moral emotions: feelings like guilt and shame, on the one hand, and resentment and indignation, on the other. These are part of the emotional core too.²⁴ But they play a different role than binding and collaborative emotions. To understand the special role of these moral emotions we need to look more closely at another psychological capacity and its impact on morality.

2.3. Guilt, Resentment, and Deep Empathy

Human cooperation fostered the evolution of collaborative emotions, but it also deepened human capacities for theory of mind. To cooperate successfully with another person, in general, I have to know what they are thinking and feeling. More specifically, Tomasello argues that cooperation required *shared intentionality*—that is, the capacity to think from the standpoint of “we.”²⁵ The “we” might be a pair of individuals or it might be a larger group. In either case, humans evolved a capacity to think not just about what “I” am doing but what “we” are doing.

Shared intentionality engendered cooperation by allowing individuals to construct plans that furthered the group’s interests. It also led individuals to form expectations about how their cooperative partners would act, which enabled more effective negotiation of their shared plan. The capacity to share plans and expectations is so ingrained in modern humans that it is present in very young children, as evidence from developmental psychology suggests. Research teams led by Tomasello’s former student, Felix Warneken, find that children actively attempt to re-engage an uncooperative partner and will sometimes abstain from completing a task they could easily perform on their own until their partner re-engages.²⁶

What children seem to exhibit in these cases is a type of shared intentionality that is distinctively altruistic. When two people share a plan to achieve their end, say to solve a puzzle together, often they do not merely share the same end and know that each needs the other to achieve it. More than that, they want cooperation to succeed, in part, just because the other wants it too. This kind of shared intentionality is “deep,” since the motivation to continue cooperating is based partly on wanting to satisfy one’s partner’s desires for their partner’s own sake. It is, in this sense, morally altruistic rather than only self-interested.

We call this phenomenon *deep empathy*. It is embodied in the moral emotions of trust and respect when someone feels them, in part, just because the person with whom they are cooperating feels them too. Humans relying on deep empathy do not act merely from self-interest, as they might if they regard the other only as a means to an end. Nor do they merely feel empathy, as they might when they only sense how the other is feeling but act contrary to what the other wants. Instead, they are motivated to act partly just to satisfy the other’s feelings or desires. Each wants what the other wants, in part, just because the other wants it.

Sympathy and loyalty embody deep empathy as well. For example, one person wants another to be free from pain in part just because the other is averse to it. For that reason, binding and collaborative moral emotions make cooperation more stable than it otherwise would be. These moral emotions were especially adaptive because they were deeply shared.

Tomasello argues that humans evolved the ability to share plans for the sake of effective cooperation. To successfully carry out their plans, they had to select partners who would reliably cooperate. In other words, they had to choose to interact only with people who would not defect in prisoner's dilemmas. However, the forces that stabilize cooperation include not just partner choice but also "partner control." That is, humans began not just to choose who to cooperate with (partner choice) but to regularly influence their behavior (partner control). Thus was born what Tomasello calls *second-personal* morality (echoing the philosopher Stephen Darwall).²⁷

Second-personal morality, Tomasello argues, transformed the social dynamics of cooperation. When one individual failed to cooperate, the other felt anger and protested.²⁸ Individuals also grasped the expectations of others and cared about their goals through deep empathy. If they failed to cooperate, then, they felt sadness and expressed contrition.²⁹ *Resentment* is a moral form of anger; *guilt* is a moral form of sadness. These emotions evolved because they reinforced and stabilized assistance and collaboration, through partner control. Both would have been impossible without deep empathy, in which each partner cares altruistically about the other partner's goals.

Guilt and resentment are reactive emotions. They are reactive, or "second-order," in the sense that they are evoked when behavior contravenes "first-order" moral emotions—when someone fails to exhibit sympathy or loyalty, or trust or respect. For that reason, reactive emotions are dependent on binding and collaborative emotions. Which sorts of things humans felt guilt and resentment about depended on these other, more "basic" emotions.

Guilt and resentment, however, are only the most prominent members of two broader families of reactive emotions. Alongside guilt are other emotions like *shame* and *regret* that are felt toward oneself (first-personal reactive emotions).³⁰ Similarly, resentment is not the only reactive emotion felt toward others, since humans also feel moral emotions like *indignation* and *contempt* (second-personal reactive emotions).

Full-blown moral agency was not yet on the scene when our genus evolved, but its emotional roots in reactive emotions might have been. Through emotions like guilt, shame, and regret, our early human ancestors gained a rudimentary capacity to feel responsible. Through emotions like resentment, indignation, and contempt, they gained a rudimentary capacity to hold others responsible too. Reactive emotions were thus added to the psychological capacities that led humans, through reciprocal altruism, to solve repeated prisoner's dilemmas and act in ways that are biologically and psychologically altruistic. (As we'll see in the next chapter, second-personal reactive emotions also provided a foundation for norm-guided punishment.)

Let's sum up. To accomplish new forms of cooperation, humans evolved diverse moral emotions. Our ape ancestors possessed binding emotions of sympathy and loyalty. Humans inherited homologues of these capacities, and they also acquired new collaborative emotions of trust and respect. Furthermore, enhanced theory of mind in the form of deep empathy led humans to evolve reactive emotions. They experienced feelings like guilt when they failed to act on basic moral emotions, and they experienced feelings like resentment when others failed to do so.

In this chapter, so far, we are in the process of unpacking a theory about the emotional core of the human moral mind. The theory builds on ideas about apes from researchers like Hrdy and de Waal discussed in [Chapter 1](#), along with ideas about humans from researchers like Tomasello and Boehm. It's also supported by empirical evidence in developmental psychology and comparative animal cognition, which suggests moral emotions are innate, as we'll see in the next section.

Up to this point in [Chapter 2](#), we've been trying to explain the evolution of moral emotions in early humans, given what we know about their ecology. To live in larger and more cooperative groups, early humans needed moral traits that were absent in the common ancestors they share with chimpanzees. We've argued that they evolved moral capacities for trust and respect, which allowed them to collaborate on terms of relative equality.

However, it is not possible to state with much precision when the full suite of moral emotions appeared. We can be confident that collaborative emotions are present in *Sapiens* but were not present when our lineage separated from chimpanzees. It is reasonable to infer that they evolved gradually in the interim but could have been present as early as *Erectus*,

given the cooperation needed to survive in the larger, complex groups these early humans formed. Next, we'll use scientific research on living humans to shed light on how these emotions are manifested in our species, in particular. We'll have to wait until [Part II](#) to fully understand the evolutionary processes that shaped the emotional core in Sapiens.

2.4. Innateness

Moral emotions are “innate,” we'll argue, but only in a very specific sense: they are not at the outset a product of general learning mechanisms. That is, they are the result of biological development rather than learning. So, the idea that moral emotions are innate does not mean that they are fixed or free from cultural influence. They can still be quite malleable in development.³¹ Later in this chapter, in fact, we'll suggest that moral emotions are designed to be malleable in response to social cues. First, though, why think moral emotions are innate?

If humans and other living apes share a psychological trait, like sympathy or loyalty, this is strong evidence that the trait is innate.³² Our learning environments are so different that it is unlikely the traits have been acquired independently. As we saw in [Chapter 1](#), chimpanzees and other apes possess capacities for sympathy and loyalty, so it's likely that binding emotions are innate. If a psychological trait is unique to humans, however, evidence that the trait is innate or unlearned is more elusive.

One way to explore the biological roots of distinctively human morality is to examine research conducted on babies. This research offers clues about which moral emotions are likely to be innate, since very young children, even if precocious, have not yet had much time to learn sophisticated psychological capacities from their parents at such an early stage of development. Research in developmental psychology can indicate that some emotions are innate in humans, while research in comparative animal cognition can indicate that those emotions are not innate in other apes.

Experimental research in developmental psychology by Kiley Hamlin, Paul Bloom, and colleagues suggests that infants show signs of moral emotions like sympathy.³³ In a typical experiment, a child watches a morality play performed by puppets. One puppet is a “helper” who helps another puppet achieve a goal. Another puppet is a “hinderer” who prevents another puppet from achieving a goal. Infants tend to prefer the helper

puppet to the hinderer. If given the choice, they reliably select the helper puppet to play with. They also look longer at the hinderer, suggesting that they have an expectation that others will help and that this expectation has been violated.

Other evidence that children exhibit sympathy can be found in a striking and growing body of experimental research, much of it carried out by Warneken and colleagues. In one of these studies, for example, children barely a year old, without prompting, will help adults complete various tasks, like picking up an object that is out of an adult's reach or opening a cupboard for them.³⁴ This helping behavior occurs without parental instruction, without reward, and toward complete strangers. Children sympathize, which motivates them to help others.

In addition, very young children also seem to possess the emotions of mutual trust and respect that enable collaboration. This is most clearly demonstrated in comparative research on human children and chimpanzees. In one study, two chimpanzees in separate cages cooperate on a task that requires them to pull two ends of a rope attached to a platform with food.³⁵ They do so only if the piles are separate and each pile is accessible to only one chimp.³⁶ If the food is in one big pile, accessible to either chimp, the dominant chimp will hog all the food, and the subordinate chimp will refrain from cooperation on subsequent trials. Human children, however, have little problem with this task in either condition, reliably dividing the spoils between them.³⁷ This study and others like it suggest that humans have an innate capacity for trust and respect that supports reciprocal give-and-take on equal terms.

In later sections of this chapter we'll develop a theory about the flexible functions of the emotional core. At this point, however, we need to summarize our conclusions and respond to objections. Over the course of [Part I](#) of the book, so far, we have advanced an evolutionary explanation for the emotional core of human morality. A leading alternative explanation is that the emotional core arises through general learning mechanisms rather than being a product of biological evolution. However, several lines of evidence speak against this alternative.

First, as we've seen, some moral emotions are found in other apes, suggesting that they are homologous, and therefore innate rather than learned. Second, developmental evidence also counts against an explanation in terms of general learning mechanisms. Children too young to have

learned the emotional core from adults seem to exhibit extended capacities for sympathy, loyalty, trust, and respect. Third, the emotional core is universal across human cultures and appears to rely on dedicated neurological and physiological mechanisms.

There is one more reason to believe that moral emotions are innate in the sense of being unlearned. This reason might be the most compelling. You can learn how to feel. Experiences modulate emotional responses, as we'll explore in detail soon. However, you can't learn how to feel, it seems, without already having feelings. There's no education that can inspire moral feelings in a being that isn't already capable of them. This is why psychological disorders that disrupt the biological development of morality, like psychopathy and anti-social personality disorder, seem to give their bearers an unfortunate immunity to moral education.³⁸

To make the case that core morality is innately human, we've argued that apes have moral feelings of sympathy and loyalty but that humans alone have moral feelings of trust and mutual respect. However, the evidence from comparative psychology is far from settled. One of the limitations of research on chimpanzees is that many studies, like those cited earlier, are conducted in artificial laboratory conditions rather than in natural settings. Furthermore, researchers frequently deny chimpanzees the opportunity to choose cooperation partners. If they did have such an opportunity, they might be more trusting and trustworthy.

Some studies in the wild find that chimpanzees are willing to collaborate in ways that might well suggest feelings of trust and mutual respect.³⁹ Yet other studies might even suggest the capacity for deep empathy outside our genus.⁴⁰ The data leave room for interpretation. The extent to which chimpanzees have moral emotions and deep empathy is an open empirical question that we are reluctant to consider settled once and for all given the present state of research. We suspect that the emotional differences between humans and chimpanzees are only matters of degree, rather than differences in kind. Nonetheless, differences in degree can be quite substantial. For example, among humans, a wider range of individuals reliably evoke moral emotions. In addition, humans have deep empathy in response to more complex cognitive states experienced by their social partners.

The presence of certain moral emotions in great apes, to some degree, suggests that the full suite might have evolved by the time early humans appeared two million years ago. We know from evidence of sympathy and

loyalty in great apes, at least, that biological evolution (as opposed to cultural evolution, discussed in the next chapter) was sufficiently powerful to select for moral emotions. As we'll see in [Part II](#) of the book, however, our cultural environments continued to exert selection pressures on moral emotions after our genus evolved. The emotional capacities of Sapiens are bio-cultural products, but they seem to have biological roots in early human ancestors.

In the preceding sections, we argued that moral emotions evolved in our lineage in part because they allowed us to find mutually satisfactory outcomes in repeated interactions that took the form of stag hunts and prisoner's dilemmas. In the next two sections, we'll turn from thinking about why moral emotions evolved to their limited scope.

Like their ape ancestors, humans were shaped by violence between groups and social hierarchy within them. As we'll see, understanding how the emotional core stabilized new forms of cooperation sheds light on the exclusivity and inequality of human morality, i.e., limitations of scope between and within groups. The evolution of cooperation can also explain why and how the scope of human morality is nonetheless flexible.

2.5. Exclusivity and Inequality

Human minds contain a mix of egoistic and altruistic motives. Thus, moral emotions co-exist with feelings that motivate aggression. Like other apes, humans are often disposed toward violence and domination. Males are especially likely to violently attack males in other groups. They are also prone to exert dominance over females in their own groups, even or especially those with whom they share intimate relationships. Unfortunately, humans are in these respects more like chimpanzees than peace-loving bonobos.⁴¹

These forms of aggression are compatible with psychological altruism in that human morality, like ape morality, has been *exclusive* and *unequal*. That is, the emotional core of morality is extended to include some humans beyond kin, but it has also excluded others and maintained a social hierarchy. To be clear, exclusivity and inequality are matters of degree. For example, exclusion does not entail that other groups never evoke moral feelings, but they typically evoke feelings that are less intense and less consistent.

In this section and the rest of the chapter, we'll describe the flexible scope of moral emotions. We'll also argue that this is key to understanding how human dispositions toward violence and domination co-exist with psychological altruism. Much later, we'll explain how the flexible scope of morality enables stable moral change toward greater inclusivity and equality. Exclusivity and inequality are not unalterable.

First, though, why has morality been exclusive and unequal in the ways mentioned earlier? This question can be answered by reflecting on the nature of human cooperation. Remember that the emotional core evolved to facilitate cooperation in the context of intergroup violence and cooperative parenting. This had two consequences. First, cooperation was fitness enhancing in part because alliances within a group allowed it to wage war against other groups more effectively. Second, natural selection favored cooperation in childrearing, but it did not require equal responsibility on the part of males and females. Let's consider each in turn.

The source of moral exclusivity in ancestral humans was antagonism toward outgroups. Like present-day humans and chimpanzees, our human ancestors engaged in violence against their neighbors. They fought wars. More often, perhaps, they raided other bands to kill or enslave their members and abscond with their resources. Intergroup violence was adaptive. Other groups were competing for the same resources. They were often violent too. From the perspective of biological fitness, at least, it is better to be predator if the alternative is to be prey.

Loyalty is inherently limited to family and friends. But sympathy is also circumscribed—to ingroup members. The explanation for moral exclusivity is that ingroup sympathy facilitated intragroup cooperation in the context of intergroup violence. And so, there were good evolutionary reasons to limit moral feelings to the boundaries of the human band. Intergroup violence was partly biologically altruistic, since it involved taking personal risks to increase the reproductive success of others in the same group. In contrast, male domination may have been purely biologically egoistic.

In later portions of the book, we'll explore how sexism is rooted, ultimately, in inequality of social roles between men and women. This type of inequality exists in the present, but it also likely existed in the ancient past. Part of the evidence for the early existence of equality and mutual respect is the behavior of modern hunter-gatherers studied in the last century. As Boehm says, these groups embody an “egalitarian ethos.” But

his evidence largely involves the behavior of males toward each other within their own group⁴²

Across societies, egalitarianism is often severely limited in relation to gender. Recorded history in most parts of the world indicates severe gender inequality. Many evolutionary psychologists have a tendency to project modern societies onto the past, inferring that modern forms of patriarchy were present throughout human history. This inference is mistaken. For example, evidence suggests the existence of greater gender equality before the agricultural revolution.⁴³ Nonetheless, some degree of inequality between men and women is ancient.

In human history, it's likely that males sometimes gained a competitive edge by subordinating females. Here, natural selection would have favored biological and psychological egoism through a sort of dominance that is familiar across great ape species (with the exception of bonobos). Thus, it seems that human females were sometimes denied the same amount of respect as males and, consequently, were subject to male violence and domination. Boehm is right that within the sexes, bullies were ostracized or executed. This view of equality *within* the sexes, however, is entirely consistent with severe inequality *between* them.

A sexual division of reproductive labor within many species is ancient, far older than humans or even apes.⁴⁴ This longstanding feature of our ancestral social structure, in which females raise young and males violently protect resources, may explain why males have often had diminished respect toward females, seeing them as less than fully equal. While revered for their capacity to give birth, females were smaller and easier to physically control, and therefore more likely to be subject to violence from males in their groups, including the males who might provide some care to their children. If so, then, the patriarchy was alive and well in the Paleolithic (though less intense than in the Neolithic and afterward, as we'll see in [Chapter 7](#)).⁴⁵ Male dominance of females would have served males' reproductive interests. Thus, although core morality enhanced equality in some dimensions, it would seem to have tolerated a sexual division of respect. Moral inequality was likely gendered.

Even if we accept these hypotheses about the evolved limits of human morality, it would be a mistake to infer that exclusivity and inequality are unalterable features of our biological makeup, much less justifiable. First of all, just because a trait evolved does not mean it is worth promoting or

preserving. Moreover, as we'll begin to see shortly, and in more detail in later chapters of the book, our social environments can alter our biology in remarkable ways, transforming how our bodies and minds function. Like so many other human traits, exclusivity and inequality are malleable.

As we have seen, core moral emotions permitted outgroup antagonism and female subordination since morality was to some degree exclusive and unequal. That is, moral emotions tended to be circumscribed, such that only male members of the same group reliably evoked the full suite of moral feelings. Moral emotions were favored by natural selection because they enabled cooperation—but only among a limited range of individuals. Whereas respect was probably limited between males and females, sympathy in particular was limited between ingroups and outgroups. Nonetheless, as we'll see next, humankind is not consigned to exclusivity or inequality. Moral emotions are plastic.

2.6. Adaptive Moral Plasticity

In general, an evolved trait is “adaptively plastic” when genetic expression of the trait is conditional, for adaptive reasons, on the organism's environment.⁴⁶ A striking example of adaptive plasticity is the Mexican salamander.⁴⁷ This species has a land form with legs, a small body, and lungs. But it also has a water form with fins, a large body, and gills. In principle, salamanders that are monozygotic twins with the exact same genomes can develop differently, one acquiring the land form and the other the water form. Which form develops depends on whether the environment is dry or wet. This flexibility is thus itself an adaptation.

Moral emotions are also adaptively plastic. Later in this chapter, we'll see how moral emotions, while innate, can be flexibly shaped through learning that is attuned to the emotional expression of others. This allowed early human groups to adapt their cooperative activities to new environments. First, however, we'll argue that moral emotions are also flexible in terms of their liability to be more or less exclusive and unequal. Here we follow ideas developed by philosophers Allen Buchanan and Rachell Powell.⁴⁸ In contrast to these authors, however, we'll unpack adaptive moral plasticity in terms of moral emotions, and we'll apply it not just to exclusivity but also to inequality.

Another illustration of adaptive plasticity is more apt. The water flea develops a costly but protective armor only when chemicals in the water signal the presence of predators.⁴⁹ Buchanan and Powell argue that moral exclusivity is similarly plastic in response to threats. In conditions where other groups are likely to be violent, or vectors of disease, or competitive threats, humans are disposed to develop a more exclusive morality.⁵⁰ But when these conditions are absent, a more inclusive morality is likely to develop. This is continuous rather than dichotomous—not an on/off switch but a dial that can be turned by degrees, as Buchanan and Powell put it.

Morality's emotional core is adaptively plastic in the sense that moral emotions are flexible, for example, liable to be more or less exclusive. The reason they are flexible in this way is that the social environment early humans confronted was variable. Whereas other groups were sometimes hazardous, they could also present opportunities. Other bands were sources of mates. They were potential trade partners. Peace with neighboring bands was valuable when it prevented violent conflict. A local peace might also provide the basis for more profitable war against yet other bands. Thus, natural selection favored moral emotions that could turn a dial between inclusivity and exclusivity.

One important piece of evidence for this form of adaptive moral plasticity, as Buchanan and Powell point out, is simply that in modern times humans are not consigned to moral exclusivity. Sometimes our “moral circles” widen.⁵¹ The scope of moral feelings can expand or contract. For example, groups of people once seen as fit only for slavery can over time be regarded as equals. Conversely, neighboring groups once seen as equals can be cast as vermin fit for extermination. This too reflects flexible re-shaping of moral circles.

We suspect that adaptive moral plasticity also underlies propensities toward male domination. It's likely that the social construction of gender roles in human cooperation varied across human societies. Some human groups were more patriarchal. Some were more gender egalitarian. If so, then natural selection would have favored adaptive plasticity in respect. Levels of egalitarianism would depend on the particular division of labor in the group and to what extent women are able to command power and authority.

One piece of evidence for adaptive moral plasticity in moral feelings of respect (discussed in more detail later in the book) is that human societies

are not invariably structured by male domination and gender inequality. Sometimes female subordination wanes, even if it has never entirely disappeared. Biology is not destiny, it would seem, because moral emotions are flexible enough to allow for moral change, even cumulative moral change that grows to be enormous over time. In the final part of the book, we'll explain how inclusivity between groups and equality between genders has evolved in modern societies.

In this chapter, we explained that humans shared food and childcare, built coalitions to overthrow dominance hierarchies, and defeated other groups. But, as humans evolved, they increasingly also had to work together in different ways depending on the circumstances at hand. To accomplish this, we've argued, moral emotions evolved to be plastic. Next, we need to understand how they enabled humans to cooperate across contexts in an open-ended way. To do that, it's worth taking a step back and thinking about the function of moral emotions. In doing so, we'll answer a more general question: why is human morality grounded in emotions?

2.7. How Moral Emotions Function

The functionality of moral emotions offers good reasons to believe that they are the products of Darwinian design. Each element of core emotional morality has a separate function. Consider first the four basic emotions. Feelings of sympathy motivate caring about others in the same group. Feelings of loyalty motivate friendship and joint protection against a hostile social environment. Feelings of trust motivate reciprocal coordination of behavior. Feelings of respect motivate equal treatment.

These elements of core emotional morality, however, work together. Sympathy and loyalty are binding emotions, enabling apes to assist and protect one another. Trust and respect are collaborative emotions, enabling humans to work together in complex, joint activities. Binding emotions and collaborative emotions are interlocked. Being part of a close-knit group makes collaboration more feasible, while collaboration creates mutual interests that strengthen the interpersonal connections that bind humans together.

No less important, guilt and resentment are reactive emotions that reinforce binding emotions and collaborative emotions by strengthening moral motivation, in oneself and in others. Together, then, core emotional

morality is an adaptively complex trait, an interlocking set of emotions that perform a broader function: to resolve problems of interdependent living that first arose in the social ecology of early humans.

We may wonder, though, why emotions are such an intimate part of morality. Why, indeed, do humans have an adaptively complex system of moral emotions at all? Could they not have evolved simply to act with reciprocity and equality while dispensing with emotions entirely? Researchers rarely pay attention to these questions. We'll provide answers to them, taking inspiration from the work of economist Robert Frank.⁵²

As we end this chapter, we'll put some finishing touches on our theory of the emotional core. This theory rests on the fact that emotions are tied to *motivation*, *expression*, and *learning*. Moral emotions are, in this sense, multi-functional. Each of their particular functions is critical to the adaptive complexity of morality. We'll look at these functions one at a time, though none is fully independent of the others. They evolved in the end as an integrated package.

Generally speaking, to begin with, moral emotions are motivating. When, for example, you feel trust and respect for someone else, you are motivated to help them and not expect more from the partnership than you are willing to give. When you feel resentment for being treated unequally, you are motivated to seek compensation and reform. When you feel guilt for your failure to be loyal, you are motivated to seek forgiveness and restore the relationship.⁵³

Can humans not be motivated to act, however, without feeling emotion? May they not just desire the action coldly, so to speak, devoid of feeling? The problem is that when humans have to coordinate their actions with others, they cannot act wisely without knowing how others are motivated. In a stag hunt or prisoner's dilemma, for example, I have to choose one of two actions, but my efforts will be futile unless you act in a way that fits my choice. Can I count on you to coordinate with me? Can you count on me to trust you? The point is that even assuming humans are disposed toward cooperation, they still need to know how others are likely to act.

Here is where the expressive function of emotions comes in handy. Humans need to communicate their emotions, through facial expressions and body postures, to the other people with whom their lives are interdependent. Moral emotions are ideal vehicles for doing just that. Humans reliably share what they intend because emotions are hard to fake

or hide. Emotional communication is thus analogous to the wag of a dog's tail, except for its far greater range of expression. You may not like what the other is feeling but at least in most cases you know what it is. This is an essential step toward coordinating behavior.

It's also through the expressive function of emotions that humans are able to learn to feel the right emotions at the right times. If you feel enough trust in me to commit to a choice without hesitation, you're responsive to what you already know about me or what you read in my face and demeanor. But how did you learn to do that? Though the capacity to feel trust is innate, a product of evolution by natural selection, it is also shaped by how humans have been raised as children and their experiences as adults.

In early years humans have to learn in large part from role models, seeing how their parents, siblings, and peers react emotionally to various situations. Their daily expressions of moral feeling are one's guide. They may be a poor guide, a mediocre one, or the best you could have. The point, though, is that the expression of moral emotions is the key to learning how to feel and behave. Humans rely on others' emotions to learn when to trust someone, to learn who deserves loyalty, and to learn how to be adequately respectful. Through emotional expression, then, humans could extend feelings of sympathy beyond the group and feelings of respect beyond the limitations imposed by gendered social hierarchies.⁵⁴

As humans evolved, our ancestors gained new cooperative relationships within their groups. They continued to rely on one another to avoid predators, defeat neighboring groups, and raise their children. They also engaged in collaborative foraging and hunting. Moreover, they needed to accomplish all of these cooperative activities in shifting, unstable environments. The reason they were able to do so is that they could rely on an emotional core that flexibly guided motivation, expression, and learning. Moral emotions are different in our species, compared to those in our ape ancestors, not just in terms of the number of different emotions possessed, but also in terms of their flexibility.

2.8. Summary

This book traces the evolutionary path that led from our shared ancestors with apes through the birth of human species and all the way up to the

origins of large-scale, settled societies. Humans evolved in three main stages.

The first stage of human evolution ended with the birth of our genus two million years ago. Biological evolution dominates over culture in the first stage, as it does in the history of other non-human animals.⁵⁵ In the second stage genes and culture co-evolved. Gene-culture co-evolution last led to speciation in our lineage 300,000 years ago, though the process continued afterward and carries on still.⁵⁶ In the third stage of human evolution culture dominates. Cultural evolution took control of the Darwinian levers 100,000 years ago and accelerated through a series of social and technological revolutions.⁵⁷ The idea that cultural evolution can be Darwinian is controversial. Making sense of it will require careful thought, beginning in the next part of the book. So far, however, we have been concerned with biological evolution.

[Chapter 1](#) began by explaining the evolution of altruism in the ape ancestors we share with chimpanzees. The nucleus of morality is sympathy and loyalty. Feeling concern for other group members for their own sake enabled cooperation, benefiting individuals themselves along with their kin. In this chapter, we saw that humans evolved further capacities for psychological altruism. Thus, perhaps even before our ancestors evolved the capacity to follow moral rules or reason about them, humans were morally different from other animals. They had richer emotional lives.

In [Part I](#), we have developed a theory of the moral feelings that comprise the emotional core of ape and human morality. Sympathy was the original, emotional wellspring of morality, present in apes and other animals. In humans, however, morality is pluralistic: it consists of several moral emotions, not just one. Social relationships are managed by sympathy and loyalty (binding emotions), trust and respect (collaborative emotions), and resentment and guilt (reactive emotions). These emotions enabled forms of cooperation unique to humankind. In particular, they solved stag hunts and prisoner's dilemmas that arose in such activities as hunting, foraging, warfare, defense, and parenting.

Together with deep empathy, six moral emotions are the affective core of human morality. Because they control motivation, expression, and learning, these emotions are a biological adaptation that allow intelligent humans to adapt their interdependence according to their environments. Moral emotions are innate in the sense that they are not produced by general

learning mechanisms, not in the sense that they are fixed. In fact, core moral emotions are flexible as a matter of evolutionary design. Thus, they have a tendency toward exclusivity with respect to outgroups and inequality with respect to gender. But they are also flexible enough to allow for inclusive and egalitarian expansion of morality, as we'll see in more detail later.

More immediately, we'll move on to the second stage of human evolution, in which culture and biology conspired to create our species. In [Part II](#) of the book, we'll develop a theory of the bio-cultural moral mind—moral capacities that nearly all Sapiens share and that all other animals lack. The co-evolution of biology and culture explains the flexible emotions that exist in our species. However, moral emotions are only the first ingredient of the moral mind. As we'll see, members of our species are morally unique in that they have a rich set of flexible moral emotions, follow a plural set of moral norms, and reason together about right and wrong.

II

MORAL MINDS

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3

Norms

The first major breakthrough in human evolution was the birth of our genus two million years ago. *Homo erectus* would persist on two continents for six or seven times longer than our own species has been around.¹ Erectus had larger brains than its predecessors and led more complex social lives. It was probably the first species in our lineage to gain the manual dexterity needed to fashion hand-axes and picks,² the first to gain some control over fire.³ These skills enriched the diets of our early human ancestors, supplying the extra calories needed to power big brains designed for sociality.

Human intelligence and sociality surged because core moral emotions motivated altruistic behavior and stabilized cooperation. Sympathy and loyalty had existed among apes for tens of millions of years. Early humans, however, evolved new moral emotions of trust and respect, guilt and resentment. Moral emotions allowed our ancestors to live together in groups that were larger, more complex, and more cooperative. Intelligence flourished because smarter individuals were better able to understand one another and the intricate social worlds they built in groups structured by interdependence and competition.

For over a million years after they appeared, humans entered a long period of relative stability. Erectus fossils are widely separated by distance and time, but they exhibit only minor variations on the same general theme.⁴ Evidently, the earliest members of our genus found an ecological niche. They exploited it richly, migrating out of Africa and into distant parts of Asia.⁵ Erectus accomplished this feat not because it was especially strong or fast or ferocious, compared to other apes, but because newfound moral and cognitive capacities activated the greater power of its collectives.

After the birth of our genus, two more speciation events in human evolution were necessary for our own species to make its appearance. The next occurred approximately 800,000 years ago when early humans who had remained in Africa evolved into *Homo heidelbergensis*. Like Erectus, Heidelberg expanded its range to Eurasia,⁶ giving birth to yet other human species there, including Neanderthals and Denisovans.

The third and final major speciation event in our family tree occurred roughly 300,000 years ago when Heidelberg populations still living in Africa evolved into *Homo sapiens*. This new human species did not leave Africa immediately. But soon after it did, Sapiens began to rule the entire planet, with far-reaching consequences for organisms on other branches of the tree of life.⁷

During the speciation events leading from early humans to Heidelberg, Sapiens, and other “late humans,” social complexity and brain size exploded. Grandmothers, aunts, and fathers contributed more and more to childcare.⁸ Mothers could therefore afford to give birth to offspring that were even more helpless, dependent on multi-parental care for a dozen or more years, their brains more plastic to facilitate a prolonged education. Compared to their predecessors, Heidelberg and Sapiens were physically weaker and more slender, with smaller teeth and weaker jaws.⁹ Losses in natural physical prowess, however, were compensated by major gains in artificial tools and technology.

Late human species were not the first toolmakers, but they were the first technological innovators. They invented a brand-new repertoire of stone and wood tools, including new blades, javelins, clubs, and spears with pointed tips.¹⁰ Their new toolkits also included items constructed out of clay,¹¹ hide,¹² and bone.¹³ Tools and technology allowed our ancestors to not just control fires but start them,¹⁴ hunt more widely and brazenly,¹⁵ and process many more types of plant products for consumption.¹⁶ Technology now did the work once accomplished by muscles, jaws, and guts.¹⁷

[Part I](#) of this book traced the evolutionary processes leading first to our family of apes and then to our genus. [Part II](#) turns to the second stage of human evolution—that is, the evolutionary processes leading from the earliest *Homo* to late human species and particularly *Homo sapiens*. How did late humans like Heidelberg, Neanderthals, and Sapiens become smart enough to make such remarkable technological innovations? The answer,

suggested by a wide range of evidence and traced in [Chapters 3–5](#), is complex cooperative culture and its impact on biology.

Scholars sometimes place the origins of complex human culture in the late Pleistocene, perhaps 50,000 years ago. However, this estimate is off by several hundred thousand years.¹⁸ Our ancestors led rich cultural lives before our own species even came into existence. After gaining the knowledge and skills sufficient to invent a wide range of sophisticated tools and technology, humans were in a position to make incremental changes to their ideas and inventions, intentionally or accidentally. Improvements in ideas and technology gave the humans that acquired them an edge in the struggle for existence and therefore tended to persist, setting into motion a slow but accelerating accumulation of adaptive cultural complexity.

Adjusting to new cultural worlds, which held the potential for rapid and unpredictable change, late humans needed to cooperate even more extensively than before to survive. With early humans they shared moral emotions that bound them to others in their bands and guided cooperation. To meet novel and sudden challenges, however, late humans needed a more flexible and precise way to coordinate behavior. Herein lies the cultural origin story of norms. Our main idea in this chapter is that norms were the next major innovation in the evolution of morality.

Norms are the shared rules that humans became addicted to. Social norms prescribe and proscribe certain actions, and they also demand material punishments and social sanctions for breaking the rules. The co-evolution of biology and culture favored a system of norms and a resonant norm psychology. Late humans were not born with innate norms, as we'll see, but they gained novel gene-cultural abilities to learn and internalize the norms in their cultural environments.

In [Part I](#) of the book, we unearthed the biological roots of morality in our family and genus, i.e., the emotional core of morality. In [Part II](#), we'll explain the evolution of the moral mind in our species. Thus, in this chapter, we'll use cultural evolution to explain the existence of the normative core in human morality and to highlight its bio-cultural nature. We'll explain why humans have norms and why they so avidly learn them. However, to pave the way for the long investigation we are about to begin into stage 2 of human evolution, we need first of all to understand how culture evolves. We need to grasp the collision in Darwinian history between natural selection and cultural selection.

3.1. Cultural Evolution

Life began on Earth four billion years ago.¹⁹ Simple, enclosed cells with just enough internal machinery to make copies of themselves would eventually give rise to the staggering diversity of enormously complex life that exists today (at least for now). This evolutionary path was made possible by a system of biological heredity. A complex developmental system ensures the reliable transmission of traits from parents to offspring. The jewels of this system are genes.²⁰

In a population of organisms, variation in genes causes variation in structural and behavioral traits. Some genes produce traits that lead an organism to survive longer and reproduce more effectively. So, genes that enhance reproductive fitness are more likely to be inherited by offspring in the next generation. Fitness-enhancing genes therefore have a tendency to increase in frequency over time. Different genetic traits prosper in different environments, leading eventually to rich species diversity.²¹

Biological evolution would, in due course, produce creatures capable of learning from their environments and passing on what they learned to others. At this point, Darwinian selection made an entrance onto a cultural stage. Culture began to evolve.

Pioneers in the field, Peter Richerson and Robert Boyd offer a useful model of cultural evolution that identifies a common quotient to cultural change. This model views the primary vehicle of cultural evolution as “information” rather than genes.²² Information consists not just of ideas and beliefs but a range of other representations that underlie language, habits, customs, and skills. It can be diffuse and therefore does not necessarily come in discrete packages (i.e., “memes”).²³ Information is stored in brains, but it also resides in other representational systems like documents, artifacts, and technology. Instead of being seeded into offspring at conception, information is communicated over the course of development. In cultural evolution information evolves.

Culture is another, parallel system of heredity in which traits expressed in one individual are passed along to others. The currency of biological evolution is the number of fertile offspring. The currency of cultural evolution is the number of influential “students.”

Just as biological genes and their resultant traits vary in a population, so does cultural information along with its resultant traits. Simply put, some

information is inherited more often because the traits it produces cause it to persist longer and find its way into more students. Its prevalence tends to increase in a population over time, relative to information that produces competing traits. Different bodies of information thrive in different ecological niches, eventuating ultimately in a rich diversity of culture.

Some scientists and philosophers, however, are skeptical that biological fitness and cultural fitness truly have anything in common.²⁴ The vehicles of inheritance are so different in each case: genes versus information. The mechanisms of inheritance and selection are also quite different. One involves biological reproduction of offspring, the other communication to students. Nonetheless, biological fitness and cultural fitness share three essential features of Darwinian selection: variation, heredity, and inherited differences in fitness.

To see this clearly, it's easiest to look at an example. In a cold environment the physical trait of having a thick coat can give an animal an advantage over other animals with thin coats. The animal is more resilient, better able to survive and reproduce, and therefore fitter in terms of natural selection. Its thick coat is inherited by more offspring through the mechanisms of biological reproduction.

Now think about a parallel case of cultural selection. *Information about how to make a thick coat* is transmitted by some individuals to others through communication. The individuals who inherit the information may be offspring, but they need not be. In any case, if the information is useful in coping with a cold environment, it's likely to be inherited more than information for making thin coats (via mechanisms we'll explore in detail in the next section).

Biological reproduction isn't necessary for cultural selection, but three things remain constant whether selection is natural or cultural: variation in traits, a mechanism of inheritance, and different rates of inheritance due to the trait's usefulness in the environment. A particular trait is "fitter" or "better adapted" in a given environment, relative to alternative traits, when its usefulness leads it to be inherited more often in that environment. This is true whether genes or information are inherited, and whether inheritance is mediated through reproduction or communication. In this way, then, both natural selection and cultural selection are Darwinian.

Scientists have cataloged the existence of Darwinian cultural evolution in numerous animal species, from macaque monkeys to whales.²⁵ Apes like

chimpanzees are also cultural beings. Humans, however, are undoubtedly the most culturally complex animals on the planet. Indeed, we are such an intensely cultural species that our biology has evolved in quite radical ways to facilitate culture.

Biological evolution is relatively slow and cannot anticipate novel variation in the environment. Cultural evolution is faster and more prescient.²⁶ And so, as we'll explain in depth later in this chapter, those of our ancestors seeded with superior abilities to acquire culture were better able to face brand-new ecological challenges. The pressures favoring a biological capacity for culture were especially intense during the periods of climatic fluctuation that coincided with the birth of new human species.

What we know about ancient humans comes mainly from bones and stones. The archaeological record of sophisticated stone tool traditions many hundreds of thousands of years ago is the most vivid trace of culture.²⁷ However, this record suggests a much richer, lost cultural history. Humans needed information to make stone tools. But they would have also needed information to produce and operate all the other tools and technology made from wood, bone, skins, and clay, which leave only faint traces in the archaeological record.

Beyond just tool construction, the cultural transmission of useful information must be what kept alive all the many complex tasks humans did to survive together in ecologies now long abandoned. Rich cultural systems were therefore alive well before our species walked and breathed, at least since the days of the first-known late humans, our Heidelberg progenitors. Late humans acquired useful information, which allowed them to succeed in their environment, and was therefore passed along to others. Thus, Darwinian cultural evolution opens new possibilities for explaining stones, bones, and other, fainter products of ancient human history.

Later in the book, in [Part III](#), we'll build our Darwinian framework for culture into a theory powerful enough to explain things like institutions and ideology. But to understand the foundations of cultural evolution we need to think more carefully about the role of social learning in cultural selection. Virtually all animal species have hit upon the trick of learning from their environments. For cultural evolution to unfold, however, what's learned must also be transmitted. Social learning mechanisms are therefore the primary drivers of cultural selection, as we'll see next.

3.2. Social Learning

Let's start by considering the ancient human ability to start and control fire. This ability arose hundreds of thousands of years ago. It is now universal, but of course it is not innate. We have no organs for producing fire. We are not born with instructions about which rocks to select or how to strike them together. Fire making came from culture rather than biology.

Fire was ecologically useful in a number of ways. It provided a source of light and warmth.²⁸ It was used to scare away predators.²⁹ Eventually, humans even used fire to clear vast tracts of land and thereby manage the local supply of plants and animals.³⁰ Earlier and more importantly, though, fire was used to cook food that was otherwise indigestible or toxic.³¹ This expanded the range and quality of food choices, indispensable when times were lean, as they often were.

Some humans hit upon fire. Because it was manifestly so useful, others copied them. Fire spread, through cultural selection.

Our task in this section is to understand how social learning mechanisms drive the cultural evolution of such things as tool production, the ability to make thick coats, and the capacity to start and control fire. One major way is through imitation.

All cooperative animals share information. However, humans alone are exquisitely adapted to learn extensively from others through imitation.³² Monkey see, monkey do? Not so much. Not compared to humans. Imitation is rife in humans because it was often adaptive. There is no need to re-invent the wheel from scratch when it is more efficient to copy others who have done the hard work already or luckily hit upon effective solutions to ecological challenges.³³

Humans are exposed to a variety of novel information, expressed in speech, behavior, and material artifacts. Some of this information arises by accident, while some arises deliberately. That is, "cultural mutations" are either random or guided. In either case, humans systematically acquire and retain some bodies of information over others. For example, information is more likely to be acquired if it is easier to learn, in virtue of such things as biases in attention, affective salience, or ease of computation.³⁴ However, even more important in the history of cultural selection were social learning

mechanisms. These mechanisms were adaptations for acquiring information useful for survival and reproduction.

Evolved social learning mechanisms lead humans to model and imitate those who are successful because they possess ecologically useful information, such as information about how to make thick coats or how to start and control fire.³⁵ Successful individuals therefore have high cultural fitness. Because of the tendency to imitate individuals who are successful, the information they possess is more likely to be transmitted to others. For these reasons, imitation was the most significant influence on cultural selection over the course of human history.

In cultural selection, remember, fitness is not necessarily a matter of producing more offspring. Children are just some of the potential students who can inherit culture. Whereas genes are transmitted “vertically” to offspring, information is transmitted vertically and “horizontally”—that is, to offspring and also to other students in a population.³⁶ These students must be smart enough to figure out who is successful and to copy them.

In modern societies, increasingly, what counts as “success” has become disentangled from the ability to survive and reproduce. But for most of human history, within our genus and our species, cultural success had huge consequences for life and death. Standards of success that didn’t track reproductive fitness would not have lasted long. Thus, over the long run in human history, information that was culturally fit tended to favor survival and reproduction.

To hammer the point home, notice that the link between cultural fitness and biological fitness is only contingent. Cultural selection doesn’t necessarily favor traits that serve an organism’s reproductive interests. Cultural fitness consists fundamentally in the ability of some information to propagate at a higher rate and thereby increase its presence in minds and other representational systems. Hence, some cultural traits are akin to viruses that spread at the expense of their hosts.³⁷ Just to take one example, a suicide ritual can spread rapidly in a population, especially when it is enacted by a person regarded as worth emulating.³⁸

When individuals compete against one another as sources of social learning, selection is operating at the level of individuals. However, like natural selection, cultural selection can also operate at higher levels. It operates at the level of groups of individuals when some information is differentially inherited because of the effects of consequent traits on the

group's cultural success relative to other groups.³⁹ For example, when one sports team is successful and their strategy is copied by other teams, cultural selection is a form of group selection. (We'll focus more on cultural group selection later in this chapter.)

So far, we've seen how social learning mechanisms generate selective pressures in cultural evolution, at the level of individuals or groups. Social learning tended to favor the transmission of useful information. Next, we need to integrate cultural evolution through social learning mechanisms within a larger framework, one that includes biological evolution. This is necessary to go any further in explaining the evolution of morality. The rest of the chapter will then use this framework to explain the existence of the normative core in the moral mind: norms and a parallel norm psychology.

3.3. Gene-Culture Co-Evolution

Evolved culture provided such a rich source of opportunities that it was foolish to strike out on one's own. An addiction to culture paid. Like natural selection, then, cultural selection became cumulative. Human cultural adaptations became more and more complex. Thus, for instance, simple tools developed into elaborate technologies. As a consequence, natural selection could no longer ignore culture.

Joseph Henrich is an anthropologist whose research intrudes into many adjacent fields. Henrich has made the best case to date that the origins of our species, and the dramatic differences between ourselves and other apes, including early humans, are due not to culture alone but to the co-evolution of genes and culture.⁴⁰ Once culture began to accumulate, it became the primary selective force acting on biological evolution. That is, genetically inherited abilities to survive and reproduce began to depend primarily on being able to negotiate not merely one's physical environment but one's cultural environment. For example, as Henrich argues, genes for advanced theory of mind evolved in our lineage in part because knowing what others were thinking allowed us to better learn the useful cultural information to be found within our groups.⁴¹

Culture was such a powerful force, Henrich explains, that it even shaped the evolution of our anatomy and physiology.⁴² At first glance, our digestive systems are not nearly as functional as those of other apes. Our

mouths, lips, and teeth are small; our lip and jaw muscles are weak; our stomachs are compact and our large intestines are short. But the reason for these apparent deficiencies is that an economical digestive system was adaptive in a culturally rich environment.

Thanks to culture, humans gained tools, technology, and the know-how to process food before eating it, accomplishing some of the aims of digestion outside the body. Eating cooked meat, for example, meant that our stomachs and large intestines needed to do far less work. For several hundred thousand years, perhaps longer, individuals gained an adaptive edge by devoting fewer resources to supporting their digestive systems—using the resources thus saved for other important biological functions, like building and sustaining energy-intensive brains. All of these biological innovations were possible only because of the stable presence of culturally evolved tools and techniques for procuring, cooking, and processing food.⁴³

The most striking effect of culture on biological evolution is the way it remodeled not guts but neural systems and neural development.⁴⁴ For humans born in a culturally rich environment, greater social intelligence conferred a huge advantage. Individuals who were better able to acquire and retain culturally transmitted information capitalized on the vast knowledge found within their groups. Thus, natural selection enlarged our brains and bestowed more neural connections upon them.

Newborn members of our species famously have massive heads. Any bigger and they apparently wouldn't be able to pass through the birth canal.⁴⁵ Of course, human brains continue to grow after birth and are highly flexible throughout development, from infancy through adolescence and beyond. Human children are dependent on their parents and alloparents for much longer than other animals because the opportunity to download more culture from their family and their community was selected for under a regimen of culture-driven biological evolution.⁴⁶

Culture exerted an especially strong selective pressure on capacities for social learning. As Henrich shows, humans evolved a sophisticated ability to learn selectively from others in their groups and to preferentially adopt their beliefs, values, and habits.⁴⁷ Our biology leads us to imitate those around us that can supply the most useful information. We copy people who are more skillful. We also copy people who are more successful, not

necessarily because we understand precisely what ideas, habits, or skills lead to their success, but simply because we recognize their success.⁴⁸

In what is called “prestige learning,” we even copy what those other members of our group are copying.⁴⁹ (Hence the staggering power of modern celebrity.) That is, we rely on meta-information about people others think are skillful or successful. Prestige learning acknowledges that when it comes to figuring out who is worth learning from, your own judgment is severely limited. Better to rely on the judgments of many other people. In the ancient past, all of these social learning strategies were biologically adaptive, given a context in which the most important and even indispensable information could not be acquired on one’s own, thanks to a long history of cumulative cultural evolution.

Gene-culture co-evolution had a radical and breathtaking effect on the human lineage. The reason, as Henrich explains, is that it can feed itself in an “autocatalytic” process—a positive feedback loop.⁵⁰ The accumulation of cultural adaptations led to selection for biological traits that allow humans to absorb culture, which led to more complex culture, which led to further biological adaptations for culture, and so on and so on.

Let’s sum up. Stage 1 of human evolution was limited mainly to genes. In stage 2 of human evolution culture evolved. Cultural learning mechanisms tended to favor useful information that enhanced survival and reproduction. Genes then had to survive in a cultural environment. Genes and culture therefore evolved in tandem. Imagine an automobile that is able to use its own exhaust as fuel. That illustrates the power of gene-culture co-evolution. And it explains how new and unprecedented species like Heidelberg, Neanderthal, and Sapiens arose.

Smarter human species evolved because gene-cultural capacities for social learning, along with other cognitive skills, were selected for within richly social communities. However, these communities could remain stable only with the help of new moral adaptations that sustained cooperation and reduced conflict. Complex, spiraling speciation events couldn’t have unfolded without the autocatalytic evolution of norms, and it is to this bio-cultural adaptation to which we’ll turn next.

3.4. Norm Culture

Morality in our species isn't all about feeling. Modern humans also have moral norms that dictate their standards of right and wrong.⁵¹ Whereas emotions are graded and fall along a continuum from strong to weak, norms provide a more discrete system of moral categorization. Thus, humans don't simply feel positively toward some actions; they think some actions are "obligatory." They don't simply feel negatively toward some actions; they think some actions are "forbidden" rather than "permissible."

Why are such norms part of human morality? That's the question we'll now begin answering by using cultural evolution. In the rest of this chapter we'll triangulate from a range of multidisciplinary work carried out over the last few decades. In this section we'll lay some groundwork. To get started, it's helpful to begin by thinking about other psychological outcomes of gene-culture co-evolution.

Some of the first impressive products of cultural evolution were various kinds of tools and techniques for obtaining and processing food. These could be transmitted through simple imitation. However, once our ancestors became equipped with rudimentary linguistic capacities—before complex syntax but especially after—they began to encode and transmit more complex, high-fidelity information about their local environment: where water is to be found; which plants are edible or poisonous; which animals are worth pursuing or avoiding; how to make and use more elaborate technology.⁵² These bodies of information would build steeply over generations, such that no single individual had any hope of gaining worthwhile expertise about their local environment on their own without dipping into the cultural inheritance of their group.

The stable persistence and accumulation of cultural knowledge shaped natural selection on our cognitive systems. Thus, humans evolved an innate "folk biology," a cognitive system designed to acquire, organize, and store relevant information about plants and animals.⁵³ We are primed to structure our thoughts about living things; we group them according to supposedly essential properties that underlie their superficial features; we're quick to project our impressions of one onto other members of the same kind. Culturally transmitted information about living kinds was so important for our survival that there was selection on our brains to evolve cognitive capacities designed specifically to take advantage of it.⁵⁴

Cultural evolution was also responsible for another invaluable body of information. Norms are culturally transmitted social rules that prescribe

how you should and shouldn't behave toward others in your group. Norms rest on expectations that other people in the group will follow the norms too.⁵⁵ Your community also holds you responsible to social norms through sanction and punishment. As will emerge in the rest of this chapter, the co-evolution of culture and biology gave rise, in the second stage of moral evolution, to the second ingredient of the moral mind: the normative core.

How did social norms come into existence in the first place? As with many cultural adaptations, humans could have invented them entirely by accident, without knowing why it was a good idea. The original locus of norms might not have been in such things as forbidding violence or commanding aid. It might have been in tool use or tool construction—for instance, rules for how you should and shouldn't strike a pair of stones together. In cooperative tasks, intelligent and cognitively flexible humans might sometimes have codified a cooperative regularity into a norm. For example, in one group successful hunters and foragers might return to camp and carefully divide their spoils so that each family received the same amount. Because nearly everyone behaved this way, the rest of the group might have begun to think of this as “the thing to do.”⁵⁶

Once food sharing transforms from a behavioral regularity into a norm, it becomes obligatory. Failing to divide spoils evenly is condemned and punished by other members of the group. Typical sanctions include withholding material or social benefits, malicious gossip, and social ostracism. In extreme cases, violating norms meant being ejected from the group entirely or even being executed.⁵⁷ For example, norms meant that would-be tyrants were unwelcome in relatively egalitarian human groups.

Now that it's clear what norms are, we can begin to explain why norms were adaptive and how they evolved. To do that, in the following sections, we'll draw on the models of cultural evolution and gene-culture co-evolution developed earlier in this chapter. Like natural selection, cultural selection is Darwinian, multi-level, and autocatalytic. It is driven by biologically adaptive social learning mechanisms. The currency of cultural selection is differential inheritance, mediated through cultural propagation of students.

Morality in our species has a normative core because of the big impact norms had on the survival and reproduction of individuals and groups. How did they have this impact? Largely, as we'll see, through advantages wrought by several general features. First, the flexibility and precision of

norms allowed our ancestors to engage in new and more reliable forms of cooperation that advanced their biological and cultural fitness. Second, norms are tied to punishment, which stabilizes altruistic cooperation. Let's examine both of these ideas in detail.

3.5. How Norms Function

Why exactly were norms useful and therefore biologically and culturally adaptive? That is, how did they help late humans increase the number of their offspring and students? Initially, norms would have offered little over and above innate moral emotions and consequent social behavior. Like emotions, norms motivate assistance and cooperation. However, emotions are innate biological adaptations. And compared to biological evolution, cultural evolution is much faster and even more flexible. A new social challenge, one that can be met only through cooperation, might destroy a group before genes encoding the needed behavior have a chance to arise.

Suppose that a new, fierce predator begins to encroach on a group's territory. To defend themselves by chasing it away, all the humans in the group must coordinate. An innate sense of heightened solidarity would be useful, making oneself and one's kin more likely to avoid being prey. Unfortunately, the new predator is much faster than the slow processes of genetic mutation and natural selection. Once a group of intelligent humans already has norms and some capacity for language, it can more quickly implement an improved norm of solidarity in predator defense. Norms enhanced fitness because, as cultural adaptations, they provide a more flexible mechanism for coordinating beneficial social behavior.

Norms were adaptive for another important reason too, besides offering greater flexibility. To a degree, moral emotions are flexible too, after all. But norms were more precise and therefore more effective than emotions alone in coordinating socially beneficial behavior. (Also, we'll argue later that emotions evolved to be flexible thanks in part to norms.)

Moral emotions exhibit plenty of variation, along several dimensions. Whereas everyone in a group has some general dispositions to experience moral feelings like sympathy or trust, a particular situation may trigger sympathy or trust in some people but not in others. Even when everyone does experience moral emotions, they may differ in intensity. Or they may lead to subtly different patterns of behavior. Or their expression may elicit

different reactions from the people in the community, some feeling approval and others feeling disapproval.

Norms can be much more specific, since they are shared rules about what to do and what not to do. For that reason, norms were more likely to ensure social coordination. For example, two people who experience the emotion of trust probably won't be tempted to lie to each other. However, if they also share a norm that says lying is forbidden and punishable, they are even less likely to lie when trust happens to be weak. Or when sympathy might lead them to lie to avoid causing unnecessary pain. And so, the more precise content of norms vastly strengthened the ability of humans to secure complex cooperation.

Another critical feature of norms is that they license sanction or punishment, even by "third parties" not directly involved.⁵⁸ When one person doesn't follow a group's social rules, others are motivated to punish them, even when this comes at a personal cost. As we'll begin to see next, norms evolved not just because they guided behavior in a way that was more flexible and precise than emotions, but also because of their link to punishment.

The practice of holding others responsible through punishment was founded on our reactive emotions. Feelings like resentment, indignation, and contempt motivated early humans to react negatively to other group members that acted anti-socially. With the advent of norms, these feelings motivated a wider range of sanctions against people for immoral behavior, such as withholding benefits, malicious gossip, and social ostracism. The emotional core of morality, then, helped construct the normative core. (We'll see this pattern repeated in the next chapter, though we'll highlight how the two cores are interdependent.)

Why did punishment evolve? A good way to begin thinking about the evolution of punishment is by turning again to evolutionary game theory. Besides probing people's cooperative dispositions in laboratory versions of the stag hunt and prisoner's dilemma, behavioral economists use a number of different games to assess the willingness of research participants to be punitive. People like giving others their just deserts, even when it comes at a personal cost.⁵⁹

In the *ultimatum game* one player is given a sum of money and told she must offer some part of it to another player. The second player can either accept or reject the offer. If he rejects it, neither player receives any money.

Now, if people were interested only in maximizing their financial payoff, and if this were common knowledge, the giver would offer as little as possible and the receiver would accept any offer above zero. However, what often happens in the ultimatum game, in most societies, is that the giver offers close to half and the receiver rejects offers that are significantly less than half.⁶⁰ Why?

Players share a norm of equal distribution, which entails that the spoils of this game should be divided roughly evenly. This matters so much to the receiver that he is willing to punish the giver by rejecting a low offer, even though this punishment entails that he will also get nothing. It matters to the giver too. She is motivated in part to share for the sake of equality.⁶¹ But she knows that the receiver might be punitive and this is also why she tends to offer close to half of the spoils.

The ultimatum game is not just an illustration of the common propensity to punish people who violate moral norms. Like the stag hunt and the prisoner's dilemma, it also provides a formal model of the evolution of social behavior. In particular, it clarifies the incentives to engage in punishment in the context of reciprocal altruism. In evolution, of course, the payoff is not the amount of money one receives but the number of offspring or students one produces.

If I am in the role of giver in the ultimatum game, I am more likely to be successful if I am stingy and share as few of my resources as possible. That is, so long as not sharing does not have any future repercussions for my interests. If you are in the role of receiver, you are more likely to be successful if you accept what little I offer rather than paying a cost to punish my greed. Punishment piles loss on top of loss.

However, suppose you and I engage repeatedly in social interactions that have the payoff structure of an ultimatum game. Then long-term interests come into play. Sometimes you might be the giver, but sometimes you might be the receiver. It pays you to punish me for being stingy, since doing so will deter me from being stingy in subsequent interactions. If I know from the start that you are likely to punish me, then it may not even be worth seeing what I can get away with.⁶²

Deterrence is therefore one reason punishment evolved. Despite representing a deviation from evolutionary egoism in the short term, punishment was favored by reciprocal altruism in repeated situations that had the structure of the ultimatum game. However, punishment wasn't just

in each of our interests. It was also in the interests of our group because punishment stabilized cooperation.

The ability to stabilize cooperation is an especially important feature of third-party punishment, which often contravenes biological and psychological egoism. To fully understand why norms and punishment evolved, we need to look more closely at the altruism they generated. We also need to expand the menu of evolutionary mechanisms with the potential to favor altruism, beyond reciprocal altruism.

3.6. Cultural Group Selection

Norms were useful in promoting multi-faceted cooperation, which is indispensable for sustaining large, complex human groups. But this does not necessarily imply that norms would have been selected for. In fact, it suggests the opposite, since norm-guided ultra-cooperative behavior is often biologically altruistic. Doubly so.

First, as we saw in prisoner's dilemmas, individuals pay a cost to follow cooperative norms. Granted, as we saw earlier, when people interact repeatedly this cost can sometimes be recouped in the long run, as in iterated prisoner's dilemmas. Second, however, individuals also pay a cost to sanction norm violators. It can be attractive to free-ride on others' punitive practices instead. If other people are punishing anti-social agents and keeping them in line, there is no need for you to do so too.⁶³

What this means is that following norms and enforcing them often benefit others in the group more than they benefit the individual. Applications of classical Darwinian principles predict that norm-guided individuals would have lower biological fitness than norm-shirking individuals. So, they would have died off at a faster rate and gained fewer opportunities to transmit their normative information to students. Being less successful, moreover, others would be less likely to copy them. Norms would have died on the vine.

As we saw in [Chapter 1](#), biological altruism can evolve through kin selection when behavior that reduces one's own fitness enhances the fitness of biological relatives. However, as economists Samuel Bowles and Herbert Gintis argue, this evolutionary mechanism wasn't available during the Pleistocene when Erectus was spawning children and grandchildren.⁶⁴ Since the appearance of Heidelberg, human groups were sufficiently large

that many of the individuals in a group were unrelated, arriving as a mate or otherwise migrating from another band. Therefore, kin selection alone likely cannot explain the evolution of norms.

Another possible mechanism is reciprocal altruism. I do you a good turn now with the expectation that you will do me a good turn in the future. Or, as we saw, I punish you now with the expectation that you will reform your behavior. My action is thus biologically altruistic but part of a broader strategy that is biologically selfish. Bowles and Gintis argue that reciprocal altruism has limited power in groups of increasing size. In a small group, it is easy to keep track of who is likely to return favors and who isn't. Within the large groups in which populations of Heidelberg and Sapiens lived, Bowles and Gintis argue, the cognitive burden on prudentially effective reciprocity was too great. If that's true, then the ultimatum game would not offer a good model of the evolution of norm punishment.

Bowles and Gintis are right that kin selection wasn't sufficient to favor the evolution of norms that transcend family relationships. However, their case against reciprocal altruism is unconvincing. There's every reason to believe that reciprocal altruism was operative to some degree in the evolution of norms. It's the reason humans are so concerned with their own reputation and with others'. A great deal of human psychology is devoted to reputation tracking and management. Humans may even have evolved the capacity for language in part to gossip about other people.⁶⁵ Gossip allowed them to keep track of the willingness of other humans to cooperate and tendency toward betrayal. Thus, we have numerous adaptations for managing the work of reciprocal altruism. Still, in large groups, reciprocal altruism may not have been enough to engender net-positive selection for norms tied to third-party punishment.

Several researchers have made a powerful case that norms evolved in part through cultural group selection.⁶⁶ Human groups with norms were more successful in intergroup competition than human groups without them. Norms endow a group with greater cooperative ability, especially in response to new ecological challenges. For example, more cooperative groups could reliably find food—and avoid becoming food. They also gained an edge in cultural evolution by pooling their informational resources. Humans that are generous with new ideas will tend to form groups that are more successful than humans who are stingy with new ideas.

Groups with norms propagated at a higher rate, compared to groups without norms, budding off more frequently into new successor groups. They were better able to tackle challenges in their physical environments. They were able to occupy more novel environments and extend their range. They defeated other groups in war and raiding, either through superior offense or superior defense. But intergroup competition was not necessarily violent. As mentioned in [Chapter 2](#), human groups often needed to cooperate with one another for the sake of trade and mate exchange. Those better able to do so gained an adaptive edge against other groups.

Being more skillful and successful, groups with norms were more likely to attract immigrants from other groups, more likely as well to incite other groups to copy them and adopt their norms. Because norms are a cultural rather than biological trait, they can be transmitted horizontally—between individuals and groups and not just over generations. Thus, rich informational systems that included norms spread.

Group selection had a bad reputation in academic circles for several decades.⁶⁷ The main obstacle for group selection is that it competes with individual selection. In general, even if cooperative groups are fitter than uncooperative groups, within both types of groups uncooperative individuals may be fitter than cooperative individuals. If individuals reproduce biologically at a higher rate than groups reproduce culturally, cooperation is subverted from within. If humans can free-ride, that is, cooperation collapses.

Late humans, however, were finally in a strong position to overcome the problem of free riders in their midst. Two different mechanisms minimized fitness discrepancies between cooperative and uncooperative individuals.⁶⁸ First, by the time norms were evolving, humans had evolved a strong motive for imitation and conformity. This is what made cultural evolution possible. Disposed to mimic and copy others, it was difficult to avoid following norms and punishing norm violations in the way that everyone else in the band did.

Second, as we've seen, norms motivate punishment against those who free-ride. Any free riders that bucked the social trend would therefore incur severe fitness costs. Thus, with individual egoism suppressed through conformity and punishment, group selection operating at the level of culturally transmitted information allowed individual altruism to win the test of selection in intergroup cultural competition. In combination with

reciprocal altruism, cultural group selection generated net-positive levels of fitness for norms. Next, we need to see how human biology responded to these momentous cultural events.

3.7. Bio-Cultural Norm Psychology

Within the chronology of this book, this chapter is our first foray into stage 2 of human evolution: gene-culture co-evolution from early in our genus through *Homo* and down to its last surviving member (us). The cultural evolution of norms allowed late humans to cooperate in ways that were necessary for complex sociality to persist. Necessary for it to pay. As Heidelberg and Sapiens were born in Africa, and Neanderthals and Denisovans in Eurasia, humans underwent radical cognitive changes. It was all possible, in part, because normative culture stabilized the complex sociality that favored greater intelligence.

But our discussion of norms so far hasn't fully embraced the gene-culture revolution. We haven't paid enough attention, not yet, to norm biology. And we need to do that to fully articulate the normative core of human morality. [Chapter 4](#) will be devoted to co-evolution between the normative core and the emotional core and the full maturation of both in our species. But our last topic in [Chapter 3](#) is co-evolution between cultural norms and biological capacities for norm learning. The normative core is not just cultural. It is bio-cultural.

In a culture of norms, it was critical for individuals to engage in a type of cultural learning: acquiring the norms in their groups. Those who did not learn their group's norms would fail to capitalize on cooperation. They would also invite punishment. Learning norms effectively was therefore a boon to individual, biological fitness.

What seems to have happened, as a result, was that humans evolved an innate norm-learning psychology.⁶⁹ This trait arose through culture-driven biological evolution (much like the evolution of innate folk biology discussed earlier in this chapter). A norm-learning psychology allowed humans to efficiently not just learn but also internalize the norms in their group. They internalized them in the sense that they acquired intrinsic motivation to follow the norms and intrinsic motivation to sanction norm violators—automatically and for its own sake, rather than deliberately and as a means to some further end.

The idea that humans have an innate norm-learning psychology explains why, as we'll see later, there is so much norm diversity across human cultures. It also explains a range of findings in developmental psychology, as Henrich argues.⁷⁰ For example, studies by Tomasello and colleagues indicate that young children are hungry for norms.⁷¹ They are eager to learn from models the rules, sometimes arbitrary, for playing a game. They are also eager to punish other children and adults who deviate from the rules.

Studies employing adult participants offer further evidence for the existence of a norm-learning psychology. People are more likely to follow cooperative norms if they make decisions quickly—for example, under time pressure.⁷² In other studies following norms and punishing norm violators is correlated with activity in areas of the brain associated with reward.⁷³

The gene-culture co-evolution of the normative core is one important part of a more general process of self-domestication that late humans underwent for hundreds of thousands of years.⁷⁴ Non-human animals such as livestock were domesticated when, intentionally or unintentionally, our ancestors selected for animals that were docile, friendly, and obedient. It's often thought that wolves were the first to undergo domestication. But the very first species we domesticated was our own. In a culture of norms, stingy partners and egoistic tyrants were out of luck, while altruistic egalitarians were more likely to survive and reproduce. Self-domestication thus gave rise to humans built to follow norms.

Let's pause for a moment to note that self-domestication also helps explain moral emotions. In [Chapter 2](#), we suggested that the full range of moral emotions might have begun to evolve among early humans. These emotions resolve problems of interdependent living that seem to have arose when our genus came into existence. Of course, the timing of events in our lineage is hard to know with much confidence, since scientists cannot perform experiments on members of *Homo erectus*. What we know directly about human moral emotions comes mainly from studies of our own species.

In the final sections of [Chapter 2](#) we argued that human morality is exclusive but that it is also flexible. In the members of *Homo sapiens* that scientists can directly study, this trait is likely the result of gene-culture co-evolution. As we argued in this chapter, norms evolved to facilitate cooperation within groups for the sake of intergroup competition. Thus,

these norms sometimes commanded violence against other groups, but they would also have commanded cooperation when that facilitated effective cultural competition. And so, biological emotions evolved to be flexibly exclusive because this trait was adaptive in the context of a normative culture that was flexibly exclusive. We'll explore the co-evolution of norms and emotions in greater depth in the next chapter.

Let's summarize the main ideas in this chapter. The second main component of human morality, after the emotional core, is the normative core. Moral norms are partly cultural and partly biological; they exist because of autocatalytic gene-culture co-evolution. A culture of norms was adaptive, which led to a rudimentary, biologically inherited norm-learning capacity, which led to more robust and pervasive norms, which led to more sophisticated norm learning, and so on and so on. Without autocatalytic relationships between biology and culture, nothing so complex as modern human norms would have been possible.

Humanity itself wouldn't have been possible. The speciation of late humans was an extraordinarily complex process. But we gain more understanding of our ancestry by viewing it as a nested set of autocatalytic co-evolutionary mechanisms. The evolution of the normative core itself co-evolved with the autocatalytic processes underlying intelligence and complex sociality. That's how biology and culture made us.

3.8. Summary

Back in [Chapter 1](#), we unearthed the ancient and earliest roots of human morality. Apes are psychologically altruistic in virtue of feelings of sympathy and loyalty. These capacities evolved because they permitted ape groups relatively limited forms of cooperation. Human morality is built on ape morality.

In [Chapter 2](#), we relied on ape morality to articulate the emotional core of a distinctively human morality. Perhaps as early as the time early humans evolved, our ancestors had a system of moral emotions (enriched later on in our lineage via gene-culture evolution). Humans felt sympathy and loyalty, but they also felt trust and respect, along with guilt and resentment. These emotions had different functions, but their ability to control motivation, expression, and learning were designed to be flexible in relation to a fluctuating social environment.

What came next in human evolution? As we saw in this chapter, a new, dense, and powerful system of inheritance formed, open to the slow but persistent effects of selection. Culture accumulated, grew in complexity, and revolutionized our biology. Culture helped make us sapient.

Darwinian selection acting on individuals and groups favored culturally inherited norms and the biological proclivity to learn and internalize them. Late humans thus had a new way of encouraging people to do their part in cooperative projects. Norms were more precise, and they could be revised if circumstances called for it. Punishment ensured that group members follow norms by sanctioning those who do not. Norms were thus selected for in cultural evolution because they gave individuals and groups an advantage.

Much of our attention in this chapter was caught up with the possibility of cultural evolution and its mechanics in social learning. We constructed a model of cultural evolution and used it to explain how norms evolved. But we have so far said little about the content of norms—what they prescribe—or what makes some norms moral. The next chapter fleshes out our theory of the normative core in the moral mind. To develop that theory, we need to understand in more depth how the emotional core and normative core are connected and how, because of that connection, each achieved full maturity in our species. Norms and emotions usually work together but they can also be at odds. As we'll see, the moral mind contains multitudes.

4

Pluralism

In stage 1 of human evolution biology was king. In stage 2 culture shared the crown. Soon enough, our Darwinian chronicle will reach stage 3 of human evolution, in the deep history of human societies, when culture seized the lion's share of power.

For now, there is still much to learn about how genes and culture together created humanity 2.0 and 3.0. Heidelberg and Sapiens were forged in large, dense, cooperative groups. Information was shared and selected. Culture thus grew in quantity and complexity. As a result, bodies, brains, and biological development were transformed by cultural revolutions.

During periods of intense climate fluctuation and cultural instability, nature selected for bigger and more flexible brains that were even better designed for complex sociality.¹ Late human species like Heidelberg and Sapiens evolved because culture became the most important part of the selective environment shaping human biology.

As our ancestors became addicted to culture, natural selection forged social learning mechanisms for the purpose of acquiring useful information. Thus, each generation had more culture to sample from and could assemble more elaborate webs of useful information. It was possible for culture to accumulate in this way only because late humans had the moral tools to live together in larger, more egalitarian collectives in which culture could be produced and shared.² Without the emerging moral mind, genes and culture would never have hit it off.

But what exactly happened to the human moral condition during revolutionary stage 2? Biological evolution in stage 1 had already given birth to altruism in apes ([Chapter 1](#)) and a richer emotional core in early humans ([Chapter 2](#)). After that, new forms of moral life were molded by extremely complex co-evolutionary processes. They are so complex,

indeed, that we must present them in overlay, across several chapters in [Part II](#) of the book.

First, as we've already learned, humans evolved a normative core: culturally inherited social norms plus a biologically inherited norm psychology ([Chapter 3](#)). Yet, at the same time, the normative core was co-evolving with the emotional core ([Chapter 4](#)). As all of this was going on, to boot, moral emotions and moral norms were co-evolving with knowledge and reasoning ([Chapter 5](#)).

Previous chapters explained the arrival of moral emotions and norms in human cognition. Jumping off from there, this chapter will explain what happened when emotions and norms collided. To profitably explore events in stage 2, though, we must recognize at the outset that traits designed in a given stage of human evolution are not irrevocably fixed. In subsequent stages, selection might opt for redesign rather than add-ons. This is especially likely when traits are plastic in the first place.

When we began exploring stage 2 in the previous chapter, we took moral emotions for granted in order to explain how norms evolved. However, the emotional core was not a permanent foundation on top of which later moral adaptations had to be stacked. Moral emotions, flexible from the outset, continued to evolve in our lineage well after they were established.

Moral emotions and moral norms co-evolved. The result was a new, adaptively complex system in which emotions and norms were knitted together. This affective and cognitive system is a central feature of the moral mind. It's also the key to understanding the internal structure of moral norms and what philosophers and scientists call "moral intuition." In this chapter, we'll explain how co-evolution between emotions and norms produced deep-seated pluralism in the moral mind. In developing our brand of moral pluralism we'll also produce a hybrid affective-cognitive theory of moral intuition.

First, we'll argue that co-evolution explains the fundamental pluralism found in norm cognition. Moral norms govern our obligations to aid others and refrain from harming them. However, they are much more diverse than this. Moral norms require us to attend closely to intimate relationships, communicate honestly, keep promises, distribute resources fairly, give people what they deserve, and respect others' autonomy. As we'll see, the core moral emotions that had likely been with us for millions of years

played a critical role in generating and sustaining a plurality of core moral norms.

This chapter will also put us in a position to explain a second variety of pluralism. Moral intuition is the capacity to engage in fast, automatic, and unconscious moral evaluation.³ But moral intuition isn't just one isolated psychological system. Rather, it's guided by coordinated interplay between emotions and norms. Thus, moral intuition involves not just gut feelings but also unconscious rules.⁴ Here again, we'll argue that co-evolution between different ingredients of the moral mind explains the complex internal structure of morality.

As stage 2 in human evolution unfolded, gene-culture co-evolution produced Sapiens some 300,000 years ago. A richer and even more pluralistic morality was brought into existence by the co-evolution of emotions and norms in a species made even smarter by accumulating culture and evolving the biology to cope with it. As we'll see throughout this chapter, emotions and norms together evolved into a complex bio-cultural system that guides moral thought and behavior.

Understanding this co-evolutionary process has major implications for philosophical moral psychology. We'll use evolutionary science to answer some age-old questions: whether emotions or norms are primary in moral thought; whether all moral norms can be reduced to a single, more fundamental norm; whether moral norms are different from norms that are purely conventional; and whether feeling or thought drives intuitive moral judgment and decision making. To get a grip on these questions, we need to begin by reviewing the evolution of culture (in general) and the evolution of norms (in particular). Only then can we develop a more complicated picture of the moral mind.

4.1. Genes and Culture

Suppose that a calendar year represents Darwinian history, beginning with the first living cells four billion years ago and ending the moment you finish reading this sentence.⁵ Natural selection commenced at midnight on January 1. Roughly six months later, by early July, simple prokaryotic cells fused into complex eukaryotic cells. Multi-cellular organisms then arose in mid-August. Multi-functional plants and animals didn't appear until early October. Apes and other cooperative animals evolved only a few days after

Christmas. And finally, Darwinian cultural evolution took off only late in the evening of December 31.

Over the course of four billion years, survival of the fittest created a stunning variety of enormously complex biological organisms. Nature always worked slowly, but it didn't let up. Culture, by contrast, has had much less time to design. It was only sometime during the history of our genus, beginning no more than two million years ago, that cultural selection became powerful enough to begin generating serious adaptive complexity. Thus, culture woke up late and got started slowly. In contrast to natural selection, though, the pace of cultural selection climbed far more quickly.

Natural selection favors organisms that are more likely than their competitors to pass along the family genes. In cultural evolution, remember, relative fitness is instead a matter of the rate at which information is inherited. The currency of cultural selection is number of students rather than number of offspring. Thus, the fittest cultural traits spread and accumulate via communication, in creatures smart enough to learn selectively from others around them.⁶

Adaptive cultural traits are communicated from teachers to students through social learning mechanisms, especially through the selective imitation of teachers who exhibit skill, success, or prestige.⁷ Of course, communication has the potential to be much faster than reproduction. Genes take millennia to win the test of Darwinian selection, while information can become widespread over the course of a single generation.

What was pivotal in the evolution of our species and other late humans is not genetic evolution or cultural evolution on their own but gene-culture co-evolution. Genes evolved in a cultural environment, giving rise to economical digestive systems and large, flexible brains. Culture-driven selection on human genes produced advanced theory of mind and adaptive learning mechanisms.⁸ But just as culture influenced natural selection on genes, genes influenced cultural selection on information. Genes and culture therefore co-evolved in a positive feedback loop. In particular, complex culture and the biological ability to produce culture favored one another, again and again and again.

Gene-culture co-evolution explains the existence of numerous human traits. Our primary focus in [Part II](#) of the book, until now, has been on how this process explains the human propensity to follow norms. Norms are social rules that guide cooperation by allowing us to classify certain

behavior as not just good or bad but obligatory or forbidden. They motivate punishment when someone violates norms. And norms work because they rest on reliable expectations that others in the group will follow them too.

As we saw in the previous chapter, norms had high relative fitness in cultural evolution because they endowed human cooperation with greater flexibility and precision. Because norms motivate punishment, they also deter anti-social behavior.⁹ So, groups that possessed altruistic norms succeeded in intergroup competition. Social conformity and punishment ensured that individuals also benefited by following norms. As a consequence, norms were preferentially inherited by individuals and groups. In addition, individuals gained an edge if they were primed to learn and internalize norms.

In sum, genes and culture created a normative core. Our ancestors evolved norms through cultural selection operating at the level of individuals and at the level of groups. They also evolved a norm-learning capacity through natural selection operating at the level of individuals. These events were looping rather than linear: norms and norm learning arose through autocatalytic gene-culture co-evolution. That is, a culture of norms favored a biology of norm learning, which helped create a richer culture of norms, which intensified the biological evolution of norm learning, and so on and so on.

Now we need to ascend to a higher level of abstraction. We need to understand how the very same positive feedback loop unfolded between cultural selection for norms, on the one hand, and natural selection for emotions, on the other. Next, we'll pick up on another important idea from the previous chapter, which is that cultural selection, like natural selection, can be multi-level. To begin with, just as natural selection can operate at the level of genes themselves (as in kin selection), cultural selection can operate at the level of information itself.

4.2. Emotions and Norms

This section initiates our turn from gene-culture co-evolution of the normative core to co-evolution between the emotional and normative cores. For starters, we need to understand that many other factors aside from the ability of individuals or groups to meet environmental challenges can influence cultural fitness, including features of human psychology. If an

idea happens to be salient and easy to remember, for example, individuals will acquire and retain the idea more easily than other less salient, less memorable ideas. Individuals do not necessarily benefit, but the idea itself does, by being propagated into more students.

Another psychological factor that influences cultural fitness is what cognitive and social scientist Dan Sperber calls “affective resonance.”¹⁰ If an idea meshes with our emotional dispositions, it too is more likely to be acquired and retained. Consider, for example, stories told again and again over many generations. Some stories are emotionally more evocative than others. These stories have an edge in cultural evolution because they are more likely to be told, attended to, and remembered. Here again, cultural selection is operating at the level of information.

Cooperative social norms evolved in a psychological environment that harbored moral emotions. What this implies is that through affective resonance, moral emotions affected the cultural fitness of norms. Following Sperber, philosopher and cognitive scientist Shaun Nichols makes a case for this idea with empirical data.¹¹ To understand the consequences of affective resonance in the cultural evolution of norms, it’s easiest to begin by thinking, as Nichols does, about the very first moral emotion that sparked altruism in our ancestors.

Humans felt sympathy for their fellows. As a consequence, if some behavior provoked sympathy, then norms that prescribed that behavior would gain an edge in cultural selection.¹² For example, norms that commanded aid for those in need were more likely to resonate affectively. They were more likely to be acquired and retained than norms that were affectively discordant or that otherwise lacked affective resonance. Thus, all else being equal, a norm forbidding harm to others within a group was culturally fitter than commandments of violence, fitter too than commandments that neither helped nor harmed others.¹³

According to Nichols, then, sympathy drove the cultural evolution of what are sometimes called “harm norms.”¹⁴ Cultural selection operating at the level of information favored harm norms because, in sympathetic creatures, these norms resonated with their affective psychological environment. We’ll explore this idea in more depth soon. First, however, we need to appreciate that the model that Nichols offers is incomplete, in two ways.

First, the model doesn't fully embrace gene-culture co-evolution. Emotions are not a fixed component of the psychological background in the cultural evolution of norms. Just as norms evolved through cultural selection in an affective context, emotions evolved through natural selection in a normative context. As a result, flexible capacities to feel moral emotions were deepened and stabilized by the norms they helped create. The right way to think about this is that sympathy and norms favored one another, through positive feedback loops.

A second way in which the model is incomplete is that Nichols explains only how in the evolution of norms, cultural selection occurred at the level of information. In fact, however, cultural selection also occurred at the level of individuals and groups. On the one hand, as Nichols says, normative information that resonated with emotions was more likely to be remembered and attended to, compared to normative information that lacked the same resonance. On the other hand, as Nichols does not say, individuals and groups who followed norms that promoted sympathetic behavior were more likely to profit from cooperation.

To illustrate this last point, consider a norm that commanded extreme nepotism. This norm might resonate with feelings of loyalty for kin, but it would be disastrous for the group as a whole if it prevented wider interdependence than was necessary for survival. Norms were thus preferentially transmitted when their fit with emotions enabled more cooperation.¹⁵ Emotion-norm systems allowed groups to solve problems of interdependent living and thereby succeed in cultural competition against other groups. And so, groups with affectively resonant, cooperative norms propagated themselves and their culture.¹⁶

In sum, two major forces shaped the emotional and normative cores of morality. Over hundreds of thousands of years, the emotions and norms that lasted were those that helped to resolve problems of interdependent living and that resonated with each other. Emotions were inherited vertically by offspring, while norms were inherited vertically and horizontally by students. Through cultural selection, then, norms acquired two interlocking functions: to resolve problems of interdependent living within groups and to advance cooperative behavior motivated by core moral emotions.

To see this more concretely, think about the set of norms that prescribe helping those in need and that forbid violence. These norms endowed groups with more solidarity and allowed them to cooperate more richly.

Such groups were more likely to create new successor groups, extend their range, forge strategic alliances with other groups, and attract émigrés and copycat groups. But norms for helping and avoiding harm propagated too because they promoted care for others. They were psychologically more attractive to individuals who possessed ingroup sympathy.

So far, we've offered a general model that explains how emotions and norms co-evolved in the lineage leading up to our species. This model also has important implications for philosophical moral psychology, which we'll begin to unpack now and continue to explore in the rest of the chapter. To start, let's look at the relationship between the first two major ingredients of the moral mind.

In the history of moral philosophy, there is a longstanding division of opinion about the importance of norms and emotions in human morality. Some philosophers follow Immanuel Kant in thinking that rules based on reason are primary in morality and emotions are secondary.¹⁷ Other philosophers follow David Hume in thinking that emotions are primary and norms are secondary.¹⁸ We're now in a position to see the limitations of both perspectives.

Historically, as we've seen, emotions are more fundamental. Not in the sense that norms can be "analyzed" in terms of emotions. Emotions are more fundamental to human morality only in the historical sense that they appeared first (in stage 1) and played an anchoring role in driving the cultural evolution of moral norms (in stage 2).¹⁹

However, emotions and norms co-evolved and shaped one another. As our species was born, emotions evolved in the context of norms. Emotions came first, but they are not the foundations of modern human morality. Followers of Kant and Hume are therefore both mistaken. Neither emotions or norms are fundamental. They are co-dependent. Beyond simply articulating a post-Kantian and post-Humean moral psychology, however, this chapter is dedicated to working out in greater detail the co-dependence of emotions and norms and, as we'll begin to do next, unpacking its pluralist implications for the moral mind.

4.3. Core Moral Norms

Let's remind ourselves of what we learned in [Chapter 2](#) about the emotional core of morality. It consists of two binding emotions (sympathy and

loyalty), two collaborative emotions (trust and respect), and two reactive emotions (guilt and resentment). Binding emotions are at least as old as our ape family. Collaborative and reactive emotions are probably no older than our *Homo* genus.

In [Chapter 3](#), subsequently, we saw how reactive emotions played a role in the evolution of norms. The family of emotions led by resentment supported human practices of punishment, including by third parties who were not directly involved in a given cooperative activity. Punishment was essential to the adaptive power of norms to secure cooperation and reduce conflict.

In this chapter, we need to see how other types of moral emotions also featured in the evolution of norms. We've already described Nichols' model of the cultural evolution of sympathy and certain norms, adapting it to account for (1) co-evolution between emotions and norms and (2) cultural selection that occurs not just at the level of information but also at the levels of individuals and groups. Next, we need to take that souped-up model and extend it to cover the gene-culture co-evolution of a wider set of emotions and norms.

Our human ancestors had four “basic” moral emotions: sympathy, loyalty, trust, and respect. Each of these emotions, we hypothesize, was a part of the environment that exerted a selective pressure on the cultural evolution of social norms that resolved problems of interdependent living. That is, norms that resonated with these emotions were more likely to be acquired, retained, and transmitted (information-level selection) and more likely to help solve problems of interdependent living (individual-level and group-level selection). The result, as we'll argue next, was a plural set of norms backed by moral emotions—emotions that in turn gained a deeper hold in human psychology because of the selective pressures exerted by their normative cultural environment.

As Nichols argues, the emotion of sympathy selected for *harm norms*. These are requirements not to harm others and to give others aid. Harm norms are, in essence, obligations to contribute to well-being and happiness.²⁰ For example, they include injunctions not to assault others, either through physical or verbal abuse. Despite the implications of the word “harm,” these norms also include positive requirements: to offer food when another is hungry, or protection when another is endangered, or comfort when another is distressed. That is, they support not just an ethics

of harm avoidance but also an ethics of care.²¹ Norms that forbid harm and require care persisted in cultural evolution because they resonated with the emotion of sympathy in ways that enabled cooperation.

The emotion of loyalty selected for *kinship norms*. In the language of moral philosophy, kinship norms concern “special obligations.”²² General obligations are duties that you have toward everyone who counts as a “person,” like duties not to kill or assault others. Special obligations are duties that you have not to people in general but specifically toward your friends, family, and other intimates. They can also include duties of loyalty to fellow members of your religion or state. In any case, kinship norms require you to do more for your fellows than for strangers. That is, they support an ethics of communitarianism.²³ Kinship norms persisted because they resonated with feelings of loyalty. Thus, the two binding emotions (sympathy and loyalty) co-evolved with two corresponding categories of norms (harm and kinship).

Alongside the binding emotions of sympathy and loyalty, remember, humans also had two collaborative emotions. Trust enabled humans to reliably give and return favors. Respect made it possible for some humans to transcend the old dominance hierarchies that prevail among other great apes and participate in cooperative projects as equal peers. These moral emotions shaped cultural evolution by engendering selection for norms that resonated with them, thanks to information-level cultural selection—but in ways that ensured cooperation, thanks to individual- and group-level cultural selection. The norms also reinforced the corresponding emotions.

Trust selected for *reciprocity norms*.²⁴ These norms obligate people to stick to their commitments. They concern promises, vows, and honesty. If you promise to help someone care for their child today provided that they return the favor, then a norm of reciprocity demands that they must help tomorrow. While language helps to remove ambiguity, agreements can also be reached without explicit promises. In a conversation, other things being equal, there is an implicit moral demand that each person tell the truth. These obligations and others make up the cluster of reciprocity norms, favored in cultural evolution by feelings of trust. Reciprocity norms and trust together comprised a new and more complex moral tool for securing cooperation.

Respect selected for *autonomy norms*. These norms resonated with the feelings of aversion to domination and control. Humans acquired the moral

obligation not to interfere with the personal liberty of others in any number of ways, such as through force, coercion, or manipulation. One dimension of autonomy is freedom of physical action. Another is freedom of expression. In each case the autonomy of one person must not encroach upon the autonomy of another. I am free to act as I wish provided that I do not prevent your free action. Similarly, I must not express myself in a way that prevents you being able to express yourself. The moral demand, in each case, is to respect autonomy. Autonomy norms were selected for in cultural inheritance because they resonated with feelings of respect. So, the two collaborative emotions (trust and respect) shaped the evolution of two corresponding categories of norms (reciprocity and autonomy).

There is another class of moral norms, one that is especially important in structuring human relationships: *fairness norms*.²⁵ Norms of fairness are myriad, but they include norms that require equal distribution of resources and power, norms that prescribe unbiased procedures for apportioning benefits and dividing labor, along with norms that demand just rewards and punishments for your efforts or lack thereof.

Since there are only four basic emotions, how did this fifth category of norms arise? Our hypothesis is that the two collaborative emotions together selected for them. Fairness norms are so diverse because they balance considerations of equality with those of reciprocity. For example, fairness might mean dividing resources equally or dividing resources based on effort. Norms of fairness evolved because they resonated both with the emotions governing reciprocal exchange (trust) and with emotions that transcend dominance in favor of equality (respect).

In sum, *harm*, *kinship*, *reciprocity*, *autonomy*, and *fairness* are the core moral norms in human morality. These five clusters of norms are widely recognized in religious and philosophical traditions. Their origins, though, have been a mystery. We've offered a solution to the mystery by arguing that they arose through gene-culture co-evolution between emotions and norms. But we still have to spell out this idea in more detail, compare it to alternatives, and explore philosophical implications. What exactly is "normative pluralism" and how does it help us understand human morality?

4.4. Normative Pluralism

The moral mind contains four basic moral emotions and five core moral norms. In one way, moral norms exhibit more internal complexity than the basic moral emotions. That is, the core moral norms are clusters rather than singletons. Each type of core moral norm has many instances.

Take autonomy norms, for example. A philosopher might articulate a highly abstract and supremely general principle of autonomy (also known as freedom or liberty). However, in human moral minds no single norm alone commands people to respect the autonomy of others. Instead, there are norms that forbid force, norms that forbid coercion, and norms that forbid manipulation. There are also norms that require freedom of movement, norms that require freedom of association, and norms that require freedom of expression. What all these norms have in common is that they relate in some way to the idea of autonomy. At a deeper level, all these norms have something else in common. They were stable in cultural inheritance because they resonated with feelings of respect.

The precise content of core moral norms is culturally variable. This will be a topic in the next part of the book, [Part III](#), once we begin to think about how our ancestors dispersed from eastern Africa and diversified into various tribes and societies. For now, it's worth noting wide cultural variation in the content of fairness norms.

Some cultures privilege “egalitarian” norms of fairness by insisting on equal distributions of basic resources. Other cultures privilege “retributive” norms of fairness by rewarding and punishing people on the basis of their actions, even if this results in unequal distributions of basic resources. Nonetheless, all human cultures have inherited one or another cluster of fairness norms because these norms were critical to living interdependently and because they resonated with the biologically universal emotions of trust and respect.

Certain aspects of our theory about the five core moral norms will be familiar to psychologists. For example, Jonathan Haidt, Jesse Graham, and their colleagues also offer a pluralist moral psychology.²⁶ This view is broadly similar to ours (and indeed a source of inspiration). Haidt and Graham carve up the same range of human norms in a slightly different way. But we need to consider more important ways that our theory is different from theirs and why ours is preferable.

Haidt and Graham think that the content of moral norms is innate.²⁷ Supposedly, each of the core moral norms is innately programmed in our

brains. Remember that innate in the sense of unlearned does not mean inflexible. Thus, Haidt and Graham also think that morality is sufficiently flexible to allow for diversity in more specific content. For instance, although norms of fairness are innate, they acknowledge that how exactly to implement them is flexible and therefore culturally variable.

However, Haidt and Graham are mistaken about the origins of moral norms and their biological basis. Core moral norms are not innate. There is no need to posit innate norms to explain what different moralities have in common. As we've seen, all that's needed are two innate capacities. One is a capacity to learn the norms found in one's culture: to quickly and easily gain intrinsic motivation both to follow them and to sanction violations. The other innate capacity is a set of resonant moral emotions. It is thanks to shared emotions and similarities in the problems of interdependent living that human groups have faced that core moral norms are universal.

Because of innate moral emotions and their influence on norm learning in cultural evolution, moral norms cluster in five categories. Though cultural adaptations, they are nevertheless human universals because of the stable influence of emotions in the cultural inheritance of norms. Culture is a deep, pervasive and stable feature of humanity. Universality is therefore not a sure sign of genetic origins.

As mentioned, Haidt and Graham propose a taxonomy for moral norms that is similar to ours. But they also claim that core moral norms include norms of *purity* and norms of *authority*.²⁸ As we'll see in [Part III](#) of the book, these norms did play a critical role in the evolution of large-scale societies during the past few thousand years. They helped large, diverse tribes share a common moral identity, avoid biological and social parasites, and create hierarchical social structures. We see no evidence, however, that hunter-gatherers were guided by these norms 300,000 years ago when *Sapiens* evolved. Let's consider purity and authority in turn (only briefly now, since each is discussed at greater length in [Chapter 7](#)).

First, hunter-gatherers were subject to contamination and disease. They would have had reactions of disgust and aversion to rotten food and human filth. But disgust need not have had a moral dimension. You can be grossed out by something and avoid it without also thinking it is morally impure. It wasn't until humans began to live in large, dense, agricultural societies that disgust was "co-opted" for morality and purity norms.

Second, hunter-gatherers were relatively egalitarian.²⁹ Their groups were not structured by relations of authority, not to the same degree that many modern societies have been in recorded history. Authority had not yet been elevated to the status of a norm. That being said, hunter-gatherers would have naturally deferred to authority within the family and the band. It is plausible, therefore, that these natural reactions were co-opted later to reinforce moral norms of authority, but without authority norms being part of the bio-cultural moral mind that evolved in Sapiens.

At this point in the present chapter, we've offered an evolutionary explanation for normative pluralism in terms of co-evolution between emotions and norms. This explanation has important philosophical implications. Remember that one old project in philosophical moral psychology is to disentangle the relationship between emotions and norms. We argued earlier in this chapter that emotions came first but that emotions and norms are co-dependent. Neither is primary.

Another, equally old project in philosophy is to figure out which moral norms are fundamental, in the sense that all other moral norms can be reduced to them. For example, utilitarians build their theory only on harm norms and fairness norms. Kantian deontologists and social contract theorists build their theories only on some combination of reciprocity norms, autonomy norms, and fairness norms. Philosophers in each of these camps argue that other norms can be derived from those that are the most fundamental.

For centuries, reductive ethical theories have struck philosophical critics as less than adequate. For one thing, moral obligations sometimes conflict with each other. Resolution of normative conflict is sometimes possible, as we'll see in the next chapter, but not because a single, fundamental norm provides a common currency.³⁰ The failure of reduction is strong evidence that no single moral norm is fundamental. Reductive theories fail to account for one or another set of norm clusters that underlie human morality.

The idea that moral emotions drive the cultural evolution of norms provides a deeper explanation for why reductive ethical theories have never stuck. Each cluster of norms has independent origins. That is, each cluster arose through gene-culture co-evolution by pairing up with different moral emotions. That's why they're resistant to reductive analysis.

The philosophers whose theories resonate most strongly with human impulses in the moral mind are ethical pluralists.³¹ Philosophers in this

camp see morality as consisting of multiple independent vectors and therefore incapable of being reduced to a single, all-encompassing moral principle. Whatever else the view has going for it, and whatever challenges it faces, ethical pluralism is at least psychologically realistic.

Let's sum up. In our pluralist moral psychology, no single norm or emotion is fundamental. Emotions and norms, as a whole, are co-dependent. A long history of co-dependence explains the complexity of moral norms. As will emerge later in this chapter, this co-dependence also explains the complexity of moral intuition. But before turning from moral norms to moral intuition, we need to consider what it even means to say that some norms are moral. Once again, emotions can help shed light on the internal structure of norms.

4.5. What Makes Some Norms Moral

Given the plurality of moral norms, it's natural to wonder if they have anything in common. Perhaps the lesson to be drawn is that even if morality was once biologically unified in apes or early humans, it has become culturally fragmented ever since late humans evolved. Indeed, some philosophers deny that morality is a distinct psychological category.³² For example, some argue that nothing unifies harm norms and fairness norms under a single category, such that both are "moral." Both regulate social behavior, as do many other apparently non-moral norms, but beyond that harm and fairness are strangers to one another.

We'll argue, however, that moral norms are in fact unified.³³ What moral norms have in common is not their shared content but certain "formal" characteristics. These characteristics are formal in the sense that they can, in principle, be attached to any norm, no matter what its content, no matter what kind of behavior it regulates. To understand which formal characteristics unify moral norms, it's necessary to compare them to norms that aren't moral but instead merely conventional.³⁴

What's the difference between morality and convention? Aside from their particular content, what's the difference between, say, a moral norm that prescribes equal distribution of goods and a conventional norm about how to greet someone? The first thing to be said here is that the difference is fuzzy rather than sharp. Morality bleeds into social convention.

On the one hand, some moral norms have a conventional aspect. For instance, two bands may both treat meat sharing as a moral obligation. But, suppose one band shares meat by cooking it together and dividing it later, while the other divides the meat first among family units and then each family cooks it on their own. Sharing fairly is a moral issue, but how exactly to accomplish sharing is conventional. One way is as good as the other, so long as everyone within a group is on the same page.

On the other hand, the difference between morality and convention is fuzzy in that some conventional norms have a moral flavor. For example, when someone makes a diplomatic visit to another group, they may employ that group's form of greeting as an expression of profound respect. Greeting norms are sometimes conventional, sometimes moral.

The existence of borderline cases does not show that there is no difference between morality and convention. Twilight is borderline between night and day, but there is still an obvious difference. The key is to look at clear cases. Doing so highlights three formal characteristics of moral norms that are absent among conventional norms.

First, clear cases of moral norms are supported by moral emotions. Clear cases of conventional norms have no such direct link. Purely conventional norms are not backed by sympathy or loyalty or trust or respect. None of these emotions ordinarily encourage you to follow arbitrary rituals at the dinner table. Violations of conventional norms, in addition, do not elicit guilt or resentment. Suppose the convention around here is to salute an acquaintance by waving your hand. If I mistakenly salute you by bowing my head instead, I may feel embarrassment. I won't feel guilt or shame.

The second formal characteristic of moral norms follows from the first. Moral norms are backed by basic and reactive moral emotions, which are motivationally powerful. Because of their link with emotions, moral norms usually take priority over conventional norms. For example, if the choice is to treat you unfairly or to treat you ungraciously, fairness usually takes precedence. This is not an inviolable law of nature, but morality typically trumps convention.

A third and final important difference between morality and convention requires more explanation. Psychological research suggests that moral norms are conceived of as objective in a way that conventional norms are not.³⁵ Within morality, in short, people think it is possible to get things

wrong. Thus, an entire group might subscribe to incorrect moral norms, by their own lights.

For conventional norms, by contrast, there is no perceived gap between appearance and reality. Consider conventions about taking off your shoes before entering someone's home. Suppose I think it's right to take off my shoes while you think it isn't necessary. We may both be right, relative to our conventions. Neither of us think there is any objective fact of the matter.

With moral norms things are different. Imagine that I think if someone has been injured, others in their group should help them with childcare or cooking. You think that others have no such moral obligation. In this case we both tend to think, as most people do, that at least one of us must be incorrect.

In sum, moral norms are unified, and distinct from conventional norms, in three ways: (1) they are linked to moral emotions; (2) they tend to take priority over conventional norms; and (3) they are conceived of as objective in the sense that you can be wrong about which moral norm is correct: if two people disagree about the morally right thing to do at least one of them must be wrong.

Remember that some norms are in-between cases. They might have some of these three features of morality but not the others. Nonetheless, the psychological difference between morality and convention is real, even if sometimes a little fuzzy. Indeed, we'll now argue that there is an evolutionary rationale for the distinction.

Moral norms were much more critical to survival than the sorts of things that were treated as matters of mere convention. Humans needed to avoid harm and unfairness for mutual survival. Moral norms thus recruited moral emotions with powerful motivating force. These emotions gave moral norms priority over matters of mere convention. Furthermore, unlike with convention, we had to share the "correct" set of moral norms, ones that enabled cooperation and thus mutual survival. That's why we needed to think of morality as independent of our opinions.

Eventually, in large-scale, relatively prosperous societies, humans became free to moralize issues that weren't so intimately connected to survival. People nowadays sometimes treat relatively trivial issues—like which formal titles you use to address someone—as objective, as though they take priority, and as worthy of guilt or resentment. Their norms have the form of morality but the stereotypical content of convention. Some

modern cultures may not even bother to distinguish morality from convention. However, it is because things like harm avoidance, reciprocity, and fairness were so critical to survival that humans developed a special category for them in the first place.

So far in this chapter, we've been exploring how emotions and norms shaped each other in gene-culture co-evolution. Our focus has been on developing a model of this process and using it to understand pluralism in human norm psychology. As *Sapiens* were evolving and their shared culture was accumulating, natural selection reinforced ancient capacities for moral feeling, while cultural selection created a new and more complex structure in our moral norms. The content of the five core moral norms reflects the content of corresponding moral emotions.

But morality is flexible. It can't be chained down to any particular contents. Humans can moralize almost anything if they've got a mind to do so. What makes moral norms a unified and a distinct category are formal properties—objectivity, priority, and a connection to moral emotions. This last property, the connection between norms and emotions, has been our main theme in this chapter and it is also germane to our final topic: moral intuition.

4.6. Moral Intuition

We're now going to dip into one of the most prominent research programs in scientific moral psychology. In an enormous and still-growing number of studies, psychologists and neuroscientists present participants with dilemmas and other moral vignettes to study the cognitive and neurological mechanisms that underlie human judgments of right and wrong. The dilemmas are often drawn from moral philosophy. The most famous such dilemmas are so-called trolley problems.³⁶

Imagine that a trolley is speeding down the track and is about to run over and kill five innocent people. You are a witness and need to make a quick decision. Next to you is a switch you can flip, which will send the trolley down a sidetrack. However, a single innocent bystander is on the sidetrack. If you flip the switch, the other five people will be saved, but this one person will die. What should you do? Should you flip the switch or do nothing? Hundreds of thousands of research participants have been asked to make a judgment about the “switch” case. A strong majority consistently

say that you should flip the switch.³⁷ Five deaths are worse than one, after all.

But now consider the “push” case. Imagine that a trolley is speeding down the track and is about to run over and kill five innocent people. You are a witness to all of this and you need to make a quick decision. Next to you on a footbridge over the tracks is a large, innocent bystander. You realize that if the large person were to be pushed off the footbridge and onto the tracks, the trolley will hit them and then come to a stop. If you push the bystander, the other five people will be saved but this one person will die. What should you do? Should you push the bystander or do nothing? Again, hundreds of thousands of participants have been asked to make a judgment about this case. This time, though, a strong majority consistently say that you should not push the bystander. But why? Didn’t we already learn that five deaths are worse than one? If it’s okay to flip the switch why is it wrong to push the bystander?

Philosophers invented trolley problems and other, similar thought experiments largely for a single purpose. Our intuitions about these cases, they think, can help us test supposedly universal moral principles by seeking counterexamples to them. For example, if it’s wrong sometimes to sacrifice one for the sake of five, as in the push case, then this seems to undermine the utilitarian principle that obliges people to produce the greatest overall good.³⁸

Psychologists, however, have a different aim. By probing judgments about an even wider variety of cases, often with only very subtle but important differences, they seek to understand the psychological mechanisms that underlie moral judgment. For example, psychologist and philosopher Joshua Greene thinks that trolley cases shed light on these mechanisms.³⁹

Why do most people say it’s okay to save five for the sake of one in “switch” and wrong to do so in “push?” Greene finds that two factors influence people’s judgments about trolley cases. First, people feel an emotional aversion to harm that is “up close and personal.”⁴⁰ Both cases involve sacrificing one person, but in “push” you have to use your hands to physically impel someone to their death. At the same time, people have internalized a norm that intended harms are worse than foreseen harms. In “push” you intentionally kill the bystander in order to save the five. But in “switch” the bystander’s death is an unintended but foreseen byproduct of

saving the five. And so, what explains the consistent pattern of results in people's judgments about trolley cases is a combination of emotional responses (to up-close-and-personal harm) and norms (about intended vs. merely foreseen harms).

Now, we don't wish to dive too deep into the vast, fascinating, and often bewildering scientific literature on moral judgment. What matters for our purposes are only two general results, illustrated by Greene's and others' empirical research on trolley cases but also supported by thousands of studies employing quite different stimuli.

First, psychologists repeatedly find that participants readily make normative judgments—of right and wrong, permissibility and impermissibility.⁴¹ The judgments are quick, automatic, and unconscious. That is, they issue from “intuition,” a psychological system separated from conscious deliberation. Most people have an immediate reaction about what you should do in the push and switch cases, with no need to consult a principle. Sometimes, indeed, your intuitive judgment conflicts with your avowed, explicit moral principles.

Here again, some researchers are tempted to infer that the capacity for moral judgments is innate. However, quick, automatic, and unconscious judgments—even quite sophisticated ones—can be the result of a capacity acquired in childhood development.⁴² As our arguments in the previous chapter suggest, the system underlying moral intuition is a learning system.⁴³ Our innate norm-learning psychology enables us to acquire norms with any content, including the harm, kinship, reciprocity, autonomy, and fairness norms found universally among human groups. Thus, while norm learning is innate, particular patterns of moral intuition are learned.

The scientific literature on moral judgment also yields a second important result, beyond clarifying the existence and nature of moral intuition. Intuitive moral judgments are not guided by only one psychological system. Rather, the emotional core and the normative core both guide moral judgment. In trolley cases, for example, emotions and norms are both needed to explain the pattern of experimental results.

Greene and other scientists have focused much of their research on cases in which emotions and norms conflict with each other. This is a useful way to isolate the two mechanisms. However, in the overwhelming majority of cases emotions and norms are in sync. If I see someone assault another

person, my response is guided both by my sympathy for the victim and by a norm that forbids assault.

Together, these two results—about the existence of “intuitive” moral thought and its basis in emotions and norms—put a new spin on moral intuition. Some philosophers and scientists think of intuition as gut feelings. Moral thinking is exercised to control and sometimes override unruly moral passions. However, this way of theorizing about moral intuition is mistaken. It reflects a false dichotomy between feeling and thinking. Moral intuition isn’t all “feeling.” It’s “thinking” too, since it’s guided by moral norms.⁴⁴

Another mistake in moral psychology is to think of intuition, whether affective or cognitive, as inflexible. Greene, for example, thinks that moral intuition was designed for the “environment of evolutionary adaptation” in the Pleistocene.⁴⁵ He argues, in addition, that moral intuition leads us astray in contemporary industrial and postindustrial environments. However, emotions and norms are both embedded in complex and flexible learning systems. They might be influenced by innate psychological factors with roots in the Pleistocene, but they are also heavily influenced by experience and education.

As we saw in [Chapter 2](#), moral emotions are designed to be flexible. They are adaptively plastic. What sorts of things elicit sympathy or respect, say, are molded by our experiences, especially by the emotional expression of kith and kin. There is also a great deal of empirical evidence that norms are plastic, as we would expect given the view presented in this book about the cultural evolution of norm cognition. People can learn to adopt new norms, and give up old ones, depending on the information they pick up about the norms operating in their environment. Of course, whether learning shapes emotions and norms in positive or negative directions depends on the character of the surrounding social environment (more on this in the final part of the book).

Moral learning, however, involves not just figuring out the rules or conditioning emotional responses. Human moral learning is particularly powerful because of the way emotions and norms scaffold one another. Both are moral tools that shine lights on the social worlds we find ourselves within. Moral education consists of attuning the emotional and normative cores in the development of moral judgment. Another way of putting this is that emotions and norms work together in learning processes that shape

moral intuition. Later, in [Parts III](#) and [IV](#), we'll see in detail how human culture shapes feeling and thought in the moral mind.

4.7. Summary

According to the timeline of human history presented in this book, moral emotions and norms both began to evolve before the birth of our species. First of all, the full set of core moral emotions may have evolved by the time *Erectus* appeared roughly two million years ago. We know that biological evolution of the sort that produced *Erectus* (stage 1) was also able to select for moral emotions in other great apes.

Furthermore, it's likely that moral norms evolved during the evolution of late humans leading to our species 300,000 years ago. Norms and norm psychology seem to be explained by autocatalytic gene-culture co-evolution, and there is good evidence that this powerful co-evolutionary process also produced many other anatomical and psychological traits during the same period (stage 2). This process was operant in our lineage but also in the lineage of other late humans too, such as Heidelberg, Neanderthals, and Denisovans.

It's important, however, to appreciate that norms and emotions evolved together during the evolution of late human species. As we've seen in this chapter, emotion-norm co-evolution helps explain why several different types of moral norms are universal in *Sapiens*; why no subset of norms is more fundamental; why moral norms have something in common; and why intuitive moral thought is both affective and cognitive. Emotions and norms are knitted together in the moral mind.

By the time *Sapiens* arose, our ancestors developed new cognitive abilities, including the capacity for distinctively modern forms of language and reasoning. With that, humans became capable of making recognizable moral judgments and expressing them verbally. They were then able to reason together about morality. As we'll see next, a core capacity for moral reasoning evolved when the moral mind collided with the reasoning mind.

5

Reasoning

Apes hold a special fascination. Dolphins and wolves might be just as clever and amiable but they are not as familiar. Nor are their differences from us as revealing.

We share an ancestor with chimpanzees and bonobos that lived six or seven million years ago. We still look something like them, but evolution has since wrought dramatic changes in our physical form.¹ Our skeletal structure was jury-rigged for bipedal motion. Our skin lost much of its fur. Our hands and fingers were molded for manual dexterity. We became taller but fatter and less robust.² Like domesticated animals, our bodies bear marks of docility.

The most significant physical change took place within our skulls. Human brains more than tripled in size since we parted ways from living apes.³ They doubled since the earliest human species appeared two million years ago. One part of the brain, in particular, underwent tremendous growth. The neocortex controls higher cognitive functions. The ratio of the neocortex to the rest of the brain is nine times greater than one would expect, based on averages, for a mammal of our size.⁴

Brain size, however, is not even close to being the whole story about the neuroanatomy of human intelligence. Brains also became denser and more folded with many more neural connections.⁵ Human neurons exhibit extreme plasticity in development.⁶ Childhood and adolescence were prolonged—it takes longer for humans to reach maturity—because brains take longer to develop in villages of cooperative parents and friends.⁷

Large, dense, flexible brains are costly. Adults expend roughly 20% of their metabolic energy to keep them running, far more than any other organ; babies expend more than half their total energy on their brains.⁸ For intelligence to be affordable, humans needed to work together. A single

hunter-gatherer could not secure enough nutrition on their own, not even close given dependent offspring.⁹ Collective hunting and foraging were necessary for humans to take down large prey, to locate abundant sources of fruit, nuts, roots, and tubers.

Fire also helped make intelligence affordable: meat and vegetables liberate more energy after being cooked.¹⁰ Other food-processing techniques were equally important for fueling brainpower.¹¹ Many plant and animal products merit consumption only after pounding or drying or grinding or leaching (or some complex combination of these techniques). An individual might cook or process their food alone, if they could find it, but they couldn't gain the requisite knowledge or skills without cumulative cultural evolution in their group's history. Sociality therefore lies behind these innovations too. A dependency on cooking and food-processing meant that our internal digestive systems could be pared down, since they are less efficient. The costs saved on constructing and maintaining factories could be spent expanding the board of directors.

Intelligence was affordable, thanks to cooperation. But why was it worth purchasing? The answer, supported by a large and diverse body of empirical evidence, is that natural selection remodeled human brains for the sake of *enhanced social plasticity*.¹² Humans evolved abilities to attune their thinking and behavior in response to what other humans around them said and did. That's how they thrived in a range of new ecological niches, some of which were constructed anew.

Humans are more intelligent than other animals, including great apes and other social primates, but not across the board.¹³ What makes human intelligence unique is social plasticity. Monkeys have a reputation for imitation, but it is undeserved. Human capacities to physically and mentally emulate others are unrivaled. They copy people who are skilled, successful, or prestigious. Advanced social learning expanded cultural reservoirs and allowed individuals to tap deeper into them. Linguistic communication evolved in large part because it offered powerful instruments for social learning.¹⁴ Language delivered knowledge in the moment, along with the cultural accumulation of knowledge in the not-too-distant future.

Non-human animals possess knowledge too. However, knowledge based on reasoning seems unique to humans.¹⁵ For one thing, reasoning requires complex representational systems that other animals lack to the same

degree. Thoughts must be represented in ways that enable an individual to grasp the links between them. With the evolution of complex language, humans acquired a set of rules through which simple representations could be combined systematically into complex thoughts. Furthermore, since languages are public property, their rules are shared. In principle, any knowledge constructed by one person through reasoning can be reconstructed by others.

The ability to reason with language is a centerpiece of human intelligence. But reasoning is not something that you are designed to do on your own. Reasoning evolved because it helped our ancestors acquire knowledge together.¹⁶ Indeed, we'll argue that reasoning is so thoroughly social that its evolution depended on morality. Morality and reasoning co-evolved.

This chapter is our third and final probe of stage 2 in human evolution, wherein genes and culture evolved in tandem. We've already explained how the normative core of morality evolved ([Chapter 3](#)) and how the emotional core and the normative core co-evolved ([Chapter 4](#)). In this chapter, we have two main goals. First, we'll explain the co-evolution of morality and reasoning, which gave birth to the third and final ingredient of the moral mind: the reasoning core. Second, we'll show how moral reasoning works and how it shapes moral thought and feeling.

The origin story of morality began when cooperative animals like great apes routinely extended their dispositions to feel sympathy and loyalty beyond immediate kin. Early humans subsequently evolved a richer emotional framework for social life. Late humans would then gain norms that intertwined with their moral emotions. Because human morality is flexible and pluralistic, emotions and norms are open-ended and can conflict with one another. And so, in the third and final act of stage 2, the late human species of which you are a member was able to fine-tune moral behavior and resolve moral conflict by acquiring moral reasons.

We'll begin this chapter by exploring the evolution of human knowledge through adaptations for social plasticity. Our main focus, ultimately, is on the evolution of human reasoning. We'll argue that reasoning is a social capacity, indeed so thoroughly social that it is scaffolded by moral emotions and norms. Reasoning depends on morality.

A product of the union between morality and reasoning, *moral reasoning* is an open-ended cultural practice of thinking together about moral

consistency in feeling and thought. It allowed Sapiens groups to re-interpret their moral intuitions and combine them into a relatively coherent system, which helped sustain reliable social expectations needed for cooperation. In this way, then, a cultural practice of moral reasoning evolved because it helped members of our species resolve the newest problems of independent living. But before we reach a point when we can explain social moral reasoning, we need to understand social knowledge in general.

5.1. Social Knowledge

Ignorance may be bliss, but throughout most of human history knowledge was vital. It gave our ancestors an edge in biological survival and cultural success, especially in shifting, unstable environments encountered as a result of climate change, migration, and competition with other mobile and intelligent human groups. Knowledgeable human species expanded into new environments. Knowledge was power.

Why do tools and technology figure so prominently in most stories of human evolution? Simply put, they were necessary for survival—necessary for hunting animals, digging up roots, and processing food; necessary for transportation, warfare, and shelter. The archaeological record documents gradual as well as punctuated advances in the sophistication of tools and technology, including new and more sophisticated stone tool traditions.¹⁷ Tools helped humans migrate from Africa to Eurasia and beyond.

Tools and technology are inflated characters in evolutionary stories, however, simply because they are the best-preserved tips of our cognitive achievements. In fact, a vast iceberg of knowledge must have carved its way across the world. Human evolution was driven not simply by a revolution in tools and technology but, more generally, by a revolution in knowledge.

Humans knew how to strike stone against stone to fashion an axe-head, throw a spear accurately, and grind or cook food until it was edible.¹⁸ But they also knew how to comfort an infant while its mother was foraging; they knew how to provide toddlers and older children with supervised experimentation; and they knew how to teach adolescents to fend for themselves.¹⁹ For hundreds of thousands of years, human knowledge guided not just tool use and childcare, but also counting, language, and

zoological classification, along with countless other physical and cognitive skills necessary for survival.

The communication and spread of human knowledge depended on learning mechanisms through which individuals copied people who were skillful, successful, or prestigious. It also depended crucially on language. Unlike other mechanisms of social learning, language offered superior precision and high fidelity. One person's knowledge could be expressed using words and transmitted faithfully to others, again and again. Language therefore allowed culture to accumulate, become more complex, and be preserved accurately across many generations.²⁰

How old are modern forms of language governed by order, syntax, and meaning? Did they arise a mere 75,000–100,000 years ago with the onset of “behavioral modernity”? Or was it much earlier when, according to one recent idea, *Erectus* acquired the conventions needed to build and operate the boats they may have used to cross bodies of water?²¹ Relevant evidence is scarce since language is so ephemeral and linguistic ability bears no simple relationship to genes. Heidelberg's ears were shaped like ours to receive the sounds characteristic of speech.²² But did they have language as such?

This question about language “as such” rests on a mistake. If the evolution of language was gradual, as it seems to have been, then it doesn't make sense to search for a precise time at which language first appeared. First of all, notice that human language is sustained through biological and cultural inheritance. On the one hand, the capacity to acquire language depends on innate preparation for learning rules. On the other hand, language will not develop readily unless children are exposed to rich patterns of linguistic behavior and active instruction during a critical developmental window.

Like so much else unique to humans, complex language seems to have evolved through incremental, autocatalytic gene-culture co-evolution. As systems of communication increased in complexity, greater fitness was conferred on individuals born with genes that facilitated language acquisition. These genes spawned greater complexity in linguistic culture, which ramped up selection pressure favoring better innate preparation. Thus, early humans had some language abilities, while later humans had more. Gradually, our ancestors acquired more and more complex linguistic systems for acquiring knowledge (among other purposes).²³

Some human knowledge was factual, like knowing facts about local flora and fauna. Much of it was practical, hands-on know-how about how to cope with the physical environment or with social problems arising within the band. All of this knowledge depended on theory of mind. Individuals were able to figure out what other humans knew, expand their own knowledge, use language and imitation to pass that knowledge along, and repeat the process again and again in a cumulative enrichment of their culture. Adaptations for social plasticity (such as language) are thus the bio-cultural basis of distinctively human intelligence and knowledge. They connected us to the cultural cloud.

When philosophers and scientists wonder what makes humans cognitively unique in the animal kingdom, language and reasoning top the list of usual suspects.²⁴ The hypothesis is not wrong so much as incomplete. We are cognitively unique in virtue of a web of evolutionary adaptations for social plasticity, including language and reasoning, but also imitative social learning and theory of mind, as well as emotional capacities and norm learning. What makes us special, however, does not reside in any single individual. It exists in our collective minds.

Knowledge has been a collective enterprise ever since humans began to accumulate adaptations for social plasticity. Humans relied on others to gain most of their practical and factual knowledge—to learn how to process food and educate children, to know how to make and use tools, to know which animals and people in their vicinity are dangerous. Moreover, the evolution of bio-cultural cognitive machinery issued from a long history of countless humans experimenting with new ideas and ways of thinking, pruned by Darwinian selection. If you want to bake any piece of human knowledge from scratch you must first invent sociality.

What's more, as we'll argue in detail next, even reasoning has a social design. Philosophers since Descartes have tended to think of reasoning as an individual achievement. Thus, most philosophers will grant that a great many premises in reasoning are acquired through communication with others. They may also accept that cognitive skills are the product of social evolutionary history. Yet they are likely to insist that when reasoning produces knowledge it is because an individual has exercised their own grasp of logic or probability to soundly derive a conclusion. In fact, however, this is the exception rather than the rule. It's not how reasoned

knowledge is typically acquired. As we'll see next, the individualist conception of reasoning is a philosophical myth.

We began this chapter by observing that humans were ecologically successful by acquiring knowledge. They thrived by gaining not just useful information about how to create and use technology but a vast range of factual knowledge and practical know-how in relation to their material and social environments. This knowledge depended on groups of humans working together and relying on hard-won cognitive adaptations for social plasticity, like imitation, theory of mind, and language. Next, we'll zoom in on just one—albeit very special—human adaptation for social plasticity.

5.2. Social Reasoning

Reasoning can be a fantastically effective method of gaining knowledge about the world. But this raises a puzzle, as cognitive scientists Hugo Mercier and Dan Sperber point out.²⁵ Why didn't reasoning of human-level sophistication evolve elsewhere in the animal kingdom?

Other animals acquire knowledge and use it to navigate their environments. And when a trait is useful, it will often evolve many times. The simplest precursor to vision—photoreceptivity—evolved separately in numerous animal lineages. Even a capacity as rare as echolocation seems to have evolved independently in several species of bats. If reasoning is so valuable, why did natural selection purchase it only once?

The answer to this question is that reasoning is valuable only for intelligent, socially plastic, ultra-cooperative creatures who also possess linguistic representations for transmitting, receiving, and accumulating knowledge. Reasoning is rare because the natural conditions in which it works effectively are also rare.

Mercier and Sperber argue that the evolutionary function of reasoning is to enable groups of cooperative humans to gain knowledge together.²⁶ It was partly through socially interactive reasoning that ancestral humans were able to accumulate so much knowledge about their environments. Numerous strands of empirical research thus indicate that people are more likely to reason successfully when they work in groups than when they operate alone.²⁷ To illustrate this general phenomenon, Mercier and Sperber point to the Wason selection task.²⁸

In the Wason selection task, you are presented with four cards. You're then told that each card has a number on one side and a letter on the other side. For example, suppose you see the cards E, K, 2, and 7.²⁹ Now consider the following conditional statement: if there is a vowel on one side, then there must be an even number on the other side. Which of these four cards must be turned over to know whether this statement is true?

Scientists have conducted hundreds of studies to assess whether participants can reason their way to the correct answer on the Wason selection task. Many studies explore whether seemingly minor variations impede or enhance performance—and what these results reveal about the underlying psychological mechanisms. Of all the findings generated, only two are relevant for our purposes here.

First, most participants give the wrong answer. Of these, most choose cards E and 2. It is true that E must be examined because if there is an odd number on the other side, then the conditional statement is false. (The statement says: if there is a vowel on one side, then there is an even number on the other side.) However, 2 need not be examined because the statement is compatible with either a vowel or a consonant being on the other side. (The conditional statement says only what must be true if a vowel is on one side, not what must be true if an even number is on one side.)

Most participants fail to realize that in addition to E, the other card that must be examined is 7. There must be a consonant on the other side. If a vowel is there instead, then the conditional statement is false, since it says that on the opposite side of a vowel is an even number. The Wason selection task is now familiar to many people. However, on first encountering it, without hearing the foregoing explanation, many intelligent people give the wrong answer. On average, only 20% of participants get it right. That's the first important finding.

In most studies employing the Wason selection task, a participant is asked to solve the problem on their own. The second important finding is brought to light when small groups of participants are given the opportunity to discuss the problem together. The results here are dramatically different. Roughly 80% of participants give the correct answer.³⁰ This second finding is important, Mercier and Sperber say, because it shows that people are far more likely to reason their way to the correct answer if they work together.

The Wason selection task exemplifies a wide range of evidence in cognitive and social science highlighting the greater reliability and power of

collective reasoning over individual reasoning.³¹ When reasoning alone, specifically, participants are prone to “confirmation bias.” Countless psychological studies reveal that people have a tendency to seek information that confirms a hypothesis and to ignore information that disconfirms it. The error of choosing card 2 instead of 7 is a case in point. If a vowel is on the other side of 2, that confirms the conditional statement. Examining the other side of 7, by contrast, offers the possibility of disconfirming it.

As Mercier and Sperber argue, people are less prone to confirmation bias when considering others people’s ideas.³² When reasoning in a group, people are more likely to search for flaws in a hypothesis if someone else has proposed it. They continue to ignore the flaws in their own hypotheses if left to their own devices. But when others offer good reasons—for example, reasons that card 2 is a dead end, along the lines just given—people can appreciate the cogency of their reasoning.

Reasoning is more effective—it is more likely to generate knowledge—when it is socially interactive. For one thing, interactive reasoning counteracts the natural tendency of individuals to fall into confirmation bias. But interactive reasoning counteracts other biases too. For example, what Mercier and Sperber call “my-side bias” is a tendency to believe self-serving ideas.³³ Another bias is the tendency to believe ideas that square with what one already believes, even if none of those ideas are supported by available evidence. Interactive reasoning is conducive to knowledge because in groups—especially in cognitively diverse groups—these biases get washed out. You and I may be prone to seek confirmation of what we already believe, to believe what we wish were true, etc. But if we believe different things and are biased in different ways, and if we are also capable of distinguishing good reasons from bad, then together we can engage in reasoning that transcends our biases. Two biases are better than one.

Mercier and Sperber propose that the evolutionary function of reasoning is different for an individual than for a group. For an individual, they claim, reasoning has two interrelated functions, one for giving reasons and the other for receiving them. On the one hand, reasoning functions to *justify* your beliefs to others—to explain them in a way that allows you to set the terms of cooperation. On the other hand, reasoning functions to *evaluate* the beliefs of others—to determine whether the beliefs are accurate and whether the person espousing them can be trusted.³⁴

Neither the justifying nor evaluative functions of individual reasoning serve primarily to generate knowledge. However, in an interactive social context, these two individual functions combine to novel effect. When humans give arguments to justify themselves to others, and when they evaluate the arguments others give, this social practice functions to produce collective knowledge. So, it's because they reasoned together that our ancestors were able to acquire so much knowledge about the world around them, and thus to gain an edge in survival against other animals living in the same environment but knowing so much less about it.

Advances in knowledge signal an increase in psychological capacities for learning and invention, along with language and reasoning, that go hand in hand with the development, transmission, and accumulation of culture. However, what's missing in most evolutionary accounts of human intelligence—including Mercier and Sperber's groundbreaking account—is that knowledge also signals the development of moral culture. To gain knowledge and put it to use, humans had to work together as equals in relationships of mutual respect. As we'll see next, humans were able to reason their way to knowledge because morality scaffolded their social practices of reasoning.

5.3. Morality Scaffolds Reasoning

Back in [Chapter 2](#), we described experiments that explore how very young children behave in situations where cooperation is possible. Even when cooperation isn't strictly necessary to complete the task, children are keen to work together. They attempt to re-engage a partner who has stopped collaborating. They also spontaneously help partners having difficulty, or they reverse roles, to sustain the activity. As we argued, humans uniquely possess *deep empathy*. That is, they are prepared to commit to a joint project in part because others share the same goal. Deep empathy is a vital cognitive and affective adaptation, one that non-human animals do not share to the same degree. As we'll see next, deep empathy and social reasoning enable cooperation for the moment and cumulative social learning for the future.

Like other forms of cooperation, interactive reasoning rests on deep empathy. Humans cared about reasoning together not just instrumentally—not just for the sake of getting the right answer—but also because they

cared intrinsically about each other. This evolutionary history is reflected in contemporary social practices.

When one person stops reasoning, partners may attempt to re-engage them, or offer advice, or reverse dialectical roles. For example, if I am wandering from the task, you may try to bring me back into focus. Or you may help me when I am trying to contribute but failing to understand the problem correctly. You may even reverse roles and shift to my line of thought, even if it conflicts with your own, just to show me respect and understand my thinking. You want to figure out the right answer for its own sake but also because doing so is our goal.

In much social discourse, certainly, these are not the only motives at play. For example, people offer specious reasons to deceive others into accepting a self-serving conclusion, or simply to flaunt their intellect and garner prestige. But when people are also motivated to get the right answer, and when they are also motivated to critically evaluate ideas, the result, nonetheless, may be knowledge gained through interactive reasoning.

To be most effective in ferreting out the truth, humans exchanging reasons had to be motivated by a shared intention to reason cooperatively. This involved seeing others as worthy of respect, as equal partners in a task they value collectively. In this way, natural and cultural selection for interactive reasoning depended on background moral values of equality and moral norms of fairness. Thus, human knowledge rests on interactive reasoning, and interactive reasoning itself rests on morality. Reasoning could not reliably work to produce knowledge unless partners in reasoning were involved in a moral relationship.

Another moral dimension of effective interactive reasoning is honesty in communication. Sincere mistakes are one thing. But if reasoners intentionally obscured the truth—an inviting prospect if it served their interests—they undermined their shared project. Note that honesty in reasoning entails not just accurately reporting observations but also admitting mistakes in reasoning and conceding that the evidence challenges one's original position. Honesty, in these ways, is a reflection of moral norms of trust and autonomy. Deception is immoral because it undermines our commitments to one another and because it is a form of manipulation. Deceptive speech and behavior violate norms of reciprocity and autonomy. Deception also breeds ignorance and misinformation.

In all these ways, morality was vital to successful interactive reasoning. Even if what's paramount is just to get the facts right, it served human beings to respect others as equals, to allow others a fair share in the space of discussion, and to communicate honestly. Moral emotions and norms evolved because they facilitated cooperation, including cooperative reasoning via deep empathy.

Later in the book, we'll see that these aren't the only ways morality and knowledge intersect—especially as interactive reasoning is embedded in social institutions, its power thus amplified. But the basic role of morality in our shared cognitive lives is clear enough at this point, given that reasoning is more successful when it is interactive. Morality co-evolved with human knowledge by scaffolding interactive reasoning.

Let's review. In evolutionary terms, human knowledge is fundamentally social. Information is gathered collectively and shared—in the modern world, certainly, but also in ancestral environments. In addition, the psychological mechanisms deployed to gather and process information are the product of Darwinian selection operating in a social environment wherein people explored different methods for generating useful knowledge. To re-purpose a phrase from the philosopher W. V. O. Quine, we are lucky to possess good methods for acquiring knowledge only because poor methods have “a pathetic but praiseworthy tendency to die before reproducing their kind.”³⁵

Knowledge is fundamentally social in another way too. Reasoning itself is designed by evolution to generate knowledge through social interaction. Knowledge evolved, but not alone. It evolved with morality. Moral emotions and norms supported the cooperative dialogue that powers the generation of human knowledge.

We've argued that morality supported reasoning in our evolutionary history. Next, though, we want to explore the opposite idea: reasoning supported morality. One way is straightforward. If an individual or group is trying to apply a moral norm, they need to get the facts right. Did she really hoard most of the food she gathered, providing it only to her own children? Did he betray his partner or simply make a mistake? To know the truth, reasoning can help us achieve our moral ends, especially when the facts are complex or the evidence is unclear.

Factual reasoning supported morality when it helped to generate knowledge that guides the application of moral norms. But can reasoning

do even more heavy lifting? Can it tell us how to interpret our norms? Can it resolve conflicts between moral norms by revealing which should take priority?

Sapiens inherited a complex bio-cultural system of emotions and norms. Cultural practices of moral reasoning evolved because they were needed to put this system into workable order. To see how, we need to consider a kind of reasoning that is not just factual but distinctively moral. And we need to understand what moral reasoning is for, what function it evolved to serve under the influence of Darwinian selection.

5.4. The Origins of Moral Reasoning

Quite a few scientists and philosophers are cynics about moral reasoning. They claim that people reason about morality mainly just to rationalize intuitive moral feelings and thoughts. The function of moral reasoning, they say, is to manage our reputations for social consumption.

Jonathan Haidt is one of the foremost proponents of this cynical view. He argues that moral judgment is almost exclusively driven by intuitions.³⁶ When people offer reasons for a moral opinion, they may sincerely believe that they are explaining what caused them to hold it. With few exceptions, however, what people are really doing is post-hoc rationalization, according to Haidt.³⁷ They are unwittingly offering after-the-fact reasons in order to present themselves in a positive light. As Haidt puts it, moral agents are not like judges who weigh evidence and reasons to form moral opinions.³⁸ They are more like lawyers who can find good arguments for whatever opinion is delivered to them by unconscious moral intuition.³⁹

Though Haidt is a psychologist by training, his perspective reflects a long philosophical tradition that treats reason and intuition as fundamentally at odds with each other. This tradition is shared by philosophers with otherwise quite different perspectives on morality. Thus, Plato, Kant, and Henry Sidgwick thought that emotions can be ruled by reason.⁴⁰ Hume thought that reason is slave to emotions.

In the rest of this chapter, we'll argue that all of these views miss how reason and intuition function jointly. Moral reasoning is guided by intuitive thought and feeling. In turn, however, it re-shapes intuitions. In particular, reasoning allows humans to interpret moral norms in new and unexpected

situations. It also allows humans to resolve dilemmas when moral norms and emotions conflict. Thus, effective moral reasoning builds consensus by removing uncertainty and conflict. For this reason, it's critical to the evolutionary function of morality, critical to the ability to resolve problems of interdependent living. Moral reasoning is therefore not just a tool for reputation management. In what follows, we'll explain in more detail why moral reasoning evolved and how it works.

The origins of moral reasoning were undoubtedly modest. Early on, even before the full development of language as we know it, humans needed to coordinate on how to apply old norms to new situations. Imagine that a community has a norm for dividing the meat from a hunt more or less evenly, perhaps with exceptions to reward a heroic hunter or to nourish a faithful hunter weakened by injury. The same norm applies to berries or tubers gathered from foraging. The practice of food sharing is guided by a norm of fairness, since most refusals to share food, especially those due to apparent greed, are met with resentment and punishment.

Imagine, however, that a new source of spearheads is discovered. Should this source be shared equally? What about childcare? Must it be shared equally as well? How far must the community extend the scope of a fairness norm that has been applied until now only to food? There is no right answer to these questions that is built into the original fairness norm. That norm dictated equal shares of food but said nothing about spearheads or childcare. Different groups would have responded to the new situations somewhat differently. And some groups would do better than others as a consequence. Over time, as a result of cultural selection, extensions of the original norm that were more beneficial for the group would tend to persist in future generations.

However, future gain for the group was not typically a motive for deciding whether to divide the spearheads evenly. For moral altruists, fairness is pursued for its own sake. So, how would the group decide whether fairness provides a reason to divide spearheads or childcare equally? The answer matters because it bears on what the groups should do in the case at hand. But the answer also matters for the future because everyone needs to know what they can expect from others in the community and what others can expect in return. Moral norms make coordination possible, but coordination depends on consistent expectations.

The question about spearheads and childcare boils down to whether there is a morally relevant difference between the situations. Are they all just matters of fairness with no morally relevant differences, so that not sharing spearheads and childcare would be just as morally wrong as not sharing food? The answer to this question is as much a matter of choice as discovery. However, any answer requires a *reason*, that is, a basis on which to generate consistent expectations. Perhaps one community decides that a division must be equal whenever a resource has very high value. This reason broadens the norm so that it covers spearheads and childcare. Another community might decide that equal division of a resource is warranted only when collective effort is required to procure it. This reason keeps the norm narrow so that it covers only food.

Because different decisions had consequences for the group's success, relative to a particular environment, cultural evolution would favor either broader or narrower bases for moral consistency. In any case, once a tradition of responding consistently had been established in a community with respect to moral norms regarding fairness, harm, trust, and so on, that tradition became a rich basis for applying moral reasoning to remove uncertainty in new cases where a given moral norm might or might not apply. Once reasons are established, they can be called upon to resolve uncertainty in novel contexts.⁴¹

Suppose that the community comes to regard sharing spearheads, like food, as a matter of fairness requiring equal distribution for the reason that both have high value. If the issue of sharing childcare then arises, fairness requires equal sharing here too since, by their lights, there is no relevant difference between childcare and these other activities. For a moral reason that they have previously established: the value of the resource is the same. That is, moral consistency demands treating childcare no differently from sharing food or spearheads. Given the reasons articulated by the group, there are no morally relevant differences between the situations.

To see more clearly how moral reasoning can resolve uncertainty and coordinate behavior, consider another realistic example of moral reasoning, adapted from a case much discussed by contemporary philosophers.⁴² Imagine that an adult happens by a shallow pond. This adult discovers that a toddler has wandered away from her parents and into the pond where she will drown if the adult does not rescue her. If there are no further

complications, the group's norm requires the adult to wade into the pond to save the child.

In one community, suppose that the moral norm requires action even if it means the adult will lose track of his prey, causing their family to go without a meal when the hunter has an ailing mate. Now, suppose instead that a few deadly poisonous snakes have been noticed in the pond. Attempting to rescue the child does not mean certain death; the chance of stepping on a snake is not great but there is some risk. The rescuer this time might balk, but moral consistency would demand rescue if the risk to his life is the same as or less than the risk in the previous case to the life of a mate.

The general point is that if a norm requires action in one case, then it requires action in another similar case unless there is a morally relevant difference, unless there is a reason for treating the case differently. Moral norms can have unexpected breadth of application because they apply in the same way to new cases. In this way, then, moral reasoning helped humans collectively interpret their norms across a range of contexts and rely on one another to follow them.⁴³ Next, though, we need to develop a more detailed account of moral reasoning and more sophisticated applications.

5.5. Moral Consistency Reasoning

Reasoning looks most like rationalization when people invoke principles. That's because moral principles are notoriously very flexible. By themselves, they leave much open to interpretation. In addition, since morality is pluralistic, multiple principles might bear on the case at hand. Thus, you can appeal to one principle and conveniently ignore other potentially relevant principles. These are some of the reasons that scientists like Haidt are legitimately skeptical about "principle reasoning."

However, we've been describing a very different form of moral reasoning, which we call "moral consistency reasoning." This type of reasoning does not decide which principles apply to any given case and which principles do not apply. Instead, it looks for another, similar choice and extends the reasons that apply in that choice to other choices. Furthermore, it's typically a social activity rather than unfolding in one person's mind. (This type of reasoning therefore fits better within Haidt's own "social intuitionist" model of moral judgment and decision making.)

There is plenty of evidence that people actually change their moral opinions in response to consistency reasoning.⁴⁴ It's especially likely in social contexts where reasons are exchanged between people who enjoy a baseline level of trust and respect. Effective moral reasoning, too, relies on emotions and norms that create a moral relationship between interlocutors. Thus, morality relies on reasoning, and reasoning relies in return on morality.

In addition, consistency reasoning can help resolve conflicts that arise between moral norms. Once a priority has been set in some choices, consistency can lead people to extend that priority to others, so long as they have not agreed that other choices reflect morally relevant differences. For instance, in the case of the hunter who can save a drowning child, a community has decided that prevention of harm trumps loyalty to kin in one situation. As a consequence, then, their reasoning can lead them to think harm trumps loyalty in other, similar situations, too. Thus, members of the community can expect others to resolve moral conflicts in the same way, which provides a reliable basis for coordinating their behavior.

Eventually, humans began to employ a more sophisticated mode of reasoning about moral consistency. They reasoned about not just actual cases but also hypothetical cases. To see this, look at how children are usually taught to apply a moral norm consistently.⁴⁵

As discussed in [Chapter 2](#), small children not much more than a year old evince a sense of fairness when someone is treating them or someone else unfairly. If treats are unequally distributed, a child is apt to ask why one person gets more than others. If an authority blames the wrong person for a mess, a child may defend another child wrongly blamed. Still, while children are able to recognize unfairness in others, they are susceptible to being unfair when it is convenient (much like their elders).

One aspect of successful moral education is learning how to recognize bias in oneself and correct it even when the temptation to ignore it is strong. Parents ask their children rhetorically, "How would you like it if someone did that to you?" They invite children to put themselves into another's shoes. The child sees, hopefully, that being a different person is not a morally relevant difference. This powerful mental exercise of "role reversal" brings home the moral lesson: in applying a moral norm impartially it is not morally relevant whether you are the one judging or the judged. Wrong is wrong whoever is on the receiving end.

The place of role reversal in moral education reflects two significant developments in moral consistency reasoning. First, the role-reversal test invites a person to imagine a “counterfactual” situation in which the person is in someone else’s position. The judgment made about an imaginary situation is relevant to a real situation. The same judgment would apply to the actual case at hand if there were no morally relevant difference. If it would be wrong for the other person to do something to you, then doing the same to the other person is wrong by your own lights.

Role reversal also reflects a second aspect of mature moral consistency reasoning. At least within one’s community, the fact that two persons are distinct does not affect whether a moral norm applies to them. Put another way, the fact that “you are you” and “I am me” does not itself count as a morally relevant difference. There is no logical necessity in this, but communities tend to treat mere identity as morally irrelevant. A person’s social role might matter—including roles such as hunting leader or caregiver—but which person in the group occupies that role typically doesn’t. It’s likely that the tendency to ignore mere identity has long been necessary for successful cooperation.

Let’s pause for a moment to review and to place the preceding discussion in a broader context. In the book so far, we explored how the moral mind evolved, bit by bit. Coming first in the evolution of morality was altruism in social primates, then the emotional core in early humans, and then the normative core in late humans. The reason that humans evolved a flexible, interlocking system of moral emotions and norms is that these capacities stabilized complex and cooperative social structure. Human intelligence and knowledge flourished in this social environment.

In this chapter, we’ve been exploring the link between knowledge and sociality. We’ve paid special attention to how morality and reasoning co-evolved. Moral emotions and norms supported interactive social reasoning. Conversely, moral reasoning helped to refine moral emotions and norms, and it helped to resolve inevitable conflicts between them. When humans faced a hard choice, they often reflected together on their intuitions in other, similar cases. By articulating moral reasons, they could make hard decisions easier and build consensus necessary for coordination. Our next and final main section in this chapter foreshadows a central issue in subsequent chapters of the book: whether reasoning can lead humans to

expand their spheres of moral concern, whether it can help us overcome persistent moral failures that we continue to live with.

5.6. Reasoning and Exclusivity

How broadly should moral consistency reasoning apply? Should role reversal be applied beyond one's own immediate group? Does the fact that you and I are distinct persons become a morally relevant difference if I am a complete stranger living outside your immediate moral community? Is sex or gender morally relevant when it comes to fairness or autonomy?

Moral questions such as these have troubled human communities for millennia. Often, perhaps, they have not troubled people as much as they should. In any case, the answers that various communities tendered have been regarded as more or less satisfactory. What we are interested in, for now, is how a better understanding of the evolved moral mind can help us see why these questions arise and how better answers might be given.

To begin with, the evolution of moral norms was influenced by basic moral emotions and by the problems of interdependent living arising within groups. As a result, norms often inherited the tendency of emotions to be exclusive, albeit flexibly. If, as we supposed in [Chapter 2](#), women were often granted less respect than men, norms of autonomy and fairness would have tended to privilege males and subordinate females. Since all moral emotions were limited in scope, all norms would have tended to be exclusive to the local band.

The tendency to limit the scope of moral norms to one's community amounts to what we have called "moral exclusivity." The moral exclusion of some people is often part of what divides neighboring humans into separate ethno-linguistic tribes (see [Chapters 6](#) and [7](#)). In complex societies, indeed the local tribe can be a portion of a state that is divided geographically but united by ethnicity, religion, or politics (see [Chapters 9](#) and [10](#)). In extreme cases, those outside the tribe may be denied moral respect or treated as unworthy of any protection from, say, harm and unfairness.

Buchanan and Powell argue that moral exclusivity should be understood in the context of adaptive plasticity, a concept introduced at the end of [Chapter 2](#) to explain variation in outgroup antagonism and sexism.⁴⁶ They suggest that this bio-cultural flexibility helps make "inclusive morality"

possible. It might well be that in modern societies, extending the scope of moral emotions and norms as widely as possible vastly improves the prospects for happiness and well-being, as measured by economic prosperity, military peace, political freedom, and efficiency, provided that there are no grave external threats. When grave threats arise, however, or even when grave threats are erroneously perceived, there is a corresponding tendency to shrink the scope of the moral community toward an exclusive mindset. The ability to overcome moral exclusivity, or the tendency to succumb to it, reflects adaptive plasticity in our bio-culturally evolved moral capacities to respond to threats and opportunities in the social environment.

Our biology is plastic, but culture is even more so. Moral reasoning is a cultural adaptation, and it offered a way of modifying norms in the presence of new and fluctuating environments. It's also an "agentive" force, unlike the conditions Buchanan and Powell identify. That is, it's a way in which humans themselves can actively modify their moralities.

Reasoning evolved in the first place for several reasons. It had the function of improving individuals' ability to gain knowledge and make wise decisions. It also had the function of rationalizing our behavior to others and managing our social reputations. Moral reasoning evolved because it enabled our ancestors to flexibly attune their moral norms to local environments. This gave groups an advantage in cultural group selection. Thus, whereas Buchanan and Powell locate adaptive plasticity in one aspect of human morality, there is also adaptive plasticity in our capacity for open-ended moral consistency reasoning. Moral reasoning can shift emotions and norms in profound ways, as we'll see later in the book.

Nonetheless, moral exclusivity is a deep and pervasive feature of bio-cultural human morality. It underlies some of the most horrible evils that humans inflict on each other: ethnic violence, war, slavery, rape, genocide.⁴⁷ Our built-in bio-cultural flexibility is double-edged. On the one hand, emotions and norms can be molded to fit with deeply hierarchical, unjust societies. On the other hand, emotions and norms can also become more humane and egalitarian.

As we'll argue later in the book, reasoning plays a role in processes of moral inclusion. Once a group decides that what is morally relevant is simply being a human, moral reasoning can help communities overcome racism and xenophobia. Being a member of a different race or ethnicity is

not inevitably regarded as a morally relevant difference. For some people, being a member of a different species is not a morally relevant difference either, at least when it comes to suffering.

In [Part I](#) of the book we argued that other apes like chimpanzees are psychologically altruistic and that human morality is founded on capacities for sympathy widespread across the animal kingdom. However, we also argued that human morality is different from ape morality, even just considering the first major ingredient of the moral mind. Humans have a wider set of moral emotions and these emotions exhibit greater flexibility.

The original function of human morality was to resolve problems of interdependent living among humans. Thus, morality did not evolve to be sensitive to the needs and interests of non-human animals. Nonetheless, the current operation of morality can and does come apart from its original function. The moral mind is capable of treating non-human animals as morally significant, to include them within human spheres of moral concern.⁴⁸

Philosophers have spent quite a bit of time and effort developing moral principles that justify more ethical treatment of non-human animals. For example, some argue for a principle of moral consideration based on sentience or minimal rationality. However, ethical treatment of animals is not typically motivated by principles. Rather, it's driven by feelings of sympathy, moral intuitions arising from them, and reasoning. We'll argue for this idea in greater detail in [Chapter 9](#), and we'll also identify the social structure in which intuitions and reasoning work best, but let's offer a brief taste for it now.

People feel and believe that it's wrong to kill or torture animals like cats and dogs. But they also reason, sometimes, that there are no morally relevant differences between these pets and the cows, pigs, and chickens subjected to torture and slaughter in industrial farms. Therefore, they conclude, not abstractly but with feeling, that industrial farming is wrong and unsupportable—that it is preferable to enact a vegan or vegetarian lifestyle, or even just reduce their meat consumption, at least until the farming industry is reformed. This is a first step to moral inclusion beyond our species.

We'll have much more to say about resistance to speciesism and other steps toward moral inclusivity in the fourth and final part of the book. We'll explore the evolution of progress against racism and homophobia. We'll

discuss not just inclusion but also equality, in movements fighting sexism, classism, and global injustice. As we'll see, moral reasoning is important but it is not sufficient on its own. What's needed is a social structure that supports, and is supported by, moral reasoning.

5.7. Summary

In the next segment of the book, [Part III](#), we'll explore stage 3 in human evolution. After our species evolved, the primary mechanism underlying changes in human lifestyles was not genetic evolution, nor gene-culture co-evolution, but pure cultural evolution. Before we turn to stage 3, however, let's review important lessons from stage 2.

After humans began to acquire and share information, the co-evolution of genes and culture transformed our lineage. Culture was possible only because humans had moral emotions that allowed them to live peacefully in large groups. Gene-culture co-evolution would then lead to complex moral traits in late humans. By the time *Sapiens* evolved, our ancestors had norms and biological equipment for acquiring them. As emotions co-evolved with norms, five types of norms evolved: harm, kinship, reciprocity, autonomy, and fairness.

Evolving through gene-culture co-evolution, five clusters of core moral norms extended our ability to live together harmoniously. Social rules governed behavior in challenging situations that could be navigated only through cooperation and coordination. Norms motivated people, intrinsically and under the threat of sanction, to avoid harming others, to maintain one's commitments, to treat one another fairly and with respect for their autonomy. Some human populations were more successful than others: groups with norms and the ability to easily learn them; groups with interlocking norms and emotions; groups that found ways of consistently applying old norms to new situations.

In this chapter, at the end of [Part II](#), we saw that moral consistency reasoning extended the scope of cooperation even more broadly. It allowed our ancestors to apply old norms to new situations and resolve conflicts between norms. We were thus able to have reliable expectations about one another as we confronted new situations that tested our ability to cooperate. The next step, to be explored in [Part III](#), was to build complex systems of norms and combine them with other cultural inventions into social

institutions. Eventually, as we'll see in [Part IV](#), moral reasoning and social institutions together offer a powerful cultural ratchet for driving progressive moral change and resisting regressive decline.

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III

MORAL CULTURES

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6

Tribes

On the tree of life our branch seems to be an outlier. We weren't always so unusual. Since the birth of our species 300,000 years ago, we have co-existed with other humans. The Earth was once populated by more than half a dozen members of the *Homo* genus. Erectus and Heidelberg lived on for ages after giving birth to us. Their other children persisted too: Neanderthals in Europe, Denisovans in Asia, diminutive Flores in Indonesia. For most of our tenure on this planet, these other humans were our neighbors. It's only in the last 30,000 years—just 10% of our species' history—that we've been left behind, alone.¹

Eventually, Sapiens emerged as the only human species left standing in the contest for survival of the fittest. It did not distinguish itself immediately, however. For the first 200,000 years of its existence, Sapiens remained few in number and relatively unaccomplished, confined to a small, eastern region of the African continent.²

Everything began to change roughly 100,000 years ago. Sapiens populations slowly expanded into other parts of Africa and into Eurasia. They made the first voyage to Australia an astonishing 50,000 years ago. Western European colonization took longer, beginning only 40,000 years ago. And 15,000 years ago, Sapiens entered North America by walking across the temporary land bridge between Siberia and Alaska and traversing sea passages along the northwest coast. Within just two thousand years, wanderers had established residency near the very tip of South America. Soon enough, Sapiens occupied virtually every habitat on the planet.³

Like most colonists, our ancestors wreaked havoc on the local indigenous populations. Across the world, megafauna conspicuously went extinct soon after Sapiens reached their territory.⁴ Fantastic creatures such as mastodons, woolly rhinos, and giant armadillos disappeared. The last

traces of other human species—equally fantastic—are also dated shortly after our arrival in their ancestral lands.

Consider the Neanderthals, an enigmatic species descended from Heidelberg populations that had migrated from Africa to Europe. Biologically adapted to cold climates, Neanderthals persisted for hundreds of thousands of years across Eurasia. Within two or three thousand years of Sapiens' invasion, however, no Neanderthals were left. A small part of their legacy lives on in our genomes, but most Neanderthals perished without leaving surviving offspring. It's likely that some were unable to handle new ecological challenges. Others must have met violent deaths at our hands.⁵

When Sapiens appeared 300,000 years ago, humans in our lineage became “anatomically modern.” They had large skulls, slender bodies, and dexterous limbs. However, it wasn't until 100,000 years ago that humans slowly started to become “behaviorally modern.” Sapiens was able to colonize the rest of the world and supplant other human species because it had achieved a new and more complex form of life. Our ancestors were at last dimly but recognizably like us. Behaviorally modern humans carried out religious rituals, including burying their dead. They adorned their bodies with pigment and jewelry. And they made not just decorations but art—musical instruments, figurines, and the famous, breathtaking paintings preserved in French and Spanish caves.⁶

This new period of human history witnessed an eruption of imaginative technological innovation. Behaviorally modern humans were able to make the journey to Australia and other remote islands because they invented seaworthy vessels and taught themselves the skills to pilot them.⁷ They endured in Northern Eurasia and other cold climates through craft. For example, instead of simply covering themselves with animal pelts as Neanderthals did, our ancestors used sewing needles to produce seamed clothing, which offered more reliable protection from the elements.⁸ In addition, large, menacing animals were hunted more safely and effectively using spears, spear-throwers, and bows and arrows. Doubtlessly, these weapons were wielded against other humans too.⁹

To create and operate all of this state-of-the-art technology, our ancestors needed a wealth of brand-new ecological and technical knowledge. Only a small portion of our ancestors' cognitive and technological achievements can be reconstructed from the archaeological record. But we know that

behaviorally modern humans knew how to make tents and other fortified structures,¹⁰ woven baskets,¹¹ fire hearths,¹² oil lamps,¹³ miniature, specialized tools for refining their constructions,¹⁴ and much, much more. With clever inventions like these, Sapiens colonized the world and became the only humans left on Earth.

How though did our ancestors become behaviorally modern? Some scientists grasp for an obscure genetic mutation.¹⁵ And yet, there is no evidence of major biological changes in our lineage after we became anatomically modern 200,000 years earlier.¹⁶ Herein lies one of the greatest and as yet unanswered puzzles of who we are and why.

This puzzle about the origins of behavioral modernity is difficult to solve because it concerns a period of “deep history” during which human activity gradually became more and more complex but available clues remain almost as sparse. Until now the book has been solidly grounded in evidence from numerous scientific disciplines. This chapter is forced to be more speculative.

To begin [Part III](#) of the book, in this chapter, we’ll offer a new Darwinian hypothesis about how our ancestors became behaviorally modern, one that explains available evidence and rests on the well-confirmed scientific framework from [Parts I](#) and [II](#). Behavioral modernity, we suggest, arose through the same old evolutionary dance between intelligence, social organization, and morality. Now, though, this process unfolded through cumulative cultural evolution alone.

Culture enhanced human intelligence by adding, in increments, new cultural software to old bio-cultural hardware. These upgrades enabled humans to gain more knowledge about their environments, learn new skills, and create diverse forms of technology never before seen. All of this was possible only because culture also facilitated more extensive cooperation in tighter and broader social networks. Humans already shared food, labor, and affection. But they also began to share copious information: a cooperative distribution of information processing spurred the cultural accumulation of intelligence.

Our idea is that cooperation and intelligence were fostered by new modes of human organization wrought by *social institutions*. After describing social institutions, we’ll argue that they are a product of Darwinian cultural selection operating in remote human history. In short, institutions evolved because they allowed human cooperation to scale up

from small bands to large tribes. Normally, bands expanded and budded off into separate units. Institutions, however, allowed them to remain unified within tribes. The unification of humans into cooperative tribes enabled the cumulative cultural evolution of behaviorally modern minds. Tribes are thus what made us modern.

This is a brief sketch of our hypothesis about the origins of behavioral modernity. In the rest of this chapter, we'll argue in more detail that humans became modern because they evolved, through cultural co-evolution, social institutions for living in tribes. Institutions enabled modern thought and behavior, and they evolved in large part because of the moral mind. As we'll see, early religious morality may have played a pivotal role in forging tribes.

[Part II](#) of the book explained the gene-cultural evolution of the moral mind in our species. [Part III](#) turns to the cultural evolution of morality through social institutions. Later in this part of the book, in [Chapter 7](#), we'll explore how institutions shaped the moral mind in cultural evolution to produce "institutional moralities." But for now, in [Chapter 6](#), our main focus is on the evolution of institutions themselves. We'll explain how institutions helped create tribes, which gave our ancestors a competitive edge by making them modern. However, to put ourselves in a position to explain behavioral modernity, we need to review Darwinian cultural evolution and understand how it became "high-powered" in our species.

6.1. The Roots of Cultural Evolution

Most animals are specialists that occupy a very narrow ecological niche. Complex physical and psychological traits have evolved for that very purpose. Thus, monkeys have an anatomy engineered for arboreal life, which leaves them vulnerable on open ground. Cows, goats, and other ruminants have compartmented stomachs and distinctive and essential gut bacteria, without which they cannot process cellulose found in green plants. Felines are exquisite hunters, "hyper-carnivores" that subsist almost exclusively on meat. Chimpanzees and gorillas have minds that prepare them to live in groups with rigid social structures based on dominance and submission.

Modern humans, by contrast, are radical generalists. We have lived in open grasslands and dense forests, sandy deserts and icy tundra.¹⁷ We have

long been “hyper-omnivores” who use one set of tools to hunt and cook animals, another to make plant products edible.¹⁸ The foodstuffs within a single human group are impressively diverse, but even more diversity can be found across groups, even just considering hunter-gatherers in the upper Pleistocene. Tens of thousands of years ago, some groups hunted and trapped small mammals in the forest, while others extricated fish and mollusks from the sea.¹⁹ Different groups found different ways of making local plant products digestible, through cooking, leeching, and other forms of ancient food-processing. Just as striking, our social environments have also been much more diverse than those of other animals. Human groups have been densely populated or diffuse;²⁰ they have practiced monogamy or polygamy;²¹ they have been strictly egalitarian or acutely hierarchical.²² Of course, we owe all of our hyper-generality to culture and the social plasticity it cultivated.

Cultural evolution made us modern via complicated processes that we’ll spell out later in this chapter, but its beginnings were humble. Early humans were smart enough to acquire and share information about their local environments and how to use the resources found there. They thrived by imitating more experienced elders and those perceived as successful or skillful. Selective imitation was, in this way, a Darwinian mechanism that favored the propagation and accumulation of useful cultural information.²³

Of particular importance to our ancestors was the information needed to make and use various tools for acquiring and processing food. Stone tools offer a window into the dawn of cultural evolution because they are more likely to be preserved than other artifacts that were more ephemeral but perhaps just as useful. By contemporary standards, the stone tools of early humans look rather simple. In fact, however, they required impressive skills that have now been lost, such as choosing the right component materials and following an elaborate series of precise and skillful steps in production. Even before *Sapiens* evolved, our remote ancestors created several types of specialized stone tools—for example, one type for butchering carcasses²⁴ and another for extracting underground roots and tubers.²⁵ Cultural traditions for making and using stone tools persisted for hundreds of thousands of years, via selective imitation and ecological success.²⁶

In a culturally rich world higher fitness was granted to humans who could siphon more of the useful information available to them. Thus,

culture-driven selection on our genes favored new cognitive adaptations for social plasticity, which allowed us to acquire more culture. Cultural learning mechanisms, consequently, became even more powerful and selective. For example, as we saw in [Chapter 3](#), late humans evolved an innate sensitivity to “prestige.” Equipped with advanced theory of mind, it was advantageous to figure out who others are imitating and to choose these prestigious individuals as models.

What’s more, as we saw in [Chapter 5](#), humans evolved bio-cultural capacities for language and interactive reasoning. These capacities enriched the repository of social knowledge available for cultural inheritance, which intensified natural selection for brains that could support more sophisticated thought and communication, again and again, back and forth in an accelerating loop. Language and interactive reasoning allowed humans to refine their information, transmit it more faithfully, and accumulate more and more complex culture.

Through successive episodes of communication and selective social learning, late humans accumulated complex cultural adaptations that no single individual was remotely smart enough to create on their own. Thus, as new species of humans evolved, the archaeological record documents the emergence of new and more advanced stone tool traditions, food-processing skills, and techniques for controlling, starting, and making use of fire. Though it is reflected more dimly in the archaeological record, humans also evolved the collective knowledge necessary to produce increasingly sophisticated but ephemeral technology and craft, to manage more complex practices of childcare, and to keep track of the objects, plants, and animals in their environment.

In this section, we have only reviewed what we already learned about cultural evolution from [Part II](#) of the book. Culture evolved through selective learning mechanisms. Through imitation, language, and reasoning, humans accumulated complex and adaptive bodies of socially transmitted knowledge. Natural selection on our genes operated in this cultural environment. Thus, late human species like *Sapiens*—with big, dense, and flexible brains—grew out of culture.

In [Part III](#) of the book, however, we are concerned not with the origins of our species but with cultural evolution after our species evolved. How did the activities and technologies of behaviorally modern humans become so enormously complex and diverse compared to pre-modern *Sapiens* and

other human species? Part of the answer, as we'll see next, is that human capacities for knowledge evolved through culture without any further help from biology. As a consequence, cultural evolution itself evolved.

6.2. The Evolution of Cultural Evolution

In [Chapter 3](#), we highlighted the essential Darwinian properties shared by natural selection and cultural selection. Whether evolution is biological or cultural, Darwinian selection occurs if variation in traits affects the rate at which those traits are inherited. One obvious difference is that biological evolution requires reproduction.²⁷ Biological traits are inherited by offspring, whereas cultural traits are inherited by students. Humans teach their children, of course, but they can also pass along useful information to anyone who seeks apprenticeship or has it thrust on them. In response, gene-culture co-evolution favored brains that made our ancestors better and better students.

Eventually, however, cultural evolution began to revamp human minds without bothering to slowly tinker with our genetic endowment. As psychologist Cecilia Heyes argues, cultural selection favored *cognitive gadgets*.²⁸

According to Heyes, “cognitive products” are ideas or representations or rules.²⁹ “Cognitive gadgets” are psychological mechanisms that process ideas or representations or rules.³⁰ Thus, as Heyes puts it, cultural evolution favored not just “grist” but also “mills.” One clear example of a cognitive gadget is literacy. Over the last few thousand years, humans acquired psychological mechanisms for reading and writing. Other cognitive gadgets are older, such as cultural modes of imitation and mental state attribution.

Heyes argues that improved psychological mechanisms for social learning arose through cultural evolution. Individuals who acquired these gadgets and happened to improve on them gained more knowledge, were more successful, and therefore were more likely to transmit the gadgets to others. Like bio-cultural adaptations for social plasticity that came before, cognitive gadgets enhanced fitness because they benefited interdependent individuals living in a complex social environment rich with useful information.

We've already seen that humans benefited by gaining information, which they passed along to others through various psychological mechanisms. Heyes' central insight is that we inherited not just new ideas and technology but new psychological mechanisms—for example, new and better capacities for imitation, theory of mind, and language. These cognitive gadgets were favored in cultural selection because they allowed humans to successfully meet a range of new ecological challenges. In this way, Darwinian cultural evolution gave our ancestors not just more information but also new cultural tools for gaining more information.

To illustrate, consider language. We argued in [Chapter 5](#) that the capacity for language is bio-cultural. Incremental gene-culture co-evolution produced, step by step, innate rule-learning abilities and a rich linguistic culture. However, it's likely that modern languages have for a long time been more sophisticated than those possessed by pre-modern Sapiens. As Henrich suggests, modern languages contain more grammatical structure, larger vocabularies, and more expressive power.³¹ Language evolved in these directions in part because it provided a more powerful tool for communicating and accumulating knowledge. Arising through pure cultural evolution, modern languages are cognitive gadgets.

Heyes emphasizes that cognitive gadgets made us smarter and better able to acquire knowledge about the world around us. Henrich illustrates the idea in terms of the evolution of modern languages. But we also need to understand an idea that these theorists and others neglect: how cognitive gadgets affected Darwinian evolution itself.

Because cultural selection fostered greater intelligence, cultural evolution itself evolved in complexity and sophistication. For starters, the research and design of natural selection produced creatures capable of fairly impressive research and design themselves. Initially, useful mutations in cultural evolution would have tended to arise randomly. Eventually, though, humans became smart enough to reliably generate useful information through deliberate ingenuity. This was a huge change. Think about how our biological future might unfold if genetic mutations were deliberately fashioned instead of utterly random. (Probably soon, for better or worse, thanks to emerging biomedical technology.)

Modern intelligence transformed not just the generation of culture but also its transmission. Humans can learn a lot through observation and imitation. But once we gained modern human languages, we were able to

communicate much more information—with more precision and higher fidelity—than can be gleaned from observation of behavior alone. Modern human learning, indeed, is usually mediated by a combination of observation, imitation, active experimentation, and linguistic communication.

Modern human intelligence enhanced the transmission of culture in one more important way too. We were no longer such passive receptacles. Instead of relying solely on the skill, success, or prestige of role models as a basis for imitation, humans began to critically evaluate and modify the cultural resources available to them.³² Social practices of interactive reasoning tested new information in theory before—and after—putting it into practice. In addition, we began to combine the insights of numerous models. As learning became more active, so too did discursive teaching. Groups who took advantage of these opportunities prospered. And so, human reasoning was incorporated into the very mechanisms of cultural selection, amplifying its power.

In our species alone, in sum, cultural evolution became high-powered. By virtue of novel cultural adaptations for ingenuity, language, and reasoning, the generation of information became more productive and its transmission more selective. More complex and more adaptive information began to propagate. Without high-powered cultural evolution, humans would never have been able to occupy so many radically diverse material and social environments. They would not have been able to colonize the planet.

We began this chapter by reviewing from [Part II](#) the basic idea of adaptive cultural evolution. In late humans like Heidelberg and Neanderthals, culture evolved through social learning mechanisms attuned to skill, success, and prestige. We have now added to this simple story by explaining how cognitive gadgets in modern Sapiens—cognitive adaptations that were not bio-cultural but purely cultural—made cultural evolution even more powerful. Smarter humans could intentionally generate adaptive information, use modern languages to communicate it accurately, apply their collective reasoning abilities to improve the information, and actively cultivate the information in the next generation. So, what's next? We need to identify that social context that favored the evolution of modern intelligence. And to do that, we need to understand how high-powered cultural evolution became autocatalytic.

6.3. Autocatalytic Cultural Evolution

Remember from [Part II](#) that gene-culture co-evolution has the potential to be autocatalytic. That is, the process can generate its own fuel. The most striking illustration is the co-evolution of brains and culture.³³ Smart humans generated complex culture, which put a premium on sophisticated neurological equipment to acquire culture, which led to more complex culture, which favored more sophisticated neurological equipment, and so on and so on. However, purely cultural evolution can be autocatalytic too.

The last speciation event in our lineage occurred 300,000 years ago. Since then, changes in human lifestyles have largely been the result of culture rather than biology. Culture evolved, cultural evolution itself evolved, and, as a consequence, the process of cultural evolution began to generate its own fuel. Some cultural adaptations favored others, which favored yet others, and on and on in a runaway positive feedback loop. Cultural adaptations thus grew in sophistication and spread because of their combined force. We'll zoom in on cultural co-evolution involving social institutions soon enough. But first let's get a broader perspective on autocatalytic cultural co-evolution from one of its clearest exponents.

Philosopher Kim Sterelny, in parallel with Heyes, argues that the intelligence distinctive of behaviorally modern humans is not the result of evolved biological hardware—not, for example, a package of innate psychological modules specialized for different domains.³⁴ Rather, our intelligence stems from cultural evolution generating increasingly more sophisticated software—cognitive gadgets—and the complex social instructions for installing and patching this software.

Take the skills needed to create and use tools made of stone, wood, bone, or clay. Initially, humans would have had to gain these skills through trial-and-error experimentation alone. Subsequent generations got a leg up: they gained some of the same advantages that established corporations have over start-ups. At first, they simply had new opportunities to observe their elders and greater access to materials for their own experimentation. But then, as Sterelny says, some elders began to augment learning through teaching.³⁵ That is, they intentionally structured their young's educational environment. Groups that did so gained an edge in cultural competition with other groups. Humans became “evolved apprentices,” as Sterelny puts it, and well-taught apprentices were better able to teach the next generation. Apprenticed

learning thus expanded the range of materials and methods available to produce blazingly novel ideas and technology.

In sum, once our ancestors became smart enough, they were able to engineer a more complex learning environment for their offspring. The next generation was a little bit smarter, which led them to enhance their offspring's learning environment yet again, and on and on and on. In this way, Sterelny argues, autocatalytic cultural co-evolution fueled construction of the modern human mind and the social scaffolding that sustains it.

Darwinian cultural co-evolution explains the existence of modern human minds, but it also explains much cultural diversity. The reason that different human groups have been able to adapt to so many disparate material and social environments—to live in grasslands, forests, deserts, and tundra; to develop hyper-omnivorous diets; to live densely or diffusely, monogamous or polygynous, with or without social hierarchy—was that the high-powered, autocatalytic process of cultural evolution yielded the knowledge and tools needed to solve unfamiliar and heterogeneous problems that arise in the furthest frontiers.

This chapter builds on Henrich, Heyes, and Sterelny, among others, to develop an explanation of behavioral modernity—in a broader framework of the co-evolution of morality, intelligence, and complex sociality. To continue doing that, we need to identify two types of cultural adaptations that are pre-eminent in autocatalytic cultural co-evolution.

Cognitive adaptations include ecological knowledge and know-how; tools and tool-making; apprenticed skills for finding and processing food; and modern languages and other cognitive gadgets. *Social adaptations* include cooperative information sharing; social divisions of labor; moral norms; and social institutions.

No sharp line divides cognitive and social adaptations. Cognitive adaptations are fundamentally social, after all, as we learned in [Chapter 5](#). Nonetheless, cognitive adaptations function primarily to solve problems that demand knowledge, while social adaptations function primarily to solve problems that demand cooperation. Both rest on biologically evolved preconditions, but they are cultural adaptations in the sense that they were inherited and selected for through the transmission of information rather than genes.

Our hypothesis in this chapter is that the engine of recent human evolution is the co-evolution of these two types of cultural adaptations in a

positive feedback loop. In general, the more cooperative a group of humans were, the more they were able to generate complex bodies of knowledge. But the more such knowledge they gained, the more they could engage in complex and lucrative forms of cooperation. Gains in knowledge enabled and thus favored more cooperation, which generated more complex knowledge, which enabled more cooperation, and so forth.

As we'll see, a runaway process of cognitive and social co-evolution seems to be the most immediate explanation for behaviorally modern humans' otherwise baffling existence. The reason we became modern is that cultural evolution generated more sophisticated cognitive adaptations. These adaptations endowed us with more knowledge and allowed us to create all the technology that helps explain our ancestors' dispersal across the globe. None of this would have been possible, however, unless we were able to live in larger, more cooperative groups in which ideas and strategies could be shared and selected. To live in such tribes, we'll argue next, our ancestors needed social institutions.

Social institutions were the most important type of new social adaptation powering cultural co-evolution in stage 3 of human history. In the next chapter, we'll argue that social institutions combined with the moral mind to produce institutional moralities. Eventually, we'll explain how institutional moralities underlie the cultural evolution of social hierarchy and moral progress. This chapter, however, takes the first step of explaining how social institutions arose in the first place. And so, before we develop any of these explanations, we need to know what a social institution is.

6.4. Social Institutions and Tribes

In the philosophical literature, one can find intricate analyses of social institutions.³⁶ Philosophers attempt to explain how institutions and other “social constructs,” while real, are different from categories that have a clear spatiotemporal location in the material world.³⁷ We won't attempt to offer a rigorous, abstract definition of social institutions here. That would take us too far afield. Moreover, all that's needed for our purposes is a broad characterization of institutions along with some paradigm examples.

The core of any given institution is a set of interlocking *norms*—that is, a set of shared and mutually reinforcing social rules about what actions are obligatory or forbidden. These rules are “norms” because they

automatically guide behavior, rest on expectations that others will follow them, and license sanctions for breaking the rules. For example, political institutions consist of a complex web of norms. These norms dictate who is permitted to give orders and who must follow them; how disputes must be resolved and who is licensed to issue verdicts; what actions are crimes and under what conditions, if any, people are exempt from criminal punishment.

It's worth emphasizing that the norms within a given institution are interconnected. That is, they comprise a mutually supporting system. And the reason humans were able to create a relatively coherent system of norms is that they possessed capacities for *consistency reasoning*. As discussed in the previous chapter, this form of reasoning allows humans to interpret norms and render them consistent with one another. In contemporary legal and political institutions, for example, people reason on the basis of precedent. New cases are decided by appeal to old cases, which is critical to interpreting laws and resolving conflicts between them. Thus, like norms, consistency reasoning was a pre-condition for institutions. (Later in this chapter, we'll devote a section to exploring another way morality enabled institutions.)

Institutions, however, are not composed of norms alone. They also include many other social ingredients, including but not limited to *rituals*, *practices*, *identities*, *narratives*, and *ideologies*. Take religious institutions, whose current value is controversial but whose historical importance in human affairs is not. Religious institutions are made up of norms governing prayer, deference, charity, and so on. But they also contain rituals marking important events in the history of the group and its members; practices of communal meals; identities of priests and supplicants; narratives recounting the origins of ancestors; and ideologies about supernatural entities and their power over human affairs in this world and the next.

Before the appearance of institutions like those just described, human populations were limited to small bands. These bands rarely exceeded 150 members.³⁸ Institutions were one of the most important innovations in human history because they knit bands together into tribes—that is, a larger concerted unit. Instead of simply drifting apart, daughter bands remained connected.

Tribes had several competitive advantages over bands in cultural group selection (as described in [Chapter 3](#)). They produced more descendants, extended their range, and inspired other groups to imitate them.

Furthermore, tribes were also likely to win violent contests against bands. Through cultural selection, then, modern humans gained political and religious institutions, along with economic, military, and family institutions. Each has somewhat different functions, as we'll discover in the next chapter. For now, however, let's examine the major functions they have in common.

As we've said, institutions consist of norms, rituals, practices, narratives, and ideologies. These allow humans to coordinate their activities for mutual benefit. Thus, institutions enable large-scale cooperation across a bigger effective population. Cooperation has several different types of benefits, each of which favored the propagation of institutions in cultural selection. One vital benefit is sharing and minimizing risk. For example, members of a tribe help each other out in lean times, during droughts and blights.

Another major benefit of institutions is the way they combine the actual and implied physical force of constituent groups. Bands that are part of the same tribe cooperate in raiding and warfare—along with defense against raiding and warfare. They also have more leverage for negotiating peace with their neighbors. Peace was often as important as domination, since it meant forgoing the risk of violence and death. Peaceful relationships between bands and tribes also eliminate so-called demilitarized zones and open access to the resources available there.³⁹

One more important benefit of institutions was that they helped resolve disputes within the band and within the tribe, in part by creating new moral norms. Yet another benefit of institutions is that they regulate behavior in new and more effective ways—for example, through ideologies that dictate the purposes people should serve, depending on their assigned social role. Institutions police immoral behavior by inculcating internal pressures and imposing external sanctions, both of which discourage violating moral norms and foster apt moral emotions. We'll wait until the next chapter to discuss, in far more detail, the benefits that institutions brought via changes in morality (and to whom exactly those benefits accrued).

The decisive early benefit of institutions, and indeed the key to explaining behavioral modernity, was their effect on the evolution of cognitive adaptations. As Henrich argues, being in a tribe means being part of a bigger “collective brain.”⁴⁰ This ramped up the cultural evolution of knowledge and technology in several ways. If there are more people in a group, more new ideas are generated. Ideas are more likely to spread. More

people also means better filtration, selection, and combination of good ideas.

According to Henrich, more division of cognitive labor is possible too: some members of the tribe are able to spend more time generating and elaborating ideas in a particular domain.⁴¹ For example, some could focus on how to find or process new sources of food, others on how to build better shelters. Still others specialized in training the young. In addition, when information is backed up in the minds of many people, it is less likely to be lost. Finally, in a larger and more integrated group, cultural evolution intensifies selection pressures on not just new information but new psychological mechanisms for processing it (i.e., cognitive gadgets). Thus, by engendering greater sociality, institutions rapidly accelerate the pace and power of cognitive evolution.

To see how sociality drives cognitive cultural evolution, Henrich points out, it's instructive to look at two naturally occurring experiments in which small groups have been deprived of their social connections.⁴²

Inuit peoples lived in Arctic regions of North America for thousands of years. Early in the 19th century, one Inuit population living in Greenland was struck by an epidemic and lost many of its members. As a result, the group lost the expertise and skills needed to make much of its most important technology, including fishing spears and bows. Most importantly, they lost the ability to make kayaks and were therefore isolated from other Inuit. The population declined until they were able, late in the 19th century, to reconnect with other Inuit, at which point they eagerly regained much of their lost knowledge and technology.⁴³

A similar effect of social isolation can be found among Tasmanians, who were separated from the rest of Australia 12,000 years ago when a warming climate led to a rise in sea levels.⁴⁴ Over many thousands of years, tools and other artifacts on the Tasmanian island became simpler and less diverse as the people there were cut off from large and well-populated social networks on the Australian mainland. This natural experiment, along with the case of isolated Inuit, reveals the power of the collective brain. Physical separation can disable the collective brain, but so can separation wrought by the dissolution of social institutions.⁴⁵

At this juncture, we are suggesting that social institutions like family, religion, and politics were the product of Darwinian cultural evolution.

Social institutions knit separate bands together into unified tribes. As a result, they facilitated cooperation through risk sharing, war and peace, better norm compliance, and dispute resolution. Most of all, social institutions created a tribal context that favored the cultural evolution of cognitive adaptations. Thus, humans with tribes had more children and more students and were therefore better able to propagate themselves and their institutional culture. A positive feedback loop developed between social institutions and cognitive adaptations.

Our explanation of social institutions, however, raises a puzzle. On the one hand, Darwinian evolution is nearsighted. That is, it does not accept short-term costs for the sake of long-term benefits. On the other hand, institutions have enormous long-term benefits but severe short-term costs. Trusting people outside one's local band is fraught with risk, not least because the threat of deception is greater. If humans could not trust and respect those outside their bands, they would not be able to cooperate with would-be members of a larger tribe. So, how did tribes get started? In the next section, we'll suggest that religious morality helped kick-start tribes.

6.5. Religious Morality and Tribes

Why would it have been difficult for our ancestors to form tribes? The problem stems from the fact, discussed in previous chapters, that pre-modern humans had a relatively exclusive morality. They did not see members of other bands as fundamentally like themselves. They did not feel others to be moral equals subject to the same moral demands of, say, reciprocity and fairness. The result is that exclusive morality would have made tribal cooperation costly or unfeasible in the short term.

Social institutions are adaptive partly because they re-shape moral emotions and norms, as we'll see in the next chapter. These emotions and norms ensure cooperation and have the potential to consolidate bands into a single tribe. However, for moral norms to work at the level of tribes, people must regard each other as worthy of moral consideration, people to whom their norms apply. And the problem, of course, is that pre-modern humans would have tended to treat those outside their local band with suspicion and hostility.

Some limited cooperation between bands has long been necessary. For one thing, well before living in tribes, humans had to exchange mates or

else suffer the costs of inbreeding.⁴⁶ Males or females often left voluntarily to join another group (sometimes with kin).⁴⁷ For that to happen, a cessation of hostility and mistrust was necessary. Humans also traded objects and ideas with other bands, due to strong incentives to acquire needed resources. In addition, they also formed military or political alliances. But the motives for all these activities were purely instrumental. So, these limited forms of cooperation did not require seeing those outside the band as moral equals.

Exogamy, trade, and military alliances initially brought people from different bands into regular contact and fostered some degree of mutual dependence. This made other bands more familiar and less dangerous. Without these strategically useful links between bands, modern tribes would not have emerged. However, something further was needed to expand cooperation so as to include those living in other bands. Our hypothesis is that this extra ingredient came in the form of shared religious morality, presaging the appearance of full-fledged religious institutions (discussed at length in [Chapter 7](#)). Further empirical research may support a different explanation. We offer this theory tentatively in the spirit of an inference to the best explanation of the evidence.

Like family, religion can provide humans with a profound sense of belonging and inherent worth.⁴⁸ Though religion involves faith, it is not just a matter of belief. It is as much about belonging to a particular community.⁴⁹ This community has much in common: a real or imaginary history; communal rituals; forms of prayer and worship; narratives about deities and heroes. All of this contributes to a religious community's shared "moral identity." Thus, we who share a religion are of a single flock, children of a common parent. When we are one people, cooperation is compulsory. Refusal to cooperate is betrayal.

We propose that through religious faith, bands became robust, expanded in size, and gave birth to daughter bands. Those bands, through their shared faith, were allies. Successful in turn, they generated more bands with the same shared faith, and so on. Religion was passed on many times through cultural inheritance. Eventually, bands were able to expand without breaking up, since shared religious faith allowed strangers to trust each other and share the same community. Indeed, separate bands that had grown apart culturally might have come together to share the same geographic area and resources, participate in shared rituals, and protect each other.

Through religion, people who are diverse in other ways can be united under a common moral identity, often through descent from a common mythical ancestor. One band may speak another dialect, dress differently, or eat an unfamiliar diet. However, once people come to share a religion, other differences between them pale in importance. What matters is their common allegiance to a way of living, thinking, and feeling that provides them with a deep sense of belonging, meaning, and purpose.

Even for the religiously faithful, of course, self-interest matters. Virtually every human seeks a sense of belonging and acceptance for the sake of their own happiness. They prefer rewards to punishment, whether now or in the promised hereafter. But religious morality also leads people to accord cooperation more than just instrumental value: it is valued intrinsically. A principal way this happens is that religious norms and practices are infused with moral significance. Thus, moral feelings of guilt and resentment ensure that people stay true to divine commands and thus true to each other.

Religion and morality intersect in another way—through moral reasoning. As we know from [Chapter 5](#), humans extend norms from old situations to new by deciding whether there are any morally relevant differences between the situations. Once others outside our band share the same moral identity, then the fact that they are superficially different from us is no longer morally relevant. It would be inconsistent to exclude them from the scope of our feelings and norms. In this way, then, the moral circle can expand. Moral reasoning cannot create larger moral communities by itself, but it does have the power to do so when combined with new moral identities fashioned by religion.

For example, I may be highly suspicious of people in the next band, given their odd clothing and ways of speaking, not to mention the bizarre things they teach their children. But when I focus on their faith and the sacrifices they make because of their commitment to the same religion, other differences appear inconsequential. To be true to my moral outlook, I must treat them no differently than I would treat my neighbor. Within the context of our shared religious faith, they are moral equals.

If the people in another band are strangers, shouldn't I be afraid of them? Not if I think that people of the same faith are protected from external threat by powerful spiritual forces in the form of gods or other superior beings. The adaptive plasticity of human minds allows the moral circle to expand

when religion promises believers security from external harm. Religion is tailor made to remove fear of those who would be outsiders except for their faith—but also to heighten fear of those who do not share the faith. Believers become part of us, of who we are, as moral equals, and distinct from the true outsiders, those who lack our faith and are not to be trusted.

Think again of ancient practices of trading with people outside my band, fighting alongside them, teaching and being taught by them, and intermarrying. Once we join a larger religious tribe, these practices become no different, morally speaking, from the same activities when they take place within my own band. All of these practices were long seen to have instrumental benefits. After being united by religion, they are also supported by moral emotions and norms and thus valued intrinsically. Moral reasoning ensures that we act and feel morally toward distant members of our tribes. These people, once outsiders, are now felt and believed to have moral worth.

One reason that moral reasoning and shared religious identity could link bands into tribes was that our moral minds are flexible. Moral emotions and norms tend to be exclusive, limited to “us” rather than “them.” Early religion did not erase this distinction, but it produced a shift in who counts as “us.”⁵⁰ Thus, while our ancestors expanded their moral boundaries, the boundaries themselves persisted.

With the advent of tribes, indeed, moral boundaries became more rigid. It used to be that we needed to be flexibly cooperative with “them,” if it was to our advantage, engaging in such things as mate exchange, trade, and temporary alliances. However, once ancestral humans could rely on other bands who were members of the same religiously unified tribes, they no longer had to be so tolerant toward other bands who lacked tribal membership.

Outsiders were seen as “less than human” and therefore unworthy of moral consideration.⁵¹ Thus, most people throughout history have used a label for their own tribe that was synonymous with “human.”⁵² Members of other bands and tribes were thought of as animals or sub-humans that could be enslaved, killed, or left to die. And so, religious morality was double-edged: we became kinder to humans within our tribes, but we also became crueler to others who happened to live outside our tribal boundaries.

6.6. Tribes and Behavioral Modernity

The big puzzle we introduced in the opening of this chapter is about how our ancestors became behaviorally modern. How did Sapiens start to become technologically inventive? How did they become cognitively and behaviorally so much like us, their descendants? How did they spread around the globe and displace other human species? We're now finally in a position to provide a comprehensive answer to these questions.

To begin, it will help to consider a popular but mistaken solution to the big puzzle. A standard story about behavioral modernity was first articulated by Richard Klein and is often repeated with only slight variations.⁵³ The standard story is that roughly 100,000 years ago biological evolution made humans unique by enhancing our neural hardware: we gained a novel and unique capacity for "symbolic thought."

This capacity is supposedly what enabled our ancestors to invent representational art, including paintings of the sort found in many caves in Europe. Symbolic thought is also claimed to have driven the invention of new technology. We managed to colonize the world and displace other human species, the standard story says, because our species alone was blessed with the gene-linked capacity for symbolic thought.

The standard story is dubious.⁵⁴ First, it relies on an implausible theory about the biological basis of intelligence. In biological evolution qualitatively new, innate psychological abilities are not generally the product of a single or even a few genetic mutations. They depend on broad expansion and reorganization of the brain. We don't see any neuroanatomical record of that after the last speciation event in our lineage 300,000 years ago.

Second, recent archaeological evidence seems to put a nail in the standard story's coffin. Radiocarbon dating on paintings in three separate caves in Spain places their origin 60,000 years ago.⁵⁵ Our species had not yet made it to Europe by then. So, it would seem, the paintings in these particular caves must have been produced by Neanderthals, the only human species known to be living in the area. It follows, then, that the capacity for symbolic thought was not unique to us and cannot be the secret to our success. Who knows? Sapiens might well have learned how to paint from their cousins.

There is a third and even more severe problem for the standard story, indeed for any theory that attempts to explain the evolution of behavioral modernity through biological or bio-cultural evolution. Humans started to become modern 100,000 years ago. However, recent genetic evidence shows that Sapiens populations began to diverge well before then. Humans in sub-Saharan Africa would then lack the secret genetic trait that supposedly makes the rest of humanity different. The problem, then, is not simply that the standard story invites racist classification of humans into superior and inferior “breeds,” but that empirical evidence shows all humans to be capable of modern thought and behavior, not just those biologically descended from the first moderns.

We don’t deny that behaviorally modern humans had the capacity for symbolic thought. Nor do we deny that this capacity played a role in the rise of behavioral modernity. Like most other interesting human traits, though, it probably evolved gradually rather than suddenly. Moreover, symbolic thought must have pre-dated modernity by several hundred thousand years.

Likewise, other capacities were necessary conditions for behavioral modernity: not just symbolic thought but also language and reasoning, cooking and cooperative parenting, moral emotions and norms. However, there is a vast time lag in our history between the appearance of all of these innovations and behavioral modernity. Something else was necessary too.

We have a better explanation than the standard story. After our species appeared, culture slowly made humans smarter. Thanks to new, cooperative social organization, cultural evolution itself evolved until it became high-powered. Humans became better at generating new information and better too at selecting useful information. High-powered cultural evolution began to generate new cognitive and social adaptations that together allowed human populations to expand into new frontiers.

Cognitive and social adaptations fed one another. Two social adaptations were critical in this autocatalytic process. One was religious attitudes and practices that gave people a shared moral identity and expanded the scope of their moral emotions, norms, and reasons. Another critical adaptation was social institutions that knit small bands together into large tribes through interconnected norms, rituals, practices, narratives, and ideologies. Religious morality and social institutions facilitated large-scale cooperation, particularly the cooperation needed to generate new ideas, technology, psychological capacities, and a fully modern human mind. In this way, then,

cumulative, autocatalytic cultural evolution—between religious morality, social institutions, and cultural intelligence—led to behavioral modernity.

We are now the only human species left. We de-throned Neanderthals in Eurasia, but not necessarily because we were innately more intelligent.⁵⁶ Anatomical evidence, at least, does not show that Neanderthals had smaller brains than us. Indeed, their brains were slightly larger. Despite decades of bad press, there is little reason to believe that Neanderthals were biologically inferior to Sapiens.

Archaeological findings do suggest, however, that Neanderthal populations were sparser and less dense.⁵⁷ Compared to the crowded and ecologically diverse valleys of East Africa where modern humans arose, Eurasia is vast and relatively uniform. Like isolated Inuit and Tasmanian populations, Neanderthals had fewer social resources to produce ideas and technology effective for dealing with various ecological challenges, including increasing climatic variation, dwindling prey populations, and a flood of dangerous immigrants from the south.

Neanderthals were enough like us that we could at least occasionally mate with them. But we had a shared religious morality and social institutions that they lacked. That is, we had evolved a rich culture for sociality that enabled us to live in tribes and that drove cognitive cultural evolution. Ultimately, that may have been what made the difference.

6.7. Summary

What made humans unique in the animal kingdom was the potent influence of a new kind of sociality. Those smart enough to gain and share knowledge would together profit from a body of information that can accumulate much more quickly and efficiently than the fruits of natural selection or solo learning. Initially married to biological evolution but eventually decoupling from it, cooperative culture made our ancestors ultra-social and hyper-intelligent.

Gene-culture co-evolution explains why Sapiens is smarter than other great apes, including ancestral human species like Erectus and Heidelberg. But it is solely because of culture that our recent ancestors were smarter than the Sapiens populations that existed for most of its history. Humans started to become behaviorally modern without undergoing major

neuroanatomical changes. The accumulation of social plasticity was underpinned by cultural inheritance alone.

This chapter began by showing how cultural evolution itself evolved until it became high-powered. Humans acquired not just larger and more complex bodies of information. They also acquired new and more sophisticated cognitive gadgets for processing information. This meant that modern humans could use their greater ingenuity to devise adaptive cultural mutations, their linguistic abilities and teaching practices to transmit information more faithfully, and their capacities for social reasoning to sift and synthesize information. And so, powered by human intelligence, cultural evolution became even more productive and even more selective. It generated sophisticated adaptations, and did so much more quickly, because intelligent modern humans had begun to actively shape the processes of cultural evolution.

High-powered cultural evolution was also autocatalytic. For example, evolved teachers could train their students to become better teachers themselves, again and again. In addition, more cooperative groups generated wider knowledge, which favored more cooperation, which generated even wider knowledge, which favored more cooperation, and so on and so on.

The hypothesis developed in this chapter is that humans are behaviorally modern because cultural evolution became high-powered within cooperative communities. Sapiens populations evolved from living only in bands to living in larger, interconnected tribes because they gained social institutions and a moral and religious identity that allowed them to see each other as moral beings deserving equal consideration. In these large tribes, social institutions and cognitive adaptations precipitated modern thought and behavior.

In these large tribes, as well, the moral mind and social institutions co-evolved to produce something we'll call "institutional morality." In the next chapter we'll explain how institutions shaped the moral mind after modernity, with the rise of agriculture and settled societies. We'll have to wait until the next part of the book to think about whether any social change could amount to progress (or regress).

7

Institutions

Millions of years ago, the Earth cooled and dense forests in Africa began to shrink. Our ancestors reacted to climate change by descending from the trees, walking on two legs instead of four, and occupying new ecological niches at the perimeters of the forest and across the open savannah. No longer occupied with climbing or four-legged galloping, our hands were now free to use the objects we found as tools and, eventually, to fashion them ourselves.¹

Life on the open ground entailed fresh dangers. Our ancestors were relatively easy prey for lions, hyenas, and other vicious carnivores, most of whom are now extinct.² Monkeys and apes often elude predators by scrambling into treetops.³ We no longer had the opportunity, or the ability, to take advantage of these escape routes. Like other animals menaced by predation, we found safety in numbers.⁴

Our groups swelled. As a result, the number of interpersonal relationships between group members ballooned exponentially and our social worlds grew immensely more complex. Large, socially complex groups enhanced possibilities for violence, but they also created new opportunities for cooperation. Natural selection favored individuals and groups who could cooperate effectively and manage conflict. Thus, humans worked together to defend themselves from predators, aggressively defeat neighboring groups of primates, suppress tyrants, find meat and other food, and raise their offspring together.

Group size, however, is not the only determinant of complex social structure. Another is the social division of labor within a group.⁵ Once individuals were able to perform a plethora of roles, new forms of social organization were possible and the value of cooperation surged. Thus, cultural selection favored cooperative groups in which members learned

from one another. As a result, cultural systems of inheritance began to transmit more and more information. Diverse and specialized bodies of knowledge were inherited within human communities, as elders apprenticed the young.

Part III of this book began, in [Chapter 6](#), by hypothesizing that a newer and more complex social structure was forged by religiously inflected social institutions, which were the secret ingredients of behavioral modernity. The original and primary function of social institutions was to create tribes and thereby harness the collective brainpower of an even bigger, more diversified population. Institutions were favored by Darwinian cultural selection because they magnified the cognitive capacities of human groups vying against one another. And so, behaviorally modern humans arose 100,000 years ago because a new, institutional social structure co-evolved with moral culture and culturally acquired intelligence.

Human communities structured by social institutions would transform the world. To begin with, newly modern humans colonized the rest of the planet and drove other large mammals to extinction, including other human species. Then, after the end of the last ice age 12,000 years ago, some groups invented methods and tools of agriculture.⁶ These innovations spread. Eventually, no later than 6,000 years ago, agricultural techniques radically increased food production and stabilized settlements with high population density.⁷ Over the course of eons, hunters and gatherers gradually gave way to farmers and herders.

This transition was not necessarily a blessing. Nor were new lifeways always adopted willingly. Some nomads probably welcomed settled life. Those who didn't might have been forced to submit or else be exterminated. Agriculture fostered social institutions that helped sustain new and profound divisions of labor.⁸ Many novel occupations were not directly implicated in the old and essential roles of foraging, fighting, and childrearing. These occupations included roles in political and religious leadership.⁹ They were filled by people who gained disproportionate benefits from the subjugation of plants, animals, and other humans.¹⁰

In [Chapter 6](#) we touched on religious and political institutions. But these weren't the only types of institutions that behaviorally modern humans created. Nor were they necessarily the most important. There were, in total, five main types of social institutions in early modernity. Religious and

political institutions, along with family, military, and economic institutions, are uniquely important. Unlike other types of institutions, they have had a longstanding presence in modern history and made the biggest impact on human lifeways.

Present-day societies have inherited the five types of institutions that arose in early modernity and flourished in concert with agriculture and urbanization. These institutions were selected for because mutually beneficial cooperation led to success in intergroup competition. However, as we'll see in this chapter, they were also selected for because domination by some individuals over others likewise led to success in intergroup competition.

On the one hand, as groups grew in size and division of labor, cultural selection favored institutions that were able to cope with myriad problems of interdependent living that arise in large and diverse populations. On the other hand, the dynamics of cultural evolution also favored institutions that privileged people occupying elevated roles in social hierarchies. After agriculture, especially, humans were not quite so vulnerable to the vicissitudes of nature. Cooperation was still necessary for survival, but domination emerged as an increasingly winning strategy.

In [Chapter 6](#), our topic was the human tribes that arose late in the Paleolithic era. In [Chapter 7](#), we now broaden our focus to include the Neolithic appearance of large-scale human societies with more elaborate institutions and marked by severe social hierarchy. Again, since we are dealing with a cultural history that leaves only faint traces in the historical record, our Darwinian explanations must be more speculative than those offered in [Parts I](#) and [II](#) of the book. And because this cultural history is so vastly complicated, we will linger only on highlights that are central to the evolution of morality.

Whereas the previous chapter explained the origins of institutions, this chapter turns to the evolution of morality under the influence of institutions. We'll develop empirical hypotheses about the evolution of morality from the beginnings of modernity through revolutions in agriculture and urbanization. In addition, we'll develop a psychological theory of *institutional moralities*. Institutions shaped the moral mind for large-scale societies that were large and socially diverse—but also deeply hierarchical and frequently violent. At this point, then, human morality was no longer quite so ennobling.

As we know from [Parts I and II](#) of the book, humans are morally different from other cooperative animals in that they have a wider set of emotions, follow norms, and reason together about right and wrong. However, this isn't the whole story. Human morality is different in another way too, different not just from that of social primates but also other human species that preceded us and even pre-modern Sapiens. Virtually all living and dead members of our species have moral minds, but only behaviorally modern humans possess institutional moralities.

Institutions allowed human morality to scale up. Under the control of social institutions, moral emotions, norms, and reasons enabled even more complex social structure. Thus, as we saw in [Chapter 6](#), early religion crafted a moral identity that extended the boundaries of exclusive morality, from the local band to the wider tribe. In [Chapter 7](#) we'll explore in detail how institutions continued to extend the reach of morality and yet also introduced relationships of domination and subordination. We'll argue, too, that institutions created new categories of moral norms, cultivated new moral emotions, and generated prodigious moral diversity.

Much of this chapter will be spent on three tasks: (1) describing the structure and function of the five main types of institutions, in succession; (2) explaining how they re-shaped the moral mind, especially through new norms of authority and purity; and (3) unpacking their consequences during major shifts in human history during the late Paleolithic and early Neolithic. As we'll see, each institution evolved by benefiting not just the group as a whole but also certain individuals within it—that is, through cooperation as well as domination. As a consequence, institutional morality serves purposes both noble and nefarious. We'll begin with the oldest institution of all, the family.

7.1. Family Institutions

Like other cooperative animals, humans have strong feelings of sympathy, loyalty, and trust that bind them emotionally to kin. Unlike other animals, however, they also have norms of kinship that create complex social arrangements between family members.¹¹ Family institutions, unique to modern humans, evolved in part because they enhanced the power of moral emotions and norms in partnerships between relatives and mates.

The disposition to pair-bond is innate in humankind.¹² However, family institutions created a formal system of marriage, which reinforces pair bonding and provides a more reliable guarantee of paternity.¹³ Fathers therefore had an incentive to become more active caregivers, a boon to their children and to the other humans who would eventually depend on the adults these children would become. Likewise, paternal relatives engaged in more childcare. Family institutions also fixed whether clan residence and descent were patrilineal or matrilineal,¹⁴ managed the necessary task of exogamy,¹⁵ and determined whether monogamy or polygamy was permissible,¹⁶ along with procedures for acquiring additional mates.

Beyond marriage, family institutions structured relationships within a clan by creating a system of extended kinship. We had siblings and parents already. We then created many other secondary family relationships through which moral feelings flowed. In many human groups throughout history your “siblings,” “cousins,” “aunts,” and “uncles” were not just those people directly related to you through parents or grandparents.¹⁷ The concepts were applied more broadly, enlarging the scope of feelings toward members of the clan. Most importantly, maternal aunts¹⁸ and grandmothers¹⁹ were mobilized as secondary caregivers. Thus, family institutions extended the scope of kinship norms, which knit a broader and tighter web of familial relationships.

The main function of extended kinship systems is to provide a social network that cultivates care and cooperation. The bigger the family, for example, the bigger the safety net. Perhaps the most important reason that extended kinship systems evolved is that they provided a cultural framework for alloparenting, far more structured and extensive than what had existed in other human species and pre-modern Sapiens. Without new alloparenting arrangements, women would not have been able to bear children continually every two or three years, as they often did in most known societies until very recently.²⁰

Family institutions are probably humanity’s oldest social institution. For one thing, they do not require cooperation between strangers who must overcome natural feelings of mistrust. Furthermore, their functions are the most basic. They allowed our ancestors to produce more children, raise more children to maturity, and bring them into a world in which they had

many kin to rely on. Children gained more siblings and cousins who could be relied on to school them in their group's cultural inheritance.

Family institutions were selected for at the very beginnings of behavioral modernity because they helped produce and raise to adulthood a new, encultured generation that was ready to live interdependently with others, including those outside their clan. Thus, family institutions were necessary pre-conditions for other institutions to arise and persist. With higher fertility, more numbers, and a bigger collective brain, behaviorally modern humans bound through marriage and extended kinship were able, shortly after 100,000 years ago, to leave their neighborhood in East Africa, pushing back Erectus, Heidelberg, and other human populations living just across the border from home.

Because different kinds of social arrangements can enhance cultural fitness, however, family institutions were not purely cooperative. They also enforced a hierarchy between the sexes, creating new divisions of labor and power within the family. Men and women were assigned different roles: men gained authority within the family in most tribes and subjugated women to the interests of their mates and the wider family.²¹ The hierarchical structure in families was consequently exported to other institutions.

After embodying a relatively egalitarian social ethos for hundreds of thousands of years, cultural evolution returned us to more intense social hierarchy via institutions. In doing so, institutions created a new cluster of moral norms (discussed briefly in [Chapter 4](#)): *authority* norms command people to follow the orders and expectations of people who occupy positions of high status.²² In the family, authority norms render people obedient to older and wiser family members. Authority structures help coordinate behavior, but they do so potentially at great cost to the interests of people subordinated, often and especially women. Family institutions are thus the root of the patriarchy.

Norms of authority, however, are not limited to the family. They can be found in religious groups, political parties, and economic organizations. The contents of authority norms varied with the institution in which they were embedded. Nonetheless, across institutional contexts, many authority norms became moralized because they were tied to moral emotions such as guilt or shame, because they gained priority over merely conventional norms, and because their power to motivate obedience—whether to fathers, priests, or

politicians—was regarded as objectively independent of opinion. Institutional authority becomes especially clear in religion and in the military, as we'll see in the next two sections.

Before moving on to other types of social institutions, it's worth emphasizing two main ways family institutions shaped the moral mind. One central function of family institutions is to provide a social support structure for mothers that encourages them to rear children over an extended period of dependence and prepares them to succeed in their tribe. Caregiving depends on moral emotions of sympathy and loyalty and moral norms of harm and kinship. Family institutions extend the scope of these emotions and norms by weaving a bigger and tighter family web, one that includes fathers, cousins, aunts, and grandmothers.

In addition, however, family institutions also created new norms of authority, which engendered hierarchical relationships between the caregivers who must divide labor to look after children, particularly between men and women. Thus, the power of family feelings and the scope of family obligations, as well as the gender hierarchy within families, in modern humans such as those that exist across the world today, are not purely biological or even bio-cultural.²³ They are institutional products.

7.2. Religious Institutions

An extensive literature attempts to bring a Darwinian perspective on religion. For example, religion seems to have found a niche in humans because it tapped into other evolved psychological capacities. Humans are oversensitive to evidence of agents acting in the world so that they don't miss any social threats and opportunities. Humans admire and defer to prestigious figures. They also experience moral feelings of respect and reverence for forces that represent the good and the right. God is thus an idea that was designed for humans: ever present, all-powerful, and perfectly just.²⁴

Religious institutions created a social hierarchy in which God and spirits are the ultimate bearers of power, prestige, and authority. Just below are priests and shamans with more direct access to the supernatural. At the bottom is everyone else, who must rely on religious authorities if they are to commune fully with the divine.²⁵

Because religious identity was central to the origins of tribes, religious institutions are unique in the degree to which their norms, practices, ideologies, and so on have been intermingled with other institutions. Thus, religion was used to justify various political, family, and military arrangements, via moral norms of authority, and it persisted in part because of its co-evolutionary dynamic with other institutions.²⁶

Religious institutions also have two main inherent functions, however, independent of their ties with other institutions. First, they introduce a novel and fantastically effective method for policing moral norms.²⁷ If God or other supernatural entities are perpetual witnesses, then immoral behavior cannot go unpunished. Thus, the threat of immediate or eternal punishment (karma or hell) helped foster the moral behavior necessary for large-scale cooperation. Religious norms were readily treated as moral norms because they did not depend on the opinions of mere mortals. Dictates of powerful and prestigious gods, these norms were regarded as objective and took priority over other, merely conventional norms.

Religion also has a second main function, as we saw in [Chapter 6](#). Religious customs and rituals create a sense of community that strengthens social ties and a sense of shared identity within a tribe. Loyalty to one's tribe is of a piece with loyalty felt toward one's family. Moral emotions and norms, extended by consistency reasoning, reinforce allegiance to the customs and rituals that define one's religious identity. One cares about these things in part because, through deep empathy, those who share one's identity care about them too. One feels trust, sees things from the point of view of the others in the tribe, and treats the community that defines one's identity with respect and reverence.

Because religion was so central to early tribal identity, it's likely that religious institutions are very old. We know that humans regularly buried their dead before they became behaviorally modern.²⁸ This suggests the basis for a set of religious beliefs and practices associated with death. For this reason, it's plausible that religious institutions were among the first critical forces that bound small groups together into tribes.

Some humans crafted myths of their tribe having been created by the same supernatural beings or forces, that chose them as their favored people. Shared ancestry from the divine would have fostered seeing one another as extended kin too. Thus, together with family institutions, religious institutions deepened moral identities that were necessary for integration

within the tribes that spread into new ecological niches across Eurasia and the other continents beginning 70,000 years ago.

Religion made some things sacred. The flip side is that religion also made some things profane. Religious institutions thus gave rise to another category of norms (like authority norms, also discussed briefly in [Chapter 4](#)): *purity* norms forbid tainting or violating things that are sacred.²⁹

Purity norms probably originated in family institutions as prohibitions against incest. But religion expanded purity norms about the body. The “impure” and therefore unacceptable can range from ingesting certain kinds of foods like shellfish or pork, sexual activities that do not serve procreation, menstruating women occupying holy places, and premarital sex. One reason purity norms evolved is that they helped keep people healthy and free from disease in populations dense with humans and other animals.³⁰ Another is that they helped men in positions of authority control the bodies and reproductive labor of women.³¹

Moral norms can command brutal sanctions for violations, including death. Thus, authority norms sometimes command executions for citizens who disobey leaders, soldiers who disobey officers, and women who disobey their husbands.³² Purity norms can even obligate people to kill daughters or sisters who are innocent victims of rape.³³ What’s striking, and perhaps surprising, is that brutal sanctions such as these are morally motivated.³⁴ That is, people sometimes inflict violence on their family and fellows not in spite of morality but because of their moral norms and feelings, cultivated by the institutions that structure their tribes.

Purity norms were so powerful in early religious tribes that they expanded our moral emotions. We gained awe and reverence for the divine. We also gained repugnance and revulsion for violations of spiritual purity. Curiously, the emotion of disgust, while originally non-moral, seems to have been co-opted by purity norms.³⁵ The main reason is that disgust motivates withdrawal and distancing.³⁶ Thus, at the outset, disgust helped people avoid sources of disease and infection. Once co-opted by morality, though, disgust also helps people follow norms that designate impure activities as disgusting. People feel disgusted by such purity violations as soiling the national flag, eating human flesh, and “deviant” sex.³⁷ Religion, in the latter case, is the source of purity norms about the body that are sexist and/or homophobic.

To sum up, religious institutions transformed the moral mind in several ways. They allowed humans to see others as having a shared identity and therefore as being worthy of trust and respect. The spoken or written word of religious authorities has often established what a tribe should value and what rules it must observe. As we've seen, religious institutions expanded the domain of moral authority to include God and religious leaders. They also created new purity norms and new moral emotions of reverence and revulsion.

In one sense, morality is prior to religion. As Plato famously observed, people tend to think implicitly that God commands things because they are morally right and not vice versa.³⁸ Throughout the world, however, religion plays a major role in the development of institutional moralities. It expands moral norms and feelings while at the same time drawing sharper moral boundaries, separating brethren from infidels. Religious norms of authority and purity can sometimes take priority over other moral norms, such as harm and fairness. As we'll see next, institutional morality enhanced solidarity and violence in other ways too.

7.3. Military Institutions

The recent historical record gives us every reason to believe that the much earlier migration of behaviorally modern beings into Eurasia and across the continent was violent. Success in intergroup competition depended on being better equipped to survive in challenging environments. But groups likely also succeeded by expanding territory, seizing resources, killing men, and abducting women. Even groups that didn't prize these savage ends needed to defend themselves against groups that did. The bona fide threat of intergroup violence was often necessary for sturdy diplomatic relationships.

Of course, violent conflict between groups is much older than behavioral modernity, much older indeed than our species and even our genus, dating back at least to our last common ancestor with chimpanzees.³⁹ Among behaviorally modern humans, however, military institutions engendered new and more effective methods of warfare and raiding.⁴⁰ Military institutions evolved because they facilitated violent intergroup competition.

Military norms, rituals, and practices enabled groups to take fast, coordinated, and flexible action. Training regimens disciplined soldiers and enabled them to act in concert. A key innovation was a more rigid,

hierarchical chain of command.⁴¹ Generals at the head of a military institution might also be political or religious leaders. A stable authority structure of ranks within ranks enabled organized military movement. Norms of authority required obedience to religious-cum-military leaders, the oath to them treated as morally sacred. Violating these authority norms often invited brutal sanctions. Executions imparted a lesson to others.

It is important, however, not to exaggerate the importance of hierarchical command structure. Numerous studies indicate that the primary motivation of soldiers is toward their immediate comrades in their unit, even if it is the lowest unit in the hierarchy.⁴² They are bound together by ties of loyalty and reciprocity. In addition, soldiers feel respect for the autonomy of their comrades to figure out what is best for the rest when life-or-death decisions have to be made quickly, being attuned to the immediate circumstances without direction from higher in the command structure.

The effectiveness of soldiers depends on their training and the quality of their orders but also on the moral structure of their relationships within the unit. Officers of the same rank, in the next level up in the hierarchy, similarly must rely on each other in coordinating their decisions. Their ties to each other are secured by moral bonds. The command structure plays an essential role in how effective the soldiers are, but it has to be complemented at each level by moral relations between the soldiers, which rest on feelings of trust and respect, norms of reciprocity, equality, and fairness. Otherwise the hierarchy is worthless.⁴³

Through solidarity as well as social hierarchy, military institutions magnified the power of large groups to defend and capture territory and exterminate rivals.⁴⁴ Coordinated military operations could take place over extended areas and times. Generals and other officers had the authority to make strategic decisions, design tactics, and order soldiers to follow commands without asking questions. Early military institutions probably had the effect of reducing diversity within the *Homo* genus. That is, relatively well-functioning militaries helped behaviorally modern humans seal the tragic fate of other human species 30,000 to 40,000 years ago.⁴⁵

Let's pause now, in the middle of our study of the five main types of institutions, to clarify how these institutions evolved. Remember, from [Chapters 3](#) and [6](#), how cultural selection works at the level of groups. One group may survive for longer than another group. They may produce more

daughter groups. They may extend their territory to occupy a wider range. One way this happens is by defeating other groups through warfare and raiding. However, their culture may also spread in ways that do not entail higher rates of reproduction. Thus, successful groups tend to be better at attracting immigrants who absorb their culture. They are also more likely to inspire other groups to imitate them and adopt their ideas, norms, and practices.

Institutions were favored in cultural group selection for two different reasons. On the one hand, as was the case for much of our evolutionary history, groups can gain a selective edge through mutually advantageous cooperation. Whether social interaction takes the form of a stag hunt or a repeated prisoner's dilemma, cooperation is preferable to going solo for the individuals involved. Individuals benefit. The group as a whole benefits too. Thus, institutions spread in part through processes of cultural selection that were to the benefit of individuals within the group.

On the other hand, though, some groups gained an edge over others not through mutual advantage but as a result of some individuals dominating others. For members of a group to coordinate their actions, it's often necessary for one or a few members of the group to gain the authority to make decisions for the group as a whole. This may be benign, as when wiser and older leaders act in the group's best interests. But it may also be nasty when family or political leaders take advantage of their high status to exploit others. Thus, institutions spread because groups were often culturally successful at the expense of some of their individual members.

So far in this chapter, we've focused on the three types of social institutions: family, religion, and the military. Each of these institutions arose and persisted by endowing groups with more cultural fitness. Groups succeeded when they enabled cooperation within tribes and when they gave some members of the tribe more power and control over others. Thus, we've suggested that the earliest family and religious institutions were critical in generating the solidarity that allowed behaviorally modern humans to leave Africa and colonize other parts of the world. Early military institutions helped modern humans violently defeat the competitors they encountered along the way.

Each institution was able to regulate social behavior because it interfaced with moral minds now enhanced by norms of authority and purity. For example, family institutions amplified feelings of loyalty and

norms of kinship and introduced a new category of authority norms between men and women. Religious institutions fostered more inclusive applications of moral emotions and norms while also helping to construct purity norms that designated some activities and some people as impure. Military institutions regimented old norms of reciprocity and new norms of authority for the sake of more effective intergroup violence.

Next, we'll turn our attention to two other important social institutions: economic and political. We'll explain how these institutions—like the family, religion, and the military—re-shaped the moral mind. We'll also highlight the important roles that economic and political institutions played in the agricultural and urban revolutions that produced large-scale societies later on in modernity (though still in pre-history), well after the pervasive colonization of other continents.

7.4. Economic Institutions

Social divisions of economic labor pre-date our species by a long time.⁴⁶ Humans have always had different occupations, some members more heavily involved in childcare, or hunting animals, or processing food, or creating tools.⁴⁷ Economic institutions, however, created a more complex social structure for organizing the production and distribution of resources and services.

Economic institutions also enabled a higher degree of specialization by coordinating the people involved in learning and performing a given occupation. The full swing of behavioral modernity 50,000 to 75,000 years ago marks an outburst of diverse and innovative forms of technology. To generate all of this technology and the knowledge to use it, humans needed elaborate cultural systems for educating the young to learn specialized skills and for organizing labor and tools in an economic order.

Economic institutions expanded in complexity once other institutions for enhancing cooperation burst onto the scene. Increasingly, they also incorporated a hierarchical division between management and labor through norms of authority. As with military institutions, however, hierarchies are effective only when those workers or managers who must cooperate with their “equals” at each level of the hierarchy are bound to a significant degree by moral ties of reciprocity and equality.⁴⁸

Like the other institutions, economic institutions produced a diversity of ways to interpret and apply the core moral norms, such as fairness, reciprocity, and autonomy. For example, authority is pervasive in economic institutions, but a significant degree of autonomy is also sometimes present. By contrast, there would be almost no freedom among those forced into slave labor. In some societies, authority norms led people to believe that slaves had a moral obligation to serve their masters. Moral ideology could even lead some slaves to embrace beliefs about their own subordinate status. Thus, interpretations of authority and autonomy depended on the nature of the economic social order within which they operated.⁴⁹

Behaviorally modern human beings increasingly devoted more time and effort to one particular occupation: trade.⁵⁰ Neighboring bands and tribes were likely to have access to important food, tools, and other resources that a group could benefit from but could not acquire on its own. We find archaeological evidence of material trade over wide distances even before Sapiens evolved. However, trade grew in importance because modern human beings were better able to tap into its ability to benefit both parties, unlike zero-sum warfare. Trade set the conditions for culture to spread from group to group through imitation and assimilation.

Cultural trade is especially profitable because ideas can be traded without themselves being relinquished. As Thomas Jefferson once said, “He who lights his taper at mine receives light without darkening me.”⁵¹ The trade of ideas, skills, knowledge, technology, and all the other elements of culture undergirded revolutions in agriculture and urbanization. Economic institutions thus helped these revolutions unfold.

Consider the critical period beginning 12,000 years ago, when the last glacial period ended.⁵² Vast ice sheets in the northern hemisphere melted. Sea levels rose. Warming climates enabled humans in the Fertile Crescent, China, and Central America to find new ways of feeding themselves. The domestication of plants and animals began without forethought, as seeds were dropped on the ground accidentally and prey rounded up for later butchering.⁵³

Humans turned agriculture into a revolution, however, through ingenuity and insight. Tens of thousands of years of high-powered cultural evolution had prepared them for the opportunity. Modern humans had long experience in developing and adapting their technology. New economic norms and

practices enabled modern humans to develop technology for sowing crops⁵⁴ and managing livestock.⁵⁵ Among the livestock were horses that were soon tamed and harnessed. After the invention of the wheel, horses were then trained to pull carts and move trading goods, migrants, and armed warriors.⁵⁶ Economic institutions were thus critical in allowing new agricultural techniques and technology to flourish. Institutions also allowed these innovations to spread.

Agriculture seems to have arisen only in a few select areas of the world where the conditions were especially ripe and nearby plants and animals were suitable for domestication, as multidisciplinary scientist Jared Diamond argues.⁵⁷ From a few centers, agriculture spread to other areas so long as there were no natural barriers to stop it. Diamond makes a persuasive case that the East-West orientation of Eurasia facilitated the spread of agriculture. Climates in the western part of the continent were similar to those in the east, so plants and animals naturally adapted to one region could easily be transplanted to another region located on roughly the same latitude. Eurasia also lacks the deserts, seas, and narrow isthmuses that prevented agriculture from spreading as quickly in Africa and the Americas.

Climate and geography, however, are not destiny. As Diamond fails to notice, it's likely that economic institutions were also important drivers of the agricultural revolution. They did so by removing artificial, cultural barriers rather than natural ones. Agriculture spread from a very small number of origins to almost every part of the globe through migration and through material and cultural trade, until most tribes were growing crops and herding animals, hunting and gathering peripheral to their economy.

Agriculture was a necessary pre-condition for subsequent revolutions such as urbanization.⁵⁸ It meant that tribes could settle in one location and endure there stably. One sometimes hears that this was an obvious improvement: instead of ranging for fruits and tubers, or following herds of animals, humans could make their food come to them. However, hunter-gatherers were burdened with far less daily labor than settled peoples.⁵⁹ They were probably healthier too.⁶⁰ More traditional lifeways were still attractive and persisted for a long time in most parts of the world. (More on these comparisons in [Chapter 8](#).)

In any case, because agriculture was more efficient than hunting and gathering, it generated food surpluses.⁶¹ This allowed for settlements with high population density.⁶² It also meant that an increasing proportion of people could devote themselves to tasks other than food production, including diverse and hierarchically defined roles in other social institutions, especially religious and political institutions. These authorities could then coerce other humans into serving them.

Agriculture spread but it wasn't always transferred willingly. The economic and political institutions that created the first agricultural empires were built on slavery and genocide. As political scientist and anthropologist James Scott argues, early agrarian states terrorized many inhabitants and neighbors. Scott doesn't explain how agricultural empires came to exist despite having such negative effects on their subjects. From the perspective developed in this chapter, though, it's likely that they arose and persisted because they benefited people in elite positions of the social hierarchy, who had a vested interest in actively sustaining them, succeeding when they used their power to burnish the cultural fitness of their society, whether through deadly power or social prestige.⁶³

In sum, economic institutions evolved because they helped sustain material and cultural trade, the production of new technologies, and agriculture. All of these activities were facilitated by a division of labor and authority. Thus, moral norms were crafted that motivated people to play their part in economic institutions, which might mean being an equal partner, an authoritative manager, or a subordinated worker. As we'll see next, social hierarchy became even more extreme with the rise of political institutions, which had already existed for a long time but grew in importance and influence after the urban revolution.

7.5. Political Institutions

Despite the importance of reciprocity and equality in morality, humans never lost apeline relationships of physical dominance and submission, especially between men and women in most known societies. We also have a long history of prestigious leaders and asymmetries of social power.⁶⁴ With the rise of agricultural settlements, political institutions amplified these social dynamics, creating leaders who were enormously prestigious,

often god-like, and could marshal through social dominance an enormous amount of power from massive and growing populations.⁶⁵ Leaders turned some settlements into reasonably well-functioning city-states with ranks within ranks of public servants. Hierarchical political institutions spread because of their benefits to the group as a whole in cultural evolution, even if the benefits did not trickle down to individual members.⁶⁶

Fundamentally, political institutions create a central authority, which may consist of a single leader or several. Leaders gain their position of authority through some combination of fear, respect, and trust from the rest of the population. The result may be more democratic or more authoritarian. In any case, a central authority takes or is given broad decision-making power, including the power to resolve disputes between individuals and to punish disobedience.

Internal norms of authority allowed political institutions to manage intertribal warfare and diplomacy. They also limited hostility within a tribe by giving it a monopoly on violence. Violence and subordination were often harnessed for the ends of those in power, sometimes with incidental benefits for others. Political institutions thus organized coordinated responses to threats and opportunities arising from groups outside the tribe, but also to those arising from sub-populations within the tribe.⁶⁷

Political institutions were so transformative in cities that they re-configured other institutions. To begin with, consider family institutions. Marriage tended toward monogamy in cities, perhaps because of higher rates of sexually transmitted disease in dense populations, perhaps too because it limited the proportion of unattached men more likely to be propelled by aggression and violence.⁶⁸ Political institutions also re-configured economic institutions in ways that allowed for greater division of labor, more trade, accumulation of wealth, and growing social inequalities.

Military institutions had been around for a while but they gained new relevance once cities and states formed. Organized systems of violence protected citizens from neighboring tribes. They also terrorized those neighbors. “Barbarians” were another class of animals that could be domesticated and enslaved.⁶⁹ One way that organized violence against other groups could be effectively motivated was by marshaling moral feelings of loyalty and moral norms of kinship. If another tribe is an existential threat

to us, or to our way of life, then you have a moral obligation to drive them away or kill them, not simply for your own sake but because you are morally committed to your political tribe.

Legal institutions are an important sub-class of political institutions. They likewise rest on a central authority, but their main function is to formalize a set of rules that govern behavior within a large group. Legal institutions translate norms into laws, enforced, directly or indirectly, by a central authority rather than by the tribe as a whole. Laws are articulated explicitly through language, whereas norms may be only implicit.

Even before the first legal documents were laid down in writing, like the Code of Hammurabi nearly 4,000 years ago,⁷⁰ political authorities enforced explicit standards on the behavior of a tribe's members. However, the cultural evolution of the written word in cities transformed legal institutions and amplified their power in populations of growing size and complexity. By creating a public system of rules, legal institutions limited violence and free-riding while at the same time bracing and deepening asymmetries of wealth and power.

These asymmetries were sustained through the power of states to enforce conformity to the law in trade and other commercial transactions, to enforce the legal chain of command in the military. States could use force, however, only if their populace supported the use of military force to ensure obedience to the law. The source of that commitment seems to have been a shared religious-moral identity. Religions might differ from state to state, but their moral-political functions did not. Indeed, all five major institutions sustained the states that comprised them. They were able to do so because each shaped morality in ways that allowed states to function smoothly. For example, institutions created norms of authority and sanctity that were adapted to statehood.

Let's now step back and draw some broad lessons about political institutions and morality. In general, political structure began to arise as groups increasingly confronted the need to make collective decisions about threats and opportunities, settle internal disputes, and seek advantages over one another. Within a small band, representatives who respected each other as equals could discuss problems to form a consensus. As tribes formed and enlarged, and as tribes grew into cities and eventually complex states, political institutions became even more important, and decision making became less democratic and more authoritarian.

The most complex forms of social organization required more political structure, turning egalitarian moral relationships into hierarchical ones. Political institutions also created a range of new moral categories that implicate the state and its obligation to citizens, categories like freedom, oppression, and justice. Moral emotions and norms became political in part because they encompass people who don't know one another but who nonetheless have a moral relationship in virtue of their shared citizenship in a state—whether that relationship is egalitarian or hierarchical. Humans living inside or outside the state could be treated instrumentally, or they could even be regarded as morally inferior, deserving of servitude or death. Politics thus crafted an institutional morality that licensed violence and subordination to those with supposedly inferior natures.

In this chapter, so far, we've offered speculative explanations for how five types of institutions evolved. Through cooperation and domination, modern humans formed tribes and, later on, developed settled societies dependent on agriculture and, finally, city-states dependent on trade and urban commerce. We've also suggested how social institutions shaped the moral emotions, norms, and reasons that structure modern human relationships in these large groups.

The cultural evolution of institutions has also generated tremendous moral diversity among societies and states. In the next section, we'll suggest that an institutional perspective in moral psychology illuminates the family patterns of variation between our moral minds. To do that, we'll turn to the evolution of institutional morality after the agricultural and urban revolutions, drawing on a small sample of some of the important developments that unfolded over the last few thousand years.

7.6. Institutions Drive Moral Diversity

A common misconception about evolution is that biology holds culture on a leash.⁷¹ Biology constrains culture, it is true, but culture can also wield vast control over biology. Human bodies and brains are flexible in response to culture—indeed, they are designed to be shaped by culture. Across the evolution of societies as well as individual development, culture shapes biology.

As we learned from [Parts I and II](#) of the book, the moral mind is flexible. Moral norms and reasons are not innate. Furthermore, innate moral

emotions can be influenced by an individual's learning environment. This means that the moral mind provided a plastic resource to be used by cultural evolution. And so, institutions re-shaped moral emotions, norms, and reasons so that they were able to sustain not just coalitions and bands but also tribes and societies. The moral mind evolved in tandem with changes in social organization, including the shift, after modernity, from nomadic hunter-gathering to settled farming and city life.

Over the last 6,000 years or so, cultural change has been even more rapid.⁷² Human morality has diversified at the rapid pace that only cultural evolution is capable of powering. Under the control of cultural evolution, institutions created new moral norms and also re-ordered priorities between them. Thus, one reason societies are morally so diverse is that they have developed different types of family, religious, and political institutions that have shaped their moral minds.

As a result of variation in social institutions, tribes have different moral perspectives concerning marriage and monogamy, the possibility of divorce, domination and subordination between men and women, and the status of same-sex relationships. Tribes also have different moral perspectives on what is pious and what is sinful, what is sacred and what is profane. Situations that one tribe sees as morally similar the other tribe sees as morally different. In addition, tribes have radically different moral perspectives on the scope of political rights, the legitimacy of inherited power or democracy, and the relative importance of equality and freedom. Obviously, this is just a tiny sample of the immense diversity of institutional morality found all around the world.

Because culture is so malleable, institutions can shift, sometimes rapidly, in response to different material and social conditions. Sometimes intergroup competition favored institutions that, relative to a particular environment, were selected for, co-evolving with other cultural adaptations. A positive feedback loop in cultural evolution generated new variations in morality alongside new variations in social structure.

To be sure, the cultural evolution of institutional morality is subject to a great deal of random drift. However, over the long haul of modern history, it is persistent Darwinian selection, rather than random, back-and-forth cultural drift, that explains broad patterns in institutional morality. We'll focus next on what we think are a few plausible cases of adaptive moral diversity in mid-to-late modernity. The main reason is that we want to

illustrate how the cultural evolution of institutions continues, in more recent modern history, to re-shape the moral mind. (We don't aim to give a complete picture of moral diversity.)

To begin with, social scientists sometimes suggest an adaptive explanation for differences between individualistic and collectivist cultures.⁷³ In some places a higher degree of cooperation would have been necessary to secure material goods. Family, economic, and political institutions therefore evolved to be more collectivist, and this favored cultural selection for emotions and norms that privilege moral relationships among kin and other intimates. For example, some researchers suggest that Eastern cultures are more collectivist than Western cultures because of the greater coordination necessary for rice cultivation than wheat cultivation.⁷⁴ In collectivist cultures, feelings of loyalty toward family and kinship norms are a stronger force and often take priority over other moral emotions and norms.⁷⁵

We've emphasized that early agricultural city-states did not evolve solely because of mutual advantage within the group. Some norms and institutions were favored because they benefit elite members of a population, who harness their resources and power to sustain these institutions in ways that, if they persist, lead to the group's cultural success. Moral indoctrination within early, theocratic states involved seeing the leader as god-like and as the citizens' moral leader. States introduced new norms and institutions for subordinating underclasses, women, and other vulnerable people. Moral emotions and norms evolved that kept people servile and supported a hierarchical class and political structure. Authority norms took priority over norms of autonomy.

Another possible case of adaptive moral diversity can be found in the evolution of honor cultures, as described by psychologists Richard Nisbett and Dov Cohen.⁷⁶ Members of a culture of honor prioritize respect, along with related moral emotions of shame and indignation. One has a duty to act honorably. Following this duty entitles one to respect. If an honorable person is not respected, they feel indignation. If someone acts dishonorably, they feel shame.

In some honor cultures, including the American South, people have a sense of honor that entails a lower threshold for anger and aggression in response to threats and insults.⁷⁷ Sometimes it leads to cycles of revenge.

When violence rests on moral feelings of shame and resentment, it is morally motivated. But how did this package of emotions and norms arise? According to Nisbett and Cohen, the breeding ground seems to be communities where economic institutions support the acquisition of property that is portable and easily stolen, and where political institutions cannot reliably enforce property rights.

For example, Nisbett and Cohen show that immigrants to the American South tended to be from herding areas of Scotland where livestock was subject to theft without plausible expectation of restitution.⁷⁸ A lower threshold for anger was selected for, they argue, because it provided an effective way of deterring theft. Individuals who acquired this disposition were more likely to prosper, had more offspring, and were prestigious objects of emulation. Thus, economic and political institutions affiliated with herding built moral minds of honor.

Religious, economic, and political institutions also appear to have shaped feelings of trust and respect toward strangers.⁷⁹ Henrich and colleagues find that the willingness of participants to cooperate with strangers in a public goods game varies across cultures.⁸⁰ Cooperation is highest in societies where daily life is more heavily “market-integrated.” A tempting explanation is the cultural co-evolution between institutions and moral feelings. Economic and political institutions facilitate a market economy, which favors moral dispositions to trust and reciprocate with strangers, which enables a more complex market economy, which further favors these dispositions, and so on and so on.

However, a market economy not only has positive effects on the moral minds of citizens disciplined by it. Markets also create a hierarchy of wealth and power, which engenders respect above and contempt below, reinforcing social hierarchies.⁸¹ Beginning in the 16th and 17th centuries, countries with market economies began to colonize other cultures that happened to have weaker militaries. They did so in part because they had evolved an institutional morality that cast some people, inside and outside the culture, as inferior, fit only to serve their betters.

At the beginning of this section, we called into question the idea that biology holds culture on a leash. Another common misconception about evolution is that it is inherently “progressive”—that it leads inexorably to better and better forms, perhaps through greater and greater complexity, or perhaps in some other, hard-to-define way. However, what matters in

Darwinian selection is simply whether a trait enhances the ability of an individual or group to transmit that trait to others of its kind, whether through reproduction or communication. The traits that fit this bill need not be more complex or “better” in any other sense.

Darwinian cultural evolution helps explain the origins of complex and diverse institutional moralities in contemporary societies. These moralities were designed for the dense and intensely competitive social worlds shaped by agriculture and urbanization. Institutional moralities are thus complex products of evolutionary design. However, it does not follow from their complexity that they are preferable. If some moralities are “worse” than others—a difficult question we’ll explore in the next part of the book—they will nevertheless persist if they enhance Darwinian fitness. Fitter does not equal morally better.

7.7. Summary

In [Parts I](#) and [II](#) of this book, we triangulated from research across a wide range of scientific disciplines to develop a general framework that explains, piece by piece, how the moral mind evolved. Human evolution was powered by the co-evolution of intelligence, social organization, and morality. The first moral traits to grow out of this co-evolutionary process were sympathy and loyalty in apes ([Chapter 1](#)). A wider range of moral emotions subsequently appeared in humans ([Chapter 2](#)). Then, as biology and culture collided, moral norms and moral reasoning evolved in late humans like *Sapiens* ([Chapters 3–5](#)).

In [Part III](#) of the book, we’ve continued to use our general framework to shed light on remote human history. But we’ve applied the framework to more recent events—well after our species evolved and once it became modern. [Parts I](#) and [II](#) explained how morality evolved in stages 1 and 2—that is, through biological evolution and gene-culture co-evolution, respectively. [Part III](#) explained, more speculatively, how morality evolved in stage 3: through cultural evolution.

In stage 3 of human evolution, ancestral lifeways changed primarily through cultural rather than biological modification. After *Sapiens* evolved, our ancestors enjoyed a range of adaptations for social plasticity, not just bio-cultural but also purely cultural. They were capable of advanced social learning, relying on not just selective imitation but also linguistic

communication and interactive reasoning. As a consequence, cultural evolution accelerated.

New moral minds also contributed to the social plasticity necessary for the accumulation of cooperative culture. Humans had flexible capacities to modulate moral emotions, to acquire the prevailing moral norms in their social environments, and to transform their emotions and norms through interactive moral reasoning. In combination with shared religious identity, moral reasoning extended and also sharpened the moral boundaries around our tribes. Thanks to the numerous advantages of living in tribes, humans became behaviorally modern.

What came next in human evolution after modernity? Plastic to the core, humans evolved to live in new worlds kindled by cultural revolutions. Our ancestors had been hunting and gathering food since the birth of our genus. They then began to farm crops and herd animals, setting into motion the slow but accelerating domestication of plants and animals. Much later, agricultural settlements sparked an urban revolution, as people began to live in large and dense societies. More recently, lifeways changed as a result of cultural revolutions in science, industry, and information technology. These revolutions are still ongoing, their future trajectory uncertain. The only thing we can be sure of is that more cultural changes are forthcoming, enabled by our evolved social plasticity.

The aim of [Chapter 6](#) was to understand the first and arguably most significant cultural revolution in human history, before science, industry, and computers, before urban societies, and even before agriculture. Long after *Sapiens* evolved, our ancestors underwent a cultural revolution that made them—and us—modern. A key to this revolution, and all the momentous changes that followed, was the evolved cultural scaffolding that began to surround and augment our adaptations for social plasticity.

In [Chapter 7](#) our aim has been to show how five different types of social institutions were responsible for transforming human morality between the rise of behavioral modernity and the advent of cities and states. Family and religious institutions extended the scope of morality while also creating new norms of authority and purity. Military and economic institutions enhanced solidarity and intensified authority structures. And as our ancestors settled down into cities, willingly or not, political institutions deepened relationships of domination and subordination.

Each of the five main institutions had different functions. Through cultural group selection, institutions evolved to the benefit of their general membership and also special interests within them. By facilitating cooperation and/or domination, institutions enhanced the cultural fitness of groups. Institutions have so much influence on moral minds that the rapid cultural evolution of institutions is one of the main engines of moral change.

Different societies across time and space have acquired disparate moral minds. Each has a common bio-cultural core, but the content of their emotions, norms, and reasons is vastly different. Social institutions, we've seen, are a primary source of this variation. The cultural evolution of institutional moralities amplified these differences over time. Can moral differences between societies, however, be evaluated as better or worse? That is the question we need to consider next, in [Part IV](#) of the book.

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IV

MORAL PROGRESS

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8

Progress

For most of human history, our ancestors lived in small bands that were nomadic and relatively egalitarian. As their thinking and behavior evolved to become recognizably modern, however, human social organization changed dramatically. Institutions linked small bands together into large tribes. Tribes enhanced social complexity by creating a superstructure of relationships beyond the immediate family and local community.

Institutions also created further divisions of labor and knowledge. An expansion of inherited institutional culture allowed some humans to become specialized for roles within extended families, armed militias, and bodies of regional political governance; within sophisticated economies of hunting and gathering, farming and herding. After the rise of agriculture and urbanization, furthermore, humans charted a return trip to pervasive social hierarchy, familiar across great ape species.

In the earliest large-scale agricultural societies, a surplus of food and other resources enabled social systems in which some individuals could gain status and authority over others. The ruling classes occupied elevated social roles that were only remotely connected to food production or childrearing. Social rank and influence were unequally distributed. Thus, beyond new divisions of labor and knowledge, humans acquired further divisions of status and power—between the sexes and within them.

Agriculture was the first major technological revolution to impact modern humans. The seeds were planted some 12,000 years ago, but significant growth did not ensue for another 6,000 years, after the urban revolution and the consequent spread of agricultural city-states. Other technological revolutions are of more recent vintage, the offspring of learning institutions. In the 18th century, the industrial revolution was launched. Machines were used to manufacture goods, powered by steam and fossil fuels rather than humans or animals. In the 20th century, the

world began to be transformed by a sweeping revolution in information technology.

In each modern technological revolution, humans outsourced labor—first to plants and animals, then to biologically inert machines and materials, and finally to computers and networks that mimicked and surpassed some of the functions of human brains. Efficient modes of production and a consequent surplus of resources led, in each case, to greater social complexity. More individuals were linked together in vast cooperative schemes. A profusion of specialized roles meant additional divisions of work and expertise. And all of this social coordination was managed by deepening and ever more pervasive social hierarchies. Powerful city-states dominated neighboring tribes and villages, evolving into nation-states and empires. As urban and rural societies were linked together in expanding economies of scale, relationships between management and labor acquired deeper asymmetries in power.

The human story began with small bands and continued with the evolution of large tribes and even larger societies. It has ended (for now) with technological revolutions in science and industry, alongside social revolutions in political and economic organization. There is no doubt that human societies have become more and more complex over the last few thousand years, especially over the last few hundred years. But have things gotten any better? Morality has evolved, but have humans become morally evolved?

[Part III](#) of this book was occupied with the evolution of institutional moralities during *early modernity*. Between 100,000 and a few thousand years ago, give or take, human lifeways were transformed by revolutions in agriculture, urbanization, and institutions like family and religion. [Part IV](#) of this book now turns to the evolution of institutional moralities during *late modernity*, that is, in the wake of revolutions in science, industry, political organization, and global economy, roughly 500 years ago to the present.

Beginning in early modernity, institutional moralities provided modern humans with moral beliefs and habits, moral concepts and principles, moral stories and ideologies—along with a whole host of other constituents of moral cultures, which vary tremendously across space and time. However, institutional moralities also comprise more deep-seated moral emotions, norms, and reasons. As we saw in [Part III](#), institutional moralities are culturally sculpted moral minds.

We'll continue, in [Part IV](#), to explore the cultural evolution of moral minds in concert with social institutions. However, whereas previous chapters were largely descriptive, the rest of the book adds an explicitly evaluative perspective. Instead of simply studying how human morality has changed over time, we'll now try to understand how morality has improved or deteriorated. Our subject is still moral evolution, but we'll narrow our focus to moral evolution that is either progressive or regressive.¹

Talk of “moral progress” is inherently fraught. To some ears, anyone who utters this term must subscribe to the naïve view that the world as a whole is ceaselessly and inevitably improving. We'll explain why the naïve view is wrong. But we'll argue that it's reasonable, nonetheless, to evaluate some moralities as better than others. Moral progress is real, yet it is always local and contingent. By explaining the progressive and regressive evolution of institutional moralities in late modernity, the chapters in [Part IV](#) will put us in a position to draw general lessons about how to foster moral progress—and how to avoid moral regress and moral stasis.

[Chapter 8](#) lays the foundations for our study of moral progress in the final, evaluative portion of the book. In [Chapters 9](#) and [10](#) we'll study episodes of moral progress and moral regress in detail. Our ultimate aim in this preliminary chapter is to fashion a philosophical perspective on moral progress that can be informed by evolutionary science. Developed as a counterpoint to traditional philosophical ethics, *moral progress theory* is designed to guide ethical thought when conditions are less than ideal. More specifically, moral progress theory seeks to identify the cultural evolutionary mechanisms that have driven reliable and durable moral progress in the recent past and, therefore, are likely to do so in the near future as well.

To develop moral progress theory in this chapter, and to apply it in subsequent chapters, we need to explain why it even makes sense to talk about moral progress in the first place. We'll set aside naïve views of moral progress as we carve out a more sophisticated approach to the topic. Before engaging with challenging philosophical problems, though, we'll begin by asking a simpler question: Has human well-being improved or declined over time? Or, in other words, are humans better or worse off than those who came before?

8.1. Two Kinds of Progress

In the early modern world, hunter-gatherers led much better lives than the agriculturalists who inhabited early cities and would eventually push traditional lifeways to the margins. To begin with, hunter-gatherers had a richer and more stable diet. Farmers, by contrast, relied heavily on only one or two cultivated crops with meager nutrient profiles. As a result, they were also vulnerable to crop failures and famines. Thus, the bones and teeth of early modern farmers often show signs of severe nutritional deficiencies, unlike the remains of hunter-gatherers.²

Other differences in the lifestyles of early moderns also impacted their well-being. Farmers lived in very close proximity to their livestock, which increased their exposure to infectious diseases.³ In addition, hunter-gatherers often had a significant amount of leisure time. Tilling soil and harvesting crops are thought to have been far more labor intensive. Lastly, the premium on manual labor also meant that slavery and child labor were endemic to early agricultural societies. Slavery was a less common fate for hunter-gatherers, at least so long as their “civilized” neighbors did not practice large-scale agriculture.

Do not pine for the good old days, however. Not unless you are unfortunate to suffer from the most extreme forms of global poverty. Life before the late modern technological and social revolutions was hardly idyllic. Early modern hunter-gatherers may have been better off than early modern farmers. But late moderns nowadays enjoy much better lives than both.

On average, a human born today can expect to live twice as long.⁴ Infant mortality rates are orders of magnitude lower.⁵ Diseases that once would have been deadly or debilitating can now be treated or prevented. Rates of violence per capita vary widely, but at this moment in late modernity they are vastly lower than ever before.⁶ Predation by wild animals is now virtually negligible, of course, but it was a familiar threat for many pre-moderns and early moderns.

In all of these respects, a great majority of humans currently alive enjoy higher levels of well-being than those who lived before the onset of late modernity. The causes of this improvement are rather diverse. Through deliberate slaughter and intense resource competition, carnivorous predators were driven to extinction or at least to the fringes of human habitats.

Scientific and industrial innovations led to modern medicine and better hygiene, which extended countless human lives. Late-modern technological revolutions also yielded novel labor-saving devices, which made countless lives relatively easier.

Economic and political changes in late modernity also enhanced well-being, as psychologist Steven Pinker argues.⁷ Stimulated by massive divisions of labor, large-scale trade distributed goods and ideas more widely. Expanding networks of material and cultural trade led to accumulations of wealth and declines in violence. Just as importantly, large states acquired a monopoly on violence through legal and political institutions. These institutions have been oppressive in many ways, but they also reduced the incidence of murderous blood feuds and other brutal crimes. Powerful state leaders were motivated by pure self-interest, typically, and yet their laws and policies often had the effect of incentivizing trade over theft. Inequalities of wealth are more severe nowadays, but average wealth is substantially higher than when hunter-gatherers or early agriculturalists still reigned.

Is this progress? In one sense, absolutely. Average well-being is much higher today than during early modernity. Office work and menial labor can lead to unhappiness, to be sure. But the human condition under late modernity is surely much better than a short life, high chances of suffering from incapacitating disease, Russian roulette—odds of a violent death, and the likelihood that half of one's children will not survive to adulthood.

From a moral perspective, the expansion of human well-being is a positive development. And yet, however much average well-being may increase, this does not necessarily entail *moral* progress. Following Allen Buchanan and Rachell Powell, we must draw a distinction here between two kinds of progress.⁸ One, which we've already been analyzing in this chapter, is improvement in average well-being. The other, which we haven't yet explored, is progress in a specifically moral sense: *improvement in human morality*. For example, one variety of moral progress articulated later in this chapter is what Buchanan and Powell call "inclusive moral progress." Roughly speaking, this occurs when moral feelings and thoughts begin to encompass and protect more than just the privileged few.

The term "moral progress" is ambiguous. Some people will regard expansions in human well-being as moral progress, since this is a good thing from a moral perspective. We simply mean to focus on another type of

moral progress. When progress is moral, in our sense, the world improves not just as a by-product of other cultural developments (e.g., medicine) but through changes in the moral minds of human beings.

Note that improvements in moral emotions, norms, and reasons must be effective. No moral progress worth its salt occurs if people's ideas are ennobled, but nothing on the ground changes. For example, if marginalized outsiders begin to elicit greater moral concern, and yet their lives do not actually improve, genuine inclusive progress has not been made.

Basking in one's own presumed moral elevation can be tempting. Many people can't help but believe that they are morally better than their forebears. In fact, however, while there has clearly been progress in average well-being since early modern times, there aren't sufficient reasons to believe that the transition from early to late modernity was morally progressive. That is, as we'll argue next, it's not clear that the shift from ancient hunter-gathering and agricultural societies to technologically and politically advanced nation-states was accompanied by effective improvements in morality.

The main reason for withholding judgment is that any evaluation of morality has to depend on the structure of society. And, as a result of recent technological and social revolutions, societal structures have changed so dramatically from early to late modernity that moral comparisons are virtually intractable. For example, have societies improved morally when their political institutions lead people to place a greater moral emphasis on freedom? Unclear. That depends on the extent to which a society's mode of organization requires interdependence for survival. More freedom is better, perhaps, but only if a given way of life can bear it—and only if more freedom does not sustain patterns of exclusion and injustice.

Consider another example. For the sake of argument, suppose that early moderns were, on average, more brutal and callous to strangers than late moderns are today. On first blush, this looks like moral progress. But the change may have occurred, in some places, because strangers no longer present such a great existential threat. Strangers have become less dangerous either through advances in cooperation across societies, widespread gains in material wealth, or greater powerlessness for marginalized societies—or some complex combination of these factors. In sum, if moral evaluation depends on societal structure, it is enormously difficult to compare modern moralities with preceding eras. Because the

structure of human relationships has evolved so dramatically—both within and between societies—moralities then and now may be incommensurable.

To uncover genuine moral progress, we have to narrow our evaluative focus to events within late modernity. Before doing so, let's pause for a moment to review. In [Chapter 7](#) we argued that agricultural, urban societies evolved in part because they benefited special interests, rather than solely due to mutual advantage. This helps explain why early modern farmers eventually replaced hunter-gatherers but were, nonetheless, worse off. Furthermore, both were much worse off than the bulk of late moderns who came after. Levels of well-being plunged after the agricultural revolution and then surged over the last few hundred years. Not for everyone, and not in all areas of life, but on average and overall.

In the study of moral evolution that this book is undertaking, however, what matters is not simply improvement in well-being but (effective) improvement in morality. And when it comes to progress that is specifically moral, it is difficult to know with any confidence whether late moderns improved upon early moderns. It's just too hard to draw moral comparisons between societies with utterly different forms of social organization. To think more clearly about moral progress, and to make evaluative comparisons with any confidence, we need to go local.

8.2. Local Moral Progress

We've argued for some restraint in thinking about moral progress: whether late moderns have better moralities than their remote ancestors is probably unknowable. We'll argue next, however, that it is in fact possible to draw moral comparisons on a smaller time scale and within certain areas of society. Considering just the last few hundred years of late modernity, we can produce some relatively uncontroversial cases of local moral progress.

Adapted from philosophers Philip Kitcher and Buchanan and Powell, the following list represents some of the clearest cases of moral progress.⁹ Later in this chapter, we'll consider and respond to skepticism about the very idea of moral progress. For now, however, if any changes in morality are progressive, these are:

- Repudiation and elimination of chattel slavery in the Americas along with the African slave trade in old centers of colonial power in Europe
- Reduction in prejudice and discrimination on the basis of race and ethnicity, including anti-Semitism, leading to greater happiness and liberty for oppressed peoples, in many though not all countries
- Wider recognition that women have interests equal in value to those of men, along with extension of equal rights through formal laws and informal norms, in many though not all countries
- Less stigmatization and greater acceptance of gay men and women, especially in North America and Europe
- The widespread condemnation and decline of colonization, apartheid, and wars of conquest, including the murder and exploitation of Indigenous peoples.

Three major qualifications are immediately in order. First, not everyone will agree that all of these examples are genuine cases of moral progress. For example, consider those people whose moral perspectives are grounded in conservative religious traditions. They might hold that increasing gender equality is a step in the wrong direction, perhaps in light of religious teachings about the proper roles of men and women in society. Or they might hold that greater acceptance of gay people is regressive, rather than progressive, since they think that homosexuality is unnatural and sinful. These perspectives are worth criticizing, but we won't attempt to do so in this book. We simply assume a broadly liberal, secular view of moral progress. If you agree with this view, then you too might be interested in finding out whether evolutionary science can shed light on its implications.

Second, none of these cases of moral progress license self-congratulation or complacency. For example, racism and sexism are still prevalent around the globe. For all we know, they might intensify over the next few decades. However, in some parts of the world, levels of racism and sexism are now—by any measure—significantly lower than they were a century or two ago.

Third, progress does not entail perfection. Nor does imperfection, even severe, entail lack of progress. To put this another way, things can get morally better without being good enough. For example, the legacies of chattel slavery and colonization are still painfully present across

contemporary societies. Nonetheless, the world has seen moral improvement, even if only fragmentary, through their reduction.

The transition from early to late modernity was not necessarily morally progressive, as we learned in the previous section. But are there grounds for thinking that the last few hundred years witnessed overall moral progress? Social organization has changed over this period of time, certainly, but not so drastically that moral comparisons are impossible. So, have moralities improved during late modernity? Unfortunately, the answer to this question about global, long-term moral progress can't be known either—in this case for very different reasons.

First of all, alongside paradigm cases of moral progress are equally uncontroversial cases of moral regress.¹⁰ To be clear, these are not simply cases in which well-being has declined or threatens to decline in the not-too-distant future—for example, through the biological evolution of novel, devastating diseases and resulting pandemics. Rather, the moral mind is implicated: moral regress consists in the deterioration of human morality, relative to surrounding social structure, and not only inside people's heads but with real, negative consequences on the ground.

Let's consider three of the clearest cases of moral regress. First, the frequency and intensity of catastrophic wars and large-scale genocide increased in the 20th century, culminating in world wars and the Holocaust.¹¹ Through weapons of mass destruction and totalitarian political movements, war and genocide threaten to increase further in the 21st century.

Second, over the same period, economic inequality between the rich and poor has deepened and become more entrenched, exacerbating disturbing imbalances of power within many countries and especially between countries.¹² In both cases, moral regress is rooted in shifting political moralities, most clearly (but not exclusively) in North American and European societies.

A third case of moral regress is that more non-human animals are suffering at our hands today than at any other point in human history.¹³ It's true that, in many countries, more and more people are becoming vegetarians and vegans for moral reasons. It's also true, in addition, that informal norms and formal laws increasingly prohibit cruel treatment of pets and biomedical research subjects.¹⁴ Nonetheless, industrial farming has

exploded over the past century. Tens of billions of sentient animals lead short, brutal, and miserable lives. Economic and political institutions have failed to protect the vulnerable creatures in our custody. Sometimes, as in this case, moral regress transpires because morality fails to keep pace with surrounding developments in the structure of society.

In this section, so far, we've tried to offer the clearest and least controversial examples of moral progress and moral regress. One immediate lesson is that pockets of local moral progress, by themselves, do not entail global moral progress. Optimism should not give way to pessimism, however. Pockets of local moral regress likewise do not entail global moral regress. So far as you can tell just from looking at any particular example, the late modern world has not gotten morally better, nor has it gotten morally worse.

To make a global assessment of moral change, moral progress in some areas of society would have to be juxtaposed with moral regress in others. One obstacle to global assessment is identifying all the most significant cases of progress and regress over the late modern period. We've offered a handful of cases in this chapter, but we're under no illusion that our list is complete. Furthermore, other cases of progress and regress are far more controversial, which would diminish confidence in any global assessment.

Even if a complete and definitive list could be recorded, however, how would one compare? What is the moral sum when you add the reduction of racial injustice and subtract the torture and slaughter of billions of animals raised for meat consumption? The calculation is difficult precisely because human morality is inescapably plural, lacking any fundamental currency (as we saw in [Chapter 4](#)). A second obstacle to global evaluation, then, is that no plausible methodology exists to measure and compare episodes of moral progress and regress—to add up cases and discover whether the balance is positive or negative. So, we can't conclude that the world has morally improved—or deteriorated—within late modernity.

Some philosophers have viewed our ancestors with either condescension or admiration. For example, Thomas Hobbes thought of “primitive” humans in the original state of nature as amoral; Jean-Jacques Rousseau thought of them as morally pure. The arguments in this chapter show that these evaluations are specious. We simply don't know whether, overall, “the moral arc of the universe” has a positive or negative slope.

However, we can more fruitfully engage in more targeted moral evaluation within the last few hundred years of late modernity. Not globally, but locally: we seem to know that some episodes of moral change are progressive; we seem to know that others are regressive. Later in this chapter, we'll defend this moral knowledge and show how it supports ethical theory. However, before developing an ethics of moral progress we need to equip ourselves with a more fine-grained analysis of moral change. Clear cases of moral progress in this chapter have something in common—effective improvement in human morality—but is there anything that sets them apart?

8.3. Two Kinds of Moral Progress

Earlier in this chapter, we drew a distinction between progress in well-being and progress in morality. Now we need to distinguish between two main kinds of moral progress. The taxonomy we're about to offer isn't intended to be exhaustive. There are other kinds of moral progress too. However, two categories capture the clearest cases, including those discussed briefly in this chapter and at greater length in subsequent chapters. To unpack two main kinds of moral progress, we'll draw on the discussion in earlier parts of the book about two corresponding moral problems and when they began to manifest and intensify.

The first type of moral problem is *moral exclusivity* between groups. Historically, human bands gained the ability to flexibly cooperate with one another. Typically, however, they were not prone to fully extend their moral feelings and thoughts to members of other groups. Rather, they regularly dehumanized outsiders and subjected them to violence. Morality has been flexibly exclusive in this way from its very earliest beginnings in great apes and early *Homo*, as we highlighted starting in [Chapters 1](#) and [2](#).

However, as we began to see in [Chapter 6](#), moral divisions shifted in early modernity. The advent of religion and social institutions extended the scope of morality from bands to tribes, on the one hand, but made the moral boundaries between tribes more rigid, on the other. In [Chapter 7](#), furthermore, we saw that early agricultural societies became more exclusive, as they gained incentives to exploit neighboring populations and inflict more dehumanization and violence on them.

Inclusive moral progress occurs when morality encompasses people who were once regarded as outsiders, reducing moral exclusivity between groups. As we saw in [Chapter 5](#), sometimes people discover that their moral responses have been inconsistent. They reason that there are no morally relevant differences that would justify treating members of other groups as unworthy of moral concern. According to Buchanan and Powell, inclusive moral progress represents a shift in which more classes of humans and animals are granted appropriate moral standing, unseen or not fully recognized before the morally progressive shift.¹⁵ Or, as Peter Singer and other philosophers put it, “moral circles” expand.¹⁶ Thus, moral norms and moral reasons take on a greater scope. At an emotional level, sympathy is no longer circumscribed only to “us.”

A blatant example of moral exclusion is genocide, such as the murder of six million Jews by the Third Reich in the Second World War. The Holocaust, like other genocides, was fueled by ideology. Jews were thought of as not just less than human but morally evil. The ideology fueling chattel slavery of Africans on the American continent was different.¹⁷ Black people were considered sub-human by those who supported slavery, but they were not generally regarded as evil in virtue of their race. Both forms of (extreme) moral exclusion have been repudiated by people around the world, though anti-Semitism and anti-Black racism continue to fester, especially when the privilege of some white people is threatened.

Let’s focus on a form of racism that happens to be more familiar to us. Reductions in anti-Black racism in the United States exemplify inclusive moral progress. Before the Civil War, Black slaves in America were legal property, denied inherent moral standing, and excluded from the moral circles constructed by whites. Afterward, moral regard for Black people slowly shifted—not consistently, nor on a linear path, but in an overall positive direction. Subsequent legislation in America would recognize non-white people as full moral persons under the law. The condition of Black people improved with the end of slavery, even though they would then be subject to extrajudicial lynchings, Jim Crow, mass incarceration, and many other horrors.

Anti-Black racism will be scrutinized in [Chapters 9](#) and [10](#). For now, resistance to it provides an apt illustration of inclusive moral progress. Furthermore, it highlights again that this type of moral progress is only comparative. Whites’ treatment of Black people in America continued to be

deplorable, but there was, nonetheless, a relative moral expansion, an improvement compared to what came before. That is, anti-Black discrimination persists at high levels, but it has diminished—not necessarily during the last few decades but certainly during the last few centuries.

To sum up the discussion in this section so far, humans face a longstanding problem of moral exclusivity between groups, originating many millions of years ago and intensifying only tens of thousands of years ago. Inclusive moral progress addresses this problem, by degrees. Examples include progress against racism of all kinds—but also reduction of ethnocentrism, colonialism, and homophobia. There are many differences between these moral problems, certainly, but all have in common some degree of moral exclusivity wherein individuals from some groups are regarded as having reduced moral standing and are excluded from moral circles. Other cases of moral progress are different, however, and address a separate and more recent set of challenges.

This brings us to a second type of moral problem, namely, *moral inequality* within groups. Relationships between individuals, especially between men and women, have long been plagued by domination and subordination, to a degree that has fluctuated over space and time. However, moral inequality surged after the agricultural and urban revolutions, when societies became structured by pervasive social hierarchies. Understanding the problem of moral exclusivity is relatively straightforward. The problem of moral inequality, however, requires more careful explication.

First of all, in any industrial, technocratic society with massive divisions of labor and knowledge, it's inevitable that power and authority will be concentrated to some degree. Not just inevitable but welcome, given the need to resolve collective action problems and thereby sustain extraordinarily complex social structures that engender high levels of average well-being. That is, in well-functioning, late modern societies, some people will exercise morally acceptable influence over others, at least in some areas of life. Not through violence or fear, hopefully, but through esteem accorded to the social roles they occupy.

However, social hierarchy generates a moral problem when it is tied up with *excess and unjust inequalities in social power*—or, in other words, when social hierarchy is inflected by *domination and subordination*. Some people are forced into social roles that are demeaning, in which they are

accorded low social status. They lack social power not because of necessary social coordination that benefits everyone but, rather, because their oppression benefits special interests.

The problem of moral inequality is not that some people are denied moral standing. Rather, victims of subordination are treated as unworthy of equal respect. In addition, unjust hierarchical social arrangements are almost always propped up by a moral ideology that purports to explain and justify them. The ideology is not dehumanizing per se, as in the case of moral exclusivity. Rather, it casts some people as the sort of lowly humans that are suited to demeaning subordination and worthy of contempt and disdain.

Inclusive moral progress enhances the scope of morality. *Egalitarian moral progress*, by contrast, overturns unjust social hierarchies. Put another way, egalitarian moral progress reduces domination/subordination and advances moral equality—between men and women, between races or ethnicities, between socioeconomic classes, and more generally between higher and lower ranks of people. Moral norms and reasons achieve greater equality when they reduce the subordination of some groups within an unjust social hierarchy, producing a fairer and more just distribution of social power. At an emotional level, egalitarian moral progress redresses unjustified imbalances in moral respect.

Instead of seeking a deeper and even more abstract analysis of moral inequality, which would lead us quickly into a philosophical morass, it is more illuminating to consider a paradigmatic example. According to Kate Manne and many other feminist philosophers, the patriarchy is fundamentally a problem of moral inequality, since it consists of a system of domination and subordination.¹⁸ Within sexist ideology, women are regarded not as less than human but as an inferior class of humans, suited to subordinate roles in society.

Correspondingly, then, improvements in the condition of women exemplify egalitarian progress. In virtually all countries, women were once denied the right to vote, serve in government, and otherwise participate in political institutions. Decades of feminist activism have advanced moral and political equality between the sexes. Women have gained more social power, not just in many political institutions but also, for example, in families and religious bodies. There is still a long way to go, but some egalitarian progress has been achieved.

Yet, as feminist philosophers have long argued, inequality is not just political; it is also personal.¹⁹ Men regularly feel and express disdain toward women in their lives, often at best only patronizing condescension. In some pockets of the world, the last few hundred years have brought about increasing moral respect for women (as we'll see in detail in [Chapter 10](#)). Needless to say, progress in the fight for gender equality hasn't gone far enough. In this case and others, egalitarian moral progress is likewise comparative, positive only relative to what came before. The patriarchy lives. It thrives.

We've been arguing that our taxonomy makes sense of clear cases of moral progress. As another illustration, consider moral progress that is international in scope. On the one hand, the drastic decline of colonization, apartheid, and wars of conquest depended on inclusive expansion of the moral circle across national borders and ethno-linguistic boundaries. On the other hand, some international political institutions prevent exploitation. These institutions—albeit relatively weak and limited thus far—advance moral and political equality between developed nations in the global North and developing nations in the global South. Of course, quite a lot of exploitation persists, including the subordination of weaker states by those with local power.

Many cases of moral progress involve gains in inclusivity *and* equality. For example, we've suggested that reductions in racism reflect inclusive moral progress. But race relations are usually not just exclusive but also unequal. Thus, the slow erosion of anti-Black racism in North America and Western Europe extended the scope of morality to encompass Black people and, by minute degrees, reduced their subordination. This case of moral progress, like many others, falls under both categories. It reflects inclusive and egalitarian moral progress. (For that reason, it will be a topic of discussion in both [Chapter 9](#) on inclusivity and [Chapter 10](#) on equality.)

Finally, it's important to see that moral regress falls under our two general categories too. The inverse of inclusive moral progress is *exclusive moral regress*. The inverse of egalitarian moral progress is *inegalitarian moral regress*. These categories illuminate our clear examples of moral regress. The increasing frequency and intensity of war and genocide reflect gains in exclusivity. So does cruel treatment of non-human animals on industrial farms. By contrast, rising differences in power between rich and

poor, domestically and globally, reflect gains in inequality. So, our taxonomy applies as much to moral regress as to moral progress.

In later chapters we'll focus on many of these episodes of moral progress and moral regress with a higher degree of resolution than we've been able to offer so far. We'll unpack evolutionary mechanisms that drive gains and losses in inclusivity ([Chapter 9](#)) and equality ([Chapter 10](#)). For now, though, while still in this foundational chapter, more philosophical work is needed to license this effort and to see exactly why it's worth undertaking.

8.4. Traditional Ethical Theory

At this stage in [Part IV](#) of the book, we've highlighted some concrete cases of inclusive and egalitarian moral progress, all of which unfolded sometime within late modernity (roughly the last 500 years). By avoiding long-term, global comparisons, we're attempting to offer a sober evaluation of medium-term, local moral progress. Some critics, however, are skeptical that even this much is possible. They admit that certain social changes are widely approved of but are reluctant to call them "progress."

However, our examples of moral progress (and moral regress) are about as uncontroversial as it is possible to furnish. For instance, people can reasonably disagree about the wisdom of affirmative action for racial and ethnic minorities, but no serious moral case can be made for chattel slavery. Likewise, if you have a liberal, secular view and are willing to engage in moral evaluation at all, you should concede that reductions in racism are moral improvements, that greater political participation for women is also moral progress, and that so is the virtual disappearance of colonization. The only reasonable alternative to accepting our cases of moral progress is withholding judgment from every single possible moral claim (i.e., moral nihilism). What this means, then, is that the evaluative judgments on which we will build our study of moral progress are about the sturdiest possible.²⁰

Skeptics are still likely to demand a stronger reason to accept our examples. What some skeptics want is a general ethical theory that explains why some changes are progressive and why others are regressive. Only once they are convinced of the theory can they accept our examples. We'll argue next, though, that this skeptical line of reasoning gets things backward. Traditional ethical theories are generalizations that are supposed to ground more specific moral evaluations. In fact, these theories tend to be

lofty idealizations that lie beyond the limits of human knowledge. To arrive at this conclusion, we must begin by laying out the status quo in philosophical ethics.

Traditionally, ethics has been a project in *ideal theory*.²¹ That is, a central aim for moral philosophers has been to develop a universal ethical code—a formula that entails what the right and wrong actions are in any and all conceivable circumstances. For example, classical utilitarianism is ideal theory.²² What utilitarianism says, in essence, is that the only things in the world that matter are pleasure and the absence of suffering. Whenever a person faces a choice, the only morally right action is the one that produces the highest expected utility, in terms of the benefits of pleasure balanced against the costs of suffering.

Understanding traditional ethics as ideal theory helps make sense of its characteristic methodology. Ethicists in philosophy departments regularly spend their time crafting rarefied thought experiments quite remote from real-life experiments in living. The best thought experiments elicit strongly held, intuitive moral judgments, which are supposed to provide a test of general ethical principles.

To illustrate, consider a famous thought experiment developed in response to utilitarianism.²³ Imagine that a doctor has the opportunity to sacrifice a healthy patient and distribute their organs to five people who will otherwise die. Imagine too, contrary to actual fact, that there is no possibility of further repercussions for public health, no erosion of trust for the medical profession. Utilitarianism entails that the doctor should kill one to save five. But is this the morally right thing to do?

Intuitively, for most people, the answer is no.²⁴ Sacrificing a healthy, innocent patient is wrong, it seems, even if it yields the most utility. If the intuitive moral judgment about this case is correct, then the utilitarian principle is false. That principle is supposed to provide a universal ethical code and, in light of a genuine counterexample, must be abandoned or revised. This would be very bad news for utilitarianism, were it not for the fact that all known ideal theories are likewise vulnerable to similar counterexamples.

Ideal theory in ethics has an important limitation: a universal ethical code is, to say the least, very hard to come by. Why is that exactly? To begin with, as we've seen over the course of this book, morality is an evolutionary achievement. From its emotional nucleus to its institutional

edifice, human morality is the product of Darwinian processes that are much smarter than any individual, smarter indeed than any group of individuals engaged in collaborative reasoning. The result is far from perfect, especially in light of Darwinian selection for moral exclusivity and moral inequality. Natural and cultural selection favor fitness, broadly construed, not moral perfection. Nonetheless, Darwinian processes have crafted a much more worthwhile system than any that humans are capable of inventing on their own.

Furthermore, human beings are fallible creatures, each of us born in a particular historical moment. It may seem as though you can build your morality from scratch, but this is an illusion. Each and every one of us begins with the evolved morality we have inherited from our ancestors. We can revise it together, as Kitcher argues, but evolved morality is and must be our starting point.²⁵ That is, we might be able to make improvements, if we are lucky, but it is infinitely harder to know the ideal moral code. Even if that code did exist somewhere, perhaps inscribed in God's mind, we wouldn't have much hope of accessing it.

And yet, we do have a reasonable shot at knowing that certain episodes of moral change are progressive or regressive. We know that some changes in morality alleviate needless suffering, reduce unjust discrimination, or ameliorate injustice. Though there is room for skepticism about many particular moral judgments, we should be confident in our judgments about such things as the abolition of chattel slavery and equal rights for men and women.

Eventually, we'll vindicate these moral judgments about progress and regress by explaining why they are rational.²⁶ For now, though, it is enough to recognize that more confidence is warranted for our cases of progressive moral change than for the moral claims essential to building a traditional ethical theory like utilitarianism. In particular, you should be more confident about these cases than you are in your judgments about various thought experiments.

For example, we're moderately confident that it is always wrong for a doctor to redistribute a healthy patient's organs when it is stipulated that no other negative consequences ensue (like distrust of the medical profession). We aren't at all sure what the right solution is for "trolley problems" and other puzzles that moral philosophers devise to test universal ethical theories and in which they sometimes place an inordinate amount of trust

(see [Chapter 4](#)). Moral intuitions about imaginary examples like these are particularly unstable in the face of empirical knowledge and discoveries of moral inconsistency (mechanisms of moral thinking described in [Chapter 5](#)). However, moral intuitions about clear cases of moral progress are much more stable. For example, we are extremely confident—and you should be too—that freedom from slavery is just, that men and women deserve equal moral consideration, and that sentient beings should not be tortured for modest and fleeting gains.

Clear cases of moral progress (and moral regress) are the most secure starting place for ethics, much more so than thought experiments or universal ethical theories. And, in fact, ethics must start from somewhere. Moral conclusions cannot be drawn from purely factual premises. There have been many attempts in the history of philosophy to derive an “ought” from an “is.” All of these attempts have been unequivocal failures. To evaluate human behavior, therefore, philosophers must “rebuild our ship while remaining afloat upon it,” standing at the outset only on the most solid planks.²⁷ That is, one must begin with some moral judgments if one is to be secure in making others.

We began this section by explaining that skeptics about moral progress demand an ethical theory that grounds cases of progressive moral change. Given the evolved nature of human morality, however, the most plausible starting place in ethics is not ethical theories, nor intuitions about rarefied cases, but instead paradigm cases of moral progress—for example that chattel slavery and racial subordination are morally wrong. From starting points such as these we can in fact develop an ethical theory. Not an ideal theory of moral right or wrong in any and all conceivable circumstances but, as we’ll see next, a theory of moral progress.

8.5. Moral Progress Theory

Acknowledging the limitations of ideal theory does not mean abandoning philosophical ethics and all of its evaluative aims. While we may not be able to know the final, universal ethical code, we do stand a chance of knowing that particular social changes count as moral progress and even, perhaps, how to engender more progress. We can also know that some changes are morally regressive and, perhaps, how to resist further regress. Here, then, is the evaluative aim of what philosophers call *non-ideal ethics*,

and it avoids any pretense to farsightedness: identifying strategies for advancing progressive moral change and resisting regressive moral change.

Non-ideal ethics explores how moral progress has been achieved in the past and, therefore, to the best of our knowledge, will likely be achieved in the future. This is a broad intellectual project. Non-ideal ethics has been taken up by many empirically and historically oriented philosophers, such as Elizabeth Anderson, Charles Mills, and Amartya Sen.²⁸ And it can be informed by a number of different scientific fields, such as economics, political science, or sociology. As we'll develop it here, *moral progress theory* is a venture in non-ideal ethics that sheds light on the psychological and cultural mechanisms that drive moral progress in cultural evolution, informed by multidisciplinary Darwinian scientific theory (of the kind set out in earlier parts of the book).

We don't propose to identify all the conditions that explain how moral progress occurs. That's a bit too grand, even in a book that attempts to give a sweeping history of the origins and development of human morality. Our aim is narrower but adds another volume to our evolutionary chronicle: to explore how moral progress unfolds through the cultural evolution of moral minds, in combination with the cultural evolution of social institutions and complex knowledge. These three key facets of human societies continue to co-evolve.

We'll pursue this aim in [Chapters 9](#) and [10](#) by identifying the psychological and institutional mechanisms that underlie major episodes of inclusive and egalitarian moral progress. For now, however, while still in [Chapter 8](#), we need to ask preliminary questions about the very idea of moral progress theory: How exactly might explanations of moral progress work? Under what conditions, if any, do moral minds and social institutions tend toward moral progress rather than moral regress or moral stasis? Is it really possible to extrapolate future strategies for moral progress from history?

First of all, any sober approach to this topic has to admit the possibility that future moral progress will not be forthcoming. In some areas of life, perhaps many, human societies may currently be facing insurmountable barriers to further moral improvement. This idea is especially tempting to those who believe, cynically, that human morality is a thin cultural veneer that covers a deeply amoral and egoistic nature.

But let's be clear. It's one thing to predict that morality is likely to stagnate, or even that moral disasters will unfold in the not-too-distant future. These predictions are defensible, at least potentially. However, it's quite another thing to claim that moral progress is not just unlikely but impossible. This claim is not at all tenable, especially when it rests on a cynical view of human nature. Indeed, this book has shown that the cynical view is false.

As we showed at the outset of this book, human beings are psychological altruists. They possess not just egoistic but also altruistic motives. Of course, that doesn't make humans unique. Great apes and other cooperative animals are also psychological altruists. What makes humans different is their evolved *moral plasticity*, uncovered in [Parts I–III](#) of the book.

Due to persistent variation in their material and social environments, *Sapiens* and its precursors evolved flexible capacities to learn a plurality of norms and to develop social practices of moral reasoning. Moral emotions evolved to be flexible too. The range and intensity of emotions like sympathy and respect are designed by evolution to be modulated through learning. So, because altruistic moral minds are open to change, moral progress is possible. Evolved morality provides grounds for hope.

The original function of human morality was to resolve problems of interdependent living that arose within small bands. Since humans became behaviorally modern, however, the moral mind was scaled up with the help of social institutions. We learned in [Part III](#) that institutions re-shaped emotions, norms, and reasoning so that morality could function to resolve more complex problems of interdependent living that arose within much larger tribes and societies. For example, religious institutions extended the scope of morality to encompass everyone in the same clan ([Chapter 6](#)).

Social institutions had so much influence over the moral mind that they have been primary causes of moral diversity. Thus, humans in market-integrated societies are more willing to extend trust and reciprocity to strangers because of the way religious, economic, and political institutions have conditioned their moral feelings and thoughts.²⁹ At the same time, however, as we also learned in [Part III](#), these institutions have conditioned people to withhold respect for members of certain groups and sub-groups. For example, the patriarchal character of most institutions leads men to have diminished respect for women. What this means, then, is that the

plasticity of our moral minds provides grounds not just for hope but also for alarm.

Moral progress is possible because our moral minds are flexible. And yet, moral regress is also possible for the very same reason. Since moral emotions are plastic in scope, they can become either more inclusive or more exclusive. In addition, the human capacity for respect retains a liability toward domination. Furthermore, new moral norms of authority and purity that arose after modernity are often oppressive and a source of violence, especially when humans give them priority over other moral norms ([Chapter 7](#)). Authority norms cast some people as inherently suited to lower status and therefore unworthy of respect. Purity norms cast some people as tainted and therefore repugnant.

Under the influence of institutions, the moral mind is susceptible to moral regress. Some people have morally exclusive feelings and thoughts after being encultured to believe that outsiders lack the characteristics that justify sympathy or loyalty. Or they come to believe that sexist domination of women is not just prudential but also morally justified, given a dubious ideology about the innate and immutable differences between men and women. Or they think that gay people are morally abhorrent because their family and religious institutions entail that homosexual behavior is, in some elusive sense, unnatural and impure.

Indeed, these morally pernicious ideologies can be internalized so that persons believe that their own race, gender, or sexual orientation makes them inferior. They acquire a “false consciousness” that reflects the attitudes of the dominant group, as feminist intellectuals and activists have highlighted for decades. This false consciousness reinforces their own oppression. Rational moral change requires overcoming the debilitating grip of false consciousness.³⁰

The discussion in this section enables us to clarify our question, stated earlier, about the very idea of moral progress theory: given equal grounds for hope and alarm, what could tip the flexible moral mind toward progress instead of regress or stasis? More specifically, what kinds of psychological and institutional mechanisms systematically lead to progressive moral change? Our answer, developed in the next and final main section of this chapter, brings the subject matter of moral progress theory into sharper focus. As we end [Chapter 8](#), then, we’ll gain a better handle on what awaits us in the rest of [Part IV](#).

8.6. Rational Moral Change

This chapter has been leading to a view that we'll defend with concrete illustrations in subsequent chapters. But the view is also, we think, plausible on its face: *reality has an inherent progressive bias*.³¹ That is, when people form accurate beliefs about the world around them and those who inhabit it, they tend to re-evaluate their moral feelings and norms in ways that lead them rationally toward greater inclusivity and equality. For example, dehumanizing and subordinating ideologies rest on factual mistakes about the people they exclude or demean, often compounded by an inconsistent application of shared core moral norms.

To arrive at a more accurate picture of reality, humans have to engage in morally scaffolded, interactive reasoning ([Chapter 5](#)). They must reason cooperatively about empirical facts and about how to achieve consistency within their system of moral norms and feelings. The co-evolution of moral minds and social institutions can then lead to progressive moral change, but only when people are collectively well informed, and only when their social and institutional environments allow them to reason fruitfully together (see [Chapters 9](#) and [10](#)). Under these conditions, people can wisely re-interpret their moral norms and appropriately resolve conflicts between them. Rational influences on the moral mind can thereby tilt societies toward moral progress. The subject matter of moral progress theory is thus *rational moral change*.

Moral progress theory, in this sense, is worth pursuing for at least two reasons. First, rational moral change is more reliable and durable than moral progress by any other means. Sometimes, moralities evolve in the right way but for the wrong reason—for example, through random cultural drift or because of the influence of prestigious figures. But these kinds of evolutionary processes are just as likely to lead to moral change that is regressive rather than progressive. So, there are good reasons to look for rational processes that favor progress and that are less likely to be exploited in the service of regress. *Robust rather than fragile*.

Second, rational moral change provides an alternative to ideal theory in traditional ethics, one that is more achievable but that also delivers on evaluative aims. Instead of seeking the endpoint of ethical inquiry—the universal code that is in God's mind or that exists in some obscure, abstract realm—moral progress theory identifies ways our moral perspectives have

been improved in the past and, therefore, can be improved in the future. *Better rather than best.*

Earlier in this chapter, we confronted skeptics who doubt that any moral changes are truly progressive. We argued, remember, that if you have a broadly liberal, secular perspective and accept that one can know anything at all about moral right and wrong—if you reject moral nihilism—then you should accept our clear cases of moral progress. But can we now say anything more in response to the skeptic, beside merely insisting on the relative plausibility of our cases?

We've already argued that one type of response to the skeptic simply won't work. You can't justify concrete evaluations of moral progress by appealing to ideal theory in traditional ethics. The problem, in short, is that a universal ethical code is much more controversial than what it is being asked to justify. However, by explaining how moral progress theory works, we've arrived at a superior method for justifying our cases of moral progress. The best response to skeptics is simply this: to show that moral progress is real because it is the outcome of rational moral change.

The study of rational moral change is, by our lights, interesting in and of itself. It can help us understand why moral progress is so difficult to achieve and maintain. Moreover, studying rational moral change can show us how to resist moral regress and retain and broaden any moral progress that has already been achieved. We'll begin to see in the next chapter that some of the clearest and most compelling cases of moral progress are partly the result of improvements in factual knowledge and moral reasoning.

In [Chapters 9](#) and [10](#) we'll explain how inclusive and egalitarian progress are rationally propelled. We'll argue that improvements in human morality are psychological as well as cultural. That is, progress depends not just on rational changes in our moral minds but also improvements in our social environments. The key to future moral progress is therefore to foster rational moral thinking and also to cultivate the cultural conditions under which such thinking can foster more cultural evolution: rational moral change feeds itself.

At this stage, we have to issue an important qualification. Much has been written on moral progress, and there is not sufficient space to examine this literature in any detail. Instead, we provide a new perspective on moral progress (and moral regress) based on how human minds and culture have evolved. We anticipate that for many readers this perspective will not be

wholly persuasive, much less definitive, without much more discussion. But if our perspective is promising enough to encourage further exploration and discussion, we'll have accomplished our goal. We want to start a conversation, not end it.

As we've seen in this chapter, it's difficult and perhaps even impossible to know whether progress has been made over vast time scales such as between early and late modernity. It's also difficult to know whether progress has been made over the course of a few years, or even from one generation to the next. For example, anti-Black racism has clearly declined in America over the past century, but it's not at all clear whether it has declined over the past decade.

That being said, we do seem to know that some medium-term changes are positive—as much as we can know anything in ethics. In the rest of the book we'll study the rational mechanisms that reliably foster progress and incrementally improve our moral perspectives. As a consequence, then, our historical explanations of moral progress will vindicate our knowledge about it. They will explain why we are right to be confident about our clear cases, without the aid of a universal ethical theory.

During stage 3 of human evolution, covered in [Part III](#) of the book, modern tribes and institutionally structured societies arose because they propagated themselves and their culture, guided largely by an invisible hand. In [Part IV](#) we have reached what we might call “stage 4” of human evolution, where cultural evolution has, to a greater degree, fallen under human control. Societies will improve morally, if at all, with human hands actively guiding this process. Stage 4 of human evolution therefore encompasses the *cultural and rational evolution of morality*. We've now laid the groundwork for exploring this stage over the next two chapters. In doing so, we'll also explore how the hierarchical structure of institutional morality can lead humans into moral regress. The chapters to follow are designed to illuminate strategies for advancing moral progress and resisting moral regress, given the mechanisms of cultural evolution now in view.

8.7. Summary

[Part I](#) and [Part II](#) of this book examined the biological and cultural evolution of moral emotions, norms, and reasons, leading ultimately to the birth of our species. [Part III](#) then turned to the cultural evolution of

institutional moralities among behaviorally modern humans in the earliest tribes and settled societies. [Part IV](#), finally, has begun to explore moral evolution through culture and rationality, in more recent history and on a much smaller time scale—that is, in late modernity during the last few centuries. With [Part IV](#), furthermore, the book is no longer largely descriptive. We now want to understand not just how morality evolves but also how humans can become morally evolved—partially, provisionally, and by degrees.

Here in [Chapter 8](#) we outlined some examples of moral change and explained why it's reasonable to think of some changes as morally progressive, others as morally regressive. We then developed a non-ideal ethical approach called “moral progress theory.” This approach examines how progressive moral change unfolded in the recent past—through rational psychological mechanisms in the right social and institutional environments—and provides a roadmap for fostering moral progress in the future. Moral progress theory is thus an alternative to traditional ideal ethics, one that is more viable given human cognitive limitations.

In [Chapters 9](#) and [10](#), next, we'll apply moral progress theory to a series of detailed case studies. The aim is to develop a general model of medium-term, local moral progress, one that can be projected into the future. This model offers a bird's-eye view of some forces in recent moral evolution. This means that we'll have to skip over many important historical details—for example, in economic and political history. Instead, we'll highlight the roles of the moral mind and social institutions in some of the most significant moral revolutions over the past few centuries.

Institutional moralities sometimes change in ways that are progressive, sometimes in ways that are regressive. More often, perhaps, they don't shift appreciably in either a positive or negative direction. But by studying the change that does happen, and its rational underpinnings, we stand a better chance of encouraging moral progress and hampering moral regress. The key, as we'll see, is to identify feedback loops between the flexible moral mind and complex social institutions.

9

Inclusivity

Long ago, our ancestors discovered hunting and gathering. Ever since then, human beings have lived interdependently within groups that were in frequent competition with one another. Only the groups that came out on top left biological or cultural descendants.

Intergroup competition was often bloody, especially in areas of the planet with high population densities and resultant scarcities in resources and territory. Bands regularly carried out brutal warfare and raids against vulnerable neighbors. Pacifism was not good for fitness. Ruthlessness, instead, was more likely to yield productive offspring and influential students. Indeed, moral minds evolved in part because cooperation within groups facilitated competition between them, including violent conflict.

Across human history, however, intergroup competition was often purely cultural and therefore relatively benign. For example, some groups were better at attracting immigrants who then adopted the group's culture; in addition, some groups flourished and thereby incited other groups to copy them. One lesson of this book is that an accurate picture of our ancestors' relationships with outsiders must leave room for considerable variation across space and time. Sometimes groups waged war; sometimes they cooperated for purposes of trade and mate exchange. Due to this sort of fluctuation in social structure between groups, humans evolved flexible moral minds, designed to be more or less inclusive.

Furthermore, it's because of this deep-seated moral flexibility, and because of the later influence of social institutions on moral minds, that anatomically modern human beings became behaviorally modern; that small bands of hunter-gatherers coalesced into large tribes; and that these large tribes built even larger, settled societies. Humans are adapted to develop moral feelings and thoughts that can potentially embrace a wider range of people, depending on the circumstances at hand. And so, by

expanding morality from the family to the band, humanity was born. Thanks to early religious identities and social institutions, moral circles expanded to encompass the tribe, and humans were thus made modern.

After the evolution of settled societies, however, incentives for moral exclusivity grew and institutional moralities contracted. Powerful oligarchic states exploited neighboring societies. A high demand for manual labor, aided and abetted by conveniently sliding criteria for moral standing, meant that these states also sought out humans for their corrals of domesticated animals. If outsiders could not be made into compliant servants they might not be allowed to live. War, genocide, and slavery—sowed in great quantities by agricultural cities, states, and empires—are the three gravest sins of moral exclusivity in the story of modern human beings.

Flexible moral minds enabled otherwise altruistic humans to kill outsiders in huge numbers. Warfare between large tribes could leave hundreds dead. Warfare between technologically advanced nation-states was several orders of magnitude more deadly. During the 20th century, roughly one hundred million soldiers and civilians perished in the two world wars alone.¹ As many or more late modern humans were victims of genocide: Indigenous peoples in the Americas and Australia; Jews in Europe; Greeks and Armenians in Turkey; ethnic minorities in the Soviet Union, Germany, Cambodia, Indonesia, Rwanda, and countless other places.² In each case, as philosopher David Livingstone Smith argues, people de-humanized other tribes and excluded them from their spheres of moral concern.³

If they were lucky enough to escape obliterating warfare or genocide, many human societies became internally diverse. That is, they contained multiple tribes whose ideologies and identities were more or less at odds with one another. Sometimes, people with different ethno-linguistic, religious, or political identities lived in relative harmony. Often, though, minorities were relegated to the margins of a society, deemed unworthy of sympathy or protection from harm. In North America and Western Europe, for example, a white, mostly Christian tribe excluded Black people, religious minorities, disabled people, and LGBTQ individuals from their moral circles.

Modern human history is a horror story. And yet, there are clear cases of inclusive moral progress during late modernity, in response to problems of exclusivity such as those just described. It's impossible to know whether the

world as a whole is progressing or regressing. But if we know anything in ethics, we know that inclusive moral progress was achieved by ending African chattel slavery, by eliminating some of the most virulent forms of racism, and by reducing discrimination on the basis of sexual orientation.

In [Chapter 8](#) we sketched several clear examples of inclusive moral progress and exclusive moral regress. Here in [Chapter 9](#) we will paint a richer portrait. Our detailed case studies of inclusivity and exclusivity in this chapter are taken from the frontlines of progressive and regressive moral change in American and Western European societies (simply because they happen to be familiar to us, given our backgrounds and cultural location). We'll begin by discussing slow resistance to anti-Black racism over the last 250 years. We'll then turn to faster changes in homophobia and speciesism over the last 50 years.

Utopias are captivating but unknowable. And so, instead of seeking a universal and ideal ethical code, moral progress theory plumbs recent history to uncover strategies for rationally improving moral minds. In this chapter we'll develop moral progress theory by identifying mechanisms that drive the cultural evolution of inclusive moral progress. That is, we'll begin building a model of rational moral change. This model explains how human societies reliably achieve gains in inclusivity—or, in other words, how the moral circle durably expands. (The cultural evolution of equality is more complicated and will be saved for the next and final chapter.)

The subject of this chapter is inclusive moral progress. An enormous range of material is therefore potentially relevant. Entire books can be devoted just to the cultural evolution of racism or homophobia or speciesism. As a consequence, we have no choice but to be selective. Our aim is not to thoroughly explain how inclusivity unfolds. The aim of [Chapter 9](#), rather, is to study how inclusivity is rationally motivated and, therefore, to learn how to tilt cultural evolution in the direction of progressive moral change.

Each of our case studies in this chapter is worthy of longer treatment. In addition, each can be illuminated from many different perspectives. Nonetheless, multidisciplinary evolutionary science, developed in [Parts I–III](#) of this book, provides one important perspective on cases of moral progress. By attending to the evolved moral architecture that is distributed across human minds and cultures, we'll explore the psychological and institutional mechanisms that yield general lessons about the evolution of

rational moral change. As mentioned in the previous chapter, we do not intend to issue a definitive theory of the evolution of moral progress. If this chapter and the next stimulate further theorizing and discussion of this topic, we will have successfully accomplished our goal.

During late modernity, moralities sometimes expanded, for good reasons, to encompass outsiders previously seen by insiders as less than human. To understand this rational moral change and how to capitalize on it, it's crucial to have a grasp of evolved moral minds and social institutions. In light of the institutional moral psychology developed earlier in this book, we'll develop a model of the rational forces behind historical episodes of inclusive moral change. We'll then use our model to predict, tentatively, how nascent episodes of moral progress can be dependably spurred along.

9.1. African Chattel Slavery

We've been careful in this book to avoid a naïve and unreasonably sanguine view of moral evolution in late modernity. In the previous chapter, we argued that it simply can't be known whether human societies have, on balance, improved morally over the last few hundred years. Local moral progress has happened, but so has local moral regress. No sweeping global conclusions can be drawn because it is difficult to determine whether progress outweighs regress, particularly given the existence of a plural set of moral standards. Without keeping all of these ideas in mind it's easy to slip into Pollyannaism—to accept a rosy but inaccurate picture of moral change in the recent past.

However, it's also easy to slip into misleading cynicism—to overlook episodes of genuine moral progress. For instance, the abolition of African chattel slavery in the 19th century, though obviously long overdue, was a remarkable event. Across the long history of modern human societies, most people not themselves in chains have accepted that slavery, in one form or another, is morally permissible. Thankfully, this perspective is now creeping toward extinction in many parts of the world. It's not happening fast enough: slavery still exists in sex trafficking, for example. But what was the rational impetus, if any, for condemning and abolishing African chattel slavery in particular? That's the question we'll try to answer at the outset of this chapter. We'll then expand and adapt our answer as we go on to consider other gains and losses in moral inclusivity.

Chattel slavery in the Americas inflicted horrific violence on Black adults and children. Slaves were legal property, murdered on a master's whim. They were whipped for disobedience or simply to impart a lesson to others. Women were raped, infants brutally killed, families torn apart. Virtually all human beings have a natural sympathetic response toward suffering, along with moral norms that forbid gratuitous harm. And yet, slavery was tolerated by whites in America, even celebrated. Widespread Christian teachings enjoined the faithful to love strangers as they loved themselves or their own kin. Nonetheless, otherwise kind, dutiful Christians practiced and supported slavery.

A powerful bulwark for slavery was racist ideology tied to America's economic and political institutions. According to this ideology, people of African descent were not fully human in their intellectual or moral capacities.⁴ The commitment to racist, de-humanizing ideology led whites to muffle their sympathy for Blacks and to otherwise limit the scope and intensity of moral thoughts and feelings that might be directed toward them.

Racist ideology was difficult to sustain, however, when Black people who knew of slavery firsthand addressed audiences through intelligent and compassionate discourse. Some whites still imagined that the slave trade was not as inhumane as often reported. This was forcefully contradicted by depictions of life on slave ships from artists who had witnessed the cruelty and misery there. Abolitionary pamphlets, along with books like *Uncle Tom's Cabin* by Harriet Beecher Stowe, also made the horrors of slavery vivid.⁵ They belied the comforting fantasy that whites regarded Black slaves as valued members of their own families. Moreover, they demonstrated the humanity of Black people in ways that more and more people could not ignore. So, as whites were exposed to direct and indirect evidence of the horrors of slavery, along with arresting evidence of the moral and intellectual characters of Black people, racist ideology began to decay and moral opposition to slavery slowly grew.

In the United States, moral beliefs changed slowly. Abolition did not take place until the end of a bloody and devastating civil war. Matters were different in the British Commonwealth, where slavery was abolished through a relatively peaceful legislative decree. The majority opinion against slavery emerged and prevailed, however, only after half a century of public debate. Moral progress in Britain was not led primarily by former slaves themselves, though some did speak there. The change came about

through public discussion in a predominantly white population that applied their moral and religious beliefs to “the slavery question.” In light of considerable evidence about the practice of slavery and its social and economic implications, British people asked themselves whether they could condone it.

As philosopher Kwame Appiah notes, public discourse about slavery took place not just in the halls of Parliament but also in newspapers, books, bars, churches, schools, and townhall meetings, which were well attended by ordinary people as well as church and business leaders.⁶ The working class in Britain prided themselves on their ability to earn a living through physical labor. Appiah argues that a widespread consensus emerged that their own physical labor was dishonored when, intuitively, they could see no relevant difference between the nature of their work and that of African slaves. Given their other moral commitments, British people found that they could not consistently condone slavery.

The protracted demise of chattel slavery in America and the British Commonwealth is obviously a far richer and more complicated story than the one we have just told.⁷ For example, we have elided discussion of many activist organizations that forced people to question the moral permissibility of slavery. Furthermore, a case can be made that chattel slavery declined for economic reasons that had nothing to do with morality. Many forces were certainly at play. What we are interested in, strictly, is how moral opposition to slavery arose and spread through rational psychological processes. That is, how did American and British societies come to know that slavery is wrong? And what were the cultural and institutional conditions necessary for this moral knowledge to develop?

We hope you agree that the abolition of slavery is a clear case of moral progress. Your confidence is warranted. But not because this truth is self-evident (it wasn’t to most modern humans). Nor because you reasoned your way to the truth from a universal ethical code (no such code itself warrants confidence). On the contrary, you are simply lucky to have inherited an institutional morality that condemns slavery. So, the question at hand is this: How did your cultural ancestors acquire moral knowledge that slavery is wrong? We have said enough to provide a provisional answer.

To begin with, moral exclusion was best appreciated by the people who were its victims. Whites learned about the wrongness of slavery only because Black people who knew it best testified to its horrors.⁸ In America

and Britain, furthermore, whites were able to reason that what would be a horrible injustice to those like them was also an injustice to Black men and women who, they learned, were no different in any morally relevant ways. The ideology that cast Black people as inferior in intelligence and character—a difference that might conceivably have justified slavery—was shattered by firsthand experience, reliable testimony from trusted sources, intuitive moral thought and feeling, and moral consistency reasoning.

Rational thought alone, however, was insufficient. American whites who were most susceptible to acknowledging the injustice of slavery, primarily in the North, had long been isolated from people of African descent. The abolitionist movement succeeded in part by disrupting the social structures that kept races apart. Whites who did have direct contact with Black people could then pass on what they learned to people who trusted them—in Northern U.S. states, the British Commonwealth, and elsewhere.⁹ Not all were convinced, of course. In particular, why were white slave owners not keenly aware of the injustice? It is hard for anyone to condemn their own way of life, especially when it benefits them, kin, and kith. As Charles Mills argues, moral ignorance about the harms of racial exclusion is often actively sustained to protect the interests of the whites who benefited from it.¹⁰

From the case of abolition three lessons can be drawn. First, a rational source of inclusive progress lies in victims of exclusion, who have more intimate access to moral knowledge about their own traits and the injustices they suffer. Second, however, people who are not themselves victims can also gain moral knowledge through the exercise of moral intuitions and moral reasoning. Third, to learn that morality should have a broader and more inclusive scope, it is important that the structure of society be changed to bring insiders and outsiders into regular and friendly contact with one another.¹¹ This is not sufficient for all forms of moral progress, as we'll see in the next chapter, but it is often a necessary condition for inclusive expansion of the moral circle. And it can be especially effective when institutional reform changes the structure of societies.

In [Part III](#) of this book, remember, we argued that humans became modern through autocatalytic cultural co-evolution between cognitive and social adaptations. In this chapter, so far, we've uncovered evidence that the same type of evolutionary process underlies the rational abolition of slavery. Through social knowledge and intuitive moral reasoning, whites began to appreciate, by degrees, that slavery was appalling and that no

morally significant differences between whites and Blacks existed to justify it. This opening of minds depended on intergroup contact between white and Black people. It also facilitated more such contact, which deepened appreciation of the horrors of slavery, which led to more contact, and so on and so on.

We've now given a first pass on the general model of moral progress to be developed further in this chapter. Inclusive moral progress unfolds through positive feedback loops in cultural evolution—between morality, knowledge, and social structure. This idea will resurface, in different ways, in each of our case studies. The abolition of chattel slavery is just our first illustration. In this case and others, progressive improvements in the moral mind caused, and were caused by, gains in knowledge and reforms in social structure. After the end of American chattel slavery, however, racial inclusion unwound more slowly and more unevenly, partly through active and brutal resistance on the part of whites, and also partly because of entrenched institutional barriers.

9.2. Anti-Black Racism

Slavery was abolished in America in the 19th century, but its legacy has remained extraordinarily potent. In the Southern states of the Confederacy, slavery had been a longstanding way of life. Southern political and economic elites pitted working-class whites against enslaved Blacks, as competitors in exploitative labor markets.¹² White people of all classes were thus motivated to defend their relative privilege over Black people. They clung to an emotionally gratifying and materially rewarding ideology that portrayed themselves as exalted members of God's creation.

Though the South lost the Civil War against the North, this outcome did not much alter most Southern whites' culturally ingrained sense of superiority. After Reconstruction, whites in the South continued to inflict violence against Blacks through frequent lynchings and persistent harassment. Furthermore, Southern political institutions enacted voter suppression. Through poll taxes, literacy tests, and brute intimidation, liberated Black populations were disenfranchised for more than a century.¹³

In the 1960s, the civil rights movement succeeded in dismantling Jim Crow and overturning many discriminatory laws and rules. But the problem of racial discrimination remained—in whites' behavior and in the economic

and political institutions designed principally to serve them. The problem is especially severe in the legal and political institutions that comprise the American criminal justice system. Black people are, proportionally, victims of police brutality far more often than whites. They are also still more likely to be disenfranchised, for example through partisan gerrymandering of political districts.¹⁴

Michelle Alexander and other social scientists have shown that Blacks in America are incarcerated at several times the rate for whites, predominantly for drug crimes, even though rates of the use and sale of drugs do not vary significantly with race.¹⁵ One reason for the persistence of racial discrimination is that whites are still racially biased, explicitly and implicitly. According to Alexander, racial biases affect the choices of law enforcement officials at every step in the criminal justice system, from concrete decisions about what initial charges to lay against a defendant to broader policies about what neighborhoods to patrol.¹⁶

The problem of anti-Black racial discrimination runs even deeper. According to Elizabeth Anderson, among others, it depends crucially on one structural feature of American society, constructed and maintained by several different types of social institutions.¹⁷ As we'll see next, the history of American anti-Black racism in the 20th and 21st centuries illustrates, in a quite different way, the same type of feedback loop between morality, knowledge, and social structure that, according to our model, helped end slavery.

In this chapter we'll discuss the exclusion of Black people from moral circles constructed by whites. We'll wait until the next chapter to discuss their subordination in an unjust social hierarchy. Thus, our discussion here will only address one dimension of anti-Black racism. And by exploring the factors that promote and undermine rational moral change, we'll continue to focus on just one among many forces in inclusive moral evolution.

Staggering disparities between white and Black Americans exist in wealth,¹⁸ mortality,¹⁹ health,²⁰ and education.²¹ Anderson argues persuasively that one of the most significant reasons for these disparities is segregation. Legal segregation under Jim Crow was abandoned in the 1960s, but a pattern of voluntary and involuntary segregation in workplaces, schools, churches, clubs, and neighborhoods persists. In fact, racial segregation in American schools has climbed since the 1980s, due to

urban white flight²² and the refusal of courts to enforce civil rights law mandating racial integration within learning institutions.²³

Combined with pre-existing racial disparities, the result of racial segregation in America is that Black people are disadvantaged along multiple, interacting dimensions. Material and social capital are concentrated among white businesses, schools, and neighborhoods, leaving Black adults and children with limited access. Critically, as Anderson goes on to argue, segregation perpetuates racial stigma and prejudice by preventing friendly intergroup contact. Consequently, anti-Black racism persists in some places, erodes too slowly in others, and makes gains elsewhere because the positive feedback loop between inclusive moral attitudes, knowledge, and integrative social structure is broken or impeded.²⁴

In sum, anti-Black racism has both declined *and* persisted for some of the same reasons behind moral opposition to chattel slavery. Knowledge about the harms of racism can be transmitted from Black to white people when the barriers that keep them separate are dissolved. Whites can then discover that there are no morally relevant differences that justify excluding Black people from their moral circles. In the 20th and 21st centuries, however, inclusive moral progress for Black people in America has been hampered by continued segregation, which is maintained by several types of social institutions.

Notoriously, legal and economic institutions have denied Black families the mortgages needed to purchase homes in predominantly white neighborhoods.²⁵ Economic institutions keep white and Black people in different occupations.²⁶ Learning institutions at every stage offer disparate educational opportunities.²⁷ At a higher, overarching level of social organization, governments are commanded mainly by whites and have prevented reforms to the structure of other institutions (more on this in [Chapter 10](#)). Each of these institutions systematically disadvantages Black people in countless ways, but our main point here is that they maintain segregation, which feeds moral exclusion.

Philosophers and social justice advocates have engaged in a long and ongoing debate about the nature of racism. Early scholarship located the essence of racism in the head or the heart.²⁸ That is, it was thought that

racism is fundamentally a matter of believing that some racial groups are inferior and/or feeling antipathy toward people on the basis of their race.

More recent scholarship, however, tends to deny that racism is a matter of either thought or feeling. This view says that racism is fundamentally systemic rather than personal.²⁹ That is, racism exists as a social structure that systematically disadvantages people of color. Individuals might have benign intentions, but if society is structured to advantage white people and disadvantage Black people, then racism lives on. For example, structural racism is reflected in municipal taxation schemes, which leave schools in predominantly Black neighborhoods severely underfunded.³⁰

Both of these perspectives are valuable, but each is limited on its own. Simply adding them together is not sufficient either. Racism, it's true, encompasses moral psychology and social structure. However, racism is dynamic, not static. Anti-Black racism in America is a complex and evolving social system: inferiorizing, antipathetic attitudes create, and are created by, social institutions that segregate whites from Blacks and that offer one group various forms of material and social capital that are denied to the other.

Moral progress against anti-Black racism has succeeded, to a degree, in part by inverting this vicious loop. Feelings of sympathy and reasoned beliefs about moral standing lead to social integration, which fuels the fire of feeling and thought. Advocates of racial inclusion therefore have to work to change hearts and minds and to alter the institutional structure of society. Without changing both of these dynamic elements, it's unlikely that racial exclusion will exhibit significant decline. For example, it's necessary to reform political, economic, and learning institutions. But if racist structures are dismantled, then racist people in a democratic society are likely to rebuild new ones (as happened after the end of chattel slavery in America).

Our main aim in this chapter is to develop an evolutionary model of medium-term, rational moral change. In a nutshell, our model states that inclusive moral progress rises to significant levels and is stable when there is cumulative, autocatalytic cultural co-evolution between the moral mind, knowledge, and institutional social structure. We'll continue unpacking this model by exploring one of the most stunning episodes of moral progress in Western societies in living memory: the decline of homophobia. (We'll return to anti-Black racism in [Chapter 10](#) when we shift our topic from inclusivity to equality, and when we also discuss gender equality.)

9.3. Homophobia

Sexual moralities have been strikingly diverse across modern societies. The origins of Western philosophy, for instance, lie principally in an ancient Greek society that permitted and encouraged sexual relationships between older and younger men. However, in more recent Western and non-Western societies, gay individuals have faced powerful stigma, hostility, and prejudice.³¹

Many societies have evolved purity norms that categorize gay sexual relationships as dirty and obscene (see [Chapter 7](#)). These norms are moralized, similar to other purity norms that condemned “miscegenation” between Blacks and whites. Norms of sexual purity are given priority over other norms, both moral and merely conventional; these norms are linked to moral emotions such as shame and repugnance; and they are regarded as objectively independent of opinion. (See [Chapter 4](#) for how the moral mind has evolved to treat some norms as distinctively moral.)

Gay relationships are illegal in many societies.³² More than just that, they are prohibited by informal moral standards and scorned by dehumanizing ideology, aided by dominant forms of religion. Being gay has often served as an invitation to ostracization and violence. The result is that many people attracted to members of the same sex have led deeply unhappy and unfulfilled lives. They have faced high rates of depression and suicide.³³

Over the course of half a century or more, however, the condition of gay people has improved dramatically in North America, Western Europe, and elsewhere. Norms that regulate romantic and sexual partnerships have changed for the better. Thus, certain religious institutions became more tolerant, and laws forbidding “sodomy” were overturned.³⁴ While gay relationships continue to be illegal in many countries, punishable even by death in many pockets of the world, same-sex marriage is now legal in America, Canada, England, and dozens of other countries.³⁵

These institutional changes have been accompanied by a psychological and behavioral metamorphosis. Anti-gay stigma has declined;³⁶ slurs are less common;³⁷ public discourse is generally less toxic. Being gay is no longer commonly regarded as a basis for public disgrace and social expulsion. By degrees, homosexuality is no longer routinely medicalized

and pathologized³⁸ or conflated with pedophilia,³⁹ nor is it treated as deserving of disease and tragedy. In the 1980s and 1990s, for example, many people held the odious belief—and were not shy about publicly expressing it—that HIV/AIDS was God’s punishment for being gay.⁴⁰

Of course, inclusive moral progress for gay and lesbian people has not gone far enough. Worst of all, it has not reached the most vulnerable populations within gay communities. For example, the legalization of same-sex marriage is laudable and necessary, but the underlying social movement has left behind those gay people who are ethnic minorities, or transgender, or find pleasure and meaning in polyamory and other non-traditional sexual relationships. Nonetheless, the progressive changes that have occurred are enormous and undeniable. Indeed, they constitute nothing short of a moral revolution.

One useful proxy for measuring psychological changes toward gay people is public acceptance of same-sex marriage. Opinion polls on this issue have flipped. Just a few decades ago, an overwhelming majority of Americans was opposed to same-sex marriage. Two decades into the 21st century, more than two-thirds of the country are in favor of same-sex marriage.⁴¹ Now, you might worry, for good reason, about the validity of opinion polls. Are people expressing their honest opinions or just telling pollsters what they think they’re supposed to believe?

Research in social psychology suggests that the psychological change is deep. Implicit biases were first studied in the 1990s.⁴² The incidence and intensity of many implicit biases haven’t changed much since then, unfortunately. This moral stasis reflects the intransigence of sexism, racism, and other forms of discrimination and oppression. However, one of the few exceptions to this depressing trend is anti-gay implicit bias.⁴³ People today feel more sympathy toward gay men and women, and less of the moral disgust and disdain that keep gay people outside moral circles.

So, what lies behind the “gay rights revolution?”⁴⁴ The explanation for this episode of inclusivist moral progress is certainly multi-factorial. One important force is gay rights activism. In particular, activists succeeded in reforming not just laws but also norms and practices within various social institutions. Institutional reforms then changed people’s moral attitudes by altering surrounding patterns of behavior and what people regard as socially acceptable. Much activism of this kind was tied to the emergence of

HIV/AIDS in the early 1980s. However, activism by itself is a double-edged sword. Anti-gay organizations can and do wield it effectively too.

In addition to activism, a further cause of the gay rights revolution is that younger generations are generally more open to new ideas and identities, whereas many older people whose bigotry is unbending are no longer alive. Gay progress is thus driven partly by generational turnover.⁴⁵ But what explains the shift in moral attitudes for younger people? Why did they change their minds so recently rather than during previous generations? Why has homophobia among young people decreased more than racism? By itself, generational turnover doesn't explain much.⁴⁶

Another important factor in gay inclusive progress, which also interacts with generational turnover, is the increasing number of gay men and women leading public and candid lives.⁴⁷ Supported by organized activism, more and more gay people came out to their friends, their family, and to the broader public. As a result, more people realized that someone they already care about is gay. They discovered that a beloved parent, child, or sibling is gay; that an admired friend, colleague, or teacher is gay; or that a prestigious film star, athlete, or musician is gay.⁴⁸

For those who already cared about the person who came out, it is easier to feel sympathy for them in light of their suffering; easier to feel guilt for contributing to their social imprisonment; easier to accept and indeed celebrate their sexual identity. They knew their loved one to have a strong moral character, so it became difficult to believe that gay people generally did not. They reasoned that if there is nothing wrong with their loved one's sexuality, there must be nothing wrong with the sexuality of so many gay people who are strangers. For this reason, among others, culture became less homophobic, which made it easier for more gay people to come out. Openly identifying as gay can be extraordinarily difficult, but the costs of courage have dropped and seem still to be dropping.

One critical reason that the gay rights revolution happened so quickly, compared to many other episodes of moral progress, is that the path to social integration is less obstructed. Sexual orientation is, more or less, a hidden trait that is randomly distributed throughout the population. It's relatively common for a heterosexual person to discover that they already have a close relationship—as family member, friend, or colleague—with someone who is gay. This kind of familiarity breeds moral knowledge.

Race provides a striking contrast. First, it's difficult to know someone intimately without, from the start, knowing whether they belong to a racial minority. Prejudice can then preempt familiarity. Second, most people are born into a society that is deeply segregated with respect to race. Neither of these conditions hold for sexual orientation. Being gay is a “horizontal” social category that transcends kinship, rather than a “vertical” social category (like race) that is shared only within families.⁴⁹ Gay and straight people are therefore primed for integration. And so, our model explains why, in some places, homophobia has declined more quickly than racism, even among people with conservative political and religious affiliations.

Bit by bit, people began to feel sympathy for gay people and reasoned that there are no morally relevant differences that would justify their moral exclusion. This rational psychological process went hand in hand with reforms to social institutions. For example, family institutions changed so that many gay men and women are accepted as siblings and cousins, fathers and mothers, aunts and uncles, parents and grandparents. Religious institutions accepted gay people as congregants and even, in some denominations, as ministers. And, of course, legal and political institutions recognized same-sex marriage. In each case, the norms, practices, and ideologies that make up a social institution facilitated intimate and friendly relationships between straight and gay people.

It's worth emphasizing that many factors were responsible for driving the moral revolution in gay progress: activism, generational turnover, better public relations, and more general changes in sexual morality. With regard to the last factor, for example, gay people have benefited, as a side effect, from greater public tolerance of sex outside marriage, along with elevation of consent as the principal moral constraint on sex. Our survey is not intended to be complete. As we've been arguing, however, one important mechanism has the profile of a positive feedback loop in cultural evolution. According to our model, intuitive moral reasoning breeds integration, which in turn breeds greater inclusion through consistency in moral thought and feeling. Under the right conditions, moral progress loops.

In the rest of the chapter, we'll continue unpacking our model of inclusive moral progress and break down how “rational looping” operates in the gay rights revolution. We'll also explain how looping is stultified in episodes of moral regress. And, on the basis of our historical explanations, we'll extrapolate what our model implies about how to reliably and durably

expand other, still narrow moral circles through rational moral change. For starters, understanding the gay rights revolution suggests strategies for encouraging an as-yet only incipient trans rights revolution.

9.4. Transphobia

What was the initial catalyst for the gay revolution? How did a rational loop begin uncoiling? In the middle of the 20th century, activists and other cultural pioneers began to create tribal pockets in which gay and lesbian identities were accepted and celebrated.⁵⁰ In America, these pockets were located primarily in New York, Los Angeles, and San Francisco. As a result, gay and lesbian people moved there and began to lead public and candid lives. They found tribes in which they could be honest about their identities and obtain other social goods, not to mention have a reasonable hope of avoiding stigma and violence.

As more people came out, others subsequently discovered that a family member or friend is gay. Given a personal and emotional connection, it's easier to appreciate that someone is being unjustly harmed, that their liberty and love are needlessly curtailed, and that their identity is denied. Empathy and sympathy can be parochial and biased, but they also shine a focused spotlight on the suffering of intimates. Feelings can therefore act as a “moral wedge” that catalyzes further moral change.

To fully change their minds, however, people needed to go beyond their local, interpersonal insight. They needed to engage in moral consistency reasoning. Thus, if there is nothing wrong with your friend's sexuality, then there must not be anything wrong with the sexuality of people you don't know personally. Or, if your friend should not have to suffer stigma and hostility, then you should not inflict stigma and hostility on others.⁵¹

Gay progress happened quickly but not because of any sudden, cataclysmic change. The rational engine of this progressive change is a positive feedback loop, one that is incremental but evidently accelerating. Some gay people began to come out, which enabled rational revision of moral attitudes for many people who happened to be close to them. This slowly changed the broader institutional culture so as to be more accepting of gay identities, which encouraged more people to come out, changing minds and slowly improving culture even further, and so on and so on.

Many other people whose identities are included under the LGBTQ banner have not enjoyed as much inclusive moral progress. At worst, there is moral stasis. In particular, transgender people are harmed by potent stigmas and punishing discrimination, similar in kind and degree to those that impacted gay people many decades ago.⁵² Many cisgender people still regard transgender people as unnatural and impure.⁵³ Unfortunately, it remains socially acceptable to air transphobic views in public.

Like being gay, being trans is largely a hidden trait that is more-or-less randomly distributed across the population. So, people can potentially discover that they have a close relationship with someone who is trans but does not conform to pejorative stereotypes. By generalizing from their local, interpersonal insight, they can realize that trans people are not depraved, that they are harmed by trans-exclusive moralities, and that trans identities are worth celebrating.

However, trans people make up a much smaller proportion of the overall population.⁵⁴ Opportunities for interpersonal moral insight are therefore rarer. In addition, gay progress was leveraged in part by excluding those LGBTQ people who were less “respectable” and therefore less likely to be accepted by the rest of society. Consequently, the problem of trans discrimination is severe and persisting, with few signs of significant progress in the mainstream population and much backlash against whatever modest progress has been made.

The path to greater acceptance of trans people is surely multi-faceted. But one important part of the solution has long been promoted by people in the trans community who, as victims of transphobic exclusion, understand the problem best. Our model of evolutionary looping deepens its rationale. Trans people must enjoy broader public representation in the media, in politics, and in other institutions that are fundamental to the fabric of modern society. Expanding pockets of trans culture, the main source of people willing to lead public lives, no longer have to be created in a discrete, physical location. Increasingly, they are cultivated online.

Broader representation would have the effect of decreasing segregation and increasing friendly intergroup contact between cisgender and transgender people. In general, the call for public diversity and integration is not, as conservatives sometimes charge, simply a meaningless paean to political correctness. Diversity and integration modify the structure of society in ways that are essential to reliable and enduring moral progress.

The reason, in this case, is they put cis people in a better position to gain knowledge about trans people and their mistreatment, which is likely to precipitate fruitful changes in integrative societal structure.

Earlier, we argued that a central factor in the gay rights revolution was that gay people chose to be open about their sexuality. According to our model, this changed the minds of people with whom they were already integrated, which made the broader culture more tolerant and welcoming, which made it easier for more gay people to live openly. On the basis of our model of rational looping, we've been suggesting that a similar process might spur a trans rights revolution.

However, the suggestion that trans people should seek broader public representation seems problematic. It places an enormous burden on them, at great personal risk. Trans people who choose to be open about their gender are regularly victims of violence and harassment. In addition, an emphasis on public representation is likely to fuel an ongoing politics of respectability, wherein those trans people whose bodies and behavior are most acceptable to the mainstream population benefit, while others are left behind.

This objection raises concerns not just about our model and its implications but about the very idea of non-ideal ethics, as it was formulated in the previous chapter. Moral progress theory seeks to leverage an explanation of historical moral progress in order to find strategies for advancing future moral progress. The problem, in short, is that what worked in the past might not be good enough. There may be better strategies that previous generations were not able, or not willing, to make use of.

We'll offer two responses to this objection, the first in defense of non-ideal ethics generally. To put it succinctly, we've argued that because morality is a complex bio-cultural adaptation, the best evidence about how to improve it in the future is what worked in the past. Therefore, more inclusive strategies that look promising in theory may be unworkable in practice. That does not mean they shouldn't be attempted. But we shouldn't pretend to know more about their efficacy than we have evidence for. Nor, then, should we invest more resources than is wise in an untested strategy, not at the cost of divesting from strategies with good track records.

Our second response to the objection defends our evolutionary model of inclusive moral progress by denying that it relieves cisgender people of moral responsibility. We've argued that rational looping is the only reliable

route to durable moral inclusion. For better or worse, this entails that trans people themselves are the primary agents in the fight against transphobia. However, cisgender people must also act as trustworthy and supportive allies. Cultures will become less transphobic only if cis people are willing to actively take up the moral knowledge that trans people have intimate access to and work so hard to broadcast.

Cis allies must consider how their beliefs about trans people, along with the issues that impact them, are distorted by segregated, deeply transphobic cultures. In general, as the discussion in this chapter illustrates, institutional culture massively shapes human capacities—emotional and cognitive—to know moral truths. This fact should encourage a kind of culturally motivated “moral fallibilism.” To wit, something can seem like a good reason for your beliefs, even though it is easily recognized as a flimsy excuse by people who live in an integrated and more progressive cultural environment.

To better understand this kind of moral fallibilism, let’s return briefly to the topic of race. By looking backward in time, we can find a clear case in which cultural context makes a flimsy excuse seem like a good reason. In the days of Jim Crow in the American South, some liberals had views about forced segregation that were nuanced—too nuanced. They believed that forced segregation was wrong, but with some exceptions. They believed that in some limited areas of society segregation might make sense. They believed, even, that it was often good for Black people themselves to live and work separately from white people. In hindsight, their views were not sufficiently “extreme.” Today, the same is likely to be true of cis people’s views on trans issues.

For gay people, same-sex marriage has been given outsized public attention, often at the cost of issues that have a greater impact on less privileged gay populations. By contrast, there is no single issue that is central to public discussion surrounding trans people. Across several issues, however, cis people should wonder whether seemingly good reasons for their beliefs are thin excuses. Because most cultures are so transphobic, many people likely have mistaken opinions, perhaps clearly evident only in hindsight, about such things as who should be allowed to use women’s bathrooms, who should be allowed to attend women’s colleges, whether to defer to people’s stated pronouns, and which gender categories trans athletes should participate in.

We don't mean to be arguing for the correct ethical position on all of these issues. What we do mean to be arguing is that cis people have reason to lower their confidence about these issues when they conflict with the majority opinion of trans people themselves, given that segregation from trans victims of exclusion is likely to deprive them of knowledge about the injustices trans people suffer. That's what our model implies. And it represents one way cis people can act as allies to trans people, supporting them in the fight against exclusion.

9.5. Speciesism

Our model of progressive inclusion identifies a positive feedback loop between morality, knowledge, and social structure. A rational loop is found, to varying strengths, in inclusive moral progress against racism, homophobia, and transphobia. The loop is also evident in another change to the moral circle, one involving not racial or sexual minorities but non-human animals. Overall, however, changes in the relationships between humans and other animals have been regressive rather than progressive. In this case, as we'll see, the rational loop is broken.

Ever since our genus evolved, humans experienced fierce competition from other animals. Mammals, birds, and other creatures foraged for the same fruits, tubers, seeds, and nuts. Non-human primates attempted to occupy the same territories. Lions and other large cats were dangerous predators that devoured many human kin. Desperate to survive, our ancestors turned to hunting animals for food. Obviously, they weren't at this time in a position to treat animals humanely. It wasn't until much later that they had the option to cooperate, rather than compete, with most other animals.

Even before the agricultural revolution, humans had developed symbiotic relationships with a few animal species. Their most intimate relationships were forged with the wolves who would eventually evolve into dogs through natural and artificial selection. Beginning roughly 40,000 years ago, some wolves began hanging around human camps, eating discarded food.⁵⁵ Eventually, they were welcomed inside, exchanging protection and companionship in relationships of moral reciprocity. Long after humans domesticated themselves through culture-driven genetic selection, dogs were given the same unwitting treatment.⁵⁶

After the growth of agriculture, humans went on to domesticate many animals previously hunted only in the wild. Despite raising these animals for meat or milk, relationships with them were relatively humane. Humans wanted animals to be healthy at least partially for the sake of self-interest, since their own lives depended on it. Furthermore, close quarters cultivated natural feelings of sympathy in response to feelings of distress, which animals express much like humans do.⁵⁷

The industrial revolution, however, drastically altered our relationships with domesticated animals.⁵⁸ Pets like dogs and cats are special cases. But technologies that enabled cheap, efficient meat production in vast warehouses, along with intensifying financial incentives for economic institutions that purvey meat, led to tragedy on a scale that is almost unimaginable. Consider just a few species whose emotional and cognitive abilities are similar to those of our pets. On industrial farms, tens of billions of pigs, cows, and sheep suffer from constant torment and agony.⁵⁹ This fact, when fully confronted, is heartbreaking to anyone who hasn't undergone intense conditioning to inure themselves to the animals' pain, tolerable to other people only by looking away.

Seen in a historical light, the relationships between humans and other animals is a clear case of moral regress. The economic and political institutions responsible for protecting sentient animals have failed to respond appropriately to the structural consequences of industrial and economic revolutions. Moral regress has transpired despite rising concern for non-human animals in many areas of the world—despite, for example, the growing number of people who choose vegan or vegetarian or flexitarian diets.

The root of the problem is structural. Segregation of animals on remote industrial farms prevents most of us from feeling an effective degree of care and concern. Non-human animals are therefore “de-humanized” in the sense that their emotional and cognitive capacities are diminished, and they are accorded less moral standing than they deserve. One of the most important strategies for members of the animal liberation movement is to foster relationships between humans and animals, demonstrate that animals have a capacity for suffering and happiness, and vividly publicize animal torture.⁶⁰ Social media has become vital to this strategy.

Animal rights activists make the most headway at the margins, by evoking sympathy among people who already share their concerns to a

degree, and would be willing, say, to adopt a more conscientious diet if given an emotional nudge. This can change the broader culture. To reliably improve moral perspectives toward animals, however, it's important not just to publicize animal cruelty vividly but to make the case, through socially transmitted knowledge and intuitive moral reasoning, that the differences between humans and other animals, while real, are not sufficient to justify torture for the sake of cheap food. Activists must encourage moral consistency reasoning. For example, if it would be wrong to torture your sentient cat or dog, it is wrong to torture sentient pigs, cows, and sheep on industrial farms. There are no differences between pets and livestock that justify such disparate treatment.⁶¹

Effective activism must also target institutions and the people who control them, including voters in the case of democratic political institutions. For example, they must work to overturn so-called ag-gag laws that prohibit documentation and dissemination of the conditions on industrial farms.⁶² In these ways, the social barriers that segregate animals—in physical space and our imaginations—might be toppled. Integration can enhance the power of moral arguments.⁶³ A progressive loop might then gain momentum.

When it comes to racism, homophobia, and transphobia, the primary agents of moral progress are victims of moral exclusion. By contrast, non-human animals do not have the same capacities for knowledge or agency. They certainly do not have the same abilities to communicate the harms they suffer, particularly through complex language. In this case, then, the most intimate access to moral knowledge about unnecessary animal cruelty is found among people who have close relationships with animals.

Scientists have long been skeptical about allegedly soft-hearted people who anthropomorphize animals and exaggerate their emotional and cognitive capacities.⁶⁴ However, scientific evidence for sophisticated animal thought and feeling has increased dramatically in recent years.⁶⁵ Furthermore, the moral risks of overstating the capacities of animals are lower than the moral risks of understating them.⁶⁶ For these reasons, people whose lives are integrated with animals are generally more trustworthy than people who are segregated from them. Kristin Andrews argues forcefully that scientists who study animals have a responsibility to develop

relationships with them in order to treat animals with the care they deserve.⁶⁷

From our model of rational looping we have extracted a series of ideas about how to gain knowledge that expands moral circles. The people in the best position to know about the characteristics of outsiders, often, are victims of moral exclusion themselves and those in close relationships with them. Their knowledge can be cultivated and communicated by reforming the institutions that maintain boundaries between outsiders and those who de-humanize them. The next and final task of this chapter is to take a step back and defend an assumption, tacit in our model, about the pace and predictability of inclusive moral progress.

9.6. Incrementalism

Human morality is an evolutionary achievement. For that reason, as we argued in [Chapter 8](#), humans cannot know the universal, ideal ethical code. The best they can have is non-ideal ethics—that is, the scientifically informed study of moral improvement. Moral progress theory is a non-ideal venture that relies on evolutionary science to study how rational moral change has yielded progress in the past and, to the best of our knowledge, will yield progress in the future as well.

Here in [Chapter 9](#) we’ve turned from theory to practice—from the philosophical foundations of moral progress theory to its application. By delving into case studies of moral exclusivity, we’ve constructed an evolutionary model that explains past inclusive moral progress and identifies conditions that will likely lead to future such progress. Now, though, we need to defend a critical assumption of our model. More specifically, we need to offer reasons for a view that we call “incrementalism” about moral progress, and we need to explain why this view isn’t as reactionary as it might initially appear.

To get clear about incrementalism, it will help to begin by thinking about roughly analogous ideas not in philosophical ethics but in evolutionary science. In the history of Darwinian biology, there has been an on-again, off-again debate about the pace of speciation, imitating even older debates in geology about the pace at which the surfaces of the Earth change. Our representation of this debate will be simplified, but we’ll use it just as an analogy.

On one side is the theory of gradualism.⁶⁸ According to this view, new species emerge over eons. The continuous pressures inflicted by natural selection lead to small, incremental changes in anatomy, physiology, and behavior. Over time, these small changes accumulate, sometimes yielding adaptively complex traits. At each reproductive step, nonetheless, offspring are nearly identical to their parents. Gradualism entails, therefore, that the boundaries between old and new species are fuzzy rather than sharp.

The other side in this biological debate is the theory of punctuation (sometimes called “saltationism”).⁶⁹ This view says that new species emerge suddenly. For example, an extremely rare genetic mutation produces an entirely novel body plan. If punctuation is the norm in Darwinian evolution, offspring are strangers to their parents. Old species yesterday are joined by new species today.

Gradualism has mostly won the debate in Darwinian biology, with some important exceptions.⁷⁰ However, an analogous debate about the pace of moral progress remains very much alive. Does moral progress occur incrementally? Or is it the result of sudden, punctuated social change? Given that cultural evolution, unlike biological evolution, can be guided by deliberate human innovation, both incrementalism and punctuation would seem to be live options.

The former stock trader and heterodox philosopher Nassim Taleb seems to suggest that moral change is punctuated.⁷¹ Taleb argues that human history is shaped largely by so-called black swan events. These events are completely unpredictable (except erroneously in hindsight) and have colossal repercussions for society. Think, for example, of the domestication of the horse, the development of steam engines, or the invention of computational devices. Or, more darkly, think about the invention of nuclear weapons, the chance evolution of deadly infectious diseases, or the unlucky election of authoritarian demagogues.

More to the point, “moral black swans” are unpredictable events that propel societies and their institutional moralities on an entirely new course, either for the better or for the worse. If you think that moral progress flies on the back of moral black swans, then you shouldn’t see much promise in our evolutionary model of inclusive moral progress—or anyone else’s model either. If moral change is punctuated, after all, the past will be a poor guide to the future. Furthermore, you should also be sympathetic to radical

political movements, more likely to favor sweeping overhaul of society rather than accretion of judicious reform.

Incrementalism, however, seems to be vindicated by the historical record. The cases of moral progress we've studied in this chapter seem to be incremental. Consider the abolition of slavery, major gains against anti-Black racism, and decreases in homophobia. All of these achievements were accomplished step by step, as moral knowledge spread and integration of insiders and outsiders accumulated. Some of these episodes of moral progress happened quite quickly, especially in comparison with the centuries of moral stasis that preceded them. However, what incrementalism entails is that moral progress unfolds in a series of transitions to adjacent states. In other words, then, morally progressive offspring are rather similar to their more regressive parents.

Wholesale shifts in moral culture do happen, but they are almost always regressive rather than progressive. Think, for example, of various "cultural revolutions" in which a radical political party gains power and attempts to re-design their society from scratch. These attempts always fail gloriously, not just in the sense that the societies do not flourish but also in the sense that the new institutional moralities are worse than what existed before. In fact, there is a reason to expect that punctuated moral change will generally be regressive.

Contemporary human morality is a complex product of Darwinian cultural evolution. As we've argued, this process is much smarter than any of the individuals who occupy some of its nodes. Political radicals, for example, can provide valuable contributions by imagining better futures, but it is dangerous to implement their visions of society in one fell swoop. The evolved nature of human morality is the reason that attempts to massively re-design institutional moralities are likely to create something even worse. It's also the reason that episodes of moral progress tend not to be black swan events.

This brings us to a crucial point: incrementalism does not mean embracing a stultifying conservatism that favors tradition over reform. Incremental, progressive moral evolution can be relatively fast and even quite groundbreaking. That is, positive moral revolutions do take place—such as the gay rights revolution discussed in this chapter. Typically, large-scale moral progress begins with small-scale "experiments in living." Instead of trying to re-design the culture of a society as a whole, small

groups of people use moral reasoning to re-design the sub-culture of their local tribes. If the results of experiments are positive, then they can be adapted elsewhere and scaled up for larger and larger portions of society.

That being said, it's possible that incremental moral change will not be sufficient to deal with the most serious threats to human survival. For example, perhaps something quite different—a moral black swan—is needed to address the problem of anthropogenic climate change. For this reason, we cannot be too confident that strategies that have worked in the past will also work in the future. When we turn to the problem of climate change in the next chapter, we will explore what we see as the best possible incremental solutions—even if they are not good enough.

Moral progress can be slow, but it need not be. In either case, whether fast or slow, reliable inclusive progress has been powered by piecemeal, incremental gains in moral knowledge and allied shifts in social structure. As we've seen in this chapter, and as we'll continue to see in the next, progressive moral change begins with local experiments in living and subsequently unfolds as a result of positive feedback loops between moral minds, knowledge, and social structure. Moral progress is achieved when small cultural changes accumulate and proliferate, in the very best cases at an accelerating pace.

The attempt to foster moral improvement can be effective only by tinkering with what we already have. That being said, let's not forget that even if evolved morality is wiser than many political radicals, it is far from optimal. Darwinian evolution leads to selection for higher fitness, not more justice. This means we cannot expect Darwinian forces to be automatically on the side of inclusivity and equality. In stage 4 of human history, the cultural and rational evolution of morality is directed by standards of cultural fitness that are informed by moral values and principles, as they are reassessed by communities of insiders and outsiders in light of new empirical knowledge and intuitive moral consistency.

9.7. Summary

Given the evolved moral flexibility of humans (detailed from [Chapter 2](#) onward), it's possible for moral progress to evolve. This justifies some hope about the future. It does not justify traditional conservative thought that seeks preservation of the status quo. Nonetheless, moral cultures change for

the better only incrementally. Relatively large and rapid change is the result only of many small steps. Incrementalism is the best we can have and, in light of available alternatives, the most we should strive for.

In this chapter we've focused on incremental moral progress for several groups that are among the primary victims of moral exclusion: Black people, LGBTQ people, and non-human animals. We haven't meant to imply that each case is the same. However, all are instances of moral exclusion. And we've argued that a general method for advancing moral inclusion is also common to them all, common indeed to addressing all problems of moral exclusion.

To reliably and durably expand moral circles, humans must cultivate sympathy for victims of exclusion and engage in reasoning that highlights fundamental similarities between insiders and outsiders. Moral knowledge about unjust exclusion is generated by outsiders and those close to them. In addition, institutions must be reformed so as to reduce segregation between insiders and outsiders.

These measures are not simply likely to generate one-off incremental gains. Rather, they have the potential to spark self-reinforcing moral revolutions, tilted rationally toward progress. Inclusive progress might then be on the horizon, not just for the victimized groups discussed in the preceding pages but for others too. The best test of this idea will come not from abstract arguments, such as those presented in this book, but from brave new experiments in living along with collective reflection on the results.

10

Equality

Human beings were made in the image of great apes. For millions of years, the ancestors of modern ape species, including ours, lived interdependently in small groups. Possessing moral feelings of sympathy and loyalty, they relied on one another for protection against predators and neighboring primates, raised their offspring collaboratively, and formed tight-knit coalitions.

Among non-human apes, however, trust was generally limited to kin and a small number of friends. In addition, respect was not mutual. On the contrary, great ape communities were structured by rigid social hierarchies. Dominant males and females expected others to feel respect and fear. And they treated subordinates viciously, with complete impunity, so long as they could retain their positions of relative dominance.¹

After our own lineage diverged from the last common ancestor with chimpanzees, humans could no longer seek dominance over other members of their groups or treat them viciously, at least not as a matter of course. Humans evolved emotional and cognitive capacities for cooperation not present in chimpanzees and other apes. Coalitions of humans helped create egalitarian communities by punishing would-be alphas and ejecting them from their group or even killing them. To live in a social world where egoistic domination was detrimental to fitness, humans gained the capacity for mutual respect.

Yet, dominance hierarchies never disappeared among humans, especially not between the sexes.² The patriarchy is not a modern invention. As far back as the relatively egalitarian Pleistocene, it's likely that males sometimes sought domination over females, including those females who agreed to be their mates, along with those who did not. When they could get away with it, both males and females sought to advance their social status

and mistreated individuals beneath them in the social hierarchy. These domineering humans were successful, in Darwinian terms, leaving descendants and imitators in subsequent generations. We must therefore count them among our biological and cultural ancestors, even if we might wish for a nobler pedigree.

Gender inequality has likely been part of the human story since before modernity, though it intensified dramatically after agriculture. Inequalities between ethno-linguistic tribes and socioeconomic classes have more recent origins but are also longstanding. Ever since the urban revolution, political leaders gained power over ordinary citizens; “civilized” empires enslaved “barbarian” neighbors; and monarchs subjugated feudal subjects. Thus, after enjoying relatively egalitarian lifestyles for hundreds of thousands of years, humans revived and escalated ancient social practices of dominance and subordination.

More recently, in the last few hundred years, late modernity has seen new and more durable problems of inequality, both between societies and within them. Market-driven exploitation of natural resources has led to enormous and growing wealth. A wider rift between social classes emerged. As a result of pervasive institutional structures, socioeconomically disadvantaged groups have been made to suffer unnecessary burdens. Blamed for their own misfortunes, they have been oppressed by religious, political, and economic elites, who have enjoyed positions of social power and denied others the opportunity to improve their circumstances.³

Beginning in the 15th and 16th centuries, and continuing well into the 20th, colonial domination exploded. Technologically advanced nations developed sophisticated economic and military institutions. These nations invaded and occupied weaker societies, exploiting humans they regarded as inferior. The savage project of colonialism has withered since then, but a colonialist legacy continues to shape relationships among ethnic groups, not just between countries but also within them.⁴ As more brutal forms of violence and exploitation subsided, more insidious practices of subordination have taken their place. Today, wealthy countries in the global North exert immense political and economic control over poor countries in the global South.⁵

In [Chapter 9](#) we discussed several case studies of inclusive moral progress and the rational forces underlying them. By analyzing historical cases, we constructed a model that offers general lessons about how to

effectively advance inclusive moral progress through rational psychological mechanisms. The key is to unlock the unique knowledge possessed by outsiders, engage interactive reasoning, and cultivate social institutions that reduce segregation—so that socially distributed knowledge, inclusive attitudes, and integrative social structures can feed one another in autocatalytic cultural co-evolution.

One of our principal case studies from [Chapter 9](#), however, is not an example of pure moral exclusivity. Anti-Black racism is not just a matter of exclusive feelings, norms, and reasons that fail to encompass Black people. It also consists of subordination within an unjust racial hierarchy. Thus, a more complete treatment of anti-Black racial justice must also include an account of egalitarian moral progress. And it is to this type of moral progress that we now turn.

In the previous chapter we focused on the evolution in American and British societies of chattel slavery, anti-Black racism, homophobia, transphobia, and speciesism. Our case studies of egalitarianism and inequality in this chapter are also, for the most part, culturally specific: gender inequality; class inequality; intersecting inequalities that contribute to social injustice; and colonialist legacies that contribute to global injustice.

In the culmination of the fourth and final part of this book, we'll continue to examine case studies of progress and regress through the lens of moral progress theory. Specifically, we'll explore how equality and inequality have evolved, so that we can articulate general strategies for achieving rational moral change. We'll identify psychological and institutional mechanisms that drive the cultural evolution of egalitarian moral progress—and inequality moral regress. The model that we'll develop is based on our model of inclusive moral progress from [Chapter 9](#), but it is somewhat more complex. Thus, the model here in [Chapter 10](#) explores not just how to expand moral circles but also how to dismantle unjust social hierarchies. Once again, our aim is to start a conversation about evolutionary science and moral progress, not to offer the final word. We hope that critics can improve upon our theorizing.

During late modernity, moralities have tended to produce greater equality in some areas of society and greater inequality in others. By explaining how some human relationships have become either more or less egalitarian, we will put ourselves in a position to sketch a roadmap for

future gains in equality. As we learned earlier in [Part IV](#), reliable and durable gains in equality depend on rational forces. The key to widespread, lasting change, once again, is positive feedback loops in cultural evolution between moral minds, collective knowledge, and institutional social structure.

10.1. The Patriarchy

The most ancient and ingrained problem of inequality arose in relationships between men and women. In great ape communities, dominance hierarchies exist within both sexes. Typically, though, even the most subordinate male occupies a higher social rung than the most dominant female. Long ago, hunter-gatherers became more egalitarian in their social organization; relationships between males and females have exhibited plenty of variation in human history. But, for reasons given in [Chapter 2](#), nothing resembling complete social equality was reliably extended to the “second sex.”

Circumstances went from bad to worse after the agricultural revolution. Women were confined largely to reproduction, childrearing, and domestic labor.⁶ There is nothing intrinsically undesirable about these roles, but in a patriarchal society they come with low social status. A lack of social power meant little recourse for women who experienced subjugation and violence at the hands of men. None of this is the result of innate biology alone. Gender inequality in modern human societies depends on evolved institutional culture.

In America and other Western countries, conditions for women began to improve noticeably in the late 19th and early 20th centuries.⁷ The first wave of the feminist movement succeeded in attaining for women certain basic legal and political rights, like the right to vote, the right to own and inherit property, and the right to an education. Second-wave feminism fought with significant success for a broader range of goals: to enter previously closed economic institutions; to be free from domestic violence and marital rape; and to gain reproductive choice. More generally, second-wave “consciousness raising” led women (and indirectly some men) to understand how oppressive patriarchal structures underpin gender subordination, in the public realm as well as in women’s personal lives.

More recent feminist movements continued the battle against assault and harassment in the workplace and other public spaces; unequal pay for equal

work; and a pervasive and invidious culture of misogyny, thrown into sharper relief by online social movements. Most critically, third-wave feminism became *intersectional*.⁸ That is, fresh attention was given to women who are oppressed along multiple, sometimes interacting dimensions, not just on the basis of their gender but also class, race, sexuality, gender identity, and ability.

Of course, women continue to be subordinated under the patriarchy, even in those societies that claim enlightenment. Over their lifetimes, roughly one in four American women will be a victim of rape or other forms of sexual assault.⁹ Women of color and poor women are particularly vulnerable to sexual violence.¹⁰ The most common agent of violence against a heterosexual woman is still her male partner.¹¹ Criminal justice systems continue to be systematically unresponsive to domestic partner abuse.¹²

In addition, childcare and domestic labor remain “women’s work.”¹³ Within romantic and other interpersonal relationships, women are also burdened with the brunt of “emotional labor”—that is, they are responsible for managing the health and well-being of the men and children who are emotionally dependent on them, sanctioned and punished if they do not fulfill a role whose burdens are still not yet widely appreciated.¹⁴ As with other inequities, the burdens of domestic and emotional labor weigh more heavily on women within certain ethnic groups.

In public life, furthermore, women continue to be denied the status and authority to control the norms and institutions that shape their lives. Only a small minority of politicians, even now, are women.¹⁵ A much smaller minority are non-white or disabled women.¹⁶ In other social institutions too—in corporations,¹⁷ religious orders,¹⁸ and academies of higher learning¹⁹—women occupy few positions of authority. Thus, gender subordination is underpinned not just by the attitudes of men but also the institutions designed to serve them.

Nonetheless, in many countries over the last century and a half, the subordination of women has diminished—comparatively speaking, albeit for white women more than others, and only in some areas of life. The balance of domestic labor and childcare between men and women has shifted, if only moderately. A hundred years ago, formal rules and informal norms barred women from entering universities.²⁰ Many occupations that

were once exclusively male now permit entry by women, even if they don't warmly welcome them.²¹ The number of women holding positions of power in politics and other social institutions is no longer virtually zero. Gender equality still has a long way to go, but some progress has been made. In many places, women have higher status, enjoy greater social freedom, and garner more respect. How did this happen?

In the struggle against anti-Black racism, emotions, norms, and beliefs changed through experiences born by intergroup contact. However, spatial integration—obviously—cannot explain the decline of gender inequality. Since before our species evolved, men and women have tended to live together in pair-bonded relationships and families. Therefore, men always had plenty of direct contact with women. And so, it would seem as though the model of inclusive moral progress presented in [Chapter 9](#) cannot explain egalitarian moral progress for women.

In addition, shifting from inclusivity to equality highlights another apparent deficiency of our evolutionary model, in connection with anti-Black racism. In many oppressive contexts, white and Black people have also been spatially integrated. Thus, our model seems unable to explain why racial subordination persisted among whites who employed Black servants in their households, or who were raised by Black caregivers, and therefore had plenty of direct contact with people who were subordinated. In short, we cannot yet explain the evolution of equality, neither for women or Black people.²²

So, does our model need to be abandoned entirely? We don't think so. But, to explain egalitarian moral progress, it does need to be significantly reworked. In the next section we'll begin elaborating our model in light of rising gender equality in the 20th and 21st centuries. In the rest of the chapter we'll adapt the model to explain the evolution of other forms of equality. We'll then be in a position to identify conditions that can stem the rise of intersectional inequality, locally and globally. A crucial step is to identify more subtle forms of segregation, buttressed again by social institutions.

10.2. Gender Equality

Unlike many other pairs of groups whose relationships are structured by domination and subordination, men and women have always been spatially

integrated. Elizabeth Anderson argues, however, that men and women, like white and Black people, have often been segregated in another, less visible way: via social roles.²³ Many social positions and occupations are reserved for men and denied to women (and vice versa). Critically, roles for women have lower social status and offer little social power. *Role segregation* thus enforces an unjust social hierarchy.

What helps keep this form of social organization in place is a pervasive and entrenched ideology, along with a set of allied social practices. According to sexist ideology, men and women have certain natural differences.²⁴ For example, men are assertive and intellectual, while women are passive and emotional. Supposedly natural differences such as these are not just descriptions. They also serve to justify and sustain practices that create gendered divisions of labor, status, and authority.

Sexist ideology is powerful enough to distort moral emotions. Instead of feeling compassion for a woman striving to break free from her enforced subordinate position, men under the sway of sexist ideology are likely to feel condescension or anger. Someone who strains futilely against her (supposedly) essential, inescapable, and inferior nature deserves at most only pity. As men occupy positions of power, sexist ideologies then serve to keep women in low-status, subordinate roles.

In North America and Western Europe, gender egalitarian moral progress was initially sparked by women who managed to take up roles traditionally reserved for men and to excel within them. Initially, women fought their way into small-scale political institutions at the level of local organizations and municipalities. They began to enter schools and other traditionally male learning institutions. During the world wars, with men busy killing and dying on the battlefield, many societies had no choice but to allow women to enter industrial workforces.²⁵ Later on, plateauing wages required more women to earn money outside the home as single incomes became insufficient to support whole families.

Doors were not opened for women. They had to force them open. When women excelled in roles with higher status, typically, most men around them resisted. But some men could not but feel newfound respect. Consequently, a sexist ideology of natural differences began to crumble, at least at the edges. Sexist ideology could not be maintained in the face of socially transmitted knowledge about sexist prejudice and manifest similarity between the sexes. Ideological defenses weakening, role

integration continued, which fueled knowledge about women and emotions of respect for them. Spearheaded by women entering economic and political sectors, a positive feedback loop between moral minds, knowledge, and role integration precipitated incremental egalitarian progress.

A gendered hierarchy persists, of course, in many private and public contexts. One primary reason is that the social and institutional barriers that uphold role segregation have proven, so far, to be too robust. For example, entrenched systems of cultural learning in family and economic institutions reward women for fulfilling certain prescribed roles (such as caregiver) while punishing them for deviating from sexist norms. As philosopher Kate Manne describes it, misogyny is the “law enforcement branch” of the patriarchy.²⁶ Culturally inherited systems keep women in subordinate roles within institutions of family and religion, economics and politics.²⁷ Sexist norms and ideology are not only endorsed by men but have also been internalized by many women.

Structural barriers are upheld predominantly by men. “Old boys clubs” in politics and business intentionally keep women out, while also breeding a hostile culture that makes it difficult for women to participate in ways that allow them to gain social capital. Thus, in many parts of society, social structures prevent a progressive loop from starting or gaining momentum.

In sum, one major reason for continuing sexism is role segregation. A more specific reason will be unpacked later in this chapter, namely, segregation in institutional roles connected to decision-making. Before that, however, let’s articulate three central philosophical ideas that fall out of our general model of rational, incremental moral progress. Here, as in the previous chapter, we are not offering a thorough explanation of moral progress. A wider range of cultural, political, and legal forces have fostered, and constrained, the evolution of gender equality. We are focusing on just those forces tied to rational moral change.

First, the best source of moral knowledge are victims of unjust exclusion and inequality. In the previous chapter, we argued that Black, gay, and trans people are in the best position to know about the injustices inflicted on them. Similarly, women tend to be more aware of the character and prevalence of gender subordination and the absence of morally relevant differences between the sexes that might conceivably justify gender subordination.²⁸

Second, this knowledge can be transmitted from women to men and thereby continue to undermine sexist ideology. The existence of some gender egalitarian progress demonstrates that men (often despite their best efforts) are not incapable of learning about sexism and misogyny. Rational moral change hinges on direct experience, testimony from trusted sources, and intuitive moral reasoning.

Third, the transmission of moral knowledge causes, and is caused by, reforms of social institutions that enhance integration. For women, among other subordinated groups, it's role integration that matters. We've hypothesized that while integration in physical space is key to inclusive moral progress, role integration is key to egalitarian moral progress. In both cases, nonetheless, what drives reliable and durable moral progress, through rational psychological change, is a self-reinforcing loop between morality, knowledge, and social structure.

At this point, we are in a position to identify an important objection to our model, not so much as an explanation of historical progress but as a projection of future progress. An intersectional lens brings this objection into sharp focus. Generally, in episodes of moral progress, the initial and primary beneficiaries are people who enjoy relative privilege within a given excluded or subordinated group. For example, during first- and second-wave feminist movements, white, wealthy women won far more liberties than poor women or women of color.²⁹

A similar dynamic is found in other progressive changes. Thus, the gay rights revolution benefited people who more easily fit a traditional, mainstream mold. Similarly, upper- and middle-class Black people have benefited more from racial inclusion than those who occupy lower socioeconomic classes. Following the recommendations of our model, then, seems likely to reinforce existing, intersectional patterns of injustice.

As we argued in [Chapter 9](#), our model and its potential drawbacks are consequences of taking a non-ideal approach to ethics, which we argued previously in [Chapter 8](#) is the only viable game in town. The problem with non-ideal theory, in short, is that historical progress tends to begin with those who are either closest to the edge of moral boundaries or who are least subordinated. Even if this is how progress has been achieved in the past, we can and should do better in the future.

Nonetheless, given the dangers of attempting punctuated moral change, the past is still our best guide. Our aim must be to learn from history while

attending to intersectional disadvantage, not to find an alternative that has no precedent. This does not mean forgoing progress for those who suffer the most subordination. As we argued in [Chapter 9](#), relatively privileged groups must learn how to be better allies to oppressed groups. We'll keep this in mind as we examine intersectional social injustice later in the chapter. First, though, we'll discuss what is arguably the most severe and entrenched problem of moral inequality, with modern economic and political structures at their root, through which the rich dominate the poor.

10.3. Class Inequality

At the beginning of [Chapter 8](#), we argued that average well-being increased during late modernity, ultimately as a result of social and technological revolutions. One mediating cause is the accumulation of wealth. Rich people today are, on average, wealthier than those in previous generations. And, in some societies at least, poor people today tend to have more economic resources than farmers and peasants several hundred years ago.

Despite overall wealth accumulation, however, the problem of moral inequality between classes has become more severe. Societies have become enormously more complex and the wealthy have garnered disproportionate control over how their societies are organized (which they manipulate, of course, to their own benefit). In addition, overall wealth has accumulated so massively that there is no reason for those in the lowest income brackets to be as poor as they are. That is, poor people have become wealthier since early modernity, but their relative wealth still lags wildly behind what social and technological revolutions have made possible. In short, poverty is a moral tragedy because it causes inequality and because contemporary societies have the power to prevent it.³⁰

To be poor is to be denied much of what the modern wealth of societies should enable. You are more likely to suffer from ill-health, including disabilities and psychological disorders,³¹ and to have limited access to adequate housing and healthcare.³² You are more likely to suffer from alcoholism and other forms of substance abuse.³³ You experience higher rates of domestic abuse,³⁴ sexual assault, and other crime.³⁵ You are more likely to be incarcerated,³⁶ victimized by police brutality,³⁷ and politically

disenfranchised.³⁸ You also find it difficult to gain access to high-quality education³⁹ and meaningful work.⁴⁰

As with other longstanding moral problems, a major barrier to class equality is entrenched ideology.⁴¹ Classist ideology both de-humanizes the poor and demeans them. A central tenet of this ideology is that poverty is self-inflicted, caused by laziness as well as lack of ability and intelligence. Hence, it is the responsibility of those who suffer from poverty to lift themselves out of it. On the one hand, classist ideology entails that it is unfair to impose on wealthy people the burden to reduce poverty since they are not responsible for it. On the other hand, charitable social programs intended to reduce poverty will, supposedly, only reinforce the shameful and pitiable traits that cause it.

In America, as elsewhere, class mobility is low.⁴² Nonetheless, adherents of classist ideology often cite examples of exceptional people who have transcended poverty through their own ingenuity, hard work, and resourcefulness.⁴³ From the truism that class mobility is possible, however, it does not follow that the majority of people in poverty have much control over their economic condition. For one thing, apparently exceptional people always enjoy exceptional luck. Moreover, an intersectional perspective brings to light empirical facts that shatter classist ideology.

On average, Black and Indigenous people are poorer than whites.⁴⁴ Consequently, they suffer from even more health problems,⁴⁵ are disproportionately targeted by criminal justice systems,⁴⁶ and have far fewer opportunities for good education⁴⁷ and meaningful work.⁴⁸ Obviously, however, people are not responsible for their race or ethnicity. It follows, then, they cannot be responsible for the greater poverty that they experience in virtue of their race or ethnicity. Classist ideology is therefore flatly inconsistent with patterns of intersectional disadvantage.

Classist ideology directly impacts behavior, leading upper- and middle-class people to feel contempt and lack of sympathy for those below them in the socioeconomic hierarchy. However, the far more impactful role of classist attitudes is to engender and sustain institutions that systematically disadvantage poor people, the effects of which need not be mediated by discriminatory attitudes. Legal and political institutions inflict oppression on the poor.

Some examples can bring this point home. First of all, housing legislation disadvantages poor people by prioritizing the interests of wealthy people and landlords. To receive just treatment under the law one needs to be able to afford a decent lawyer. Poverty is a source of despair and desperation, which breeds crime, leading in many societies to excessive incarceration, precarious housing, and political disenfranchisement. To vote, even when eligible, often requires privileges that poor people lack.

Consider another example. Instead of helping people who suffer from extreme poverty, sometimes as a result of mental illness, many societies criminalize homelessness.⁴⁹ Laws can therefore discriminate against poor people without doing so explicitly. As Anatole France said ironically more than a hundred years ago, “The law, in its majestic equality, forbids the rich as well as the poor to sleep under bridges, to beg in the streets, and to steal bread.”⁵⁰ In general, laws are designed by wealthy people who do not care and do not recognize that others, living in circumstances quite unlike their own, are suffering under poverty.

In sum, the major proximal cause of class inequality is not individual behavior but the structure of institutions. This cause is not limited to legal and political institutions. Modern economic institutions are structured so as to provide immense rewards to those at the top of the class structure and less than a living wage to those at the bottom. Learning institutions limit class mobility by providing valuable certification only to those who can afford it, either directly through exorbitant tuitions or indirectly by living in wealthy neighborhoods with well-funded primary and high schools.⁵¹

One might think that religious institutions are an exception to the general rule that institutions are the principal cause of class inequality. For example, many Christian churches preach to their congregants about the value of charity. However, these same churches also teach a doctrine of individual responsibility that fuels classist ideology. In general, religious institutions work less to eradicate poverty and more to help the poor accept their misfortunes and be grateful in spite of them. Churches also tend to be segregated by class and therefore mask poverty from wealthy congregants.⁵²

We’ve been developing a model that identifies the rational forces underlying historical episodes of moral progress. We’ve also tried to project our model into the future, to suggest strategies for further progress. However, the evolution of class inequality is a clear case of regress rather

than progress. Thus, our aim now is to offer a general model of this episode of moral regress and, on that basis, suggest how to resist rising inequality.

Unjust class structures have evolved in concert with classist ideology. To begin understanding why, it helps to see that the poor and the rich tend to be segregated in physical space *and* social roles. Furthermore, poverty tends to be similar to race, and dissimilar to sexual orientation, in two important ways (see [Chapter 9](#)). First, poverty, like wealth, tends to be vertically inherited, from generation to generation. Second, poverty is typically highly visible. These two features tend to sustain spatial and role segregation on the basis of class.⁵³ Consequently, the rich are durably segregated from the poor in ways that prevent the former from developing appropriate moral concern for or acquiring knowledge of the latter.

We propose that classist institutions evolved to produce greater inequality during late modernity in large part because they are designed by certain limited groups of people. People in decision-making roles within various social institutions are segregated from the poor, both in physical space and social roles. Therefore, they tend to modify institutions in ways that continue to systematically disadvantage the poor. This in turn reinforces segregation in all its forms, which reinforces classist ideology, which leads to the evolution of institutions that are even more inegalitarian. An “irrational loop” has uncoiled due to co-evolution between ignorance, immoral attitudes, and segregative social structure. It is thus the inverse of rational loops responsible for moral progress. Moral regress, too, loops.

One reason that social segregation loops with moral regress, as we’ve said, is that separation between dominant and subordinate groups cultivates ignorance about the absence of morally relevant differences between them and lack of concern for subordinate groups. But another reason is that subordinate groups have superior knowledge about the ways institutions discriminate against them, along with greater motivation to change social systems. Thus, when powerful decision makers are drawn exclusively from dominant groups, institutions tend to become more and more inegalitarian.

Our model of inegalitarian moral regress brings to light an important factor in moral evolution that has so far been invisible: *democratic segregation*. As a sub-type of role segregation, democratic segregation involves segregation in one particular type of social role: decision-making roles within various social institutions. Societies can therefore resist unjust inequality by reducing democratic segregation.

For example, political institutions are dominated by wealthy elites. As a first step, political reform requires participation from a wider range of people. Or, to consider another example, economic institutions are structured so as to massively benefit the rich because rich people are responsible for designing them. One familiar way of resisting inequality is for working-class unions to shape the structure of economic institutions of which they are a part. Unions enhance democratic integration, which progressively reforms economic institutions, which can then give workers greater power, and so on.

Put simply, our model for resisting inequality entails that egalitarian progress can be achieved via looping between three factors: democratic integration; knowledge to which subordinated groups have special access; and egalitarian moral minds and institutions. To gain a clearer grasp of democratic integration and our model, we'll turn next to some important cases of social injustice. More specifically, we'll consider oppression that lies at the intersection of class and either gender or race. Narrowing our focus to select examples, we'll suggest ways societies can begin to solve major problems of inequality.

10.4. Social Injustice

How did modern industrial and technocratic societies in America and the British Commonwealth become increasingly inegalitarian along so many dimensions? As social institutions became more and more complex, the people in control of them were drawn exclusively from a dominant group: upper-class white men. Out of a combination of self-interest and ignorance, they re-designed institutions to serve themselves and people like them, which led to more people like them gaining wealth and power, which increased their command of decision-making roles in institutions of greater scope and complexity, and so on.

This model of the cultural evolution of inequality is intellectually valuable. But it is also practically valuable, since it suggests strategies for dismantling the institutionalized inequality that impacts poor people, women, and people of color. The idea is that individuals in each of these social categories must enjoy broader representation in institutional decision-making roles—in short, societies must achieve greater democratic integration.

The best way to understand the practical implications of our model of democratic integration and egalitarian moral progress is to consider a set of case studies. First, we'll analyze the oppression of poor women through "the problem of parenting." After that, we'll turn to the oppression of poor racial minorities through "the problem of policing." We'll then be in a position, in the final sections of this chapter, to think about global inequality.

Before the agricultural and urban revolutions, it's likely that human tribes tended to embody moderate gender inequality. They were more egalitarian than other great ape bands, including other groups of *Homo*, but probably less egalitarian than the most progressive 21st-century communities.⁵⁴ As settled societies formed, and as they evolved sophisticated political and economic institutions, humans gained access to more resources and power. However, the benefits accrued to men residing near the top of a newly developing social hierarchy. For the rest, things did not improve morally. They got worse.

In early tribes, women were involved in a wide range of labor and knowledge.⁵⁵ Eventually, however, their freedoms were limited. Women had long been primarily responsible for parenting their own children, as well as grandchildren, nieces and nephews, and the offspring of close friends.⁵⁶ (To be fair, men contributed to parenting as well, though never quite as much as women.) In early cities and states, however, women were forced to be parents and caretakers, permitted to do little else.⁵⁷

Of course, parenting is hugely important to the health of society. It also has the potential to be immensely rewarding and meaningful. But, after being confined to the home, women's freedom was limited to parenting and other forms of domestic and emotional labor.⁵⁸ Parenting earned women only low social status. Some women were akin to chattel slaves. What little freedom women achieved was limited to domestic life. They were denied the ability to participate fully in religious, economic, and political institutions.

The gendered problem of parenting lives on. Due in part to oppressive systems of cultural learning, women still tend to take on the overwhelming majority of parenting responsibilities.⁵⁹ Poor women have the greatest need for help, partly because they are far more likely than men to be single parents.⁶⁰ The requirement to earn a living wage demands a greater number

of working hours. Of course, poor women are also less able to afford childcare. They are caught, then, in a double bind: to give up needed earnings or reduce their ability to care directly for their children.⁶¹

In a landmark philosophical discussion of injustice within families, Susan Moller Okin diagnoses one aspect of the problem of parenting, as it plays out in traditional, heterosexual partnerships.⁶² Okin argues that institutions structure choices so that it can be rational for men and women to fulfill gender stereotypes, and reinforce them, even when they are equally talented at the same tasks and think of themselves as moral equals.

Imagine, Okin says, a couple in which both the man and the woman are equally talented at their jobs and think of themselves as moral equals. Imagine, too, that both are equally talented at parenting. It's likely, nonetheless, that the man will be paid more for his employment. One reason is the existence of the gendered wage gap. Another is that if the woman takes the leave necessary for childbirth and recovery, the man is likely during that time to have climbed the career ladder further, gained promotions or seniority, and acquired a raise or added job security. Thus, Okin makes clear that if the couple cares about maximizing their earnings to provide adequate support for their children, it is, on balance, in their collective self-interest and indeed rational for the man to work outside the home and for the woman to take on the bulk of domestic and emotional labor.⁶³ Despite regarding themselves as moral equals and equally talented, they rationally choose work that reinforces gender inequality.

Contributing to the problem of parenting, poor women are severely disadvantaged by the absence of social programs that subsidize affordable childcare, as well as by the existence of business policies that do not consider the burdens of poor women. Neither do employers accommodate parental leave within incentive structures. The reason for all this, according to our model of inegalitarian moral regress, is that political and business leaders tend to be wealthy men. Laws and policies therefore tend to privilege wealthy men and disadvantage poor women, among others. And so, political and economic institutions contribute to inequality by systematically subordinating poor women.

Solutions could be provided by governments or businesses, but neither has developed anything close (except perhaps in Canada, France, and some Scandinavian countries). Our aim here is not to explore particular policy solutions to the intersectional problem of parenting. Rather, we want to

show how our model of egalitarian moral progress offers a diagnosis of the roots of the problem and suggests routes toward solutions.

The problem of parenting stems from democratic segregation within political and economic institutions. Solutions, therefore, can be found by diverse groups of people working together, conducting local experiments in living and analyzing the results before implementing them more broadly. An important first step in this direction is democratic integration: for decision-making roles in political and economic institutions to be occupied by a greater number of the people most gravely impacted, namely women with a lived history of poverty. They possess both greater motivation to seek solutions and more knowledge of the problem of parenting. Their knowledge must be cultivated, disseminated, and implemented. If solutions are successful, they would empower more poor women, who would then be in a position to occupy a greater number of decision-making roles. A rational loop might then unfold, one that reduces institutionalized inequality and produces egalitarian progress, incremental but perhaps accelerating.

Let's turn now to another example that illustrates the same general idea—shifting our attention from parenting to oppression at the intersection of policing and poverty. We'll offer just a brief taste of the complex, longstanding, and entrenched problem of policing, which affects a wide range of people. Our focus will be on the oppression of Black and Indigenous people in America and the British Commonwealth.

In America, Black people lived as slaves for no less than 250 years. They have been (ostensibly) liberated from slavery for not much longer than 150 years, since the end of the U.S. Civil War. Rooted in slavery, racist ideology evolved because it helped justify the exclusion and subordination of Black people.⁶⁴ Notably, this ideology was not internally consistent. Sometimes whites thought of Black people as less than human; sometimes they thought of Black people as a lower class of humans fit only to serve. After its violent collapse, slavery was replaced with other institutions of social control that thrive on exclusion and subordination. For example, Black Americans suffer more than any other group from mass incarceration. The 13th Amendment of the U.S. Constitution prohibits involuntary servitude but makes an exception for convicted criminals.⁶⁵

Indigenous people in North America have also been longstanding victims of exclusion and subordination. From the beginning of European intrusion into the continent, white colonists sought to exterminate

Indigenous people and deprive them of their land and resources. Treaties were signed and then broken. Indigenous people were then relegated to intense poverty on reservations. Children were forcibly taken from their parents and enrolled in cruel boarding schools. Those Indigenous people who attempted to live in predominantly white cities and towns were subject to punishing violence and discrimination, permitted employment only in unrewarding occupations that offer low remuneration.

As mentioned earlier, Black and Indigenous people suffer from higher rates of poverty than whites and other racial minorities. This means that they are also subject to higher rates of criminal victimization, ill-health, alcoholism, domestic abuse, and sexual assault.⁶⁶ These problems are caused by the oppressive structure of various social institutions. However, what we want to focus on here is the way policing, in particular, reinforces racial and class inequality.

Fundamental to the problem of policing is that the criminal justice system arrests and imprisons a disproportionate number of Black and Indigenous people.⁶⁷ Laws concerning drug use, housing, and mental health are systematically racially biased in their design and implementation.⁶⁸ Although whites use illegal drugs at roughly the same rates that Black and Indigenous people do, evidence suggests that the latter group use cheaper drugs on average, which are more likely to be sold in public spaces.⁶⁹ When the police focus on cheap drug use in poor neighborhoods, the result is incarceration of much higher numbers of Black and Indigenous people relative to their proportion in the population as a whole.⁷⁰ Another consequence is that Black and Indigenous people are among the primary targets of police violence and brutality.⁷¹ Yet another, indirect consequence is that Black and Indigenous people experience economic subordination through prison labor, unemployment, and low-paid work. They also suffer political subordination through lack of political representation and disenfranchisement. Studies show that all of this makes it more likely that the same people will re-offend, creating a vicious, debilitating feedback loop.⁷²

The criminal justice systems in American and British societies were designed principally by wealthy white men. Thus, we would argue that a greater number of impoverished Black and Indigenous people should play a role in reforming these criminal justice systems. Alongside other scholars

and activists, philosopher Olufemi Táíwò articulates this idea under the umbrella of “community control over policing.”⁷³

Roughly, the idea is that the communities that are supposed to be served by the police should play a role in their democratic governance. Community control does not tell us whether policing should be abolished, or defunded, or reformed. Again, we are not advocating directly for any particular set of policies. Rather, we’re outlining the first steps toward developing the right policies, by engendering democratic integration within the legal and political institutions that regulate policing.

The gendered problem of parenting and the racialized problem of policing can both be solved, we submit, by achieving a better understanding of how inequality evolves. Oppression arises from the structure of political, economic, and other institutions. Reform of these institutions is necessary. And it is best accomplished by fostering a progressive loop between democratic integration, moral minds, and collective knowledge.

Let’s summarize our discussion in this chapter of gender, class, and race. The oppressed, we’ve argued, are in the best position to have knowledge about their own oppression. This knowledge can be disseminated and acted on if oppressed groups occupy decision-making roles within important social institutions. The idea, remember, is not simply to make one-off gains, but to spark a growing moral revolution that feeds on itself and stems the tide of intersectional inequality. Our next task in this chapter is to see how our model of egalitarian moral progress can be applied within a global context. After offering some needed background, we’ll narrow our focus to the most significant problem of global inequality: climate injustice.

10.5. Global Injustice

Why are some countries rich and powerful while others are poor and disempowered? The answer to this question is extremely complicated, obviously, and social scientists have only begun to generate and test possible answers. But this much is known: global imbalances in wealth and power stem from a combination of historical happenstance and ideologically motivated domination.

On the side of historical happenstance, Jared Diamond argues persuasively that biogeography played a major role in shaping global societies during and after the agricultural revolution (see [Chapter 7](#)).⁷⁴

Farming and herding originated in, and spread to, a limited set of regions, largely due to the availability and portability of wild plants and animals that happened to be relatively easy to domesticate. As a consequence of agriculture, sizable human populations grew in select locations, and stable, large-scale government was possible.

Other circumstantial factors were also critical, such as climate, accessibility to the sea, and geographic vulnerability to invasion. In an important contribution to big-picture history, Joseph Henrich argues that the decision of the Catholic Church to forbid polygamy and marriage between cousins was also critical.⁷⁵ This rule disrupted parochial family institutions, leading to the rise of individualism as well as a willingness to trust strangers and develop commercial relationships with them.

Coincidental factors such as these were among the ultimate causes of global inequality. They also created conditions that enabled another more recent but important driver of global inequality: colonization.

Wealthy states had the means to exploit other societies to further enrich themselves. The motive was elite self-interest, of course. But self-interest was facilitated by the cultural evolution of de-humanizing and subordinating ideologies that cast outsiders as beyond the moral circle or fit only to serve. Despite their rich insights, scientists like Diamond and Henrich tend to underrate the role of colonialist ideology and oppressive social practices in exacerbating pre-existing disparities in wealth and power.

Europeans “discovered” America. They claimed to be the first “people” to find it, since they thought of Indigenous peoples as sub-humans. The colonization of the American continent was then accomplished through mass genocide, war, and slavery, along with relegation of native populations to the ecological margins.⁷⁶ Whites attempted to exterminate Indigenous peoples. Those who survived were forced to live in poverty, and therefore suffer from disparities in health,⁷⁷ longevity,⁷⁸ and opportunities for meaningful work.⁷⁹

Contemporary societies in America and the British Commonwealth are ethno-linguistically diverse, partly due to forced migration in the distant past and partly due to voluntary migration in more recent decades. Many current inhabitants come from countries that were once targets of colonization.⁸⁰ And so, the ideologies that evolved to justify and sustain colonialism now serve to subordinate peoples whose origins lie ultimately

in Africa and Asia, along with Indigenous peoples in the Americas and Australia. Historical colonialism between countries therefore helps to explain modern racial inequalities within them.

Colonialism also helps to explain modern global inequalities. Rich, developed countries have recently been forced to end much (though not all) warfare and genocide against people in developing countries. However, they continue to exert political and economic control over them. Multi-national corporations based in developing countries exploit natural resources, enriching their owners and shareholders along with local elites, while ordinary local citizens enjoy hardly any of the benefits and must tolerate nearly all of the externalities.⁸¹ International political institutions have lopsided ruling structures, their purpose largely confined to facilitating economic exploitation.⁸²

Now and especially in the not-too-distant future, the biggest cause of global injustice is anthropogenic climate change.⁸³ Riding the wave of the industrial revolution, rich countries have overwhelmingly contributed to climate change, but poor countries will suffer far more from its consequences. In the long term, changes in global climate may cause the extinction of much complex life on Earth, including humans.⁸⁴ But in the short to medium term, rich countries will have far greater resources to mitigate the harms. The victims will largely be innocent future generations. Thus, climate change will lead to intergenerational climate injustice, predicated on global inequality between rich and poor countries.⁸⁵

According to our model, the solution to problems of global inequality, including climate injustice, can be created through democratic integration. That is, people from developing countries must occupy decision-making roles in the political and economic institutions that sustain global inequality. In that event, decisions that shape the structure of these institutions will be more likely to reflect greater knowledge about global inequality as well as the moral motivation to resist it. However, several major challenges lie in the way.

International political institutions tend to consist of national governments with moralities and institutions that are “nation-centered.” That is, they tend to put the interests of their own citizens first. Furthermore, because national governments are controlled by wealthy elites, they tend to prioritize the interests of privileged people within their

own countries. Thus, cooperation is difficult. Global decision-making structures do not allow poor nations, through democratic integration within international political institutions, to dismantle the unjust global inequalities that persist between nations.⁸⁶

Consider the United Nations, the international political institution arguably best positioned to address climate injustice. On the surface, the UN may seem democratically integrated, since its members include countries from around the world. However, these nations are led by those committed to defending the interests of their elite citizens. The most powerful of these nations can demand a veto on policies that might benefit ordinary people in poorer nations, or even poor people within their own nations. And so, while the UN has attempted to take some steps to address the problem of climate change, its more powerful members have largely stymied the most impactful policies.⁸⁷

In the rest of this chapter, we'll look more closely at the problem of climate injustice. We'll explore in more detail whether our model of moral progress can be applied to this problem. Ultimately, we believe, a necessary part of the solution is for international political institutions to become democratically integrated. Furthermore, given that global power imbalances are so entrenched, we need to examine whether other types of moral and structural reform can help bring about democratic integration and global justice.

10.6. Climate Injustice

Modern climate change is unlike any other challenge humans have encountered. It's not a "natural" disaster. The gradual warming of the Earth's climate has been caused mainly by rich countries in the developed world whose industries have emitted billions of tons of greenhouse gases.⁸⁸ Indeed, that's partly how these countries became so rich. Climate change will ultimately affect every human on the planet, but it will be particularly harmful to future generations in poorer nations.⁸⁹ The injustice is therefore both global and intergenerational.

Strikingly, the existence of anthropogenic climate change is recognized by virtually all disinterested scientists with any relevant expertise.⁹⁰ And, just as strikingly, the solution to the problem is also widely known. In short,

climate change can be mitigated via two measures. First, countries must reduce emissions of greenhouse gases—for example, by shifting energy production from coal, oil, and natural gas to renewable sources like wind, water, and solar, which are likely to become more and more efficient as the years pass. Second, countries must employ low-risk technologies that can reduce the concentration of greenhouse gases in the atmosphere and acidification of the oceans. This should be attempted not through dangerous geo-engineering, if possible, but through safer technologies like carbon capture.⁹¹

The responsibility to reverse climate change lies with governments that can regulate energy production and incentivize the development and diffusion of technology. Our planet is on track to suffer accelerated climate crises not because humans lack the knowledge to prevent them but because the rich are unwilling to limit short-term economic gains for elites for the sake of long-term survival for everyone. If those with the most to lose as a result of climate change had more power, they might be able to force international cooperation and implement recognized solutions.

The burning question, then, is this: How is it possible to engender real democratic integration within international political institutions, such as the UN? In this case, democratic integration requires participation from economically subordinated nations, which cannot be simply pro forma. These nations must be able to exercise real power. How can this be achieved, given that nations are (at best) democratically governed by citizens and leaders with varying levels of concern and knowledge with regard to climate change? A totalitarian world government might be able to address the problem, but everything we know about history suggests that such a government, likely controlled by economically and militarily powerful nations, would be even less sensitive to global inequality than the national governments that exist today.

We think our model of inclusive and egalitarian moral progress can contribute to a solution to climate injustice. Again, as in previous examples, our model doesn't imply any particular policies. But it does suggest strategies that can be employed to develop and implement the right policies. To put it bluntly, it's unclear whether enough time remains on the climate clock to pursue these strategies, especially since our model can identify only incremental changes. But in the absence of any viable alternatives it seems nonetheless worth trying. At its core, our idea is that spatial and role

integration within international social institutions can potentially lead to the necessary democratic integration of international political institutions.

International social institutions include not just institutions of commerce and government, but also institutions of learning, medicine, entertainment, journalism, sports, and the arts. Because of recent improvements in communication, including growing access to the internet, people from diverse backgrounds, from diverse nations, can join together to pursue joint projects without costly travel across borders. Within these institutions, then, spatial and role integration can be accomplished virtually. And so, these international institutions have the potential to diffuse knowledge about the absence of morally relevant differences across global society that would conceivably justify exclusion or subordination. International institutions can therefore precipitate more inclusive and egalitarian moral minds.

Consider some examples. International scientific institutions are composed of scientists from universities across many countries. Together, they may study disease, or poverty, or climate by trusting one another in pursuing complementary research in diverse areas. Or, consider international institutions of entertainment and the arts. They consist of diverse entertainers and artists, along with the diverse public who consumes their work. By bringing people together and socially integrating them, we suggest, institutions such as these can foster more inclusive and egalitarian moral perspectives.

Still, a further problem remains. Many people across the globe are unconcerned about climate change, despite its existential threat to humanity. A main source of resistance is the spread of misinformation about the existence of the problem (and about the impact of proposed solutions). As we'll see next, misinformation also relies on the flexible moral mind and a hierarchical social structure that protects the privileged. Just like the other cases of inequality discussed previously in this chapter, these factors enter into a feedback loop engendering moral regress.

First of all, as we saw in [Chapter 4](#), the moral mind sets priorities among diverse moral norms when they conflict. Thus, while one might expect people to demand the rich and powerful take the lead in combating climate change, the privileged can claim that autonomy trumps the moral demands of harm avoidance and equality. They can also claim that the perceived threat of harm is a hoax perpetrated by those who want power for themselves.

Why has this claim garnered so much more credibility than it deserves, given the scientific consensus about climate change? Why indeed has so much misinformation spread through conservative social movements in America, the British Commonwealth, and across the globe? Why do people believe conspiracy theories not just about climate change but also about vaccines, elections, and secret cabals?

As we know from [Chapter 5](#), complex knowledge requires moral scaffolding. Beginning in early modernity and continuing to the present day, knowledge can be generated and disseminated only with the help of social institutions that cultivate and maintain appropriate moral emotions and norms. Individuals gain complex knowledge not on their own but by trusting and respecting the people around them, including experts. Unless you happen to be a climate scientist, you don't possess the evidence supporting the existence of anthropogenic climate change. You rely, necessarily, on the knowledge of scientific experts and the politicians and journalists who transmit their knowledge.

Misinformation exploits the very same social fabric that evolved to support knowledge. People who believe that climate change is a hoax are relying on others, just as those who believe it is a grave threat to human survival. They trust people regarded as experts in their community and the politicians and journalists who transmit their claims. Thus, the problem is not that they are individually irrational but that they have placed their trust in members of an irrational community. Morality sustains their erroneous beliefs, and it also prevents their correction. Many people distrust scientific experts and their representatives in politics and journalism. In virtue of this tribal moral structure—trusting unreliable sources and distrusting legitimate experts—they are trapped in what philosopher Thi Nguyen classifies as an “echo chamber.”⁹²

Why does this tribal distrust exist? In America, conservative media outlets have exploited fear and resentment for economic gain. In part, however, tribal distrust also arises from the perception that socioeconomic elites in science, government, and journalism do not care about those with low socioeconomic status. This perception is accurate. It is all too common for elites to regard lower classes as contemptuous and deplorable, to feel disrespect and disregard toward them. If a group of people don't care about you and your community, then it is in fact reasonable to distrust them.

Thus, the problem of misinformation rests, at least in part, on problems of socioeconomic inequality. Rational discourse is not enough to dispel misinformation and conspiracy theories, not without the right moral scaffolding that enables people to trust legitimate experts. For trust to arise, members of elite groups must win the trust of others and the tribes that contribute to their identities. And so, we have one more pressing reason for making our societies more egalitarian, not just economically but also with regard to power, status, and respect. More equality can limit the spread of misinformation.

A reliable and durable way out of problems of inequality, through rational moral change, is to build positive feedback loops that engender greater socioeconomic equality and attack the classist ideology that supports inequality. Scientific knowledge can advance moral progress—for example, when it produces technological innovations that generate wealth and reduce conflict. In addition, however, what our model entails is that moral progress is needed for scientific knowledge to be trusted and disseminated. Socioeconomic equality can overturn the tribal structures that spread misinformation about climate change.

Developed over the last two sections, our general solution to the problem of climate change has two components. First, spatial and role integration within international institutions can change the hearts and minds of citizens within countries. These citizens will then be more likely to care more about the impact of climate change on poor countries in the future. They will be more likely to elect democratic representatives who also care about the problem of climate injustice, who recognize its urgency, and who are willing to push for reform in international political institutions that equalizes power imbalances between rich and poor countries. This is a necessary first step toward collective political action.

Second, however, it is not enough to foster solidarity across national borders and elect politicians who care about climate change, not if misinformation continues to spread, advancing the belief that climate change is fake, a hoax elites have been taken in by, and an excuse to deprive working-class people of their rights. The problem of misinformation is buttressed by an unequalitarian social structure that privileges socioeconomic elites. To engender trust in science, government, and journalism we need a more equal society.

If these two solutions can be pursued, policies to reverse climate change may have a real shot. Will this way of facilitating global cooperation work? Is there still time to mitigate climate change? Will draconian solutions be unavoidable? We can only know by conducting experiments in living and analyzing the results.

10.7. Summary

The final part of this book has been an exercise in moral progress theory, developed as an alternative to traditional ethical theory. Identifying universal rules or ideally just societies is not a viable project for cognitively limited, evolved human beings. The aim for philosophers, scientists, and their intellectual partners must be, instead, to identify historical episodes of progressive and regressive change; develop a model of the rational forces in cultural evolution; and apply this model to the most pressing problems that humans face in their communities, countries, and global societies.

In the previous chapter we discussed problems of exclusion along with inclusive moral progress. In this chapter we turned to problems of inequality and egalitarian moral progress. We focused on a series of cases concerning the subordination of women, Black and Indigenous people, and the local and global poor. We argued that the model of inclusive moral progress that we developed earlier can be built up to explain egalitarian moral progress (and regress) in the past and to guide collective moral action in the future. Success is not certain, but our biologically and culturally evolved moral minds do make success possible.

As with inclusive moral progress, cultural evolution can foster egalitarian moral progress via positive feedback loops between institutional morality, collective knowledge, and integrative social structure. A key factor, identified in this chapter, is democratic integration. Members of oppressed social groups must enjoy greater representation in decision-making roles within social institutions. The knowledge and motivation they possess can be marshaled to enrich social knowledge and moral minds, which can continue reforming social structures in ways that spark moral revolutions. Problems of inequality are especially difficult. But it is critical that we attempt to solve them if future generations are to be granted opportunities to learn from our mistakes.

Conclusion: Survival

For hundreds of thousands of years, morality has been essential to the survival of humanity. The ancestors we share with chimpanzees evolved into humans by developing brains and bodies suited to cooperating in larger, more cooperative groups. For these complex groups to remain stable, humans evolved moral emotions, norms, and reasoning. Institutions then scaled up the moral mind so that it could support enormous tribes and societies. Ever since then, humans have been reaping the rewards and coping with the costs.

We began this book, in [Part I](#), by showing how biological and psychological altruism emerged through natural selection in apes millions of years ago. Through individual selection, kin selection, and reciprocal altruism, morality evolved because it enhanced fitness. Thus, to protect each other from external and internal threats, raise offspring collaboratively, and share food and labor, humans evolved moral emotions: sympathy and loyalty, trust and respect, resentment and guilt. Humans share some of these moral capacities with chimpanzees, bonobos, and other long-extinct apes, but their range, scope, and flexibility are unique to humankind.

Moral emotions rest on a capacity for deep empathy—to feel the same emotions as another. Deep empathy undergirds the binding emotions of sympathy and loyalty, but it also operates at a more complex level beneath moral emotions experienced by the human ancestors of *Sapiens*, perhaps as early as *Erectus*. The collaborative moral emotions of trust and respect, along with the reactive emotions of resentment and guilt, played a key role in making possible more complex forms of cooperation. This was essential to the survival of small human bands who lived for hundreds of thousands of years during times of drastic environmental change and intense intergroup competition.

In [Part II](#), we turned to the gene-culture co-evolution of moral norms. Culturally transmitted norms evolved alongside psychological capacities to learn and internalize these norms. Norm psychology reinforced cooperation through blame and punishment when norms are violated. Five clusters of

core moral norms became anchored in moral emotions: harm, loyalty, reciprocity, autonomy, and fairness. These norms are universal, but they have different interpretations and priorities across cultures, and thus give rise to enormous cultural diversity. Along with moral emotions, moral norms are the basis for an open-ended and pluralistic human morality.

From moral pluralism emerged moral reasoning. A moral norm can be indeterminate. Or it may conflict with other core norms. Resolution of indeterminacy and conflict is achieved through reasoning in a consistent way about analogous cases. In this way, the moral mind evolved into a flexible mechanism for motivating assistance, resolving disputes, and coordinating joint solutions to social problems. These problems include gaining the complex knowledge necessary for survival, possible only with the trust and respect that underwrites socially interactive reasoning. Thus, the moral mind that emerged by the time Sapiens evolved was necessary not only for cooperation, but also for complex knowledge.

In [Part III](#) of the book, we probed the emergence of behaviorally modern humans some 100,000 years ago when Sapiens began to shift from independent bands of hunter-gatherers into large tribes. Eventually, starting roughly 12,000 years ago, these tribes evolved into agricultural societies, urbanized city-states, and sprawling empires. This stage of human evolution is primarily cultural, since humans had already become anatomically modern with the arrival of Sapiens 300,000 years ago. What accounts for the revolutionary transition after some 200,000 years of stasis?

Our hypothesis involves the advent of unifying religious faith, social institutions, and new moral norms added to the moral mind. Religion expanded the moral circle to include people of shared faith who would otherwise be strangers. New authority and purity norms permeated not only family and religious institutions but also political, military, and economic institutions. Social institutions depended on elaborate divisions of labor coordinated by hierarchical authority structures. In the past, these structures enhanced our collective ability to survive. Unfortunately, those in positions of power also used structures of authority to their own advantage, creating unjust social divisions that persist to this day and now pose a threat to our collective survival.

In [Part IV](#), we turned to moral evolution—for better and worse—over the last few hundred years. No universal ethical formula can be used to determine whether a moral change is progressive or regressive. But there

are clear cases, such as the abolition of chattel slavery or the exacerbation of socioeconomic inequality. By studying the evolution of rational moral change in its social and institutional contexts, philosophers and scientists can develop an ethics of moral progress, one that avoids unrealistic idealizations.

Moral progress and moral regress unfold largely depending on how well or how poorly humans cope with problems of exclusion and inequality. Success or failure reflects the interplay of three key longstanding elements in our evolution: the moral mind, complex social structures, and knowledge of the world around us and of ourselves. Thus, the very same set of factors that produced our genus, species, and modern life is also at play in making our lives better and worse.

Evolutionary feedback loops among these factors can result in moral regress. Dominance and subordination, fed by undemocratic institutions, serve the few and reinforce injustice. Or feedback loops can be positive, as knowledge extends moral feelings and norms in integrated social and institutional contexts. When democratically integrated social structures generate knowledge, justice is possible. Progress and regress are always partial, success is always contingent, but the evolution of moral progress is possible in the right circumstances.

Exemplified in colonialism, genocide, and exploitation of the poor, moral regress benefits some at the expense of others. Until recently, however, moral regress did not pose an existential threat to our species as a whole. Global climate change is such a threat, caused primarily by the more powerful at the expense of the less powerful. Its resolution will require the richest nations to sacrifice for the sake of the common good. To make that happen, international political institutions must become democratically integrated. Taking action against climate change would be a morally progressive, historic step toward greater inclusivity and equality.

We've come a long way since our genus *Homo* split off from other apes. We now understand how life evolved, the damage humans have wrought upon each other and the planet itself, and the key role that human moral evolution must play in solving imminent threats to our continued existence. Put simply, human survival depends on moral progress.

Will we become a better ape?

We'll know soon enough.

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Notes

Introduction

1. Why exactly does “none of this theology survive Darwin”? Darwinian evolutionary theory provides a materialist explanation for the appearance of design in nature. This explanation undercuts theological inferences to the existence of God and His divine commands. Of course, a religious believer might yet hold that God is behind the creation of the material universe. They might accept that humans are not the product of special creation and yet insist that God set the process in motion. Our point here is not that theism is false but that it has lost what was once a crucial source of support. One of the best arguments for the existence of God was the “argument from design” ([Paley 1803](#)). This argument is no longer persuasive, given that Darwinian evolutionary science offers a much, much better explanation of natural design. So it goes for ethical prescriptions that appeal to God’s will or intentions. They were built on a theological foundation that has now crumbled.
2. Strictly speaking, genes are not passed only to offspring. Lateral gene transfer is common and may account for major transitions in evolution. See, e.g., [Quammen \(2018\)](#) for an accessible review.
3. [Hume \(1739\)](#).
4. [Kant \(1785\)](#).
5. See [Tennyson \(1850\)](#) for the origins of the phrase “red in tooth and claw.”
6. See arguments to the contrary from [Cordelia Fine \(2017: ch. 2\)](#).
7. Put another way, the idea is that if a trait exhibits a complex functional fit with its environment, and if it is not intentionally produced by an organism, then it is exceedingly likely to be the result of Darwinian, selective forces. Many researchers have made this point, going back to Darwin himself, but it is perhaps most clearly articulated by the philosopher [Daniel Dennett \(1995: ch. 9\)](#). We borrow the term “adaptive complexity” from him.
8. [Wrangham \(2009\)](#). In a more recent book [Wrangham \(2019\)](#) argues that humans evolved because they were able to tame one another.
9. [Hrdy \(2009\)](#).
10. For a clear presentation of the idea that human evolution is driven by not one but many factors, see [Sterelny \(2012\)](#).
11. We are grateful to Allen Buchanan for suggesting this phrase.
12. For some of the most significant philosophical contributions, see [Nichols \(2004\)](#); [Anderson \(2010\)](#); [Livingstone Smith \(2011\)](#); [Tomasello \(2016\)](#); [Buchanan \(2020\)](#).
13. Hume and Nietzsche are among the few exceptions.
14. Cf. [Dobzhansky \(1973\)](#), who wrote that “nothing in biology makes sense except in the light of evolution.”
15. [Boehm \(1999, 2012\)](#); [Wrangham \(2019\)](#).
16. [Nichols \(2004\)](#).
17. Here we are drawing on [Anscombe’s \(1957\)](#) distinction between two “directions of fit.” Some representations are supposed to fit the world (including descriptive ideas), while some

representations are supposed to make the world fit them (including normative ideas). As Anscombe says, for instance, a list of the same grocery items can be an inventory or shopping list. An inventory is supposed to fit the world; a shopping list is supposed to make the world fit it.

18. [Hume \(1739\)](#).
19. [Moore \(1903\)](#).
20. [Campbell and Kumar \(2012, 2013\)](#); [Kumar and Campbell \(2012, 2016\)](#); see also [Campbell \(2014, 2017\)](#); [Campbell and Woodrow \(2003\)](#).
21. See especially [Haidt \(2012\)](#).

Chapter 1

1. The dates given for our last common ancestor with chimpanzees, along with the dates subsequently given for the evolution of *Homo* and its species, come from findings about the earliest known specimen, molecular clocks, and other such sources of evidence. These dates should be taken as rough approximations only.
2. See [Leakey et al. \(1995\)](#) for the earliest known Australopith specimen.
3. [Strait \(2010\)](#).
4. [Herries et al. \(2020\)](#).
5. There is some controversy about which species represents the first member of the *Homo* genus. Some researchers think *Homo habilis* was the first, while some think this species fits better among the Australopith genus. *Habilis* might have been addicted to tool construction too, just like *Erectus*. In general, there are no sharp lines between different species and genera, so asking which species was, strictly, the very first *Homo* is probably misguided. Fortunately, nothing we say turns on which species was “first” in the *Homo* line that gave rise to us and at least half a dozen other human species. In addition, note that we are following researchers who lump various human populations together into *Homo erectus*. Other researchers split *Erectus* into two species: *Homo ergaster* (earlier) and *Homo erectus* (later). Again, there are no sharp lines here. “Lumping” versus “splitting” is often a matter of trading off between simplicity and precision.
6. [Ungar et al. \(2006\)](#); [Willems and van Schaik \(2017\)](#).
7. [Anton et al. \(2016\)](#).
8. [Richards \(2002\)](#).
9. [Rightmire \(1998\)](#).
10. [Rightmire \(2004\)](#).
11. [Gómez-Robles \(2019\)](#); [Douka et al. \(2019\)](#); [McNulty \(2016\)](#); [Dembo et al. \(2015\)](#); [Strait et al. \(2015\)](#).
12. See [Reich \(2018\)](#). Neanderthals and Denisovans also mated with each other. Remarkably, recent genomic analysis of a set of human bones dated to roughly 90,000 years ago shows that the individual had a Neanderthal mother and a Denisovan father ([Slon et al. 2018](#)).
13. [Reich \(2018: 58\)](#).
14. [Fleagle et al. \(2010\)](#).
15. These dates are approximations, like most other remote dates given in this book. In some cases there are several lines of support. For example, the new estimate of 300,000 for the speciation of *Sapiens* (instead of the old number of 200,000) is supported by evidence from fossils ([Hublin et al. 2017](#)), gene sequencing ([Mallick et al. 2016](#)), and new methods of analysis using ancient DNA ([Reich 2018](#)). On the other hand, some of these dates might be significantly off. Evidence currently available does not rule out the possibility that humans first reached the Americas not 15,000 but 20,000–25,000 years ago or even longer.
16. [Mounier and Mirazón Lahr \(2019\)](#).
17. [Haber et al. \(2019\)](#); [Rito et al. \(2019\)](#); cf. [Posth et al. \(2016\)](#).

18. [O'Connell and Allen \(2015\)](#). Cf. [Clarkson et al. \(2017\)](#), who claim that humans made it to Australia 65,000 years ago.
19. [Finlayson \(2005\)](#).
20. [Skoglund et al. \(2015\)](#).
21. [McBrearty and Brooks \(2000\)](#); [Conrad \(2006\)](#).
22. [Bocquet-Appel \(2011\)](#).
23. [Huxley \(1897\)](#); [Ghiselin \(1974\)](#); [Dawkins \(1976\)](#); [Wright \(1994\)](#).
24. This formulation of Darwin's idea is from [Lewontin \(1985\)](#).
25. There has been debate in the scientific and philosophical literature about whether Darwin's principle of natural selection is a tautology rather than a testable scientific hypothesis that can explain why better adapted individuals have evolved. In this book we hold the standard view that it is a testable scientific hypothesis. See [Campbell and Robert \(2005\)](#) for an examination of the issue and defense of our view,
26. See [Okasha \(2020\)](#) for a thorough review of biological altruism.
27. [Skutch \(1935, 1961\)](#); [Fry \(1972\)](#).
28. [Wilkinson \(1984\)](#); [Carter and Wilkinson \(2013\)](#).
29. [Cheney and Seyfarth \(1990\)](#).
30. [Hamilton \(1964\)](#); [Maynard Smith \(1964\)](#); [West-Eberhard \(1975\)](#).
31. [Brown \(1974\)](#); [Fry \(1977\)](#); [Hatchwell \(2009\)](#); [Hrady \(2009: 177–184\)](#); cf. [Stacey \(1979\)](#); [Kingma et al. \(2011\)](#).
32. The metaphor of genes as “selfish” comes from [Dawkins \(1976\)](#).
33. See [Maynard Smith \(1975\)](#).
34. [Trivers \(1971\)](#); [Axelrod and Hamilton \(1981\)](#).
35. [Wilkinson \(1984\)](#); [Carter and Wilkinson \(2013\)](#); [Wilkinson et al. \(2019\)](#).
36. [Wilson \(1975\)](#); [Wilson and Dugatkin \(1997\)](#); [Sober and Wilson \(1998\)](#); [Henrich \(2004\)](#); cf. [Maynard Smith \(1976\)](#).
37. [Sober and Wilson \(1998: 122–133\)](#).
38. [Muir \(1996\)](#); see also [Wade \(1976\)](#).
39. [Maynard Smith and Szathmary \(1997\)](#); [Blackstone \(2013\)](#); [Shelton and Michod \(2020\)](#).
40. [Nowak et al. \(2010\)](#); cf. [Abbot et al. \(2011\)](#).
41. [Williams \(1966\)](#); [Wilson \(1975\)](#); [Pinker \(2015\)](#); [Boehm \(2016\)](#).
42. [Maynard Smith \(1964\)](#).
43. [Lee et al. \(2010\)](#).
44. [de Waal \(1982\)](#); [Wrangham and Peterson \(1996\)](#).
45. See [Batson and Shaw \(1991\)](#) for review of evidence that seems to undermine psychological hedonism.
46. See [Schroeder \(2004\)](#).
47. [Sober and Wilson \(1998: ch. 10\)](#).
48. [Eibl-Eibesfeldt \(1974\)](#); [de Waal \(2007\)](#); [Rogers and Bales \(2019\)](#).
49. [Churchland \(2019\)](#); see also [Hrady \(2009\)](#).
50. [Wrangham \(1980\)](#); [van Schaik \(1983\)](#); [Feistner and McGrew \(1989\)](#).
51. See especially [Hrady \(2009\)](#).
52. For wolves see [Packard \(2003\)](#). For elephants see [Moss \(1988\)](#); [Payne \(1998\)](#). For whales see [Caldwell and Caldwell \(1966\)](#); [Connor and Norris \(1982\)](#).
53. [Safina \(2015\)](#); see also [de Waal \(2016\)](#).
54. [Busse \(1977\)](#); [van Schaik \(1983\)](#).
55. [Nishida et al. \(1985\)](#); [Wrangham and Peterson \(1996\)](#); [Crofoot and Wrangham \(2010\)](#).
56. [Boesch \(1994, 2002\)](#).
57. [Hrady \(1976\)](#); [Williams et al. \(1994\)](#); [Tardiff \(1997\)](#); [Chism \(2000\)](#); [Snowdon and Ziegler \(2007\)](#); [Burkart and van Schaik \(2010\)](#); [Ren et al. \(2012\)](#); [Tecot and Baden \(2015\)](#). See also

- Rogers and Bales (2019).
58. Hrdy (2007, 2009, 2016); Isler and van Schaik (2012); Burkart et al. (2009). Technically, “alloparents” refers to parents other than mothers and fathers, while “allomothers” refers to parents other than mothers.
 59. de Waal (1982); Byrne and Whiten (1988); Harcourt (1992).
 60. de Waal (1982); Silk (1993); Nishida et al. (1996).
 61. Riss and Goodall (1977); Nishida (1983); Nishida et al. (1996); van Schaik et al. (2004).
 62. Wrangham (1980); de Waal (1984); Isbell and Young (2002); Silk et al. (2003); Newton-Fisher (2006).
 63. See Fine (2017) for discussion.
 64. See Jensen and Silk (2013).
 65. Goodall (1990).
 66. de Waal (1997).
 67. See Andrews and Gruen (2014) for a review of relevant empirical literature on non-human great apes.
 68. Goldsborough et al. (2020).
 69. de Waal and van Roosmalen (1979); Kutsukake and Castles (2004); Fraser et al. (2008); Fraser and Aureli (2008); Romero et al. (2010); Romero and de Waal (2010).
 70. Horner et al. (2011); see Skoyles (2011) for criticism.
 71. Yamamoto et al. (2009).
 72. Anderson et al. (2010); Biro et al. (2010).
 73. There is plenty of anecdotal evidence but see also Warneken et al. (2007).
 74. de Waal (2006: 31–32).
 75. de Waal (1982).
 76. Goodall (1977); Takahata (1985); Hamai et al. (1992); Watts et al. (2002).
 77. Wrangham and Peterson (1996).
 78. Andrews and Gruen (2014).
 79. Povinelli et al. (1996); Call and Tomasello (1999);
 80. Call et al. (2004); Buttelman et al. (2007).
 81. Karg et al. (2015); Krupenye et al. (2016); Kano et al. (2019).
 82. Masserman et al. (1964). See Monsó and Andrews (forthcoming) for a review of recent empirical work on sympathy in other non-human animals.
 83. de Waal and Luttrell (1988); Bonnie and de Waal (2004).
 84. Skyrms (2004).
 85. Silk (2007); Tomasello et al. (2012).
 86. In the literature on stag hunts in game theory, there is often an emphasis on “assurance.” Two individuals might have self-interested reasons to “hunt stags,” but only if the other individual makes the same choice. Suppose I choose to hunt a stag but you choose to hunt a hare. Then I will have lost out, since I cannot capture a stag by myself. I would have been better off hunting a hare on my own. For this reason, it may seem that care and sympathy are not enough to solve problems that take the form of stag hunts. What’s missing is assurance that the other will cooperate. Indeed, later on we’ll discuss the emotion of trust that helps achieve coordination through assurance. However, while this objection makes sense in the abstract, it ignores the real-world ecology of primate cooperation. Often, “stag hunts” happen in contexts where an individual can see whether their partner is choosing to cooperate. They can make a “game time” decision about whether or not to hunt a stag or a hare depending on their partner’s behavior. Assurance is thus provided by direct confirmation of their partner’s behavior. Assurance also arises when potential partners, in feeling moral emotions, are moved by what the other wants and the other recognizes it. This “deep empathy” is discussed in the next chapter.
 87. See Cheney and Seyfarth (1982, 1985, 1986) for evidence from vervet monkeys.

88. Godfrey-Smith (1998, 2016, 2017); Grove (2017).
89. Some animals, like octopuses, have evolved to be highly intelligent because of complexity in their non-social environment; these animals do not live in cooperative groups (Godfrey-Smith 2016).
90. de Waal (1982); Byrne and Whiten (1988); Byrne (1996); Whiten (2018).
91. See de Waal (2006) for a theory about the “building blocks” of morality in humans and great apes. His emphasis is on “empathy” (de Waal 2009) but what he seems to mean is a combination of empathy and sympathy. On our view, developed in the next few chapters, the emotional building blocks of human morality are far richer.

Chapter 2

1. Antón et al. (2016).
2. See Kaas (2006) regarding the evolution of the neocortex.
3. Cf. Coqueugniot et al. (2004).
4. One longtime proponent of this view is Robin Dunbar (2016), who argues that the “social brain hypothesis” explains the correlation between brain size and group size in primates. He argues that the maximum size of chimp and Australopith groups was around fifty, but the maximum size of smarter human groups increased steadily up to around 150.
5. See Brooks et al. (2018) for archaeological evidence of early trade.
6. Dunbar (2003).
7. See Olson (1965); Hardin (1968) on free riding.
8. Dunbar (1996).
9. Boehm (1999).
10. Dunbar (2016).
11. Tomasello (2016: 42–43).
12. Hrdy (2009).
13. Tomasello (2016).
14. Andrews (1992).
15. Baumard (2016).
16. Skyrms (2004).
17. Noë and Hammerstein (1994, 1995).
18. Boehm (2012).
19. Darwall (1977); Gilbert (2014).
20. Wrangham and Peterson (1996).
21. Skyrms (1996) explores the prisoner’s dilemma and its relevance to the evolution of morality.
22. Axelrod (1984); see also the introduction in Campbell and Sowden (1985). As Axelrod shows, the game strategy most likely to succeed in iterated prisoner’s dilemma games is “tit for tat,” where each player cooperates on the first move with another player and afterward copies what the other player did before. This strategy rewards cooperation with cooperation but punishes defection with defection.
23. When feelings of trust and respect come into play, coupled with “deep empathy” (see below) so that each person wants to cooperate in a joint project in part just because the other does, the payoff structure in the prisoner’s dilemma choice situation changes. The dilemma is not solved so much as *dissolved*. The payoffs are no longer those of a prisoner’s dilemma, because the players prefer outcomes that no longer reflect simply their independent interests. Defection when a partner chooses to cooperate is no longer the best outcome, because each wants to avoid an outcome that is bad for the other. Moreover, since each wants an outcome that is better for the other, both want mutual cooperation. Unlike in the prisoner’s dilemma, that is the best outcome for each.
24. Boehm (1999, 2012); Tomasello (2016).

25. [Bratman \(1992\)](#); [Tomasello \(2016: 50–53\)](#).
26. [Warneken et al. \(2007\)](#).
27. [Darwall \(2009\)](#).
28. [Tomasello \(2016: 67–70\)](#).
29. [Tomasello \(2016: 73–75\)](#).
30. [Tangney and Dearing \(2003\)](#).
31. [Griffiths \(2002\)](#).
32. [Hamilton \(1975\)](#).
33. See [Hamlin et al. \(2007\)](#) for the earliest study. See [Bloom \(2013\)](#) for review of the work. There is some concern that the original studies were conducted on small pools of participants. Follow-up studies are currently underway to explore whether the findings can be replicated on larger pools. See [Schlingloff et al. \(2020\)](#).
34. [Warneken and Tomasello \(2006, 2007, 2008, 2013\)](#).
35. [Melis et al. \(2006\)](#).
36. See [Suchak et al. \(2014\)](#), however, for conflicting evidence.
37. [Warneken et al. \(2011\)](#).
38. [Hare \(1998, 1999\)](#).
39. For example, studies indicate bonded chimpanzees will share food and cooperate ([Melis et al. 2006](#); [Jaeggi et al. 2013](#)). They will also cooperate and share rewards when they are able to select partners ([Suchak et al. 2016](#)). They prefer to cooperate with partners who share food more equitably ([Melis et al. 2009](#)). They expect friends, but not non-friends, to share food ([Engelmann and Hermann 2016](#)). One study even found that in an ultimatum game (more on that in [Chapter 3](#)), chimpanzees made more equitable divisions after their partner protested ([Proctor et al. 2013](#)).
40. See [Suchak et al. \(2016\)](#). There is evidence that other animals experience feelings of trust, for example in learning when and how to play; see [Bekoff \(2007: 96–103\)](#). The difference may be only in the range and complexity of occasions when the emotion shapes behavior.
41. [Wrangham and Peterson \(1996\)](#).
42. [Boehm et al. \(1993\)](#).
43. [Dyble et al. \(2015\)](#).
44. [Bird \(1999\)](#).
45. [Collier \(1988\)](#).
46. See [Watkins \(2020\)](#) for more careful definitions of phenotypic plasticity and reflections on the empirical methodology needed to test hypotheses concerning plasticity.
47. [Suetsugu-Maki et al. \(2012\)](#).
48. [Buchanan and Powell \(2018\)](#).
49. [Chadwick and Little \(2005\)](#); [Stoks et al. \(2016\)](#); [Reger et al. \(2018\)](#).
50. [Buchanan and Powell \(2018: 188–218\)](#).
51. [Buchanan and Powell \(2018: 192–199\)](#).
52. [Frank \(1988\)](#).
53. Note that emotions motivate behavior only “other things being equal.” For example, the resentment you feel for unequal treatment may concern circumstances over which you have no control, in which case you cannot act on your emotion. Nonetheless, in each case, you are primed to act should the opportunity arise. Moral emotions are motivating, then, even if circumstances prevent you from acting on what you are feeling.
54. Over time, people also learn when moral emotions are not to be trusted—for example, when someone is faking the need for help. Because emotional moral responses are usually quick and unpremeditated, arising within us unannounced, it is remarkable that humans don’t always act on these moral feelings without hesitation. However, humans can learn after hard experience and through watching those who are wiser. You can learn to detect clues that things are not as

they seem and resist following through with what you are initially motivated to do. What triggers your emotion may turn out to not be a good reason, “reason enough,” to act on your moral feelings. Learning to recognize false signals allows humans to flexibly refine their capacities to feel moral emotions.

55. On the first stage, see [Boehm \(2012\)](#); [Tomasello \(2016\)](#); [de Waal \(2007\)](#); [Nichols \(2004\)](#).
56. On the second stage, see [Henrich \(2015\)](#); [Mercier and Sperber \(2017\)](#); [Diamond \(1997\)](#); [Hrdy \(2009\)](#); [Richerson and Boyd \(2005\)](#); [Bowles and Gintis \(2011\)](#); [Greene \(2013\)](#).
57. On the third stage, see [Sterelny \(2012\)](#); [Heyes \(2018\)](#); [Buchanan and Powell \(2018\)](#); [Livingstone Smith \(2011\)](#); [Scott \(2017\)](#).

Chapter 3

1. [Rizal et al. \(2020\)](#).
2. [Richards \(2002\)](#).
3. [Roebroeks and Villa \(2011\)](#); [Berna et al. \(2012\)](#).
4. [Tobias and Rightmire \(2020\)](#); [Van Arsdale \(2013\)](#).
5. [Kappelman et al. \(2008\)](#); [Fleagle et al. \(2010\)](#).
6. [Rightmire \(2001\)](#).
7. The dates offered in the foregoing paragraphs are only rough approximations, based on the known first instance.
8. [Hrdy \(2009\)](#).
9. [Harvati \(2007\)](#); [Stringer \(2016\)](#).
10. [Wilkins et al. \(2012\)](#).
11. [Violatti \(2014\)](#).
12. [Gilligan \(2010\)](#).
13. [Henshilwood et al. \(2001\)](#).
14. [Richter et al. \(2017\)](#).
15. [Surovell et al. \(2005\)](#).
16. [Larbey et al. \(2019\)](#).
17. [Henrich \(2015: ch. 5\)](#).
18. [Henrich \(2015: 314\)](#); [Richerson and Boyd \(2005: 12\)](#).
19. [Schopf \(2006\)](#); [Schopf et al. \(2007\)](#); [Dodd et al. \(2017\)](#).
20. Cf. proponents of developmental systems theory (DST), such as [Oyama et al. \(2001\)](#).
21. [Darwin \(1859\)](#). See also [Brandon \(1990\)](#) for a contemporary version.
22. [Richerson and Boyd \(2005: 5\)](#).
23. The term “meme” was coined by [Dawkins \(1976\)](#); see also [Dawkins \(1987\)](#).
24. See [Lewens \(2012\)](#) for an overview of this debate.
25. [Schofield et al. \(2018\)](#); [Sinha \(2005\)](#); [Laland and Galef \(2009\)](#); [Whitehead and Rendell \(2014\)](#).
26. Cf. [Perreault \(2012\)](#); [Lambert et al. \(2020\)](#).
27. [Groeneveld \(2016\)](#).
28. [Brown et al. \(2009\)](#).
29. [Wrangham \(2009: 99\)](#).
30. [Bliege Bird et al. \(2008\)](#).
31. [Wrangham \(2009\)](#).
32. [Apesteguia et al. \(2007\)](#); [Brody and Stoneman \(1981, 1985\)](#); [Bussey and Perry \(1982\)](#); [Buttelman et al. \(2012\)](#); [Cook et al. \(2012\)](#); [Herrmann et al. \(2013\)](#); [Horner and Whiten \(2005\)](#); [McGuigan et al. \(2007\)](#); [Miller and Dollard \(1941\)](#); [Naber et al. \(2013\)](#); [Nielsen \(2012\)](#); [Offerman et al. \(2002\)](#); [Over and Carpenter \(2013\)](#); [Perry and Bussey \(1979\)](#); [Pingle \(1995\)](#); [Presbie and Coiteux \(1971\)](#); [Rosekrans \(1967\)](#); [Rosenbaum and Tucker \(1962\)](#); [Ryalls et al. \(2000\)](#); [Selten and Apesteguia \(2005\)](#); [Zmyj et al. \(2010\)](#); [Atran \(2001\)](#); [Byrne \(2003\)](#);

- Gambetta (2005); Gergely and Csibra (2006); Heyes (2011); Laland (2001); Read (2006); Kaye and Marcus (1981); Blackmore (1999).
33. See Richerson and Boyd (2005: chs. 3–4).
 34. Sperber (1996).
 35. Henrich (2015: ch. 4).
 36. Creanza et al. (2017).
 37. Dawkins (1993); Brodie (1996); Cullen (2000); Distin (2005).
 38. Rubinstein (1983).
 39. See Sober and Wilson (1998: ch. 4–5).
 40. Henrich (2015).
 41. Henrich (2015: 50–52).
 42. See Henrich (2015: 65–69).
 43. Henrich (2015: 65–69); Wrangham (2009); Zink et al. (2014).
 44. Henrich (2015: ch. 5).
 45. Fischer and Mitteroecker (2015).
 46. Hochberg and Konner (2019); Sterelny (2012).
 47. Henrich (2015: ch. 4).
 48. Chudek et al. (2012); Atkisson et al. (2012).
 49. Henrich and Broesch (2011); Chudek et al. (2012); Jiménez and Mesoudi (2019); Henrich and Gil-White (2001).
 50. Henrich (2015: 57); Sterelny (2012: 29–34).
 51. See Nichols (2004).
 52. Tomasello (2008); Csibra and Gergely (2006, 2011); Gelman and Roberts (2017); Taylor and Thoht (2011).
 53. Atran and Medin (2008).
 54. See also Henrich 2015: 78–81.
 55. Bichieri (2005, 2016).
 56. There is controversy about when norms first appeared, but it is not always clear what “normative behavior” is meant to include. In an important paper on “naïve normativity” Kirstin Andrews (2020) argues that many mammals, not just great apes, exemplify normative behavior of a primitive form when four basic conditions are met: animals can distinguish agency from non-agency; they distinguish ingroup agency from outgroup behavior, they choose to follow voluntary patterns of behavior in the ingroup because most of the others do; and when some don’t conform, others have a negative, corrective reaction. In such cases the pattern is the socially prescribed way of behaving for the ingroup and constitutes naïve normativity. It is naïve in various respects, including lack of self-consciousness about following a norm, much less the capacity to defend deviance from the norm. Our discussion of norms treats norms on the sophisticated end of the spectrum. Here culture is critical to normative evolution: those following a normative pattern can describe it, conflicts among norms can be recognized by those in conflict, and they can defend variances in response to conflict. Our discussion of norms, however, is compatible with views that focus on “norms” of a more primitive kind at an earlier stage of evolution. For a discussion of how “reasons” for action might have evolved with the emergence of moderately sophisticated norms, see Campbell and Woodrow (2003) and Campbell (2009).
 57. Tomasello (2015); Richerson and Boyd (2005: 214).
 58. Fehr and Fischbacher (2004); Weibull and Villa (2005); Boyd and Richerson (1992).
 59. See, e.g., Fehr and Fischbacher (2004) for review.
 60. Henrich et al. (2001, 2010); Nowak et al. (2000).
 61. Why think people are motivated partly just for the sake of fairness and not just because they anticipate punishment? Behavioral economists have conducted experiments using a game

slightly different from the ultimatum game. In the “dictator game,” a player is likewise given a sum of money and told they must offer part of it to another player. In this game, however, the other player has no choice but to accept the offer. If people were motivated solely by self-interest, we would expect them to offer as little as possible. But this is not how people actually behave. Many participants still offer something close to half, even though they are immune to punishment.

62. [Slembeck \(1999\)](#).
63. This is called the second-order free-rider problem; e.g., [Ozono et al. \(2017\)](#).
64. [Bowles and Gintis \(2011: ch. 2\)](#).
65. [Dunbar \(1996\)](#).
66. [Henrich \(2015\)](#); [Richerson and Boyd \(2005\)](#); [Bowles and Gintis \(2011\)](#); [Sober and Wilson \(1998\)](#).
67. E.g., [Dennett \(1994\)](#); [Dawkins \(1994\)](#); [Pinker \(2012\)](#).
68. See [Bowles and Gintis \(2011: ch. 3\)](#).
69. [Henrich \(2015: 185–199\)](#).
70. [Henrich \(2015: ch. 11\)](#).
71. [Schmidt et al. \(2012\)](#); [Schmidt and Tomasello \(2012\)](#); [Rakoczy et al. \(2008, 2009\)](#).
72. [Rand et al. \(2012, 2013, 2014\)](#).
73. [de Quervain et al. \(2004\)](#); [Fehr and Camerer \(2007\)](#); [Rilling et al. \(2004\)](#); [Sanfey et al. \(2003\)](#); [Tabibnia et al. \(2008\)](#); [Harbaugh et al. \(2007\)](#).
74. [Henrich \(2015: ch. 11\)](#); [Wrangham \(2019\)](#).

Chapter 4

1. [Richerson and Boyd \(2002\)](#); [Potts \(2012\)](#).
2. [Boehm \(1999\)](#); [Erdal et al. \(1994\)](#); [Harvey \(2014\)](#).
3. [Haidt \(2012\)](#); [Railton \(2014\)](#).
4. [Nichols \(2004\)](#).
5. Here we are re-purposing an old but useful trope. The original version, to our knowledge, was offered by Carl [Sagan \(1977\)](#).
6. [Boyd and Richerson \(1985\)](#); [Richerson and Boyd \(2001, 2005\)](#); [Bell et al. \(2009\)](#).
7. [McElreath et al. \(2008\)](#); [Legare et al. \(2015\)](#).
8. [Richerson and Boyd \(2005\)](#).
9. [Boyd and Richerson \(2008\)](#).
10. [Sperber \(1996\)](#).
11. [Nichols \(2004: 127–129\)](#).
12. [Sober and Wilson \(1998: 232\)](#); [Nichols \(2004\)](#).
13. [Nichols \(2002\)](#).
14. [Nichols \(2004: 143–147, 156–159\)](#).
15. [Boyd and Richerson \(1992, 1994\)](#).
16. [Boyd and Richerson \(2009\)](#); [Tomasello et al. \(2012\)](#).
17. [Kant \(1785\)](#).
18. [Hume \(1739\)](#).
19. [Nichols \(2002\)](#).
20. [Nichols \(2004: 3–29\)](#).
21. See [Gilligan \(1982\)](#); [Held \(2006\)](#).
22. See [Jeske \(2019\)](#) for a review of the concept of special obligations in the philosophical literature.
23. [Sandel \(1982\)](#).
24. [Haidt \(2012: 150–180\)](#).
25. [Haidt \(2012: 158–165\)](#).

26. [Haidt \(2012\)](#); [Graham et al. \(2013\)](#).
27. [Haidt \(2001\)](#); [Haidt and Joseph \(2004, 2008\)](#); [Graham et al. \(2009, 2011, 2013\)](#).
28. [Haidt and Graham \(2007, 2009\)](#); [Graham and Haidt \(2010, 2012\)](#).
29. [Cashdan \(1980\)](#).
30. [Greene \(2013\)](#) thinks that utilitarianism provides a common currency.
31. For an influential historical example of ethical pluralism see [Ross \(1930\)](#). A striking recent example, grounded in moral evolution and moral psychology, is [Wong \(2006\)](#).
32. [Kelly et al. \(2007\)](#); [Kelly and Stich \(2008\)](#); [Nado et al. \(2009\)](#); [Sinnott-Armstrong and Wheatley \(2014\)](#).
33. [Kumar \(2015, 2016\)](#); [Campbell and Kumar \(2013\)](#).
34. Here we rely on a critical interpretation of empirical work on the moral/conventional distinction. See [Turiel \(1983\)](#); [Smetana \(1993\)](#); [Tisak \(1995\)](#); [Nucci \(2001\)](#). For developmental research see [Nucci and Turiel \(1978\)](#); [Smetana \(1981\)](#); [Tisak and Turiel \(1984\)](#); [Nucci \(1985\)](#); [Smetana and Braeges \(1990\)](#); [Smetana et al. \(1984\)](#); [Blair \(1996\)](#). For cross-cultural research see [Nucci et al. \(1983\)](#); [Snarey \(1985\)](#); [Hollos et al. \(1986\)](#); [Song et al. \(1987\)](#); [Yau and Smetana \(2003\)](#). For a critical interpretation see [Kumar \(2015\)](#).
35. [Nichols \(2004\)](#); [Nichols and Folds-Bennett \(2003\)](#); [Wainryb et al. \(2004\)](#); [Goodwin and Darley \(2008\)](#).
36. In philosophy see [Foot \(1967\)](#); [Thomson \(1976\)](#). In psychology see [Haidt \(2012\)](#); [Greene \(2014\)](#).
37. [Greene \(2008, 2013\)](#).
38. For early and influential philosophical treatments of trolley problems see [Foot \(1967\)](#); [Thomson \(1976, 1985\)](#).
39. See especially [Greene and Haidt \(2002\)](#); [Greene \(2008\)](#); [Greene et al. \(2008\)](#).
40. [Greene \(2013: 709\)](#).
41. [Haidt \(2001\)](#).
42. [Nichols et al. \(2016\)](#).
43. [Sripada \(2008\)](#); [Sripada and Stich \(2007\)](#).
44. Some philosophers think of moral judgments as true or false beliefs about the correct norms to follow. Some philosophers think of moral judgments as emotions that motivate us to act morally. This dichotomy is false. Normative beliefs and motivating emotions are usually both contained in moral judgments and indeed are co-dependent. See [Campbell \(2007: 321–349\)](#).
45. [Greene \(2008, 2013, 2014\)](#).

Chapter 5

1. [Lieberman \(2013\)](#).
2. [Pontzer \(2012\)](#).
3. [Mora-Bermúdez et al. \(2016\)](#).
4. [Dunbar \(1996: 62\)](#).
5. [Hofman \(2014\)](#).
6. [Sherwood and Gómez-Robles \(2017\)](#).
7. [Gurven \(2004\)](#); [Hill and Kaplan \(1999\)](#); [Kaplan and Gurven \(2005\)](#); [Kaplan et al. \(2000\)](#); [Robson and Kaplan \(2003\)](#).
8. [Dunbar \(1996: 3\)](#).
9. [Hrdy \(2009: 101\)](#).
10. [Wrangham \(2009: 13–14\)](#).
11. [Sterelny \(2012: 86\)](#).
12. For reviews of this evidence, see e.g., [Henrich \(2015\)](#); [Heyes \(2018\)](#).
13. For more detail see [Herrmann et al. \(2010\)](#).
14. [Tomasello \(2008\)](#).

15. Bonnefon (2017); Vendetti and Bunge (2014); cf. Pennisi (2007), Thomas (2012), Kaufmann and Cahen (2019).
16. Richerson and Boyd (2000); Cummins (2004).
17. Washburn (1959); Foley and Lahr (1997).
18. Wrangham (2009).
19. Burkart et al. (2009).
20. Kirby et al. (2007).
21. Everett (2019).
22. Martínez et al. (2004).
23. Pinker and Bloom (1990); Deacon (1998); Briscoe (2003); Deutscher (2005); Tomasello (2008, 2010); Christiansen and Chater (2008); Heyes (2012).
24. Tomasello (2008).
25. Mercier and Sperber (2017).
26. Mercier and Sperber (2017: 175–201).
27. See Laughlin (2011); Kugler et al. (2012) for a review.
28. The task was developed originally by the psychologist Peter Wason (1968).
29. Mercier and Sperber (2017: 39–43).
30. Moshman and Geil (1998). See Mercier and Sperber (2017: 264–265) for discussion.
31. See especially Tetlock and Gardner (2015).
32. Mercier and Sperber (2017: 212–218).
33. Mercier and Sperber (2017: 213–225, 236).
34. Mercier and Sperber (2017: 52–68).
35. Quine (1969: 126).
36. Haidt (2012: 3–30).
37. Haidt (2012: 41–55).
38. Haidt (2012: 61).
39. See Railton (2014) for a powerful reply to Haidt.
40. Plato (360 BCE); Kant (1785); Sidgwick (1874).
41. Campbell and Kumar (2012).
42. This case is taken from Singer (1972).
43. See Campbell and Kumar (2013).
44. For experimental evidence using moral vignettes see Petrinovich and O’Neill (1996) and Schwitzgebel and Cushman (2015).
45. Campbell (2017).
46. Buchanan and Powell (2018); see also Buchanan (2020).
47. Glover (2000).
48. It is possible that pre-historic societies revered, even worshipped, non-human animals, treating them as worthy of moral respect. But these attitudes would have reflected the application of moral norms and feelings that had already evolved independently to resolve human problems of living together. The function of morality, in this case, would have expanded to guide behavior toward other animals in a way that enhanced human fitness. The new function would technically be called an “exaptation.” See Gould and Verba (1982). Note that modern humans who treat other animals as worthy of moral respect need not, of course, revere them in the way that early humans did. They would now understand their origins more mundanely, but they may see the origins of humans more mundanely as well.

Chapter 6

1. González-José et al. (2008); Ko (2016); Krause et al. (2010); Higham et al. (2014); Galván et al. (2014). Note, for the record, that other human species existed aside from those mentioned here, almost certainly including those not yet discovered. However, it is notoriously difficult to

identify clear demarcations between species, especially given interbreeding and hybrid populations.

2. Cf. [Hublin et al. \(2017\)](#).
3. As noted in [Chapter 1](#), these dates are only rough approximations.
4. [Surovell et al. \(2005\)](#).
5. [Banks et al. \(2008\)](#); [Finlayson and Carrión \(2007\)](#).
6. [Henshilwood and Marean \(2003\)](#); [Hill et al. \(2009\)](#).
7. [Lourandos \(1997\)](#).
8. [Gilligan \(2007\)](#).
9. [Lahr et al. \(2016\)](#).
10. [Pryor et al. \(2020\)](#).
11. [Wendrich and Holdaway \(2018\)](#).
12. [Stiner et al. \(2011\)](#).
13. [Guarnieri \(2018\)](#).
14. [Stout \(2011\)](#).
15. [Klein \(1995, 2000, 2003\)](#).
16. [Nowell \(2010\)](#); [Sterelny \(2011\)](#).
17. [Roberts and Stewart \(2018\)](#).
18. [Price et al. \(2012\)](#).
19. [Hu et al. \(2009\)](#).
20. [Hilpert et al. \(2007\)](#); [Hoppa and Vaupel \(2008\)](#); [Birch-Chapman et al. \(2017\)](#).
21. [Chapais \(2013\)](#).
22. [Boehm \(1999\)](#); [Calmettes and Weiss \(2017\)](#).
23. [Blackmore \(2001\)](#).
24. E.g., [Solodenko et al. \(2015\)](#).
25. [Vincent \(1985\)](#); [Nugent \(2006\)](#); [Liu et al. \(2011, 2013\)](#).
26. [Stout \(2011\)](#).
27. [Brandon \(1990\)](#), although cf. lateral gene transfer ([Margulis and Sagan 2008](#); [Ochman et al. 2000](#); [Andersson 2005](#); [Hotopp et al. 2007](#)). See also [Godfrey-Smith \(2009\)](#) on whether evolution requires reproduction.
28. [Heyes \(2018\)](#).
29. [Heyes \(2018: 38\)](#).
30. [Heyes \(2018: ch. 5\)](#); see also [Heyes \(2016a, 2016b\)](#).
31. [Henrich \(2015: ch. 13\)](#).
32. See [Sperber \(1996\)](#).
33. See [Henrich \(2015: ch. 5\)](#).
34. [Sterelny \(2012\)](#); cf. [Pinker \(2003\)](#).
35. [Sterelny \(2012\)](#), although cf. [section 2.3](#).
36. [Searle \(1995, 2010\)](#); [Miller \(2019\)](#).
37. [Haslanger \(1995\)](#).
38. See [Dunbar \(1993, 2016\)](#).
39. [Sterelny \(2012: 188\)](#).
40. [Henrich \(2015: ch. 12\)](#).
41. [Henrich \(2015: 310\)](#).
42. See [Henrich \(2015: ch. 12\)](#).
43. [Boyd et al. \(2011\)](#).
44. [Henrich \(2015: 226\)](#).
45. [Henrich \(2004, 2006\)](#).
46. [Wade \(1979\)](#); [Moore and Ali \(1984\)](#).
47. [Oota et al. \(2001\)](#); [Hrdy \(2009: 239\)](#).

48. Krause (2003); Chan et al. (2019).
49. Appiah (2018).
50. Wilson (2003).
51. See Livingstone Smith (2011).
52. Boas (1943).
53. Klein (1995, 2000, 2003). See also Tattersall (2013).
54. Nowell (2010); Sterelny (2012).
55. Hoffmann et al. (2018).
56. See Henrich (2015: 226).
57. Degioanni et al. (2019).

Chapter 7

1. Cerling et al. (2011); cf. Vignaud et al. (2002).
2. E.g., Berger (2006); Aramendi et al. (2017); Njau and Blumenschine (2012); Lee-Thorp et al. (2000).
3. Although see Mitani et al. (2001) regarding predation of monkeys by hawks.
4. See Isbell (1994) for a review of primate predation and group size.
5. Havelková et al. (2011); Kantner et al. (2019); Hanson et al. (2017); Hartwick (2010); Nakahashi and Feldman (2014).
6. Zeder (2011); Molina et al. (2011).
7. Armelagos et al. (1991); Bocquet-Appel (2011); McMahon (2020); Lawrence et al. (2016); cf. Zahid et al. (2016).
8. Weisdorf (2003). See also Harari (2015).
9. For an argument that religion started at the same time as agriculture see Cauvin (2000). Since we think the origins of religion are earlier, what coincided with agriculture might have been organized religions that have a recognized hierarchical social structure governed by norms of authority.
10. Kuijt (2000); Scott (2017).
11. Leonetti and Chabot-Hanowell (2011).
12. Chapais (2009).
13. See Coontz (2004) for a history of marriage; Bethmann and Kvasnicka (2011) for the link between marriage and paternity.
14. Ensor (2017).
15. Chapais (2009).
16. Fortunato and Archetti (2010); Fortunato (2011).
17. Pilloud and Larsen (2011).
18. Hrdy (2009: 79).
19. Hawkes et al. (1989, 1997, 1998); O'Connell et al. (1999); Hawkes (2003, 2004); Hawkes et al. (2018).
20. See Hrdy (2009).
21. Eagly and Wood (1999).
22. Haidt (2012).
23. Buss (2008); Hyde (2005); Eagly et al. (2012); Geary (2010).
24. This is called the by-product hypothesis of the evolution of religion (Atran and Henrich 2010). For the alternative, adaptationist hypothesis, see Wade (2009), and for an overview of the debate see Sosis (2009). On our view, religion was originally a by-product and then became an adaptation.
25. Boehm (2008).
26. Levine (1986); Rossano (2006); Peoples and Marlow (2012); Beyers (2015).
27. Dennett (2007); Sanderson (2008); Atkinson and Bourrat (2011).

28. [Rendu et al. \(2013\)](#); [Pettitt \(2013\)](#).
29. [Forth \(2017\)](#).
30. [Kelly \(2011\)](#).
31. [Vandello and Hettinger \(2012\)](#).
32. [Haidt \(2012\)](#).
33. [Kulczycki and Windle \(2011\)](#); [Ruggi \(1998\)](#); [Sev'er and Yurdakul \(2001\)](#).
34. [Fiske and Rai \(2014\)](#).
35. [Chapman et al. \(2009\)](#).
36. See [Kumar \(2017a\)](#) for further discussion of the causal role of moral disgust and its wider application in moral cognition beyond purity norms.
37. [Rozin et al. \(2008\)](#).
38. Plato (399 BCE).
39. [Crofoot and Wrangham \(2010\)](#); [Pitman \(2011\)](#).
40. [Lee \(2016: ch. 1\)](#). See also [Kissel and Kim \(2019\)](#) for the argument that warfare would have required symbolic thought.
41. [Lee \(2016: ch. 1\)](#).
42. [Lee \(2016: 32\)](#); [Whitehouse and Lanman \(2014\)](#); [Whitehouse et al. \(2014\)](#); [Whitehouse \(1996\)](#).
43. See [McDonald et al. \(2012\)](#) regarding the psychological corollaries of the evolution of warfare.
44. [Lahr et al. \(2016\)](#); [Wrangham \(1999\)](#); cf. [Kelly \(2005\)](#).
45. [Le Blanc \(2004\)](#).
46. [Goldsby et al. \(2011\)](#); [Simpson \(2012\)](#); [Cooper and West \(2018\)](#).
47. Regarding gendered divisions of labor, see [O'Connor \(2019\)](#).
48. [Adler \(2001\)](#).
49. [Yates \(2001\)](#); [Taylor \(2001\)](#); [Santos-Granero \(2009\)](#); [Jameson \(1977\)](#); [Crouch \(1985\)](#).
50. [Brooks et al. \(2018\)](#); [Johnson and Earle \(2000: 31\)](#).
51. [Jefferson \(1813\)](#).
52. [Zeder \(2011\)](#).
53. [Diamond \(1997\)](#).
54. E.g., [Wu et al. \(2019\)](#).
55. [Chessa et al. \(2009\)](#); [Vigne et al. \(2009\)](#); [McTavish et al. \(2013\)](#).
56. [Anthony \(2010\)](#).
57. [Diamond \(1997: ch. 10\)](#).
58. [Childe \(1950\)](#).
59. [Bhui et al. \(2019\)](#); cf. [Kaplan \(2000\)](#). This is called the “original affluent society” hypothesis. Note that it may only apply to men; women’s work times may not have increased or decreased at this juncture.
60. [Larsen \(2006\)](#); [Key et al. \(2020\)](#); [Wells and Stock \(2020\)](#).
61. [Barker \(2009\)](#).
62. [Bocquet-Appel \(2002\)](#); [Hershkovitz and Gopher \(2008\)](#).
63. [Scott \(2017: ch. 5\)](#).
64. [Corning et al. \(1988\)](#) argue that political evolution pre-dates our species. See also [Corning \(2017\)](#).
65. [Price \(1995\)](#); [Feinman \(1995\)](#).
66. [Scott \(2017: ch. 4\)](#).
67. [Carneiro \(2012\)](#).
68. [Fortunato and Archetti \(2010\)](#); [Bauch and McElreath \(2016\)](#); [Kokko et al. \(2007\)](#).
69. See [Scott \(2017\)](#).
70. [Scheil \(1904\)](#).
71. [Wilson \(1978\)](#).
72. [Mesoudi \(2011\)](#); [Henrich \(2015: ch. 17\)](#); cf. [Perreault \(2012\)](#).

73. Triandis (1988); Triandis and Gelfand (2012). This idea is implicit in much of contemporary social science research, e.g.: Kotlaja (2018); Hornikx and de Groot (2017); Xiang et al. (2019); Du et al. (2015); Brown et al. (2014); Frank et al. (2015); Chiao and Blizinsky (2010).
74. Talhelm et al. (2014); Henrich (2014); Hu and Yuan (2015); Ruan et al. (2015).
75. Henrich (2020).
76. Nisbett and Cohen (1996).
77. Nisbett and Cohen (1996).
78. Nisbett and Cohen (1996).
79. Henrich (2020).
80. Marlowe et al. (2008); Ensminger and Henrich (2014); Henrich et al. (2001, 2004); Henrich (2000); Knafo et al. (2009).
81. Gowdy (1999).

Chapter 8

1. Kitcher (2011, 2021); Buchanan and Powell (2018); Buchanan (2020); Heath (2014).
2. Katz et al. (1974); Larsen (2006); Wells and Stock (2020).
3. E.g., Key et al. (2020).
4. Angel (1969); for current data, see The World Bank (n.d.).
5. For historical infant mortality rates, see Goodman and Armelagos (1989). For current data, see WHO (n.d.).
6. Pinker (2012).
7. Pinker (2012, 2019).
8. Cf. Buchanan and Powell (2018: ch. 1).
9. Kitcher (2011, 2021); Buchanan and Powell (2018: 47).
10. Buchanan and Powell (2018: ch. 7).
11. Glover (2000); Levy (1982); Clauset (2018).
12. Piketty and Saez (2003); Bornscheir (2002).
13. Fitzgerald (2008); Ritchie and Roser (2017).
14. Beers (2006).
15. Buchanan and Powell (2018: ch. 5).
16. Singer (2011).
17. Thomas (1996).
18. Manne (2018); Frye (1983); Becker (1999); hooks (2004).
19. Hanisch (1970).
20. Although for evolutionary debunking arguments about moral epistemology, see Street (2006, 2008); Joyce (2007, 2013, 2016).
21. Rawls (1971); Simmons (2010); Valentini (2012); Rivera-López (2017).
22. Bentham (1789); Mill (1861); Sidgwick (1874).
23. Thomson (1985); see also Foot (1967).
24. Greene (2013: 113).
25. As Kitcher (2011: 285–286) says, “Despite their differences, almost all approaches to normative ethics share a static vision. Correct principles and precepts await discovery, and once apprehended they can be graven in stone. Pragmatic naturalism sees things differently. The ethical project evolves indefinitely. . . . The project is something people work out with one another. There are no experts here.”
26. See Kumar (2017b, 2019) for more on “vindications” that at once explain and justify moral attitudes.
27. Neurath (1921); Quine (1960).
28. Anderson (2010); Mills (1997, 2017); Sen (2009); Schmidtz (2011); Kumar (2020).
29. Henrich (2020).

30. [Kitcher \(2021\)](#).
31. Colbert at the [White House Correspondents' Dinner \(2006\)](#).

Chapter 9

1. [Hedges \(2003\)](#).
2. [Kiernan \(2007\)](#).
3. [Livingstone Smith \(2011\)](#); [Glover \(2000\)](#).
4. See [Livingstone Smith \(2011: ch. 4\)](#).
5. [Stowe \(1852\)](#). For examples of abolitionist pamphlets see [Carey \(2014\)](#).
6. [Appiah \(2010\)](#).
7. See especially [Drescher \(2009\)](#). For a philosophical summary see [Collier and Stingl \(2020: ch. 6\)](#).
8. [Carey \(2014\)](#).
9. [Cameron \(2014\)](#).
10. [Mills \(2007\)](#).
11. See, e.g., [Pettigrew et al.](#) for confirmation of this idea in intergroup contact theory.
12. [Alexander \(2010: ch. 1\)](#).
13. [Packard \(2003\)](#).
14. [Alexander \(2010\)](#).
15. [Alexander \(2010\)](#); [Mauer and King \(2007\)](#); [Vogel and Porter \(2016\)](#).
16. [Alexander \(2010\)](#).
17. [Anderson \(2010\)](#); [Griffith et al. \(2007\)](#); [Holroyd \(2015\)](#).
18. [McKernan et al. \(2013\)](#).
19. [Desantis et al. \(2017\)](#).
20. [Farmer and Ferraro \(2005\)](#); cf. [Kahng \(2010\)](#).
21. [Everett et al. \(2011\)](#).
22. [Ihlanfeldt and Sjoquist \(1998\)](#).
23. [Orfield and Lee \(2004\)](#). [Anderson \(2010\)](#) cites a number of relevant court cases, such as [Board of Education v. Dowell \(1991\)](#); [Freeman v. Pitts \(1992\)](#); [Wessman v. Gittens \(1998\)](#); [Parents Involved in Community Schools v. Seattle School District \(2007\)](#).
24. This view is contested. See, e.g., [Merry \(2016\)](#).
25. [Kain \(1968\)](#).
26. [Pager and Shepherd \(2008\)](#).
27. [Wells and Crain \(1994\)](#); [Byrd-Chychester \(2000\)](#).
28. [Garcia \(1996, 1997, 1999\)](#); [Blum \(2002\)](#); For relevant work in psychology and neuroscience see [Gaertner and Dovidio \(1986\)](#); [Greenwald and Banaji \(1995\)](#); [Chekroud et al. \(2014\)](#); [Hodson and Busseri \(2012\)](#).
29. [Jones \(1997\)](#); [Bhavnani et al. \(2005\)](#); [Phillips \(2011\)](#). See also [Carmichael and Hamilton \(1967\)](#), who coined the expression “institutional racism.”
30. [Feagin and Barnett \(2004\)](#); [Vaught \(2009\)](#).
31. [Fone \(2000\)](#); [Wickberg \(2000\)](#); [Sullivan \(2004\)](#).
32. “State-Sponsored Homophobia” (2019).
33. [Bailey \(1999\)](#); [Noell and Ochs \(2001\)](#); [Paul et al. \(2002\)](#); [Kourany \(1987\)](#); [Lee et al. \(2017\)](#).
34. For the United States see [Lawrence v. Texas \(2003\)](#). For the United Kingdom see the [Wolfenden Report \(1957\)](#).
35. “State-Sponsored Homophobia” (2019).
36. [Brewer \(2003\)](#); [Gallup Inc. \(2018\)](#).
37. [Woodford et al. \(2012\)](#); [Postic and Prough \(2014\)](#); [Nohomophobes \(n.d.\)](#).
38. [Schwanberg \(1985\)](#); [Bayer \(1987\)](#).
39. [Angelides \(2009\)](#).

40. [Murphy \(1988\)](#); [Kowalewski \(1990\)](#); [Noden \(2007\)](#); [Heimlich \(2007\)](#); [Olaore and Olaore \(2014\)](#); [Petro \(2015\)](#).
41. See two Pew Research Center reports: *Growing Support* (2013); *Changing Attitudes* (2019).
42. [Schneider and Shiffrin \(1977\)](#); [Fazio \(2014\)](#). Note that there is intense controversy about the validity and significance of implicit biases, see, e.g., [Gawronski \(2019\)](#) for review.
43. [Westgate et al. \(2015\)](#); [Charlesworth and Banaji \(2019\)](#); [Ofosu et al. \(2019\)](#).
44. [Faderman \(2015\)](#).
45. [Hart-Brinson \(2018\)](#).
46. [Kumar et al. \(2021\)](#) offers answers to these questions.
47. [Newport \(2018\)](#).
48. See [Kumar et al. \(2021\)](#) for more details.
49. See [Solomon \(2012\)](#).
50. [Hanhardt \(2013\)](#).
51. [Campbell \(2017\)](#).
52. [Norton \(1997\)](#); [Serano \(2016\)](#). For specific examples see [Mizock and Mueser \(2014\)](#); [White Hughto et al. \(2015\)](#).
53. [Luhur et al. \(2019\)](#).
54. [Flores et al. \(2016\)](#); cf. [Newport \(2018\)](#).
55. [Irving-Pease et al. \(2019\)](#); [Camarós et al. \(2016\)](#); cf. [Thalmann and Perri \(2019\)](#).
56. [Frantz et al. \(2020\)](#).
57. [Miralles et al. \(2019\)](#).
58. [Joy \(2011\)](#).
59. [Nierenberg \(2005\)](#); Food & Water Watch (2015).
60. [Jasper and Poulsen \(1995\)](#); [Wrenn \(2013\)](#). See [May and Kumar \(2021\)](#) for discussion of the moral psychology that underpins the persistence and decline of meat consumption.
61. [Campbell and Kumar \(2013\)](#).
62. See [Bittman \(2011\)](#), who coined the term “ag-gag.”
63. [May and Kumar \(2021\)](#).
64. [Morgan \(1894\)](#); [Daston and Mitman \(2005\)](#); [Sober \(2006\)](#); [Andrews and Huss \(2014\)](#).
65. [Andrews \(2016\)](#).
66. [Mikhalevich and Powell \(2020\)](#).
67. [Andrews \(2020\)](#).
68. [Darwin \(1859\)](#). See also [Darwin \(1871\)](#) where he says, “the difference in mind between man and the higher animals, great as it is, is certainly one of degree and not kind.”
69. [Eldredge and Gould \(1972\)](#); [Bowler \(1983\)](#).
70. See [Quammen \(2018\)](#).
71. [Taleb \(2010\)](#).

Chapter 10

1. [Cowlshaw and Dunbar \(1991\)](#); [Hrdy \(1999\)](#).
2. [von Rueden and Jaeggi \(2016\)](#). See [Sidanius and Pratto \(1999\)](#); [Pratto et al. \(2006\)](#) for the so-called invariance hypothesis within social dominance theory.
3. [Kohler and Smith \(2018\)](#).
4. See, e.g., [Wengraf \(2016\)](#).
5. [Nkrumah \(1984\)](#); [Prashad \(2007\)](#).
6. [Hansen et al. \(2015\)](#).
7. [Freedman \(2007\)](#).
8. [Crenshaw \(1989\)](#).
9. [CDC \(2020\)](#).
10. [Planty et al. \(2013\)](#).

11. [RAINN \(n.d.\)](#).
12. [Klein \(2009\)](#).
13. [Hochschild and Machung \(2012\)](#).
14. [Zimmerman \(2015\)](#).
15. [UN Women \(2019\)](#).
16. [United Nations \(2018\)](#).
17. [Hinchliffe \(2020\)](#).
18. [UN Women \(2019\)](#).
19. [Seltzer \(2017\)](#).
20. [Solomon \(1985\)](#).
21. [Women's Bureau \(n.d.\)](#).
22. See [Thomas \(2000\)](#) for disanalogies between racial and gender subordination.
23. [Anderson \(2010\)](#).
24. [Fausto-Sterling \(1992\)](#); [Shelby \(2014\)](#); [Haslanger \(2017\)](#); [Hanel \(2018\)](#); [Manne \(2018: 20\)](#).
25. [Rose \(2018\)](#).
26. [Manne \(2018\)](#).
27. [Young \(1990\)](#).
28. It may seem paradoxical that those personally affected by oppression would have the most objective view of it. For defenses of the view that the standpoint of the oppressed tends to be objective, see [Harding \(1986\)](#); [Antony \(2002\)](#); [Campbell \(1998: chs. 2–3, 2001\)](#). This kind of view applies as well to the testimony of slaves regarding the oppression of slavery; see [note 9](#) in last chapter.
29. [hooks \(1984\)](#); [Breines \(2002\)](#); [Staples \(2019\)](#).
30. [Singer \(2015\)](#).
31. [Gupta et al. \(2007\)](#).
32. [Umeh and Feeley \(2017\)](#).
33. [Smyth and Kost \(1998\)](#).
34. [Slabbert \(2017\)](#).
35. [Harrell et al. \(2014\)](#).
36. [Bjerk \(2007\)](#); [Duncan et al. \(2010\)](#).
37. [Feldman et al. \(2019\)](#).
38. [Cohen \(2012\)](#); [Colgan \(2019\)](#).
39. [Ladd \(2012\)](#); [Duncan et al. \(2017\)](#); [Baugh et al. \(2019\)](#).
40. [Butcher and Schanzenbach \(2018\)](#).
41. [Durante and Fiske \(2017\)](#).
42. For America see [Hertz \(2006\)](#); [Isaacs \(2007\)](#); [Sawhill and Morton \(2007\)](#); [DeParle \(2012\)](#). For other parts of the world see [Corak \(2006\)](#); [Hertz \(2006\)](#).
43. [Krause and Tan \(2015\)](#).
44. [Macartney et al. \(2013\)](#).
45. [Baciu et al. \(2017\)](#).
46. [Crutchfield et al. \(2009\)](#); [Sampson and Lauritsen \(1997\)](#).
47. [Morgan \(2005\)](#).
48. [Pinard \(2010\)](#); [Royster \(2003\)](#).
49. [National Law Center on Homelessness and Poverty \(2019\)](#).
50. [France \(1924\)](#).
51. [Greenstone et al. \(2013\)](#).
52. [Rogers and Konieczny \(2018\)](#).
53. [Florida and Mellander \(2015\)](#).
54. Cf. the many foraging and horticultural communities that had female-centered spiritual/religious ideologies that are nearly unimaginable today. See [Gimbutas \(1999\)](#).

55. [Adovasio et al. \(2007\)](#); [Sørensen \(2013\)](#).
56. [Hrdy \(2009\)](#).
57. Cf. [Hamilton \(2000\)](#).
58. [Kerber \(1988\)](#); [Vickery \(1993\)](#); [Kranzberg and Hannan \(n.d.\)](#).
59. [Jolly et al. \(2014\)](#); [Buchanan et al. \(2016\)](#); [Negraia et al. \(2018\)](#).
60. [Weinraub et al. \(2002\)](#).
61. [Nieuwenhuis and Maldonado \(2018\)](#).
62. [Okin \(1998\)](#).
63. [Miller \(2018\)](#).
64. [Alexander \(2010\)](#).
65. [The House Joint Resolution proposing the 13th Amendment to the Constitution \(1865\)](#).
66. Cf. [Chartier and Caetano \(n.d.\)](#).
67. [Anthony \(2013\)](#); [Hinton et al. \(2018\)](#).
68. [Alexander \(2010\)](#).
69. [Alexander \(2010\)](#).
70. [Alexander \(2010\)](#).
71. [Nelson \(2001\)](#); [Embrick \(2015\)](#); [Ritchie \(2017\)](#).
72. For philosophical discussion see [Gordon and Hildebrand \(2021\)](#).
73. [Táíwò \(2020\)](#).
74. [Diamond \(1997\)](#).
75. [Henrich \(2020\)](#).
76. [Dunbar-Ortiz \(2014\)](#).
77. [Ring and Brown \(2003\)](#); [Lafontaine \(2018\)](#).
78. [Freemantle et al. \(2015\)](#).
79. [Allard and Brundage \(2019\)](#).
80. [Budiman \(2020\)](#).
81. [Kolk \(2016\)](#).
82. [Klein \(2007\)](#); [Hardstaff \(2003\)](#).
83. [Caney \(2012\)](#); [Jamieson and Paola \(2014\)](#).
84. [Kolbert \(2014\)](#).
85. [Caney \(2020\)](#).
86. [Hulme \(2010\)](#).
87. [Security Council—Veto List \(n.d.\)](#).
88. [IEA Energy Atlas \(n.d.\)](#).
89. [Law \(2019\)](#); [US EPA \(n.d.\)](#).
90. [Oreskes \(2004\)](#).
91. [Mann \(2018\)](#).
92. [Nguyen \(2020\)](#).

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