

The Moral Landscape – Sam Harris

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INTRODUCTION

I will argue [...] that questions about values—about meaning, morality, and life’s larger purpose—are really questions about the well-being of conscious creatures. Values, therefore, translate into facts that can be scientifically understood: regarding positive and negative social emotions, retributive impulses, the effects of specific laws and social institutions on human relationships, the neurophysiology of happiness and suffering, etc. The most important of these facts are bound to transcend culture—just as facts about physical and mental health do. (62-66)

Cancer in the highlands of New Guinea is still cancer; cholera is still cholera; schizophrenia is still schizophrenia; and so, too, I will argue, compassion is still compassion, and well-being is still well-being. And if there are important cultural differences in how people flourish—if, for instance, there are incompatible but equivalent ways to raise happy, intelligent, and creative children—these differences are also facts that must depend upon the organization of the human brain. In principle, therefore, we can account for the ways in which culture defines us within the context of neuroscience and psychology. The more we understand ourselves at the level of the brain, the more we will see that there are right and wrong answers to questions of human values. (66-72)

There are, for instance, twenty-one U.S. states that still allow corporal punishment in their schools. These are places where it is actually legal for a teacher to beat a child with a wooden board hard enough to raise large bruises and even to break the skin. Hundreds of thousands of children are subjected to this violence each year, almost exclusively in the South. (90-92)

In fact, all the research indicates that corporal punishment is a disastrous practice, leading to more violence and social pathology—and, perversely, to greater support for corporal punishment. (96-98)

Just as there is no such thing as Christian physics or Muslim algebra, we will see that there is no such thing as Christian or Muslim morality. Indeed, I will argue that morality should be considered an undeveloped branch of science. (107-9)

Multiculturalism, moral relativism, political correctness, tolerance even of intolerance—these are the familiar consequences of separating facts and values on the [political] left. (122-23)

Throughout this book I make reference to a hypothetical space that I call “the moral landscape”—a space of real and potential outcomes whose peaks correspond to the heights of potential well-being and whose valleys represent the deepest possible suffering. (158-60)

Human experience shows every sign of being determined by, and realized in, states of the human brain. (174)

Do you feel that sons are more desirable than daughters? Is obedience to parental authority more important than honest inquiry? Would you cease to love your child if you learned that he or she was

gay? The ways parents view such questions, and the subsequent effects in the lives of their children, must translate into facts about their brains. (200-3)

My goal is to convince you that human knowledge and human values can no longer be kept apart. The world of measurement and the world of meaning must eventually be reconciled. And science and religion—being antithetical ways of thinking about the same reality—will never come to terms. (203-5)

The philosopher and psychologist Jerry Fodor crystallizes the view: Science is about facts, not norms; it might tell us how we are, but it couldn't tell us what is wrong with how we are. There couldn't be a science of the human condition. (220-22)

Despite the reticence of most scientists on the subject of good and evil, the scientific study of morality and human happiness is well underway. This research is bound to bring science into conflict with religious orthodoxy and popular opinion—just as our growing understanding of evolution has—because the divide between facts and values is illusory in at least three senses: (1) whatever can be known about maximizing the well-being of conscious creatures—which is, I will argue, the only thing we can reasonably value—must at some point translate into facts about brains and their interaction with the world at large; (2) the very idea of “objective” knowledge (i.e., knowledge acquired through honest observation and reasoning) has values built into it, as every effort we make to discuss facts depends upon principles that we must first value (e.g., logical consistency, reliance on evidence, parsimony, etc.); (3) beliefs about facts and beliefs about values seem to arise from similar processes at the level of the brain: it appears that we have a common system for judging truth and falsity in both domains. (225-32)

Many readers might wonder how can we base our values on something as difficult to define as “well-being”? It seems to me, however, that the concept of well-being is like the concept of physical health: it resists precise definition, and yet it is indispensable. In fact, the meanings of both terms seem likely to remain perpetually open to revision as we make progress in science. (234-37)

Belief also bridges the gap between facts and values. We form beliefs about facts: and belief in this sense constitutes most of what we know about the world—through science, history, journalism, etc. But we also form beliefs about values: judgments about morality, meaning, personal goals, and life's larger purpose. (278-80)

For my argument about the moral landscape to hold, I think one need only grant two points: (1) some people have better lives than others, and (2) these differences relate, in some lawful and not entirely arbitrary way, to states of the human brain and to states of the world. (288-90)

Many social scientists incorrectly believe that all long-standing human practices must be evolutionarily adaptive: for how else could they persist? Thus, even the most bizarre and unproductive behaviors—female genital excision, blood feuds, infanticide, the torture of animals, scarification, foot binding, cannibalism, ceremonial rape, human sacrifice, dangerous male initiations, restricting the diet of pregnant and lactating mothers, slavery, potlatch, the killing of the elderly, sati, irrational dietary and agricultural taboos attended by chronic hunger and malnourishment, the use of heavy metals to treat illness, etc.—have been rationalized, or even idealized, in the fire-lit scribbles of one or another dazzled ethnographer. But the mere endurance of a belief system or custom does not suggest that it is adaptive, much less wise. It merely suggests that it hasn't led directly to a society's collapse or killed its practitioners outright. (378-85)

The obvious difference between genes and memes (e.g., beliefs, ideas, cultural practices) is also important to keep in view. The latter are communicated; they do not travel with the gametes of their human hosts. The survival of memes, therefore, is not dependent on their conferring some actual benefit (reproductive or otherwise) on individuals or groups. It is quite possible for people to traffic in ideas and other cultural products that diminish their well-being for centuries on end. (385-88)

I have made the case elsewhere that religion and science are in a zero-sum conflict with respect to facts. Here, I have begun to argue that the division between facts and values is intellectually unsustainable, especially from the perspective of neuroscience. Consequently, it should come as no surprise that I see very little room for compromise between faith and reason on questions of morality. While religion is not the primary focus of this book, any discussion about the relationship between facts and values, the nature of belief, and the role of science in public discourse must continually labor under the burden of religious opinion. (442-47)

It also seems that, given the relative poverty of science, wealthy organizations like the Templeton Foundation (whose endowment currently stands at \$1.5 billion) have managed to convince some scientists and science journalists that it is wise to split the difference between intellectual integrity and the fantasies of a prior age. (453-55)

[...] many scientists seem to worry that subjecting people's religious beliefs to criticism will start a war of ideas that science cannot win. I believe that they are wrong. More important, I am confident that we will eventually have no choice in the matter. (461-62)

CHAPTER 1

MORAL TRUTH

Many people believe that something in the last few centuries of intellectual progress prevents us from speaking in terms of "moral truth" and, therefore, from making cross-cultural moral judgments—or moral judgments at all. (474-75)

I am not suggesting that science can give us an evolutionary or neurobiological account of what people do in the name of "morality." Nor am I merely saying that science can help us get what we want out of life. These would be quite banal claims to make—unless one happens to doubt the truth of evolution, the mind's dependency on the brain, or the general utility of science. Rather I am arguing that science can, in principle, help us understand what we should do and should want—and, therefore, what other people should do and should want in order to live the best lives possible. My claim is that there are right and wrong answers to moral questions, just as there are right and wrong answers to questions of physics, and such answers may one day fall within reach of the maturing sciences of mind. (488-93)

Given that changes in the physical universe and in our experience of it can be understood, science should increasingly enable us to answer specific moral questions. For instance, would it be better to spend our next billion dollars eradicating racism or malaria? Which is generally more harmful to our personal relationships, "white" lies or gossip? (496-98)

As the philosopher John Searle once pointed out, there are two very different senses of the terms "objective" and "subjective." The first sense relates to how we know (i.e., epistemology), the second to what there is to know (i.e., ontology). When we say that we are reasoning or speaking "objectively," we generally mean that we are free of obvious bias, open to counterarguments, cognizant of the relevant

facts, and so on. This is to make a claim about how we are thinking. In this sense, there is no impediment to our studying subjective (i.e., first-person) facts “objectively.” (513-18)

[...] given that there are facts—real facts—to be known about how conscious creatures can experience the worst possible misery and the greatest possible well-being, it is objectively true to say that there are right and wrong answers to moral questions, whether or not we can always answer these questions in practice. (532-34)

[...] my claim that consciousness is the basis of human values and morality is not an arbitrary starting point. (571)

[...] the concept of “well-being” captures all that we can intelligibly value. And “morality”—whatever people’s associations with this term happen to be—really relates to the intentions and behaviors that affect the well-being of conscious creatures. (573-75)

It is, perhaps, worth remembering that there are trained “scientists” who are Biblical Creationists, and their “scientific” thinking is purposed toward interpreting the data of science to fit the Book of Genesis. Such people claim to be doing “science,” of course, but real scientists are free, and indeed obligated, to point out that they are misusing the term. Similarly, there are people who claim to be highly concerned about “morality” and “human values,” but when we see that their beliefs cause tremendous misery, nothing need prevent us from saying that they are misusing the term “morality” or that their values are distorted. (602-7)

Consider the Catholic Church: an organization which advertises itself as the greatest force for good and as the only true bulwark against evil in the universe. Even among non-Catholics, its doctrines are widely associated with the concepts of “morality” and “human values.” However, the Vatican is an organization that excommunicates women for attempting to become priests but does not excommunicate male priests for raping children. It excommunicates doctors who perform abortions to save a mother’s life—even if the mother is a nine-year-old girl raped by her stepfather and pregnant with twins—but it did not excommunicate a single member of the Third Reich for committing genocide. Are we really obliged to consider such a diabolical inversion of priorities to be evidence of an alternative “moral” framework? No. It seems clear that the Catholic Church is as misguided in speaking about the “moral” peril of contraception, for instance, as it would be in speaking about the “physics” of Transubstantiation. In both domains, it is true to say that the Church is grotesquely confused about which things in this world are worth paying attention to. (608-17)

The definition of “life” remains, to this day, difficult to pin down. Does this mean we can’t study life scientifically? No. The science of biology thrives despite such ambiguities. (625-27)

One of my critics put the concern this way: “Morals are relative to the time and place in which they appear. If you do not already accept well-being as a value, then there seems to be no argument for why one should promote well-being.” As proof of this assertion, he observed that I would be unable to convince the Taliban that they value the wrong things. By this standard, however, the truths of science are also “relative to the time and place in which they appear,” and there is no way to convince someone who does not value empirical evidence that he should value it. (635-39)

Medicine can resolve specific questions about human health—and it can do this even while the very definition of “health” continues to change. (651-52)

It is worth noting in [...] that the God of Abraham never told us to treat children with kindness, but He did tell us to kill them for talking back to us (Exodus 21:15, Leviticus 20:9, Deuteronomy 21:18–21, Mark 7:9–13, and Matthew 15:4–7). And yet everyone finds this “moral” imperative perfectly insane. (678-78)

I have argued that values only exist relative to actual and potential changes in the well-being of conscious creatures. (681-82)

The moment we admit that consciousness is the context in which any discussion of values makes sense, we must admit that there are facts to be known about how the experience of conscious creatures can change. (733-34)

The fact that it could be difficult or impossible to know exactly how to maximize human well-being does not mean that there are no right or wrong ways to do this—nor does it mean that we cannot exclude certain answers as obviously bad. For instance, there is often a tension between the autonomy of the individual and the common good, and many moral problems turn on just how to prioritize these competing values. However, autonomy brings obvious benefit to people and is, therefore, an important component of the common good. The fact that it might be difficult to decide exactly how to balance individual rights against collective interests, or that there might be a thousand equivalent ways of doing this, does not mean that there aren’t objectively terrible ways of doing this. The difficulty of getting precise answers to certain moral questions does not mean that we must hesitate to condemn the morality of the Taliban—not just personally, but from the point of view of science. The moment we admit that we know anything about human well-being scientifically, we must admit that certain individuals or cultures can be absolutely wrong about it. (738-45)

There are very practical concerns that follow from the glib idea that anyone is free to value anything—the most consequential being that it is precisely what allows highly educated, secular, and otherwise well-intentioned people to pause thoughtfully, and often interminably, before condemning practices like compulsory veiling, genital excision, bride burning, forced marriage, and the other cheerful products of alternative “morality” found elsewhere in the world. (746-50)

[...] this person has since been appointed to the President’s Commission for the Study of Bioethical Issues:

She: What makes you think that science will ever be able to say that forcing women to wear burqas is wrong?

Me: Because I think that right and wrong are a matter of increasing or decreasing well-being—and it is obvious that forcing half the population to live in cloth bags, and beating or killing them if they refuse, is not a good strategy for maximizing human well-being.

She: But that’s only your opinion.

Me: Okay ... Let’s make it even simpler. What if we found a culture that ritually blinded every third child by literally plucking out his or her eyes at birth, would you then agree that we had found a culture that was needlessly diminishing human well-being?

She: It would depend on why they were doing it.

Me [slowly returning my eyebrows from the back of my head]: Let’s say they were doing it on the basis of religious superstition. In their scripture, God says, “Every third must walk in darkness.”

She: Then you could never say that they were wrong. (764-73)

Moral relativism, however, tends to be self-contradictory. Relativists may say that moral truths exist only relative to a specific cultural framework—but this claim about the status of moral truth purports to be true across all possible frameworks. In practice, relativism almost always amounts to the claim that we should be tolerant of moral difference because no moral truth can supersede any other. (791-93)

Moral relativism is clearly an attempt to pay intellectual reparations for the crimes of Western colonialism, ethnocentrism, and racism. This is, I think, the only charitable thing to be said about it. I hope it is clear that I am not defending the idiosyncrasies of the West as any more enlightened, in principle, than those of any other culture. Rather, I am arguing that the most basic facts about human flourishing must transcend culture, just as most other facts do. (796-800)

In his wonderful book *The Blank Slate*, Steven Pinker includes a quotation from the anthropologist Donald Symons that captures the problem of multiculturalism especially well: If only one person in the world held down a terrified, struggling, screaming little girl, cut off her genitals with a septic blade, and sewed her back up, leaving only a tiny hole for urine and menstrual flow, the only question would be how severely that person should be punished, and whether the death penalty would be a sufficiently severe sanction. But when millions of people do this, instead of the enormity being magnified millions-fold, suddenly it becomes “culture,” and thereby magically becomes less, rather than more, horrible, and is even defended by some Western “moral thinkers,” including feminists. [...] It is precisely such instances of learned confusion (one is tempted to say “learned psychopathy”) that lend credence to the claim that a universal morality requires the support of faith-based religion. (802-10)

[...] when the entomologist E. O. Wilson (in collaboration with the philosopher Michael Ruse) wrote that “morality, or more strictly our belief in morality, is merely an adaptation put in place to further our reproductive ends,” the philosopher Daniel Dennett rightly dismissed it as “nonsense.” The fact that our moral intuitions probably conferred some adaptive advantage upon our ancestors does not mean that the present purpose of morality is successful reproduction, or that “our belief in morality” is just a useful delusion. (Is the purpose of astronomy successful reproduction? What about the practice of contraception? Is that all about reproduction, too?) Nor does it mean that our notion of “morality” cannot grow deeper and more refined as our understanding of ourselves develops. (842-48)

We have good reason to believe that much of what we do in the name of “morality”—decrying sexual infidelity, punishing cheaters, valuing cooperation, etc.—is borne of unconscious processes that were shaped by natural selection. But this does not mean that evolution designed us to lead deeply fulfilling lives. (853-55)

It seems to me, therefore, that there are at least three projects that we should not confuse: 1. We can explain why people tend to follow certain patterns of thought and behavior (many of them demonstrably silly and harmful) in the name of “morality.” 2. We can think more clearly about the nature of moral truth and determine which patterns of thought and behavior we should follow in the name of “morality.” 3. We can convince people who are committed to silly and harmful patterns of thought and behavior in the name of “morality” to break these commitments and to live better lives. These are distinct and independently worthy endeavors. Most scientists who study morality in evolutionary, psychological, or neurobiological terms are exclusively devoted to the first project: their goal is to describe and understand how people think and behave in light of morally salient emotions like anger, disgust, empathy, love, guilt, humiliation, etc. This research is fascinating, of course, but it is not my focus. And while our common evolutionary origins and resultant physiological similarity to one

another suggest that human well-being will admit of general principles that can be scientifically understood, I consider this first project all but irrelevant to projects 2 and 3. (860-70)

Imagine that a handsome stranger tries to seduce another man's wife at the gym. When the woman politely informs her admirer that she is married, the cad persists, as though a happy marriage could be no impediment to his charms. The woman breaks off the conversation soon thereafter, but far less abruptly than might have been compatible with the laws of physics.

I write now, in the rude glare of recent experience. I can say that when my wife reported these events to me yesterday, they immediately struck me as morally salient. In fact, she had not completed her third sentence before the dark fluids of moral indignation began coursing through my brain—jealousy, embarrassment, anger, etc.—albeit only at a trickle. First, I was annoyed by the man's behavior—and had I been present to witness it, I suspect that my annoyance would have been far greater. If this Don Juan had been as dismissive of me in my presence as he was in my absence, I could imagine how such an encounter could result in physical violence.

No evolutionary psychologist would find it difficult to account for my response to this situation—and almost all scientists who study “morality” would confine their attention to this set of facts: my inner ape had swung into view, and any thoughts I might entertain about “moral truth” would be linguistic effluvium masking far more zoological concerns. I am the product of an evolutionary history in which every male of the species has had to guard against squandering his resources on another man's offspring. Had we scanned my brain and correlated my subjective feelings with changes in my neurophysiology, the scientific description of these events would be nearly complete. [...]

But there are many different ways for an ape to respond to the fact that other apes find his wife desirable. Had this happened in a traditional honor culture, the jealous husband might beat his wife, drag her to the gym, and force her to identify her suitor so that he could put a bullet in his brain. In fact, in an honor society, the employees of the gym might sympathize with this project and help to organize a proper duel. Or perhaps the husband would be satisfied to act more obliquely, killing one of his rival's relatives and initiating a classic blood feud. In either case, assuming he didn't get himself killed in the process, he might then murder his wife for emphasis, leaving his children motherless. There are many communities on earth where men commonly behave this way, and hundreds of millions of boys are beginning to run this ancient software on their brains even now.

However, my own mind shows some precarious traces of civilization: one being that I view the emotion of jealousy with suspicion. What is more, I happen to love my wife and genuinely want her to be happy, and this entails a certain empathetic understanding of her point of view. Given a moment to think about it, I can feel glad that her self-esteem received a boost from this man's attention; I can also feel compassion for the fact that, after recently having our first child, her self-esteem needed any boost at all. I also know that she would not want to be rude, and that this probably made her somewhat slow to extricate herself from a conversation that had taken a wrong turn. And I am under no illusions that I am the only man on earth whom she will find attractive, or momentarily distracting, nor do I imagine that her devotion to me should consist in this impossible narrowing of her focus. And how do I feel about the man? Well, I still find his behavior objectionable—because I cannot sympathize with his effort to break up a marriage, and I know that I would not behave as he did—but I sympathize with everything else he must have felt, because I also happen to think that my wife is beautiful, and I know what it's like to be a single ape in the jungle.

Most important, however, I value my own well-being, as well as that of my wife and daughter, and I want to live in a society that maximizes the possibility of human well-being generally. (887-916)

CHAPTER 2

GOOD AND EVIL

There may be nothing more important than human cooperation. Whenever more pressing concerns seem to arise—like the threat of a deadly pandemic, an asteroid impact, or some other global catastrophe—human cooperation is the only remedy (if a remedy exists). [...] Open a newspaper, today or any day for the rest of your life, and you will witness failures of human cooperation, great and small, announced from every corner of the world. The results of these failures are no less tragic for being utterly commonplace: deception, theft, violence, and their associated miseries arise in a continuous flux of misspent human energy. [...] When one considers the proportion of our limited time and resources that must be squandered merely to guard against theft and violence (to say nothing of addressing their effects), the problem of human cooperation seems almost the only problem worth thinking about. (939-41)

Many people imagine that the theory of evolution entails selfishness as a biological imperative. This popular misconception has been very harmful to the reputation of science. In truth, human cooperation and its attendant moral emotions are fully compatible with biological evolution. (947-49)

While much remains to be understood about the biology of our moral impulses, kin selection, reciprocal altruism, and sexual selection explain how we have evolved to be, not merely atomized selves in thrall to our self-interest, but social selves disposed to serve a common interest with others. (964-66)

[...] unlike the rest of the earth's creatures, including our fellow primates, the sclera of our eyes (the region surrounding the colored iris) is white and exposed. This makes the direction of the human gaze very easy to detect, allowing us to notice even the subtlest shifts in one another's visual attention. The psychologist Michael Tomasello suggests the following adaptive logic: If I am, in effect, advertising the direction of my eyes, I must be in a social environment full of others who are not often inclined to take advantage of this to my detriment—by, say, beating me to the food or escaping aggression before me. Indeed, I must be in a cooperative social environment in which others following the direction of my eyes somehow benefits me. Tomasello has found that even twelve-month old children will follow a person's gaze, while chimpanzees tend to be interested only in head movements. He suggests that our unique sensitivity to gaze direction facilitated human cooperation and language development. (968-76)

Questions of human well-being run deeper than any explicit code of morality. Morality—in terms of consciously held precepts, social contracts, notions of justice, etc.—is a relatively recent development. (1000-1001)

[...] any biological changes that served to mitigate the internecine misery of our ancestors would fall within the scope of an analysis of morality as a guide to personal and collective well-being. To simplify matters enormously:

1. Genetic changes in the brain gave rise to social emotions, moral intuitions, and language ...
2. These allowed for increasingly complex cooperative behavior, the keeping of promises, concern about one's reputation, etc....
3. Which became the basis for cultural norms, laws, and social institutions whose purpose has been to render this growing system of cooperation durable in the face of countervailing forces.

(1004-8)

[...] just as it is possible for individuals and groups to be wrong about how best to maintain their physical health, it is possible for them to be wrong about how to maximize their personal and social well-being. (1047-49)

I believe that we will increasingly understand good and evil, right and wrong, in scientific terms, because moral concerns translate into facts about how our thoughts and behaviors affect the well-being of conscious creatures like ourselves. If there are facts to be known about the well-being of such creatures—and there are—then there must be right and wrong answers to moral questions. (1049-52)

What would our world be like if we ceased to worry about “right” and “wrong,” or “good” and “evil,” and simply acted so as to maximize well-being, our own and that of others? (1088-89)

Does forcing women and girls to wear burqas make a net positive contribution to human well-being? Does it produce happier boys and girls? Does it produce more compassionate men or more contented women? Does it make for better relationships between men and women, between boys and their mothers, or between girls and their fathers? I would bet my life that the answer to each of these questions is “no.” So, I think, would many scientists. And yet, as we have seen, most scientists have been trained to think that such judgments are mere expressions of cultural bias—and, thus, unscientific in principle. Very few of us seem willing to admit that such simple, moral truths increasingly fall within the scope of our scientific worldview. (1099-1104)

[...] under certain conditions, it is compassionate to prolong a person’s pain unnecessarily so as to reduce his memory of suffering later on. Indeed, it might be unethical to do otherwise. (1314-5)

(1) there are many revealed religions available to us, and they offer mutually incompatible doctrines; (2) the scriptures of many religions, including the most well subscribed (i.e., Christianity and Islam), countenance patently unethical practices like slavery; (3) the faculty we use to validate religious precepts, judging the Golden Rule to be wise and the murder of apostates to be foolish, is something we bring to scripture; it does not, therefore, come from scripture; (4) the reasons for believing that any of the world’s religions were “revealed” to our ancestors (rather than merely invented by men and women who did not have the benefit of a twenty-first-century education) are either risible or nonexistent—and the idea that each of these mutually contradictory doctrines is inerrant remains a logical impossibility. Here we can take refuge in Bertrand Russell’s famous remark that even if we could be certain that one of the world’s religions was perfectly true, given the sheer number of conflicting faiths on offer, every believer should expect damnation purely as a matter of probability. (1323-31)

The pleasure that a racist takes in abusing some minority group, for instance, seems on all fours with the pleasure a saint takes in risking his life to help a stranger. If there are more racists than saints, it seems the racists will win, and we will be obliged to build a society that maximizes the pleasure of unjust men. But such concerns clearly rest on an incomplete picture of human well-being. To the degree that treating people as ends in themselves is a good way to safeguard human well-being, it is precisely what we should do. Fairness is not merely an abstract principle—it is a felt experience. We all know this from the inside, of course, but neuroimaging has also shown that fairness drives reward-related activity in the brain, while accepting unfair proposals requires the regulation of negative emotion. (1349-55)

While each individual’s search for happiness may not be compatible in every instance with our efforts to build a just society, we should not lose sight of the fact that societies do not suffer; people do. (1360-62)

Most of us spend some time over the course of our lives deciding how (or whether) to respond to the fact that other people on earth needlessly starve to death. Most of us also spend some time deciding which delightful foods we want to consume at home and in our favorite restaurants. Which of these projects absorbs more of your time and material resources on a yearly basis? (1397-1400)

I have no doubt that I am less good than I could be. Which is to say, I am not living in a way that truly maximizes the well-being of others. I am nearly as sure, however, that I am also failing to live in a way that maximizes my own well-being. This is one of the paradoxes of human psychology: we often fail to do what we ostensibly want to do and what is most in our self-interest to do. We often fail to do what we most want to do—or, at the very least, we fail to do what, at the end of the day (or year, or lifetime) we will most wish we had done. (1404-7)

A majority of Americans believe that the Bible provides an accurate account of the ancient world. Many millions of Americans also believe that a principal cause of cancer is “repressed anger.” Happily, we do not allow these opinions to anchor us when it comes time to have serious discussions about history and oncology. It seems abundantly clear that many people are simply wrong about morality—just as many people are wrong about physics, biology, history, and everything else worth understanding. (1486-89)

The most conservative regions of the United States tend to have the highest rates of divorce and teenage pregnancy, as well as the greatest appetite for pornography. (1534-36)

The brain regions involved in moral cognition span many areas of the prefrontal cortex and the temporal lobes. The neuroscientists Jorge Moll, Ricardo de Oliveira-Souza, and colleagues have written the most comprehensive reviews of this research. They divide human actions into four categories:

1. Self-serving actions that do not affect others
2. Self-serving actions that negatively affect others
3. Actions that are beneficial to others, with a high probability of reciprocation (“reciprocal altruism”)
4. Actions that are beneficial to others, with no direct personal benefits (material or reputation gains) and no expected reciprocation (“genuine altruism”). This includes altruistic helping as well as costly punishment of norm violators (“altruistic punishment”)

As Moll and colleagues point out, we share behaviors 1 through 3 with other social mammals, while 4 seems to be the special province of human beings. (We should probably add that this altruism must be intentional/conscious, so as to exclude the truly heroic self-sacrifice seen among social insects like bees, ants, and termites.) While Moll et al. admit to ignoring the reward component of genuine altruism (often called the “warm glow” associated with cooperation), we know from neuroimaging studies that cooperation is associated with heightened activity in the brain’s reward regions. Here, once again, the traditional opposition between selfish and selfless motivation seems to break down. If helping others can be rewarding, rather than merely painful, it should be thought of as serving the self in another mode. (1556-71)

The regions of the brain that govern judgments of right and wrong include a broad network of cortical and subcortical structures. The contribution of these areas to moral thought and behavior differs with respect to emotional tone: lateral regions of the frontal lobes seem to govern the indignation associated with punishing transgressors, while medial frontal regions produce the feelings of reward associated with trust and reciprocation. [...] there is also a distinction between personal and impersonal moral decisions. The resulting picture is complicated: factors like moral sensitivity, moral motivation, moral judgment, and moral reasoning rely on separable, mutually overlapping processes.

The medial prefrontal cortex (MPFC) is central to most discussions of morality and the brain. [...] this region is involved in emotion, reward, and judgments of self-relevance. It also seems to register the difference between belief and disbelief. Injuries here have been associated with a variety of deficits including poor impulse control, emotional blunting, and the attenuation of social emotions like empathy, shame, embarrassment, and guilt. When frontal damage is limited to the MPFC, reasoning ability as well as the conceptual knowledge of moral norms are generally spared, but the ability to behave appropriately toward others tends to be disrupted.

Interestingly, patients suffering from MPFC damage are more inclined to consequentialist reasoning than normal subjects are when evaluating certain moral dilemmas—when, for instance, the means of sacrificing one person’s life to save many others is personal rather than impersonal. (1578-91)

Robert Hare, the creator of the standard diagnostic instrument to assess psychopathy, the Psychopathy Checklist–Revised (PCL–R), estimates that while there are probably no more than a hundred serial killers in the United States at any moment, there are probably 3 million psychopaths (about 1 percent of the population). If Hare is correct, each of us crosses paths with such people all the time. (1654-57)

Psychopaths are distinguished by their extraordinary egocentricity and their total lack of concern for the suffering of others. A list of their most frequent characteristics reads like a personal ad from hell: they are said to be callous, manipulative, deceptive, impulsive, secretive, grandiose, thrill-seeking, sexually promiscuous, unfaithful, irresponsible, prone to both reactive and calculated aggression, and lacking in emotional depth. They also show reduced emotional sensitivity to punishment (whether actual or anticipated). Most important, psychopaths do not experience a normal range of anxiety and fear, and this may account for their lack of conscience. The first neuroimaging experiment done on psychopaths found that, when compared to nonpsychopathic criminals and noncriminal controls, they exhibit significantly less activity in regions of the brain that generally respond to emotional stimuli. While anxiety and fear are emotions that most of us would prefer to live without, they serve as anchors to social and moral norms. Without an ability to feel anxious about one’s own transgressions, real or imagined, norms become nothing more than “rules that others make up.” The developmental literature also supports this interpretation: fearful children have been shown to display greater moral understanding. It remains an open question, therefore, just how free of anxiety we can reasonably want to be. (1662-75)

Further neuroimaging work suggests that psychopathy is also a product of pathological arousal and reward. People scoring high on the psychopathic personality inventory show abnormally high activity in the reward regions of their brain (in particular, the nucleus accumbens) in response to amphetamine and while anticipating monetary gains. Hypersensitivity of this circuitry is especially linked to the impulsive-antisocial dimension of psychopathy, which leads to risky and predatory behavior. Researchers speculate that an excessive response to anticipated reward can prevent a person from learning from the negative emotions of others.

Unlike others who suffer from mental illness or mood disorders, psychopaths generally do not feel that anything is wrong with them. They also meet the legal definition of sanity, in that they possess an intellectual understanding of the difference between right and wrong. However, psychopaths generally fail to distinguish between conventional and moral transgressions. When asked “Would it be okay to eat at your desk if the teacher gave you permission?” vs. “Would it be okay to hit another student in the face if the teacher gave you permission?” normal children age thirty-nine months and above tend to see these questions as fundamentally distinct and consider the latter transgression intrinsically wrong. In this, they appear to be guided by an awareness of potential human suffering. Children at risk for psychopathy tend to view these questions as morally indistinguishable.

When asked to identify the mental states of other people on the basis of photographs of their eyes alone, psychopaths show no general impairment. Their “theory of mind” processing (as the ability to understand the mental states of others is generally known) seems to be basically intact, with subtle deficits resulting from their simply not caring about how other people feel. The one crucial exception, however, is that psychopaths are often unable to recognize expressions of fear and sadness in others. And this may be the difference that makes all the difference.

Neuroscientist James Blair and colleagues suggest that psychopathy results from a failure of emotional learning due to genetic impairments of the amygdala and orbitofrontal cortex, regions vital to the processing of emotion. The negative emotions of others, rather than parental punishment, may be what goad us to normal socialization. Psychopathy, therefore, could result from a failure to learn from the fear and sadness of other people.

A child at risk for psychopathy, being emotionally blind to the suffering he causes, may increasingly resort to antisocial behavior in pursuit of his goals throughout adolescence and adulthood. As Blair points out, parenting strategies that increase empathy tend to successfully mitigate antisocial behavior in healthy children; such strategies inevitably fail with children who present with the callousness/unemotional (CU) trait that is characteristic of psychopathy. While it may be difficult to accept, the research strongly suggests that some people cannot learn to care about others. Perhaps we will one day develop interventions to change this. (1677-1704)

As Jared Diamond explains: It’s true, of course, that twentieth-century state societies, having developed potent technologies of mass killing, have broken all historical records for violent deaths. But this is because they enjoy the advantage of having by far the largest populations of potential victims in human history; the actual percentage of the population that died violently was on the average higher in traditional pre-state societies than it was even in Poland during the Second World War or Cambodia under Pol Pot. (1727-31)

Territorial violence might have even been necessary for the development of altruism. The economist Samuel Bowles has argued that lethal, “out-group” hostility and “in-group” altruism are two sides of the same coin. (1735-36)

We are conscious of only a tiny fraction of the information that our brains process in each moment. While we continually notice changes in our experience—in thought, mood, perception, behavior, etc.—we are utterly unaware of the neural events that produce these changes. In fact, by merely glancing at your face or listening to your tone of voice, others are often more aware of your internal states and motivations than you are. And yet most of us still feel that we are the authors of our own thoughts and actions. All of our behavior can be traced to biological events about which we have no conscious knowledge: this has always suggested that free will is an illusion. For instance, the physiologist Benjamin Libet famously demonstrated that activity in the brain’s motor regions can be detected some 350 milliseconds before a person feels that he has decided to move. Another lab recently used fMRI data to show that some “conscious” decisions can be predicted up to 10 seconds before they enter awareness (long before the preparatory motor activity detected by Libet). (1761-69)

As Daniel Dennett has pointed out, many people confuse determinism with fatalism. This gives rise to questions like, “If everything is determined, why should I do anything? Why not just sit back and see what happens?” But the fact that our choices depend on prior causes does not mean that they do not matter. If I had not decided to write this book, it wouldn’t have written itself. My choice to write it was unquestionably the primary cause of its coming into being. Decisions, intentions, efforts, goals, willpower, etc., are causal states of the brain, leading to specific behaviors, and behaviors lead to

outcomes in the world. Human choice, therefore, is as important as fanciers of free will believe. And to “just sit back and see what happens” is itself a choice that will produce its own consequences. (1803-9)

The question of free will is no mere curio of philosophy seminars. The belief in free will underwrites both the religious notion of “sin” and our enduring commitment to retributive justice. (1821-23)

The great worry is that any honest discussion of the underlying causes of human behavior seems to erode the notion of moral responsibility. (1828-29)

While viewing human beings as forces of nature does not prevent us from thinking in terms of moral responsibility, it does call the logic of retribution into question. Clearly, we need to build prisons for people who are intent upon harming others. But if we could incarcerate earthquakes and hurricanes for their crimes, we would build prisons for them as well. The men and women on death row have some combination of bad genes, bad parents, bad ideas, and bad luck—which of these quantities, exactly, were they responsible for? No human being stands as author to his own genes or his upbringing, and yet we have every reason to believe that these factors determine his character throughout life. Our system of justice should reflect our understanding that each of us could have been dealt a very different hand in life. In fact, it seems immoral not to recognize just how much luck is involved in morality itself. (1869-76)

It is not that free will is simply an illusion: our experience is not merely delivering a distorted view of reality; rather, we are mistaken about the nature of our experience. We do not feel as free as we think we feel. Our sense of our own freedom results from our not paying attention to what it is actually like to be what we are. The moment we do pay attention, we begin to see that free will is nowhere to be found, and our subjectivity is perfectly compatible with this truth. Thoughts and intentions simply arise in the mind. What else could they do? The truth about us is stranger than many suppose: The illusion of free will is itself an illusion. (1915-19)

CHAPTER 3

BELIEF

The work of archeologists, paleoanthropologists, geneticists, and neuroscientists—not to mention the relative taciturnity of our primate cousins—suggests that human language is a very recent adaptation. Our species diverged from its common ancestor with the chimpanzees only 6.3 million years ago. And it now seems that the split with chimps may have been less than decisive, as comparisons between the two genomes, focusing on the greater-than-expected similarity of our X chromosomes, reveal that our species diverged, interbred for a time, and then diverged for good. Such rustic encounters notwithstanding, all human beings currently alive appear to have descended from a single population of hunter-gatherers that lived in Africa around 50,000 BCE. These were the first members of our species to exhibit the technical and social innovations made possible by language.

Genetic evidence indicates that a band of perhaps 150 of these people left Africa and gradually populated the rest of the earth. Their migration would not have been without its hardships, however, as they were not alone: *Homo neanderthalensis* laid claim to Europe and the Middle East, and *Homo erectus* occupied Asia. Both were species of archaic humans that had developed along separate evolutionary paths after one or more prior migrations out of Africa. Both possessed large brains, fashioned stone tools similar to those of *Homo sapiens*, and were well armed. And yet over the next twenty thousand years, our ancestors gradually displaced, and may have physically eradicated, all rivals. Given the larger brains and sturdier build of the Neanderthals, it seems reasonable to suppose that only our species had the advantage of fully symbolic, complex speech.

While there is still controversy over the biological origins of human language, as well as over its likely precursors in the communicative behavior of other animals, there is no question that syntactic language lies at the root of our ability to understand the universe, to communicate ideas, to cooperate with one another in complex societies, and to build (one hopes) a sustainable, global civilization. (1934-53)

It is surprising that so little research has been done on belief, as few mental states exert so sweeping an influence over human life. While we often make a conventional distinction between “belief” and “knowledge,” these categories are actually quite misleading. [...] It is reasonable to wonder [...] whether “belief” is really a single phenomenon at the level of the brain. Our growing understanding of human memory should make us cautious: over the last fifty years, the concept of “memory” has decomposed into several forms of cognition that are now known to be neurologically and evolutionarily distinct. This should make us wonder whether a notion like “belief” might not also shatter into separate processes when mapped onto the brain. In fact, belief overlaps with certain types of memory, as memory can be equivalent to a belief about the past (e.g., “I had breakfast most days last week”), and certain beliefs are indistinguishable from what is often called “semantic memory” (e.g., “The earth is the third planet from the sun”). There is no reason to think that any of our beliefs about the world are stored as propositions, or within discrete structures, inside the brain. Merely understanding a simple proposition often requires the unconscious activation of considerable background knowledge and an active process of hypothesis testing. (1961-78)

But we are not likely to find a region of the human brain devoted solely to belief. The brain is an evolved organ, and there does not seem to be a process in nature that allows for the creation of new structures dedicated to entirely novel modes of behavior or cognition. Consequently, the brain’s higher-order functions had to emerge from lower-order mechanisms. An ancient structure like the insula, for instance, helps monitor events in our gut, governing the perception of hunger and primary emotions like disgust. But it is also involved in pain perception, empathy, pride, humiliation, trust, music appreciation, and addictive behavior. It may also play an important role in both belief formation and moral reasoning. Such promiscuity of function is a common feature of many regions of the brain, especially in the frontal lobes. (2022-28)

And much of our behavior and cognition, even much that now seems essential to our humanity, has not been selected for at all. There are no aspects of brain function that evolved to hold democratic elections, to run financial institutions, or to teach our children to read. We are, in every cell, the products of nature—but we have also been born again and again through culture. Much of this cultural inheritance must be realized differently in individual brains. The way in which two people think about the stock market, or recall that Christmas is a national holiday, or solve a puzzle like the Tower of Hanoi, will almost surely differ between individuals. This poses an obvious challenge when attempting to identify mental states with specific brain states. Another factor that makes the strict localization of any mental state difficult is that the human brain is characterized by massive interconnectivity: it is mostly talking to itself. And the information it stores must also be more fine-grained than the concepts, symbols, objects, or states that we subjectively experience. Representation results from a pattern of activity across networks of neurons and does not generally entail stable, one-to-one mappings of things/events in the world, or concepts in the mind, to discrete structures in the brain. (2032-42)

The seventeenth-century philosopher Spinoza thought that merely understanding a statement entails the tacit acceptance of its being true, while disbelief requires a subsequent process of rejection. Several psychological studies seem to support this conjecture. Understanding a proposition may be analogous to

perceiving an object in physical space: we may accept appearances as reality until they prove otherwise. The behavioral data acquired in our research support this hypothesis, as subjects judged statements to be “true” more quickly than they judged them to be “false” or “undecidable.”

When we compared the mental states of belief and disbelief, we found that belief was associated with greater activity in the medial prefrontal cortex (MPFC). This region of the frontal lobes is involved in linking factual knowledge with relevant emotional associations, in changing behavior in response to reward, and in goal-based actions. The MPFC is also associated with ongoing reality monitoring, and injuries here can cause people to confabulate—that is, to make patently false statements without any apparent awareness that they are not telling the truth. Whatever its cause in the brain, confabulation seems to be a condition in which belief processing has run amok. The MPFC has often been associated with self-representation, and one sees more activity here when subjects think about themselves than when they think about others.

The greater activity we found in the MPFC for belief compared to disbelief may reflect the greater self-relevance and/or reward value of true statements. When we believe a proposition to be true, it is as though we have taken it in hand as part of our extended self: we are saying, in effect, “This is mine. I can use this. This fits my view of the world.” It seems to me that such cognitive acceptance has a distinctly positive emotional valence. We actually like the truth, and we may, in fact, dislike falsehood.

The involvement of the MPFC in belief processing suggests an anatomical link between the purely cognitive aspects of belief and emotion/reward. Even judging the truth of emotionally neutral propositions engaged regions of the brain that are strongly connected to the limbic system, which governs our positive and negative affect. In fact, mathematical belief (e.g., “ $2 + 6 + 8 = 16$ ”) showed a similar pattern of activity to ethical belief (e.g., “It is good to let your children know that you love them”), and these were perhaps the most dissimilar sets of stimuli used in our experiment. This suggests that the physiology of belief may be the same regardless of a proposition’s content. It also suggests that the division between facts and values does not make much sense in terms of underlying brain function. (2053-79)

I have argued that there is no gulf between facts and values, because values reduce to a certain type of fact. This is a philosophical claim, and as such, I can make it before ever venturing into the lab. However, my research on belief suggests that the split between facts and values should look suspicious: First, belief appears to be largely mediated by the MPFC, which seems to already constitute an anatomical bridge between reasoning and value. Second, the MPFC appears to be similarly engaged, irrespective of a belief’s content. This finding of content-independence challenges the fact/value distinction very directly: for if, from the point of view of the brain, believing “the sun is a star” is importantly similar to believing “cruelty is wrong,” how can we say that scientific and ethical judgments have nothing in common? [...] the norms of reasoning seem to apply equally to beliefs about facts and to beliefs about values. In both spheres, evidence of inconsistency and bias is always unflattering. Similarities of this kind suggest that there is a deep analogy, if not identity, between the two domains. (2080-89)

Decades of psychological research suggest that unconscious processes influence belief formation, and not all of them assist us in our search for truth. When asked to judge the probability that an event will occur, or the likelihood that one event caused another, people are frequently misled by a variety of factors, including the unconscious influence of extraneous information. For instance, if asked to recall the last four digits of their Social Security numbers and then asked to estimate the number of doctors practicing in San Francisco, the resulting numbers will show a statistically significant relationship. Needless to say, when the order of questions is reversed, this effect disappears. (2094-99)

It is also true that the less competent a person is in a given domain, the more he will tend to overestimate his abilities. This often produces an ugly marriage of confidence and ignorance that is very difficult to correct for. Conversely, those who are more knowledgeable about a subject tend to be acutely aware of the greater expertise of others. This creates a rather unlovely asymmetry in public discourse—one that is generally on display whenever scientists debate religious apologists. For instance, when a scientist speaks with appropriate circumspection about controversies in his field, or about the limits of his own understanding, his opponent will often make wildly unjustified assertions about just which religious doctrines can be inserted into the space provided. Thus, one often finds people with no scientific training speaking with apparent certainty about the theological implications of quantum mechanics, cosmology, or molecular biology. (2114-21)

In my experience, arrogance is about as common at a scientific conference as nudity. At any scientific meeting you will find presenter after presenter couching his or her remarks with caveats and apologies. When asked to comment on something that lies to either side of the very knife edge of their special expertise, even Nobel laureates will say things like, “Well, this isn’t really my area, but I would suspect that X is ...” or “I’m sure there are several people in this room who know more about this than I do, but as far as I know, X is ...” The totality of scientific knowledge now doubles every few years. Given how much there is to know, all scientists live with the constant awareness that whenever they open their mouths in the presence of other scientists, they are guaranteed to be speaking to someone who knows more about a specific topic than they do. (2123-29)

We have long known, principally through the neurological work of Antonio Damasio and colleagues, that certain types of reasoning are inseparable from emotion. To reason effectively, we must have a feeling for the truth. Our first fMRI study of belief and disbelief seemed to bear this out. If believing a mathematical equation (vs. disbelieving another) and believing an ethical proposition (vs. disbelieving another) produce the same changes in neurophysiology, the boundary between scientific dispassion and judgments of value becomes difficult to establish.

However, such findings do not in the least diminish the importance of reason, nor do they blur the distinction between justified and unjustified belief. On the contrary, the inseparability of reason and emotion confirms that the validity of a belief cannot merely depend on the conviction felt by its adherents; it rests on the chains of evidence and argument that link it to reality. Feeling may be necessary to judge the truth, but it cannot be sufficient.

The neurologist Robert Burton argues that the “feeling of knowing” (i.e., the conviction that one’s judgment is correct) is a primary positive emotion that often floats free of rational processes and can occasionally become wholly detached from logical or sensory evidence. He infers this from neurological disorders in which subjects display pathological certainty (e.g., schizophrenia and Cotard’s delusion) and pathological uncertainty (e.g., obsessive-compulsive disorder). Burton concludes that it is irrational to expect too much of human rationality. On his account, rationality is mostly aspirational in character and often little more than a façade masking pure, unprincipled feeling.

Other neuroscientists have made similar claims. Chris Frith, a pioneer in the use of functional neuroimaging, recently wrote:

[W]here does conscious reasoning come into the picture? It is an attempt to justify the choice after it has been made. And it is, after all, the only way we have to try to explain to other people why we made a particular decision. But given our lack of access to the brain processes involved, our justification is often spurious: a post-hoc rationalization, or even a confabulation—a “story” born of the confusion between imagination and memory. (2161-79)

[...]people differ significantly with respect to risk tolerance, and these differences appear to be governed by a variety of genes—including genes for the D4 dopamine receptor and the protein stathmin (which is primarily expressed in the amygdala). (2191-92)

As it turns out, dopamine receptor genes may play a role in religious belief as well. People who have inherited the most active form of the D4 receptor are more likely to believe in miracles and to be skeptical of science; the least active forms correlate with “rational materialism.”⁵⁰ Skeptics given the drug L-dopa, which increases dopamine levels, show an increased propensity to accept mystical explanations for novel phenomena. (2196-2200)

As it turns out, dopamine receptor genes may play a role in religious belief as well. People who have inherited the most active form of the D4 receptor are more likely to believe in miracles and to be skeptical of science; the least active forms correlate with “rational materialism.” Skeptics given the drug L-dopa, which increases dopamine levels, show an increased propensity to accept mystical explanations for novel phenomena. The fact that religious belief is both a cultural universal and appears to be tethered to the genome has led scientists like Burton to conclude that there is simply no getting rid of faith-based thinking. (2196-2202)

The problem, however, is that we could have said the same about witchcraft. Historically, a preoccupation with witchcraft has been a cultural universal. And yet belief in magic is now in disrepute almost everywhere in the developed world. (2211-12)

Lest the analogy between religion and witchcraft seem quaint, it is worth remembering that belief in magic and demonic possession is still epidemic in Africa. In Kenya elderly men and women are regularly burned alive as witches. In Angola, Congo, and Nigeria the hysteria has mostly targeted children: thousands of unlucky boys and girls have been blinded, injected with battery acid, and otherwise put to torture in an effort to purge them of demons; others have been killed outright; many more have been disowned by their families and rendered homeless. Needless to say, much of this lunacy has spread in the name of Christianity. The problem is especially intractable because the government officials charged with protecting these suspected witches also believe in witchcraft. As was the case in the Middle Ages, when the belief in witchcraft was omnipresent in Europe, only a truly panoramic ignorance about the physical causes of disease, crop failure, and life’s other indignities allows this delusion to thrive. (2214-22)

The development of mind-reading technology is just beginning—but reliable lie detection will be much easier to achieve than accurate mind reading. (2291-92)

Methodological problems notwithstanding, it is difficult to exaggerate how fully our world would change if lie detectors ever became reliable, affordable, and unobtrusive. Rather than spirit criminal defendants and hedge fund managers off to the lab for a disconcerting hour of brain scanning, there may come a time when every courtroom or boardroom will have the requisite technology discreetly concealed behind its wood paneling. Thereafter, civilized men and women might share a common presumption: that wherever important conversations are held, the truthfulness of all participants will be monitored. (2303-7)

In a legal context, some scholars have already begun to worry that reliable lie detection will constitute an infringement of a person’s Fifth Amendment privilege against self-incrimination. However, the Fifth Amendment has already succumbed to advances in technology. The Supreme Court has ruled that

defendants can be forced to provide samples of their blood, saliva, and other physical evidence that may incriminate them. (2313-16)

[...] the prohibition against compelled testimony itself appears to be a relic of a more superstitious age. It was once widely believed that lying under oath would damn a person's soul for eternity. (2319-20)

This is not how our minds work. A belief—to be actually believed—entails the corollary belief that we have accepted it because it seems to be true. To really believe a proposition—whether about facts or values—we must also believe that we are in touch with reality in such a way that if it were not true, one would not believe it. We must believe, therefore, that we are not flagrantly in error, deluded, insane, self-deceived, etc. While the preceding sentences do not suffice as a full account of epistemology, they go a long way toward uniting science and common sense, as well as reconciling their frequent disagreements. There can be no doubt that there is an important difference between a belief that is motivated by an unconscious emotional bias (or other nonepistemic commitments) and a belief that is comparatively free of such bias. (2341-47)

[...] people tend to be risk-averse when considering potential gains and risk seeking when considering potential losses. [...] Another way of stating this is that people tend to overvalue certainty (2417-19)

There is no question that human beings regularly fail to achieve the norms of rationality. But we do not merely fail—we fail reliably. We can, in other words, use reason to understand, quantify, and predict our violations of its norms. This has moral implications. We know, for instance, that the choice to undergo a risky medical procedure will be heavily influenced by whether its possible outcomes are framed in terms of survival rates or mortality rates. We know, in fact, that this framing effect is no less pronounced among doctors than among patients. Given this knowledge, physicians have a moral obligation to handle medical statistics in ways that minimize unconscious bias. Otherwise, they cannot help but inadvertently manipulate both their patients and one another, guaranteeing that some of the most important decisions in life will be unprincipled. (2441-48)

Despite a widespread belief to the contrary, scientific validity is not the result of scientists abstaining from making value judgments; rather, scientific validity is the result of scientists making their best effort to value principles of reasoning that link their beliefs to reality, through reliable chains of evidence and argument. (2458-60)

The answer to the question “What should I believe, and why should I believe it?” is generally a scientific one. Believe a proposition because it is well supported by theory and evidence; believe it because it has been experimentally verified; believe it because a generation of smart people have tried their best to falsify it and failed; believe it because it is true (or seems so). This is a norm of cognition as well as the core of any scientific mission statement. As far as our understanding of the world is concerned—there are no facts without values. (2466-69)

CHAPTER 4

RELIGION

Since the nineteenth century, it has been widely assumed that the spread of industrialized society would spell the end of religion. Marx, Freud, and Weber—along with innumerable anthropologists, sociologists, historians, and psychologists influenced by their work—expected religious belief to wither in the light of modernity. It has not come to pass. Religion remains one of the most important aspects of

human life in the twenty-first century. While most developed societies have grown predominantly secular, with the curious exception of the United States, orthodox religion is in florid bloom throughout the developing world. In fact, humanity seems to be growing proportionally more religious, as prosperous, nonreligious people have the fewest babies. When one considers the rise of Islamism throughout the Muslim world, the explosive spread of Pentecostalism throughout Africa, and the anomalous piety of the United States, it becomes clear that religion will have geopolitical consequences for a long time to come.

Despite the explicit separation of church and state provided for by the U.S. Constitution, the level of religious belief in the United States (and the concomitant significance of religion in American life and political discourse) rivals that of many theocracies. The reason for this is unclear. While it has been widely argued that religious pluralism and competition have caused religion to flourish in the United States, with state-church monopolies leading to its decline in Western Europe, the support for this “religious market theory” now appears weak. It seems, rather, that religiosity is strongly coupled to perceptions of societal insecurity. Within a rich nation like the United States, high levels of socioeconomic inequality may dictate levels of religiosity generally associated with less developed (and less secure) societies. In addition to being the most religious of developed nations, the United States also has the greatest economic inequality. The poor tend to be more religious than the rich, both within and between nations. (2471-89)

[...] research on people’s responses to unfamiliar moral dilemmas suggests that religion has no effect on moral judgments that involve weighing harms against benefits (e.g., lives lost vs. lives saved). And on almost every measure of societal health, the least religious countries are better off than the most religious. Countries like Denmark, Sweden, Norway, and the Netherlands—which are the most atheistic societies on earth—consistently rate better than religious nations on measures like life expectancy, infant mortality, crime, literacy, GDP, child welfare, economic equality, economic competitiveness, gender equality, health care, investments in education, rates of university enrollment, internet access, environmental protection, lack of corruption, political stability, and charity to poorer nations, etc. (2494-2500)

[...] religious commitment in the United States is highly correlated with racism. (2504-5)

Whether religion contributes to societal dysfunction, it seems clear that as societies become more prosperous, stable, and democratic, they tend to become more secular. Even in the United States, the trend toward secularism is visible. [...] this suggests that, contrary to the opinions of many anthropologists and psychologists, religious commitment “is superficial enough to be readily abandoned when conditions improve to the required degree.” (2509-12)

The evolutionary origins of religion remain obscure. The earliest signs of human burial practices date to 95,000 years ago, and many take these as evidence of the emergence of religious belief. Some researchers consider the connection between religion and evolution to be straightforward insofar as religious doctrines tend to view sexual conduct as morally problematic and attempt to regulate it, both to encourage fertility and to protect against sexual infidelity. (2513-17)

Clearly, religion cannot be reduced to a mere concatenation of religious beliefs. Every religion consists of rites, rituals, prayers, social institutions, holidays, etc., and these serve a wide variety of purposes, conscious and otherwise. However, religious belief—that is, the acceptance of specific historical and metaphysical propositions as being true—is generally what renders these enterprises relevant, or even comprehensible. I share with anthropologist Rodney Stark the view that belief precedes ritual and that a

practice like prayer is usually thought to be a genuine act of communication with a God (or gods). (2534-39)

[...] people do not accept incredible religious doctrines because they have relaxed their standards of rationality; they relax their standards of rationality because certain doctrines fit their “inference machinery” in such a way as to seem credible. And what most religious propositions may lack in plausibility they make up for by being memorable, emotionally salient, and socially consequential. (2573-76)

[...] several experiments suggest that children are predisposed to assume both design and intention behind natural events—leaving many psychologists and anthropologists to believe that children, left entirely to their own devices, would invent some conception of God. (2586-88)

While religious affiliation is strictly a matter of cultural inheritance, religious attitudes (e.g., social conservatism) and behaviors (e.g., church attendance) seem to be moderately influenced by genetic factors. The relevance of the brain’s dopaminergic systems to religious experience, belief, and behavior is suggested by several lines of evidence, including the fact that several clinical conditions involving the neurotransmitter dopamine—mania, obsessive-compulsive disorder (OCD), and schizophrenia—are regularly associated with hyperreligiosity. Serotonin has also been implicated, as drugs known to modulate it—like LSD, psilocybin, mescaline, N,N-dimethyltryptamine (“DMT”), and 3,4-methylenedioxymethamphetamine (“ecstasy”)—seem to be especially potent drivers of religious/spiritual experience. Links have also been drawn between religious experience and temporal lobe epilepsy. (2597-2605)

Working in Mark Cohen’s cognitive neuroscience lab at UCLA, I published the first neuroimaging study of belief as a general mode of cognition [...]. While another group at the National Institutes of Health later looked specifically at religious belief, no research had compared these two forms of belief directly. In a subsequent study, Jonas T. Kaplan and I used fMRI to measure signal changes in the brains of both Christians and nonbelievers as they evaluated the truth and falsity of religious and nonreligious propositions. For each trial, subjects were presented with either a religious statement (e.g., “Jesus Christ really performed the miracles attributed to him in the Bible”) or a nonreligious statement (e.g., “Alexander the Great was a very famous military leader”), and they pressed a button to indicate whether the statement was true or false.

For both groups, and in both categories of stimuli, our results were largely consistent with our earlier findings. Believing a statement to be true was associated with greater activity in the medial prefrontal cortex (MPFC), a region important for self-representation, emotional associations, reward, and goal-driven behavior. This area showed greater activity whether subjects believed statements about God and the Virgin Birth or statements about ordinary facts.

Our study was designed to elicit the same responses from the two groups on nonreligious stimuli (e.g., “Eagles really exist”) and opposite responses on religious stimuli (e.g., “Angels really exist”). The fact that we obtained essentially the same result for belief in both devout Christians and nonbelievers, on both categories of content, argues strongly that the difference between belief and disbelief is the same, regardless of what is being thought about.

While the comparison between belief and disbelief produced similar activity for both categories of questions, the comparison of all religious thinking to all nonreligious thinking yielded a wide range of differences throughout the brain. Religious thinking was associated with greater signal in the anterior insula and the ventral striatum. The anterior insula has been linked to pain perception, to the perception of pain in others, and to negative feelings like disgust. The ventral striatum has been frequently linked to

reward. It would not be surprising if religious statements provoked more positive and negative emotion in both groups of subjects. (2616-42)

While religious belief may be nothing more than ordinary belief applied to religious content, such beliefs are clearly special in so far as they are deemed special by their adherents. They also appear especially resistant to change. This is often attributed to the fact that such beliefs treat matters aloof from the five senses, and thus are not usually susceptible to disproof. But this cannot be the whole story. Many religious groups, ranging from Christian sects to flying saucer cults, have anchored their worldviews to specific, testable predictions. (2654-58)

Beliefs have consequences. In Tanzania, there is a growing criminal trade in the body parts of albino human beings—as it is widely imagined that albino flesh has magical properties. Fishermen even weave the hair of albinos into their nets with the expectation of catching more fish. (2692-94)

[...] the belief in the curative powers of human flesh is widespread in Africa, and it used to be common in the West. It is said that “mummy paint” (a salve made from ground mummy parts) was applied to Lincoln’s wounds as he lay dying outside Ford’s Theatre. As late as 1908 the Merck medical catalog sold “genuine Egyptian mummy” to treat epilepsy, abscesses, fractures and the like. (2697-99)

If we are measuring sanity in terms of sheer numbers of subscribers, then atheists and agnostics in the United States must be delusional: a diagnosis which would impugn 93 percent of the members of the National Academy of Sciences. There are, in fact, more people in the United States who cannot read than who doubt the existence of Yahweh. In twenty-first-century America, disbelief in the God of Abraham is about as fringe a phenomenon as can be named. But so is a commitment to the basic principles of scientific thinking—not to mention a detailed understanding of genetics, special relativity, or Bayesian statistics. (2711-16)

The boundary between mental illness and respectable religious belief can be difficult to discern. This was made especially vivid in a recent court case involving a small group of very committed Christians accused of murdering an eighteen-month-old infant. The trouble began when the boy ceased to say “Amen” before meals. Believing that he had developed “a spirit of rebellion,” the group, which included the boy’s mother, deprived him of food and water until he died. Upon being indicted, the mother accepted an unusual plea agreement: she vowed to cooperate in the prosecution of her codefendants under the condition that all charges be dropped if her son were resurrected. The prosecutor accepted this plea provided that that resurrection was “Jesus-like” and did not include reincarnation as another person or animal. Despite the fact that this band of lunatics carried the boy’s corpse around in a green suitcase for over a year, awaiting his reanimation, there is no reason to believe that any of them suffer from a mental illness. It is obvious, however, that they suffer from religion. (2716-24)

The soul doctrine suffers further upheaval in light of the fatal resemblance of the human brain to the brains of other animals. The obvious continuity of our mental powers with those of ostensibly soulless primates raises special difficulties. If the joint ancestors of chimpanzees and human beings did not have souls, when did we acquire ours? (2737-39)

What can be shown by example is how poorly religious scientists manage to reconcile reason and faith when they actually attempt to do so. Few such efforts have received more public attention than the work of Francis Collins. (2753-54)

In 2006, Collins published a bestselling book, *The Language of God*, in which he claimed to demonstrate “a consistent and profoundly satisfying harmony” between twenty-first-century science and Evangelical Christianity. *The Language of God* is a genuinely astonishing book. To read it is to witness nothing less than an intellectual suicide. (2758-61)

Here is how Collins, as a scientist and educator, summarizes his understanding of the universe for the general public (what follows are a series of slides, presented in order, from a lecture Collins gave at the University of California, Berkeley, in 2008):

Slide 1

Almighty God, who is not limited in space or time, created a universe 13.7 billion years ago with its parameters precisely tuned to allow the development of complexity over long periods of time.

Slide 2

God’s plan included the mechanism of evolution to create the marvelous diversity of living things on our planet. Most especially, that creative plan included human beings.

Slide 3

After evolution had prepared a sufficiently advanced “house” (the human brain), God gifted humanity with the knowledge of good and evil (the Moral Law), with free will, and with an immortal soul.

Slide 4

We humans use our free will to break the moral law, leading to our estrangement from God. For Christians, Jesus is the solution to that estrangement.

Slide 5

If the Moral Law is just a side effect of evolution, then there is no such thing as good or evil. It’s all an illusion. We’ve been hoodwinked. Are any of us, especially the strong atheists, really prepared to live our lives within that worldview? Is it really so difficult to perceive a conflict between Collin’s science and his religion?

Just imagine how scientific it would seem to most Americans if Collins, as a devout Hindu, informed his audience that Lord Brahma had created the universe and now sleeps; Lord Vishnu sustains it and tinkers with our DNA (in a way that respects the law of karma and rebirth); and Lord Shiva will eventually destroy it in a great conflagration. Is there any chance that Collins would be running the NIH if he were an outspoken polytheist? (2767-83)

Collins argues that science makes belief in God “intensely plausible”—the Big Bang, the fine-tuning of Nature’s constants, the emergence of complex life, the effectiveness of mathematics, all suggest to him that a “loving, logical, and consistent” God exists. But when challenged with alternate (and far more plausible) accounts of these phenomena—or with evidence that suggests that God might be unloving, illogical, inconsistent, or, indeed, absent—Collins declares that God stands outside of Nature, and thus science cannot address the question of His existence at all. Similarly, Collins insists that our moral intuitions attest to God’s existence, to His perfectly moral character, and to His desire to have fellowship with every member of our species; but when our moral intuitions recoil at the casual destruction of innocent children by tidal wave or earthquake, Collins assures us that our time-bound notions of good and evil cannot be trusted and that God’s will is a perfect mystery. (2845-53)

The problem, however, is that miracle stories are as common as house dust, even in the twenty-first century. For instance, all of Jesus’ otherworldly powers have been attributed to the South Indian guru Sathya Sai Baba by vast numbers of living eyewitnesses. Sai Baba even claims to have been born of a virgin. This is actually not an uncommon claim in the history of religion, or in history generally. Even

worldly men like Genghis Khan and Alexander were once thought to have been born of virgins (parthenogenesis apparently offers no guarantee that a man will turn the other cheek). (2878-82)

Would Collins have received the same treatment in Nature if he had argued for the compatibility between science and witchcraft, astrology, or Tarot cards? (2907-08)

The ethics of embryonic stem-cell research, which currently entails the destruction of human embryos, can be judged only by considering what embryos at the 150-cell-stage actually are. We must contemplate their destruction in light of how we treat organisms at similar and greater stages of complexity, as well as how we treat human beings at later stages of development. For instance, there are a variety of conditions that can occur during gestation, the remedy for which entails the destruction of far more developed embryos—and yet these interventions offer far less potential benefit to society. Curiously, no one objects to such procedures. A child can be born with his underdeveloped yet living twin lodged inside him—a condition known as fetus in fetu. Occasionally this condition isn't discovered until years after birth, when the first child complains about having something moving around inside his body. This second child is then removed like a tumor and destroyed. As God seems to love diversity, there are countless permutations of this condition, and twins can fuse in almost any way imaginable. The second twin can also be a disorganized mass called a teratoma. Needless to say, any parasitic twin, however disorganized, will be a far more developed entity than an embryo at the 150-cell stage. Even the intentional sacrifice of one conjoined (“Siamese”) twin to save the other has occurred in the United States, with shared organs being given to the survivor. In fact, there have been cases where unshared organs have been transferred from the twin that is to be sacrificed. (2948-60)

There is now a large and growing literature—spanning dozens of books and hundreds of articles—attacking Richard Dawkins, Daniel Dennett, Christopher Hitchens, and me (the so-called New Atheists) for our alleged incivility, bias, and ignorance of how “sophisticated” believers practice their faith. It is often said that we caricature religion, taking its most extreme forms to represent the whole. We do no such thing. We simply do what a paragon of sophisticated faith like Francis Collins does: we take the specific claims of religion seriously. (2990-93)

[...] fact that certain people can reason poorly with a clear conscience—or can do so while saying that they have a clear conscience—proves absolutely nothing about the compatibility of religious and scientific ideas, goals, or ways of thinking. It is possible to be wrong and to not know it (we call this “ignorance”). It is possible to be wrong and to know it, but to be reluctant to incur the social cost of admitting this publicly (we call this “hypocrisy”). And it may also be possible to be wrong, to dimly glimpse this fact, but to allow the fear of being wrong to increase one's commitment to one's erroneous beliefs (we call this “self-deception”). It seems clear that these frames of mind do an unusual amount of work in the service of religion. (3024-29)

CHAPTER 5

THE FUTURE OF HAPPINESS

Despite our perennial bad behavior, our moral progress seems to me unmistakable. Our powers of empathy are clearly growing. Today, we are surely more likely to act for the benefit of humanity as a whole than at any point in the past. (3036-37)

[...] those of us who live in the developed world are becoming increasingly disturbed by our capacity to do one another harm. We are less tolerant of “collateral damage” in times of war—undoubtedly

because we now see images of it—and we are less comfortable with ideologies that demonize whole populations, justifying their abuse or outright destruction. Consider the degree to which racism in the United States has diminished in the last hundred years. Racism is still a problem, of course. But the evidence of change is undeniable. Most readers will have seen photos of lynchings from the first half of the twentieth century, in which whole towns turned out, as though for a carnival, simply to enjoy the sight of some young man or woman being tortured to death and strung up on a tree or lamppost for all to see. These pictures often reveal bankers, lawyers, doctors, teachers, church elders, newspaper editors, policemen, even the occasional senator and congressman, smiling in their Sunday best, having consciously posed for a postcard photo under a dangling, lacerated, and often partially cremated person. Such images are shocking enough. But realize that these genteel people often took souvenirs of the body—teeth, ears, fingers, kneecaps, genitalia, and internal organs—home to show their friends and family. Sometimes, they even displayed these ghoulish trophies in their places of business. (3038-48)

I am bolstered in this expectation by my view of the moral landscape: the belief that morality is a genuine sphere of human inquiry, and not a mere product of culture, suggests that progress is possible. If moral truths transcend the contingencies of culture, human beings should eventually converge in their moral judgments. I am painfully aware, however, that we are living at a time when Muslims riot by the hundreds of thousands over cartoons, Catholics oppose condom use in villages decimated by AIDS, and one of the few “moral” judgments guaranteed to unite the better part of humanity is that homosexuality is an abomination. And yet I can detect moral progress even while believing that most people are profoundly confused about good and evil. I may be a greater optimist than I thought. (3066-71)

I believe that conservatives have the same morality as liberals do, they just have different ideas about how harm accrues in this universe. There is also some research to suggest that conservatives are more prone to feelings of disgust, and this seems to especially influence their moral judgments on the subject of sex. More important, whatever the differences between liberals and conservatives may or may not be, if my argument about the moral landscape is correct, one approach to morality is likely more conducive to human flourishing than the other. (3100-3104)

Some people will go to bed tonight proud to have merely reduced their daily consumption of methamphetamine; others will be frustrated that their rank on the Forbes 400 list has slipped into the triple digits. Where one is satisfied to be in life often has a lot to do with where one has been. (3113-15)

Some of what psychologists have learned about human well-being confirms what everyone already knows: people tend to be happier if they have good friends, basic control over their lives, and enough money to meet their needs. Loneliness, helplessness, and poverty are not recommended. We did not need science to tell us this. But the best of this research also reveals that our intuitions about happiness are often quite wrong. For instance, most of us feel that having more choices available to us—when seeking a mate, choosing a career, shopping for a new stove, etc.—is always desirable. But while having some choice is generally good, it seems that having too many options tends to undermine our feelings of satisfaction, no matter which option we choose. Knowing this, it could be rational to strategically limit one’s choices. Anyone who has ever remodeled a home will know the glassy-eyed anguish of having gone to one too many stores in search of the perfect faucet. One of the most interesting things to come out of the research on human happiness is the discovery that we are very bad judges of how we will feel in the future—an ability that the psychologist Daniel Gilbert has called “affective forecasting.” Gilbert and others have shown that we systematically overestimate the degree to which good and bad experiences will affect us. Changes in wealth, health, age, marital status, etc., tend not to matter as

much as we think they will—and yet we make our most important decisions in life based on these inaccurate assumptions. It is useful to know that what we think will matter often matters much less than we think. Conversely, things we consider trivial can actually impact our lives greatly. If you have ever been impressed by how people often rise to the occasion while experiencing great hardship but can fall to pieces over minor inconveniences, you have seen this principle at work. The general finding of this research is now uncontroversial: we are poorly placed to accurately recall the past, to perceive the present, or to anticipate the future with respect to our own happiness. It seems little wonder, therefore, that we are so often unfulfilled. (3138-54)

If you ask people to report on their level of well-being moment-to-moment—by giving them a beeper that sounds at random intervals, prompting them to record their mental state—you get one measure of how happy they are. If, however, you simply ask them how satisfied they are with their lives generally, you often get a very different measure. The psychologist Daniel Kahneman calls the first source of information “the experiencing self” and the second “the remembering self.” And his justification for partitioning the human mind in this way is that these two “selves” often disagree. Indeed, they can be experimentally shown to disagree, even across a relatively brief span of time. We saw this earlier with respect to Kahneman’s data on colonoscopies: because “the remembering self” evaluates any experience by reference to its peak intensity and its final moments (the “peak/end rule”), it is possible to improve its lot, at the expense of “the experiencing self,” by simply prolonging an unpleasant procedure at its lowest level of intensity (and thereby reducing the negativity of future memories). (3155-63)

[...] we don’t tend to think about the future as a set of experiences; we think of it as a set of “anticipated memories.”⁷ The problem, with regard to both doing science and living one’s life, is that the “remembering self” is the only one who can think and speak about the past. It is, therefore, the only one who can consciously make decisions in light of past experience. (3170-73)

[...] the correlation in well-being between these two “selves” is around 0.5. This is essentially the same correlation observed between identical twins, or between a person and himself a decade later. It would seem, therefore, that about half the information about a person’s happiness is still left on the table whichever “self” we consult. What are we to make of a “remembering self” who claims to have a wonderful life, while his “experiencing self” suffers continuous marital stress, health complaints, and career anxiety? And what of a person whose “remembering self” claims to be deeply dissatisfied—having failed to reach his most important goals—but whose moment-to-moment state of happiness is quite high? Kahneman seems to think that there is no way to reconcile disparities of this sort. If true, this would appear to present a problem for any science of morality. It seems clear, however, that the “remembering self” is simply the “experiencing self” in one of its modes. Imagine, for instance, that you are going about your day quite happily, experiencing one moment of contentment after the next, when you run into an old rival from school. Looking like the very incarnation of success, he asks what you have made of yourself in the intervening decades. At this point your “remembering self” steps forward and, feeling great chagrin, admits “not so much.” Let us say that this encounter pitches you into a crisis of self-doubt that causes you to make some drastic decisions, affecting both your family and career. All of these moments are part of the fabric of your experience, however, whether recollected or not. Conscious memories and self-evaluations are themselves experiences that lay the foundation for future experiences. Making a conscious assessment of your life, career, or marriage feels a certain way in the present and leads to subsequent thoughts and behaviors. These changes will also feel a certain way and have further implications for your future. But none of these events occur outside the continuum of your experience in the present moment (i.e., the “experiencing self”). (3174-89)

It is clear that we face both practical and conceptual difficulties when seeking to maximize human well-being. Consider, for instance, the tensions between freedom of speech, the right to privacy, and the duty of every government to keep its citizens safe. Each of these principles seems fundamental to a healthy society. The problem, however, is that at their extremes, each is hostile to the other two. Certain forms of speech painfully violate people's privacy and can even put society itself in danger. Should I be able to film my neighbor through his bedroom window and upload this footage onto YouTube as a work of "journalism"? Should I be free to publish a detailed recipe for synthesizing smallpox? Clearly, appropriate limits to free expression exist. Likewise, too much respect for privacy would make it impossible to gather the news or to prosecute criminals and terrorists. And too zealous a commitment to protecting innocent people can lead to unbearable violations of both privacy and freedom of expression. How should we balance our commitment to these various goods? We may never be able to answer this question with absolute precision. It seems quite clear, however, that questions like this have answers. Even if there are a thousand different ways to optimally tune these three variables, given concomitant changes in the rest of culture, there must be many more ways that are less than optimal—and people will suffer as a result. (3205-15)

[...] most of the research done on happiness suggests that people actually become less happy when they have children and do not begin to approach their prior level of happiness until their children leave home. Let us say that you are aware of this research but imagine that you will be an exception. Of course, another body of research shows that most people think that they are exceptions to rules of this sort: there is almost nothing more common than the belief that one is above average in intelligence, wisdom, honesty, etc. But you are aware of this research as well, and it does not faze you. Perhaps, in your case, all relevant exceptions are true, and you will be precisely as happy a parent as you hope to be. However, a famous study of human achievement suggests that one of the most reliable ways to diminish a person's contributions to society is for that person to start a family. How would you view your decision to have a child if you knew that all the time you spent changing diapers and playing with Legos would prevent you from developing the cure for Alzheimer's disease that was actually within your reach? (3218-27)

[...] we have all evolved from common ancestors and are, therefore, far more similar than we are different; brains and primary human emotions clearly transcend culture, and they are unquestionably influenced by states of the world (as anyone who has ever stubbed his toe can attest). (3257-59)

Currently, most scientists believe that answers to questions of human value will fall perpetually beyond our reach—not because human subjectivity is too difficult to study, or the brain too complex, but because there is no intellectual justification for speaking about right and wrong, or good and evil, across cultures. Many people also believe that nothing much depends on whether we find a universal foundation for morality. It seems to me, however, that in order to fulfill our deepest interests in this life, both personally and collectively, we must first admit that some interests are more defensible than others. Indeed, some interests are so compelling that they need no defense at all.

This book was written in the hope that as science develops, we will recognize its application to the most pressing questions of human existence. For nearly a century, the moral relativism of science has given faith-based religion—that great engine of ignorance and bigotry—a nearly uncontested claim to being the only universal framework for moral wisdom. As a result, the most powerful societies on earth spend their time debating issues like gay marriage when they should be focused on problems like nuclear proliferation, genocide, energy security, climate change, poverty, and failing schools. Granted, the practical effects of thinking in terms of a moral landscape cannot be our only reason for doing so—

we must form our beliefs about reality based on what we think is actually true. But few people seem to recognize the dangers posed by thinking that there are no true answers to moral questions.

If our well-being depends upon the interaction between events in our brains and events in the world, and there are better and worse ways to secure it, then some cultures will tend to produce lives that are more worth living than others; some political persuasions will be more enlightened than others; and some world views will be mistaken in ways that cause needless human misery. Whether or not we ever understand meaning, morality, and values in practice, I have attempted to show that there must be something to know about them in principle. And I am convinced that merely admitting this will transform the way we think about human happiness and the public good. (3265-81)

NOTES

I confess that, as a critic of religion, I have paid too little attention to the sexual abuse scandal in the Catholic Church. Frankly, it felt somehow unsportsmanlike to shoot so large and languorous a fish in so tiny a barrel. This scandal was one of the most spectacular “own goals” in the history of religion, and there seemed to be no need to deride faith at its most vulnerable and self-abased. Even in retrospect, it is easy to understand the impulse to avert one’s eyes: Just imagine a pious mother and father sending their beloved child to the Church of a Thousand Hands for spiritual instruction, only to have him raped and terrified into silence by threats of hell. And then imagine this occurring to tens of thousands of children in our own time—and to children beyond reckoning for over a thousand years. The spectacle of faith so utterly misplaced, and so fully betrayed, is simply too depressing to think about.

But there was always more to this phenomenon that should have compelled my attention. Consider the ludicrous ideology that made it possible: the Catholic Church has spent two millennia demonizing human sexuality to a degree unmatched by any other institution, declaring the most basic, healthy, mature, and consensual behaviors taboo. Indeed, this organization still opposes the use of contraception: preferring, instead, that the poorest people on earth be blessed with the largest families and the shortest lives. As a consequence of this hallowed and incorrigible stupidity, the Church has condemned generations of decent people to shame and hypocrisy—or to Neolithic fecundity, poverty, and death by AIDS. Add to this inhumanity the artifice of cloistered celibacy, and you now have an institution—one of the wealthiest on earth—that preferentially attracts pederasts, pedophiles, and sexual sadists into its ranks, promotes them to positions of authority, and grants them privileged access to children. Finally, consider that vast numbers of children will be born out of wedlock, and their unwed mothers vilified, wherever Church teaching holds sway—leading boys and girls by the thousands to be abandoned to Church-run orphanages only to be raped and terrorized by the clergy. Here, in this ghoulish machinery set to whirling through the ages by the opposing winds of shame and sadism, we mortals can finally glimpse how strangely perfect are the ways of the Lord.

In 2009, the Irish Commission to Inquire into Child Abuse (CICA) investigated such of these events as occurred on Irish soil. Their report runs to 2,600 pages (www.childabusecommission.com/rpt/). Having read only an oppressive fraction of this document, I can say that when thinking about the ecclesiastical abuse of children, it is best not to imagine shades of ancient Athens and the blandishments of a “love that dare not speak its name.” Yes, there have surely been polite pederasts in the priesthood, expressing anguished affection for boys who would turn eighteen the next morning. But behind these indiscretions there is a continuum of abuse that terminates in absolute evil. The scandal in the Catholic Church—one might now safely say the scandal that is the Catholic Church—includes the systematic rape and torture of orphaned and disabled children. Its victims attest to being whipped with belts and sodomized until bloody—sometimes by multiple attackers—and then whipped again and threatened with death and hellfire if they breathed a word about their abuse. And yes, many of the children who were desperate or

courageous enough to report these crimes were accused of lying and returned to their tormentors to be raped and tortured again.

The evidence suggests that the misery of these children was facilitated and concealed by the hierarchy of the Catholic Church at every level, up to and including the prefrontal cortex of the current pope. In his former capacity as Cardinal Ratzinger, Pope Benedict personally oversaw the Vatican's response to reports of sexual abuse in the Church. What did this wise and compassionate man do upon learning that his employees were raping children by the thousands? Did he immediately alert the police and ensure that the victims would be protected from further torments? One still dares to imagine such an effulgence of basic human sanity might have been possible, even within the Church. On the contrary, repeated and increasingly desperate complaints of abuse were set aside, witnesses were pressured into silence, bishops were praised for their defiance of secular authority, and offending priests were relocated only to destroy fresh lives in unsuspecting parishes. It is no exaggeration to say that for decades (if not centuries) the Vatican has met the formal definition of a criminal organization devoted—not to gambling, prostitution, drugs, or any other venial sin—but to the sexual enslavement of children. Consider the following passages from the CICA report:

7.129 In relation to one School, four witnesses gave detailed accounts of sexual abuse, including rape in all instances, by two or more Brothers and on one occasion along with an older resident. A witness from the second School, from which there were several reports, described being raped by three Brothers: "I was brought to the infirmary ... they held me over the bed, they were animals. ... They penetrated me, I was bleeding." Another witness reported he was abused twice weekly on particular days by two Brothers in the toilets off the dormitory:

One Brother kept watch while the other abused me ... [sexually]... then they changed over. Every time it ended with a severe beating. When I told the priest in Confession, he called me a liar. I never spoke about it again.

I would have to go into his ... [Br X's] ... room every time he wanted. You'd get a hiding if you didn't, and he'd make me do it ... [masturbate] ... to him. One night I didn't ... [masturbate him] ... and there was another Brother there who held me down and they hit me with a hurley and they burst my fingers ... [displayed scar]....

7.232 Witnesses reported being particularly fearful at night as they listened to residents screaming in cloakrooms, dormitories or in a staff member's bedroom while they were being abused. Witnesses were conscious that co-residents whom they described as orphans had a particularly difficult time:

The orphan children, they had it bad. I knew ... [who they were]... by the size of them, I'd ask them and they'd say they come from ... named institution. ... They were there from an early age. You'd hear the screams from the room where Br ... X ... would be abusing them.

There was one night, I wasn't long there and I seen one of the Brothers on the bed with one of the young boys ... and I heard the young lad screaming crying and Br ... X ... said to me "if you don't mind your own business you'll get the same." ... I heard kids screaming and you know they are getting abused and that's a nightmare in anybody's mind. You are going to try and break out. ... So there was no way I was going to let that happen to me ... I remember one boy and he was bleeding from the back passage and I made up my mind, there was no way it ... [anal rape]... was going to happen to me. ... That used to play on my mind.

This is the kind of abuse that the Church has practiced and concealed since time out of memory. Even the CICA report declined to name the offending priests. (3452-3507)