Chapter I

HUMAN INQUIRY AND THE FIXATION OF BELIEFS

INTRODUCTION

Stable things, like the pyramids of Egypt, resist change and remain intact for a long period of time. Even if we wanted to, it would be an onerous, if not an impossible task, to move those pyramids to Cincinnati or reshape them into spheres. Indeed it is very difficult for us humans to alter anything erected upon a solid foundation. In contrast, obviously unstable things, which change over time, such as the elements of popular culture, and election results in Ohio, are malleable, lack a solid foundation, and therefore, are easily transformed by human design in pursuit of our own ends. Now at least some of our individual and collective beliefs seem to be supported by a foundation and therefore remain relatively stable and unchanged over long periods of time. They resist change and the intrusion of its distinctive cognitive marker, doubt. Indubitale mathematical beliefs, such as $7+5=12$, clearly exhibit this aura of universality and permanence. But these beliefs are analytical truths that are true by virtue of the definitions of the component concepts “7,” “+,” “5,” and “=.” The goal of modern scientific inquiry has been to extend mathematical certainty into understanding of the rest of the external world. The stability of these well-founded beliefs, such as the boiling point of water at 212 degrees Fahrenheit, is usually attributed to the universal and inviolable laws of nature, or simply Nature.

Conversely, we human beings also harbor other beliefs that seem to lack any obvious universal foundation, such as those beliefs that express our taste in food, music, art, or literature. These beliefs appear to be relative to individuals, sub-communities, and/or larger communities living at various times in different geographical locations. The hallmark of foundationless beliefs is that they are malleable and thereby subject to control and manipulation by individuals and by communities. Malleable beliefs are said to be open to variable interpretation. Beliefs that are open to variable interpretation are
subject to manipulation and most often associated with political discourse in the form of spin.

We all harbor beliefs about human beings. At least some of those beliefs seem stable enough to be indicative of something that we might call Human Nature. If there is a stable universal foundation upon which we might base a theory of human nature, we would expect to find universal consensus among believers. Biology provides a coterie of these apparently stable universal human attributes, such as possession of 46 chromosomes, a cerebral cortex, opposable thumbs, or two legs suitable for bipedal locomotion. However, I shall argue that the most stable and distinctive element of universal human nature is that we ask questions about ourselves and about our world. In ordinary language we call the answers to those questions beliefs. These beliefs, in a sense, nestled in our individual minds or brains, but they also migrate between the minds or brains of human beings within communities, and between and within the collective minds of communities. I call this general human propensity to ask questions the process of inquiry. Ultimately, the goal or purpose of human inquiry is the settlement of individual and collective opinion and the “fixation of belief.” The process of inquiry and the ultimate fixation of belief shape the distribution of power and resources between individuals and within and between inquiring communities.

The fixation of belief also has a sociopolitical context; that is to say, it always involves the formation and maintenance of organizations. At least some of these organizations are established around formalized systems of belief called disciplines, which can be analyzed in terms of their intellectual, sociopolitical, and economic content. Disciplines invariably produce ideas, or beliefs that are exchanged within and between self-interested individuals embedded in social groups. Beliefs compete with other beliefs in the minds of individual inquirers and in the collective minds of communities.

This process of disciplinary belief fixation always has an institutional foundation that generates a relatively stable body of beliefs and habitual behavior that are bound by both tradition and economic self-interest. The hallmark of disciplinary knowledge is its reliance upon relatively stable institutions such as professional societies, educational institutions, and publishing companies. Some disciplines, such as engineering and medicine are devoted to “applications” or the production of beliefs that facilitate the development of techniques or technologies that enable us to “do something.” Therefore, I shall argue that human inquiry aims at the fixation of beliefs, which explain, predict, and control our intellectual, sociopolitical, biological, and economic environments.

All disciplines rely on a method to fixate the beliefs of their believers. Scientific disciplines, such as physics, biology, and psychology employ what we call the scientific method (or perhaps scientific methods), while other disciplines rely on nonscientific methods. The difference between scientific and non-scientific methods of belief fixation, however, has itself been subject to inquiry. It may be the case that the difference between these methods is more a matter of
spin than substance. This book will take seriously this highly skeptical hypothesis and its ramifications.

But both scientific and nonscientific disciplines ask questions and propose answers within a methodological framework. The lines of demarcation between disciplines are dynamic and determined on the basis of both tradition and methodological commitment. But disciplines are more than repositories of beliefs. They also form the sociopolitical boundaries of inquiring communities.

Disciplines are collective repositories of both beliefs and gregarious human beings with minds. However, this sociopolitical dimension of disciplinary inquiry is often overlooked by inquirers. Although, inquirers tend to immerse themselves in the exciting world of ideas, organizations play an important role in the fixation of belief. Organizational dynamics, however, must take into account both individual self-interest and collective self-interest. That’s because human beings have the natural capacity to pursue either: their own self interest, the self-interest of other individuals, or the self-interest of groups. Sometimes we compete with other individuals and/or groups and sometimes we cooperate. Therefore, it is important to acknowledge that individual inquirers and their organized disciplinary communities are vehicles for the advancement of individual and collective self interest as much as they are vehicles for the discovery of Truth and Goodness. When philosophers focus on ideas but fail to account for the sociopolitical context of inquiry, they end up with irrelevant other worldly theories.

The realization that the “self-interest” of individuals and communities influences the nature of inquiring disciplines sets the stage for the further realization that the fixation of belief is subject to economic inquiry: that is to say that the act of inquiry involves the expenditure of finite quantities of time, effort, and resources. The amount of time and effort expended on this book could have been spent inquiring into other questions, or doing other things like spending time with my family or playing music. Given that books on philosophical inquiry do not sell very well, I often wonder if the time, energy, and resources expended on this book are really worth it. Economists call these other desirable activities that inquirers could have done opportunity costs.

Inquirers and everyone associated with the process of inquiry often get paid for inquiring. There is a wide variety of different kinds of institutions that conduct inquiry. There are lines of disciplinary inquiry, called academic inquiry, which are passed on from one generation to the next via complex educational institutions, which include stakeholder groups such as: faculty, staff, administrators, custodians, and a wide variety of technicians. Academic inquirers also market the products of their inquiry, directly to students and the larger community via: lectures, book publishing companies, magazines and journals, television, radio, the Internet, etc. It’s easy to overlook the obvious fact that human inquiry is a complex business enterprise: a massive industry, subject to the laws of supply and demand.

Academic disciplines are evolutionary in the sense that both beliefs and believers change over time based on variation and selection. My beliefs have evolved substantially over the past 25 years, although I still have a few core
beliefs that remain relatively stable. Some disciplines and their core beliefs survive for long periods of time by maintaining or increasing the number of believers, while other disciplines lose believers and eventually become extinct. There are still a few members of the “Flat Earth Society.” Extinction, obviously, leads to diminished employment opportunities for those recalcitrant believers.

Disciplines (e.g., philosophy) often give rise to sub-disciplines (e.g., metaphysics), and new disciplines (e.g., science). And some disciplines combine with other disciplines and give rise to new “interdisciplinary” and/or “multidisciplinary” disciplines (e.g., systems theory). These new disciplines, then, compete with old disciplines and often create new employment opportunities. Disciplinary affiliation gives rise to the empowerment of experts and authorities that play an important role in the fixation of belief; and get paid for doing it! Members of disciplines are often regarded as experts, and we tend to believe what they tell us. Experts also carry credentials that are bestowed upon them by their respective disciplines. Today becoming an expert most often involves earning a degree from an institution or a license conferred by government.

For better or worse, we humans live in hierarchically arranged communities: that is to say, we follow leaders. Disciplines, therefore, are comprised of both leaders and followers. The sociopolitical processes that contribute to maintenance of hierarchies and the empowerment of experts are, no doubt, supported by genetic material embedded in the human genome. Therefore, it is important philosophically and scientifically to take into account the biological foundations of hierarchy, and authority as exercised in human communities. In my mind at least, one of the great puzzles in the study of human nature is why human inquiry relies so heavily on empowerment, authority, and ultimately, credentialled expertise?

The particular beliefs that arise out of the disciplinary process of human inquiry are also subject to change over time. Individual beliefs and shared collective beliefs are subject to change over time; not only within lifetimes and within generations, but also between generations. Old beliefs from the past compete with new beliefs in the present, and ultimately influence the fixation of new beliefs. Therefore, disciplines are subject to historical inquiry, which is itself disciplinary and conducted by experts, called historians. Historians interpret the past by trying to make sense of the biological, intellectual, sociopolitical, and/or economic forces that shape the past and their relationship to the present and the future.

In this chapter I’ll present two main arguments. First, I shall argue that beliefs (or theories) serve three main interrelated functions in human affairs: the explanatory function, which questions (and answers) “why things change or stay the same;” the predictive function, which questions (and answers) “how things will change or stay the same in the future;” and the control function, which questions (and answers) whether and how human beings might be able to deliberately redirect a malleable future in the service of human ends. Second, I shall argue that the whole of human inquiry can be reduced to just two fundamental lines of questioning: descriptive inquiry, which questions (and
answers) the way things are; and prescriptive inquiry, which questions (and answers) the way things ought to be. Now if it is true that the most salient feature of universal human nature is that we ask questions, it makes sense to inquire as to whether there are any universal lines of inquiry? Are there any immutable, universal, inter-generational, inter-cultural Truths or Values? Are some disciplines more likely to uncover Truth and/or Goodness? And, are there any real experts?

EXPLANATION, PREDICTION, AND CONTROL
OF THE HUMAN ENVIRONMENT

In the course of human inquiry, beliefs serve three main functions: explanation, prediction, and control of human affairs. In philosophy, the nature of the explanatory function has always been notoriously vague. When we attempt to “explain” something, what exactly are we after? First of all, let’s agree that we seek explanations, or inquire, in a human environment that exhibits alternating periods of stability and change. We ask why things change and we ask why things don’t change. But changes in our environment tend to generate inquiry more than uninterrupted stability. Because I’m generally healthy, I tend to inquire more when I feel sick, than when I feel well. If I suffered from a chronic illness, I suppose unexpected health would also generate inquiry.

The study of human inquiry is contextual, which is to say that it is contingent upon environmental conditions. In this book, I argue that human beings live in four irreducible, overlapping environments: environment, an intellectual environment, a sociopolitical environment, a biological and an economic environment. All of these environments fluctuate between periods of relative stability and change. If these environments were eternally stable and unchanged, or never stable, we would never seek explanations or predictions, nor would we feel compelled to control those environments. Moreover, we rarely pursue explanations for what seems to be obvious. Most of us do not worry much about why 7+5=12. So let’s agree that explanations arise out of the interplay between stability and change, after the fact, and therefore explanations tend to look backwards. When we are faced with either long-term stability or change, we naturally try to explain “how” or “why.”

There are universal questions that all human beings at all times and places ask themselves and their experts. These existential questions include: Who are we? Where are we going? And, what, if anything, can I do about it? Disciplines and inquirers that provide the most palatable answers to these basic questions are rewarded in terms of social and political power and hefty paychecks. But as we’ve already seen, the, intellectual, sociopolitical, biological and economic forces that direct human inquiry generate enormous complexity. Philosophical confusion arises from the incontrovertible fact that explanations are multidimensional. Many philosophers and scientists tend to focus inquiry on
intellectual content, but there are also sociopolitical, biological, and economic considerations.

There is a biological foundation that underlies the process of belief fixation. When we accept or reject an explanation of something, a psychological event takes place in our minds that is caused by underlying biological events located in our brains and central nervous systems. Belief and doubt are accompanied by a sort of feeling, which is to say that we can all naturally distinguish the state of belief from the state of doubt. So belief and doubt are obviously contingent upon the structure of our central nervous systems and our brains, both of which are programmed by our genes. It is also important to acknowledge out front that all inquirers believe that some explanations (beliefs, theories, and worldviews) are more believable, acceptable or palatable than others. We accept (or believe) some explanations and reject (or doubt) others based on feelings. Doubt is marked by a particular kind of feeling, an unpleasant feeling, which all human beings can readily identify. This feeling, naturally, triggers the process of inquiry and the re-fixation of belief. Doubt, therefore, destroys old beliefs and creates opportunities for new beliefs and believers. New beliefs foster economic opportunities for the new believers at the expense of the old believers.

Philosophically, this notion of a “better” or “more plausible” explanation often suggests an underlying logical structure; that is to say that all explanations are expressed as logical arguments that are subject to objective evaluation. All arguments are basically structured combinations of particular beliefs expressed in sentences that are either true or false. Some of these sentences represent general beliefs (“The earth is spherical.”) while others express particular beliefs (“Ron wrote this book.”). Some beliefs are conditional and therefore take the form of “if this than that.” “If you put a pot of water on the stove, at sea level, then that water will boil at 212 degrees.” Some of these beliefs are “old beliefs” that we already accept as true, while others are aspiring “new beliefs.” When we evaluate an argument, we are basically evaluating the truth of an aspiring new belief in light of our old beliefs. If there is such a thing as a “logical explanation,” it must be based on the structure of the argument. We naturally tend to believe obviously logical arguments and doubt obviously illogical arguments, but not always. The most common illogical arguments are called logical fallacies. Unfortunately, many explanations that employ logical fallacies still manage to attract believers. One of the most effective, and therefore, frequently utilized logical fallacy invokes the authority of an expert.

A logically structured argument must have both premises and a conclusion. A conclusion is justified or unjustified based on the logical relationship between the premises (which contain our old beliefs) and conclusion (which contains a new belief). Sometimes premises and conclusions contain particular beliefs and sometimes they contain more general beliefs. The rationality of belief is often based on the logical, or inferential, relationship between our old beliefs and our new beliefs. Most philosophers and scientists adhere to the view that rationality is framed by two forms of logical inference,
and that there are only two ways to explain something logically, *deductively* and/or *inductively*.

**Deductive explanations** “explain” or “justify” particular new beliefs in terms of how they relate to our more general old beliefs. For example, take the question, “Am I justified in believing that, the sun will rise in the east at 7:48 A.M. on December 12, 2005?” The answer is “Yes, I am logically justified in inferring that the new belief (conclusion) that the sun will rise in the east at 7:48 because I already believe (know) that the motion of the sun is governed by a general theory (the universal laws of gravity). If that old belief is true, then my new belief must also be true.” If the laws of nature are true, the sun cannot possibly arise at 7:46 A.M on December 12, 2005. We believe that the laws of nature are universal and immutable. However, when I want to know what time the sun will rise tomorrow, I don’t have to go through the mathematical calculations. I usually listen to the meteorologist on the evening news. Unfortunately, the fact that we are justified in our belief that it will arise at 7:48, does not guarantee that the sun will rise tomorrow. We know, based on those same laws of nature, that the sun will eventually burn out, in which case there will be no future believers left. And of course, meteorologists’ weather reports are often wrong, but they almost never get the time of sunrise and sunset wrong.

There are universal laws (or rules) that govern deductive inference. The most important (and most obvious) law governing logical inference is the **law of non-contradiction**, which states that two contradictory beliefs cannot be true at the same time. Hence, it is illogical or irrational to believe that: “The earth is round and flat at the same time.” It necessarily follows that either one or the other of those beliefs must be false, or perhaps both are false. Logically, they cannot both be true at the same time without violating the law of non-contradiction. Of course, the law of non-contradiction does not guarantee that we know which, if either, of the two contradictory beliefs is true. But as a general rule, contradiction does tend to trigger feelings of doubt, and further inquiry. When logical persons discover contradictory beliefs, doubt usually ensues and the process of inquiry begins. As a child I, remember when I had to reconcile my belief in an overweight Santa Claus with the observable fact that our home had a very small chimney, which, at the very least, would require a very thin Santa. Contradiction can also inspire doubt in social contexts within groups of believers or between different groups of believers. Most of us abandoned our belief in Santa when our friends at school expressed their collective disbelief.

Deduction justifies our new beliefs based on our old beliefs. Deduction does not expand our knowledge of the world by adding to our repertoire of new beliefs. If our old beliefs are false, we’re out of luck. Of course, many of our old beliefs remain intact despite contradictions raised by new beliefs. Individually and collectively human beings tend to be *conservative*; that is to say, we tend to prefer our old beliefs. It is also important to note that when contradictory beliefs are discovered between cultures, doubt does not necessarily ensue. We in the United States know that most of the world does not believe in capital punishment, but that doesn’t necessarily mean that we question our commitment
to the death penalty. Remember that human beings are not always logical and tend to hold onto their old beliefs, even when they are contradicted by convincing new beliefs.

Inductive explanations involve the accumulation of evidence. How do I know that the earth is spherical rather than flat? One answer might be that I know that the theory is true, because scientists have tested that belief numerous times. Hence, I can inductively infer the truth of general theories based on the accumulation of empirical evidence over time. Pictures taken from the space shuttle provided strong empirical evidence in favor of the spherical earth theory. We might say that these photographs “verify” the spherical earth theory. Therefore inductive explanations are additive, in the sense that they, naturally, tend to become more persuasive with the accumulation of evidence. They are also ampliative in that they actually expand our repertoire of knowledge, rather than just elaborate upon what we already know. Hence, we might say that inductive explanations “justify” new beliefs independent of old beliefs.

In sum, the explanatory function of our beliefs is often, but not always, based on deductive and inductive reasoning. But sometimes we simply hold fast to our old beliefs, and fight off any feelings of doubt, despite contradictory evidence offered by new beliefs and vice versa. That’s because human inquiry does not always rely upon logical processes. In fact, we do not always have control over what we believe and doubt.

Although we have a natural tendency to follow leaders and to mold our beliefs in conformity to authorities, we also know that human beings make mistakes, even experts! We also know that human beings, also deliberately attempt to deceive one another, even experts do it. Sometimes we have competing experts and therefore doubt the testimony of one expert, or group of experts, and believe other experts. Human nature is more complex than we care to admit.

As stated earlier, the explanatory function of belief also includes a psychological dimension that is universally recognizable among human beings. This suggests that scientists might someday discover how our brains and central nervous systems manufacture these feelings that distinguish belief from doubt. Although, there is a biological foundation for the production of our beliefs, detailed knowledge of biology will not enable us to deduce the fact that the sun will rise at 7:48 on December 12, 2005. Exhaustive knowledge of the internal world of consciousness does not necessarily imply exhaustive knowledge of the external world and vice versa.

We live in an ever-changing world. Beliefs also serve a predictive function; that is so say that we use our beliefs to foresee the future. December 12 has now already passed and the sun did, indeed, rise at 7:48. I woke up at 6:00 and saw it rise in the east. My earlier prediction proved accurate. If the laws of gravity are true, we should be able to predict sunrise and sunset for any day of the year. We believe the universal laws of gravity are true, not only because of the absence of the psychological manifestation of doubt, or because experts say so, but because scientists can, in fact, accurately predict gravitational phenomena beforehand. In part, that’s what makes them experts. Thanks to
Newtonian physics, scientists can predict with remarkable accuracy, the relative positions of sun, the moon, the planets, and the stars as they will appear in the sky. Human beings are also pretty good at predicting the boiling point of water, given variables such as the chemical composition of the water, atmospheric pressure etc.

Certainly one of the byproducts of a useful theory of human nature would be that it might enable us to predict how human beings feel, think, or behave in various environments. In business, the ability to accurately predict consumer behavior would be handy when it comes to consistently turning a profit. Unfortunately, it’s a lot harder to predict consumer behavior than it is to predict tomorrow’s sunrise or the boiling point of water. Many philosophers and scientists, argue that there is an obvious difference between Newtonian physics and human social science in terms of the sheer level of complexity. Remember this! It will come up again!

The ability to predict future phenomena does not necessarily mean that we can explain why we can predict it, nor does our ability to predict something necessarily imply that we can control it. Human beings, more than any other organism, employ beliefs in order to control their environment. Some beliefs contribute to the production of tools, which also enhance our ability to control various aspects of our environment. Applied science and technology exemplify this control function. Thanks to modern tools such as weather satellites, today, we can predict, with variable degrees of accuracy, when and where a hurricane might hit land and predict its intensity. But alas, we still can’t control where it will hit land, nor can we control its intensity. One would think that our ability to accurately predict where and when a hurricane will hit land would enable us control the loss of human life. We can easily predict the resulting traffic jams, but we are not particularly adept at controlling them. And we are not very good at controlling the behavior of human residents when a hurricane is, in fact, approaching. We’re not very good at persuading residents to leave, nor are we very good at forcing them to leave. When we are successful at convincing residents to leave, we can predict that at least some residents will stay behind and steal from their neighbors. And we’re not very good at preventing looting.

So obviously, whether we like it or not, there are some events that are explainable, and predictable but more-or-less out of our control. Nevertheless, over the years in many areas of human endeavor science has dramatically increased our ability to predict and control our environment. But then again, when we do seek to enhance our ability to predict and control our environment, it’s not always clear that those efforts are worth the time, effort, and expense expended in the course of inquiry.

Finally, it is worth noting that one of the longstanding enigmas associated with developing a theory of human nature is the possibility that some human beings might use that knowledge to control other human beings or their environment. That’s why many individuals and groups oppose scientific research on nuclear power, racial differences, genetics, cloning, and stem cells. Critics of applied science argue that at least some new technologies that advance science’s ability to explain, predict and control nature may not be good for some
individuals, *good* for some communities, or even *good* for the human species as a whole. As scientists develop the ability to control more and more of the human environment, there will always be those who oppose science. Again, that’s because human beings tend to be conservative. We like to preserve equilibrium when things are going well, and we seek change when things are not going so well. In other words, we prefer to bask in the good feelings associated with belief and we prefer to avoid the unpleasant irritation associated with doubt.

Political inquiry is an inevitable consequence of the fact that under the *status quo*, at any given time, some of us will be doing well, and others will not be doing so well. And of course, human beings are never doing well enough. We almost always want more. I recently purchased a cell phone. I don’t really need it. In fact, right now it’s in my guitar case! But I wanted one anyway. Don’t ask me why. I don’t know. However, it is important to acknowledge that although I can afford a cell phone, others cannot. Politics is ultimately about reconciling the conflicting interests of the “haves” and the “have-nots.”

It is also important to remember that the ability to explain, predict, and/or control the human environment has both social value (the community will praise you!), and economic value (you will earn money). Therefore many experts earn healthy paychecks: especially experts that can demonstrably predict and control our environment for the better. Philosophers generally are great at spinning explanations, but not very good at predicting or controlling anything. In part, that’s why doctors, lawyers, and engineers earn heftier paychecks than philosophers.

So the ability to explain, predict, and control nature has profound economic implications. But not everyone that earns a hefty paycheck contributes to the explanation, prediction, or control of nature. Athletes, actors, and musicians, often make a lot of money but do not necessarily contribute much to the course of human inquiry. They do contribute to the Good Life. Interestingly, we often value their contributions to the Good Life as much or more than the contributions of disciplinary inquirers that explain, predict, and control our environment. We also tend to believe the pronouncements of entertainers as much as we believe real experts. Go figure.

### DESCRIPTIVE AND PRESCRIPTIVE INQUIRY

Earlier, I suggested that there are only two broad forms of human inquiry. *Descriptive inquiry* centers on the verb “*is*” and the distinction between *truth* and *falsity*. In some large scale communities such as the United States, Western Europe, and even in some of the Eastern countries, *Science* has become the dominant tradition within descriptive inquiry, which is to say that their individual and collective descriptive beliefs are often shaped by the “authority” of science and scientists. *Prescriptive inquiry* focuses on “*ought*” and the difference between “*good*” and “*bad*,” and involves the discernment of *value*. Like science, the study of value has been shaped by its own experts or authorities. Although, religion, especially the Judeo-Christian tradition has been the dominant force in fixating Western moral beliefs, its authority is far from
unquestioned. Christianity, for example, is a hodge-podge of often conflicting beliefs embraced by an ever expanding number of internal denominations. It has always been challenged by other religions, philosophy, and science. And don’t forget that both descriptive and prescriptive can earn hefty paychecks!

In the history of prescriptive philosophical inquiry several lines of inquiry are longstanding: logic distinguishes between good and bad arguments; politics, good and bad government; aesthetics good and bad art; and ethics or morality differentiates between good and bad human behavior. For now, let’s focus on ethics. Many philosophers distinguish between the higher levels of prescriptive theoretical inquiry, called meta-ethics, and the everyday moral decisions called normative ethics. The relationship between meta-ethical theories and real life moral decision-making is subject to inquiry. Some meta-ethical theories are based on reason (or thought); some are based on emotions or feelings; while others are based on the exercise of sociopolitical and economic power.

Moral theories explain, predict, and control good and bad human behavior. Descriptive moral theories seek to explain the “factual” basis of moral decision-making by invoking biological theories, psychological theories, sociological theories, or even political and economic theories. Since the time of the ancient Greeks, it has been widely acknowledged that, what philosophers call, “The Good” comes in two varieties: extrinsic good and intrinsic good. When we say that we believe that X is extrinsically good we are saying that it is good because it gives rise to other things that are good. Money is probably the exemplar of extrinsic value. Teleological (or consequentialist) value theories are based on the production of extrinsic goods. Characteristically these “consequentialists” differentiate between “ends” or “goals,” and the “means” to achieve those goals. The mantra here is that the “end justifies the means.” This can be expressed in terms of a ratio. The more valuable (good) the end that is being pursued, the easier it becomes to justify the means necessary to achieve it. The perceived value of human life has been used to justify immoral means such as lying, cheating, and stealing. It has also been used to justify the sacrifice of a few lives for the benefit of many lives.

So, prescriptive moral theories try to differentiate between good and bad behavior. Most teleological moral theories are hedonistic and therefore identify “The Good” with pleasurable consequences, or feelings, and “The Bad” with painful consequences. If it feels good, then do it! If it’s painful, don’t do it. However, few things in life produce pure unadulterated pleasure. Therefore, most hedonists seek merely a preponderance of pleasure over pain as expressed in a positive cost/benefit ratio. These cost/benefit ratios can be calculated based on the anticipated production of pleasure and pain for either individuals or communities of individuals. Doing “The Good,” therefore, implies the ability to make decisions based on accurate predictions concerning the production and distribution of pain and pleasure as expressed in utility ratios. These ratios can be calculated relative to the pain or pleasure of individuals (egoism) or relative to the pain and pleasure of communities (social utility). Unfortunately, what is pleasurable for individuals is not necessarily pleasurable for communities, and
vice versa. I enjoy playing loud electric guitar more than my neighbors do! And our ability to predict pleasure and pain is woefully imperfect; especially over the long run. “Do you still like that tattoo?”

The most serious drawback to teleological moral theories is that it is difficult, if not impossible, to predict consequences, especially when you’re dealing with other human beings. Some consequences are easily anticipated. When I forgot our anniversary, I knew the consequences would be less than pleasurable! In general, whenever we deliberately employ means X in order to bring about goal Y, we encounter unanticipated consequences. The employment of complex means (such as going to war to save lives) are characteristically wrought with unanticipated consequences. The war in Iraq has been especially wrought with unanticipated consequences. Teleological critics of the war argue that the U.S. government should have anticipated those obvious painful consequences.

When we say that “X is intrinsically good,” we mean that it is “good for its own sake;” regardless of whether X yields other good things or not. Philosophers have proposed a variety of things that are deemed to be “good for their own sake,” independent of any subsequent consequences. Deontologists, like Immanuel Kant, argue it’s not the consequences that make an act good or bad. It is the motivation behind the act that generates moral good. A “good person” acts out of a “good will,” which is intrinsically good. Everything that is good can be traced to the possession of a good will. A “good person” acting out of duty, according to Kant, is motivated by the desire to act in conformity with categorical rules, or imperatives. The “Categorical Imperative,” requires that “good persons” “act on universal principles” and “treat persons as ends and never as means,” regardless of the consequences. So, doing the right thing does not always produce positive cost-benefit ratios. Even if the institution of slavery generated a positive cost-benefit ratio, it would still be wrong because it treats persons (slaves) as a means of benefitting others, which is universally wrong at all times, in all places. Historically, defenders of slavery, therefore, dehumanize slaves and argue that they are “things” and not “persons.” Historically, beliefs about race, religion, gender, and species have all been employed in this process of dehumanization.

The distinction between extrinsic good and intrinsic good has also been invoked in the context of knowledge of Truth. Many philosophers argue that knowledge of Truth is an intrinsic good. They say that it is always “good” to know the Truth: regardless of its consequences. If knowledge is good for its own sake, then human inquiry is boundless. For example, scientific knowledge of how to produce weapons of mass destruction (WMDs), such as nuclear bombs, and chemical and biological weapons, is “Good” independent of who uses those weapons and for what purposes. Others argue that knowledge of Truth is “Good” only to the extent that it produces “good consequences.” Hence, there may be some forms of knowledge that might not be good. One might argue that knowledge of WMDs is “good” only to the extent that they are used by the “Good Guys,” to bring about “good consequences,” such as peace. Then we
might inquire into whether peace is an intrinsic or extrinsic good, and whether WMDs really do contribute to peace?

But the distinction between extrinsic and intrinsic value has always been problematic, as the categorization has always been notoriously malleable and subject to interminable debate. Deontologists argue that intrinsic good trumps the production of extrinsic good. So therefore, it is always your duty to “tell the truth,” even if it leads to an overwhelmingly negative cost//benefit ratio. But then again, there are times when we all tell “little white lies,” which are intended to generate small-scale, positive utility ratios, but are technically immoral. Would you tell a lie in order to spare the humiliation of a friend? Would you tell a lie to save the universe?

Teleological moral systems usually designate feelings of pleasure or happiness as intrinsically good, and pain as intrinsically bad. But that dichotomy raises other issues such as the measurement and predictability of pleasure and, the question of whose pleasure counts? In other words, we must set the parameters of the moral universe based on the experience of pleasure and pain. Unfortunately, those parameters have always been pretty malleable, and therefore, it’s easy to adjust its borders in conformity with our own individual and collective beliefs. Are animals, fetuses, dead humans, criminals, racial minorities, ethnic minorities, and religious minorities within or outside of those moral borders?

So the central question in ethics has been: “How can we know whether a human action is good or not?” Or, how do we go about justifying our prescriptive beliefs? Deontologists in the Kantian tradition reject the teleological idea that pleasure has anything to do with the Good. For that line of moral inquiry, it is human intent and conformity to universal rules, not consequences that constitute morality. Hence, the possession of a “good will,” which is marked by a willingness to act on universal principles, is regarded as intrinsically good. If we act out of a “good will” we’re still “good persons,” even if the consequences turn out lousy. Thus, contributing to a bogus charity that benefits no one other than the organization’s well-paid leaders, could, nevertheless, be deemed “good” from a deontological perspective.

Deontological moral systems tend to be very conservative, beholding to tradition, and resistant, if not impervious, to change. From a deontological perspective, moral inquiry is generally focused on the discovery of the authoritative source of the moral rules rather than the consequences of those rules. For humans, moral authority is usually grounded in the unquestioned authority of ancient written texts (Bible, Koran etc.), human experts (priests, ministers, or mullahs), intuition, rationality, or even Mother Nature.

As far as I can tell, many philosophers still adhere to the idea that Truth and Value occupy relatively distinct lines of inquiry and that there are corresponding individual inquirers and communities of inquirers that are “experts” that engage themselves in descriptive inquiry and there are “experts” that specialize in prescriptive inquiry. Again, descriptive inquirers seek the “The Truth” and prescriptive inquirers invariably seek “The Good.”
Throughout most of human history, questions of morality have been settled by religious inquiry and religious experts, and to a lesser extent philosophical inquiry and its experts. However, in recent years, Western societies have begun to look to science for not only Truth, but also Value. Of course, border raids by individual scientists and sub-communities of scientists into prescriptive inquiry have always elicited a defensive response from theologians and philosophers; and, border raids by theologians and philosophers into descriptive inquiry have been met with similar resistance from scientists.

I think it’s safe to say that within human inquiry, the most puzzling border raids occur between descriptive and prescriptive inquirers. Although these boundary disputes are sometimes deliberate, more often than not they are inadvertent. That’s because inquirers are not always clear as to whether they are actually engaged in descriptive and/or prescriptive modes of inquiry. Even when inquirers acknowledge that there might be a definable distinction between an “is” and an “ought,” they tend to disagree as to the nature of that border. And on those occasions when the individual community members believe a specific descriptive theory, they often disagree over the prescriptive values that might be associated with those that theory. Very soon scientists will be able to clone human beings. But does the “fact” that we can do it, imply that we “ought” to do it?

Now when we observe the beliefs of various sub-communities of inquirers, such as scientists, philosophers, and theologians, it is important to acknowledge that there is a lot of consensus and a lot of variation of belief between and within these communities. Although we often make a big deal out of the inter-group conflicts of belief that arise between, say, scientific and religious communities, we tend to overlook the fact that communal membership does not necessarily imply intra-group uniformity of belief. So just because two individuals happen to be members of the same community of inquirers (say, the community of biologists) does not necessarily mean that their beliefs, theories, and worldviews are identical. Now typically, there is usually a great deal of consensus among biologists in regard to higher-level beliefs or theories, such as Darwinian evolution. Although it is also true that a few biologists express doubt in regard to the truth of evolutionary theory and some even propose alternative theories. The same can be said of other high-level theories such as relativity theory, or neoclassical economic theory. But most theoretical scientific debate usually takes place, at the lower levels. For example, there is a lot biological inquiry and debate among biologists concerning the precise nature of the genetic mechanism that explains the evolutionary relationship between humans and other primates. But there is very little debate among orthodox biologists as to whether human beings, in fact, evolved, from other primates.

Despite variation of belief between and within communities of inquirers, we nevertheless, tend to identify communities of inquirers and give them names such as: biologists, theologians, and philosophers. When we do this we often mistakenly confuse communal membership with conformity of belief: as if the borders between and within communities of inquirers were crystal clear, absolute, and inviolable. The amorphous borders between individual inquirers
and communities of inquirers suggest that there is a certain degree of malleability in respect to both beliefs and communities of believers.

### THE VARIATIABILITY AND MALLEABILITY OF BELIEF

The variability and malleability of belief is most often associated with prescriptive beliefs, especially moral beliefs and political beliefs, which often seem to lack any objective universal foundation, and, consequently, exhibit a high degree of relativity. We in the United States, for example, are often surprised to learn that other cultures espouse and act upon different moral beliefs. To us, most of our own moral beliefs seem stable, universal, obvious, and therefore, justified. We view our own moral beliefs as eternal and universal truths, and we tenaciously seek to convince others of the truth of our prescriptions: such as: “All cultures ought to acknowledge the equality of women.” “All cultures ought to not kill innocent civilians in time of war.” and “All societies ought to execute murderers.” When other cultures fail to acknowledge, what we regard as universal prescriptions, some philosophers explain that divergence of belief by insisting that that some moral beliefs and/or behaviors (usually our own moral beliefs and behaviors) are universal and objectively true. Anyone that disagrees is regarded as either wrong or bad.

Many contemporary philosophers argue that all moral beliefs are really subjective, and therefore are inexorably relative to particular individuals, communities, and/or cultures. Subjectivists conclude that there are no universally binding prescriptive beliefs, or hyper-norms. Multiculturalism is certainly one manifestation of the contemporary acceptance of the incommensurability of cultural beliefs. However, it is often easier to defend multiculturalism in principle than it is in the real world. Today we bestow group-status upon an ever-widening variety of assemblages, including: whites, blacks, Latinos, Native Americans, women, men, children, elderly, homosexuals, and a staggering variety of religious and ethnic groups. Many cultural groups embrace descriptive beliefs that are obviously false and others embrace prescriptive beliefs that are obviously bad or immoral. Therefore the virtue of tolerance in a multicultural setting is not easy to apply, especially when specific cultural groups threaten other individuals or groups. This ever-elusive virtue of tolerance is also complicated by the ontology of groups. It is reasonable to question what exactly constitutes a cultural group and what kinds of culturally based activities we ought to tolerate. Are there some cultural activities that are more deserving of our tolerance than others?

When there is consensus in regard to any particular moral belief within a community, agreement can often be attributed to the formation and maintenance of a tradition. Typically, beliefs that are sustained on the basis of tradition survive through the conscious and deliberate efforts of leaders. Leaders uphold tradition by employing a variety of well-known strategies, which together, buttress their ability to control the beliefs of their followers. One obvious, and often employed, way to uphold tradition is for leaders to use...
physical force and/or threat of physical force. The lure of pleasure is a powerful incentive and the threat of pain is a powerful disincentive. Indeed, most longstanding traditions have been sustained, at least to a certain degree, by brute force. Another highly efficient technique for maintaining a tradition involves controlling the flow of information within communities and between communities. This can involve manufacturing useful beliefs and/or censorship of contrary beliefs. Hence, social and political philosophers and social scientists inquire into the nature and the extent to which leaders of communities ought to use force and/or censorship in the maintenance of any given tradition. At least in the Western world, these questions are considered central to all political theories.

However, the maintenance of a tradition is not entirely a matter of skilled leaders. There is a natural foundation, a biologically rooted inertia that predisposes human beings to prefer stability over change. Hence, tradition is relatively easy to uphold, even by relatively unskilled leaders. Let’s face it! Human beings embrace some pretty goofy traditions. We celebrate the birth of Christ, in part, by telling our children that Santa Claus lives at the North Pole, flies around the world on a reindeer-propelled sleigh, lands on the roof, enters through the chimney, and delivers presents under an indoor tree. This is a prime example of how cultural inertia can sustain even the most irrational forms of goofiness.

Not all leaders are committed to upholding tradition. Some overtly or covertly seek to break the bonds of tradition and institute novelty, or new beliefs. However, depending upon the circumstances, it is often much easier for leaders to maintain tradition than to institute revolutionary change. Again, human beings are naturally conservative in the sense that they prefer equilibrium over change, especially if their interests are currently being served by the status quo. The anti-slavery movement in nineteenth-century America faced stiff opposition from those who had a vested interest in maintaining that institution. When the interests of powerful individuals are being served by the status quo, it is especially difficult to institute change. But Mother Nature rarely cooperates with the long-term preservation of the status quo. All things change over time and so do beliefs. However, goofy beliefs seem to be especially resilient, at least from my admittedly cynical perspective.

If there are any prescriptive moral beliefs that are embedded in human nature, we would expect to find universality of belief. Now some longstanding moral beliefs permeate large cultures, and remain intact for centuries. For example, most human cultures have longstanding prescriptions that forbid incest, which suggests a biological foundation. In contrast, prescriptive moral beliefs maintained solely on the basis of tradition invariably fall short of universality and almost always appear relative to a particular cultural group. (Whatever that is?) But the presence of a large-scale, well-nurtured tradition can be easily confused with one of those stable universal beliefs embedded in human nature. Therefore, one of the longstanding issues in ethics is whether there are any “hyper-norms,” or moral beliefs that are objective, universally binding, and independent of subjective individual or cultural moral beliefs or norms.
Unfortunately, all major cultures believe that their own prescriptions are hyper-norms.

In contrast, to our obviously malleable prescriptive beliefs, most of us like to think that descriptive beliefs are different because we believe that Truth is not relative to a specific individual, sub-community, culture, or time period. Truth, as it is usually understood, has nothing at all to do with tradition. The descriptive belief that “Water boils at 212 degrees Fahrenheit at sea level” seems universal and utterly immalleable. If anyone believes that it boils at 100 degrees Fahrenheit, we know that person is wrong and therefore harbors an objectively false belief. When we encounter those who defend obviously false descriptive beliefs, we rarely invoke the principle of cultural diversity and the virtue of tolerance. That’s because we believe that at least some of our descriptive beliefs, such as the boiling point of water, demand universal consensus. No matter how hard we try to reshape that belief, the “fact” is that water boils at 212 degree Fahrenheit, regardless of whether we believe it or not. It seems utterly immalleable and impervious to personal, communal, and cultural manipulation. And, we do not generally say that our descriptively true beliefs, such as our belief in the boiling point of water, are any more or less true today than they were in the past.

The philosophical doctrine known as realism defends the general thesis that there is something “real” out there that our true beliefs (descriptive or prescriptive) more or less “correspond to” and that our false beliefs simply “do not correspond to” that reality. Philosophers call this the correspondence theory of truth. What I shall call a descriptive realist believes that there are at least some descriptive beliefs that correspond to a foundational reality of some kind, and that the truth of these beliefs is objective and evidenced by a temporal universality. The vast majority of scientists that I know are descriptive realists. A prescriptive realist believes that there are at least some hyper-norms or prescriptive beliefs that correspond to foundational reality, and that the goodness of these beliefs is objective, eternal, and universal.

In sum, the underlying assumption of both descriptive and prescriptive realism is the underlying conviction that at least some of our beliefs are universally true, timeless, and “founded” upon some objective body of reality. However, today a menagerie of post-modern antirealists argue that Truth and/or Value are merely “constructed” by human beings, and that descriptive and/or prescriptive beliefs are infinitely malleable to human design. Some argue that both prescriptive and descriptive beliefs are either subjective preferences, expressions of personal feelings or emotions, matters of taste, or social constructions manipulated by powerful leaders, communities, and cultures. Therefore, constructivists argue that Truth and/or Value are “relative” to a specific time period (historical relativism); “relative” to individuals (personal relativism); and/or “relative” to a specific culture (cultural relativism). Philosophers call this the coherence theory of truth: X is true because it coheres with an already existing body of beliefs, and false if it does not.

Of course, realists cannot easily explain away the historical, psychological, and sociopolitical manifestations of relativism. It is painfully
obvious that scientific authorities often disagree with one another; and that moral authorities often disagree, even when they’re from the same religious or philosophical tradition. Therefore, philosophically astute realists (as opposed to naïve realists) usually defend a more modest form of realism that simply asserts that there are at least some beliefs (but certainly not all beliefs) that are universally and objectively “True” or “Good” and, that these beliefs tend to resist our attempts to reshape them by manipulating our feelings of belief and doubt. Take for example the universal moral belief that it is wrong to eat dead human beings. Although, over the centuries there have been some individuals and a few isolated cultures that have believed that “It is morally acceptable to eat dead human beings, especially their enemies.” As far as we can tell, no large human society has practiced large-scale cannibalism for very long. The same might be said for the universal prescription against incest.

Longstanding historically stable moral truths, realists argue, exhibit the same sort of objectivity, universality, and stability that true scientific beliefs exhibit. All inquirers, they argue, can discover these stable and universal moral beliefs through historical and/or sociological analysis. Some recent moral realists embrace evolutionary ethics and therefore have taken that analysis one step further by arguing that the universality of some moral beliefs can be explained in terms of the distribution of certain genes throughout the human population. Hence, the genes that discourage us from eating other human beings or having sex with our brothers and sisters are expressed much more often than those that predispose cannibalism and incest. The mantra of naturalism is “What is natural is good.”

Although descriptive realists insist that truth and falsity are something more than sociopolitical constructions maintained by tradition that are enforced by executioners and “spin doctors,” it’s not easy for them to explain how and why individual scientists and/or communities of scientists frequently harbor conflicting beliefs concerning allegedly objective phenomena. Indeed, we often find it rather frustrating when our alleged “experts” contradict one another on important “matters of fact” such as global warming, the deterrence effect of the death penalty, and the safety of nuclear power plants. And of course, in criminal trials we’re all familiar with the phenomenon of conflicting “expert” testimony being offered by “scientific witnesses.” Winning or losing a court case is usually contingent upon your ability to pay for a good lawyer and an authoritative team of experts to testify on your behalf. Never forget the underlying fact that all experts get paid.

As I said earlier, there’s always a degree of variation of belief and a lack of universal consensus among scientific experts in regard to the “Truth” of high-level beliefs even: quantum theory and evolutionary theory. Of course, descriptive realists readily admit that there is more malleability in science than they would like, but nevertheless, they remain adamant in their defense of the general thesis that there are at least some universal objective scientific beliefs out there to be discovered. The so-called “human sciences” (psychology, psychiatry, sociology, anthropology, history, and anthropology) have been especially prone to high level theoretical variation. That’s because the natural
laws that govern these sciences are enormously complex and it’s not at all clear how the laws of biology and physics relate to human phenomena.

Theories, or high-level generalized beliefs held by individuals and communities, serve many different functions. I think most philosophers agree that all theories fulfill the three aforementioned purposes: explanation (provide plausible answers to perplexing questions), prediction, (provide foreknowledge of future events) and/or control (provide a means of altering future events). Less general lower-level theories explain, predict, and/or control more particular phenomena. (Why George Bush won Ohio’s electoral votes.) Higher-level, comprehensive theories explain, predict, and/or control more general phenomena (How life emerged from non-living materials.) Taken together, the most general high-level theories embraced by a community constitute its worldview. Worldviews serve as filters through which inquirers ask questions and pose answers; or to put it more simply, worldviews help individuals and communities interpret the world and our relationship to that world. Human societies generate different world views and therefore introduce variety into our global intellectual environment, which, unfortunately, invariably leads to conflict.

Although asking questions and offering answers has an intellectual aura about it, human inquiry invariably affects the behavior or actions of individual human beings as well as the behavior or actions of communities of human beings. In short, we tend to act on our descriptive and prescriptive beliefs. Because of our communal nature and our ability to communicate with other human beings via language, our beliefs, theories, and worldviews are irrevocably social and economic events. This, in part, helps us explain similarities and differences between individual beliefs, collective beliefs, and forces of stability and change that result from inquiry. Inquiry also helps us explain the intra-generational differences in the beliefs and behavior between contemporary individuals, communities, nations, and even cultures; and, the inter-generational differences in beliefs and behavior between present day individuals, nations, and cultures and individuals, nations, and cultures of those of the past.

In old large cultures, such as the ones in China and India, worldviews tend to remain relatively stable over long periods of time. This stability can mean one of two things. It could signal the presence of a true belief that corresponds to some immalleable external reality, or it could signal the presence of a well-nurtured cultural belief upheld by tradition. One of the most puzzling questions in Western philosophy is how can we know whether the apparent universality and stability of some of our beliefs emerge from an objective process of discovery or from the successful maintenance of tradition.

Historically, what we call our Western Worldview is rooted in two main lines of Western European cultural tradition: the Greco-Roman tradition and Judeo-Christian tradition. Although the vestiges of these lines of non-scientific tradition remain a part of our worldview, these older traditions now compete with more recent scientific traditions. Of course, the physical sciences, especially seventeenth-century Newtonian mechanics, spearheaded the so-called “scientific revolution.” However, throughout the twentieth century, new beliefs
threaten the Newtonian tradition, including quantum mechanics, relativity theory, and evolutionary theory have challenged Newtonian domination. In some areas of inquiry the “mechanistic” explanations offered by Newton have been uprooted in favor of less deterministic and even chaotic explanations.

Despite the growth of scientific knowledge, and scientific communities, the older “nonscientific traditions” have not been driven into extinction. Typically nonscientific lines of inquiry survive by either: 1. resisting wide scale acceptance of scientific knowledge and by questioning the authority of scientists; 2. by assimilating “scientific knowledge” into their non-scientific belief systems; or 3. by carving out non-competing parallel spheres of influence. In the United States today, the survival of both scientific and nonscientific modes of inquiry is increasingly influenced by self-interested lobbyists in Washington that represent religious groups, scientific organizations, and corporations. Well paid lobbyists advance the interests of their constituencies by influencing self-interested politicians. In short, religion, science, and business are all subject to political machination. How much influence should government have when it comes to reconciling incommensurable beliefs?

Although the descriptive and prescriptive aspects of human inquiry are often regarded as separate lines of inquiry, there are no doubt facts that underlie human values. For example, with the assistance of social science we can determine (as a matter of fact) the specific values that a given community upholds. Christians believe that Jesus was the son of God. Now the “fact” that Christians believe that Jesus was the son of God, doesn’t necessarily imply that Jesus was in fact the son of God. In other words, we can describe the prescriptive values that underlie that community, but that doesn’t mean that those values ought to be held by all communities.

It is important to recognize that there is a longstanding assumption that permeates both descriptive and prescriptive realism. It holds that Truth and/or Value are, at least to a certain degree, obvious, and that descriptive and prescriptive consensus within a community is relatively easy to achieve. Hence, many what I call naïve realists believe that in order to gain knowledge of Truth and Value, all we have to do is reason more clearly and/or look more closely. However, in this book I will suggest that, for the most part, knowledge of Truth and Value is actually very elusive and universal consensus based on reason and/or observation, more often than not, turns out to be extremely difficult, if not impossible, to achieve. Moreover, I will argue that over the long run, universal consensus and stability of belief among inquirers is not only unachievable, it is not necessarily desirable.

FOUR INDUBITABLE PRINCIPLES

Over the centuries inquirers have crafted an ample supply of theories intended to explain why it is that humans seek to explain, predict, and control their environment, via, beliefs, theories, and worldviews. I propose that we fearlessly acknowledge that human inquiry is constrained by four, interrelated, but nevertheless, “indubitable principles.”
**INDUBITIBLE PRINCIPLE 1**: Human beliefs evolve on the basis of variation and selection. Although our beliefs are generated by our brains, once they are manufactured they become artifacts, which in turn, evolve on their own, independent of biology. Once a given belief is manufactured by a brain, it competes with other beliefs within that brain and within a community of believers in an intellectual environment. So, our own personal beliefs evolve in our minds and our shared cultural beliefs evolve within human organizations. Hence, this is a co-evolutionary process. However, our individual and collective beliefs are also conditioned by the other three principles.

**INDUBITIBLE PRINCIPLE 2**: Human beings are sociopolitical animals that form collective, organized, communities that exchange both: resources (matter and/or energy) and individual and collective beliefs (information, misinformation, and disinformation). These organizations evolve through the transfer of power between individuals and organizations. However, human organizations are also conditioned by the other three principles.

**INDUBITIBLE PRINCIPLE 3**: Human beliefs are manufactured by biological processes that take place in the human brain. There are no individual or collective minds or beliefs without brains. The biological processes that constitute the human brain are encoded in the human genome. Compared to other primates, the human brain is by far the most complex. However, our biological beliefs are also conditioned by the other three principles.

**UNASSAILABLE PRINCIPLE 4**: Human beliefs effect the distribution of human resources and therefore are subject to economic analysis. Inquirers are paid to inquire. Beliefs are bought and sold in an economic environment. These markets also evolve over time. However, the economies where beliefs are bought and sold are also conditioned by the other three principles.

Biology has contributed much to our understanding of the foundations of human belief. Based on biological inquiry, the universal human propensity to form inquiring communities that generate theories is itself viewed as a highly complex biological adaptation. Although it is an unassailable truth that human inquiry involves biological processes that are centered in our brains and central nervous systems, it is also true that even if modern science produced an exhaustive account of the genetic programming that conditions the human brain and the neurological processes that underlie human thoughts, feelings, and behavior, biological inquiry alone will never be able to exhaustively explicate
human nature or human inquiry. So it follows that any credible theory of human inquiry will have to employ a multi-disciplinary approach that brings together its intellectual, sociopolitical, biological and economic manifestations. Biological reduction takes us a long way, but not all the way. It’s those remainders that make the study of human nature enormously complex, and most of all, interesting.

This multi-dimensional view suggests that there is something more to beliefs and theories above and beyond the brain processes that generate them. We find beliefs, theories and worldviews not only in our brains, but also in cultural settings at all times and in all places. (cave paintings!) And of course, not all of these beliefs, theories, and worldviews are true. In fact, over the long course of human history the overwhelming vast majority of human beliefs, theories, and worldviews have been either nonscientific (belief in God) or patently false (flat earth). And of course, let’s not forget that human beings are also notoriously skilled liars and cheaters.

In this book I will argue that human inquiry is driven by intellectual, sociopolitical, biological, and economic determinants. All four of these determinants are subject to the natural forces of variation and selection as defined by Darwinian evolutionary theory. The human central nervous system (especially brain and spinal cord) is the product millions of years of biological evolution. It is directly responsible for both our intellectual and social nature. Although, the neuronal activity of the human brain, no doubt, generates beliefs, I shall also argue that once these beliefs (theories, worldviews etc.) and the corresponding feelings of belief and doubt that accompany them, are generated they, literally, “take on a life of their own.” Beliefs then, compete in macrocosmic intellectual systems (comprised of competing beliefs), and they also become embedded in sociopolitical systems (comprised of competing human individuals and communities of individuals). And finally, we can’t overlook the fact that beliefs form the basis for economic systems, and that those inquirers that we regard as experts and leaders earn hefty paychecks.

Our most general or comprehensive scientific theories, as represented by Newtonian physics, relativity theory, quantum mechanics, and Darwinian evolution all contribute to the formation of our Western Worldview. We also have the Judeo-Christian moral tradition and its theories, which also contribute to that worldview. Can we assemble all of our old scientific beliefs, logically, into one single, comprehensive worldview without contradiction? Will we ever be able to do that? Is it worth trying? Can we logically integrate our scientific and non-scientific traditions into one single comprehensive worldview? Is that worth trying?

In the next chapter I will discuss some of the philosophical problems that are associated with theories in general, and evolutionary theory in particular; and their implications for the Western worldview. For the most part, these problems stem from two high-level metaphysical theoretical distinctions: the distinction between Descriptive Truth and Prescriptive Value; and the distinction between Ontology and Epistemology. If we study beliefs, theories, and worldviews as “human artifacts” we can discern the broad outlines of a
universal evolutionary structure that underlies both scientific and non-scientific inquiry. But that common denominator is certainly not obvious.