

DRAFT MANUSCRIPT

**BEING HUMAN:
A DARWINIAN THEORY OF HUMAN BEHAVIOR**

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PERMISSIONS FOR REPRINTING MUCH OF THE QUOTED MATERIAL ARE STILL TO BE OBTAINED.

INTRODUCTION TO READERS OF THIS DRAFT MANUSCRIPT

As you will see, this manuscript represents an effort to address such broad and fundamental human issues that it invites a quick rejection as overly ambitious and amateurish. I, obviously, hope you will avoid this impulse, keep an open mind, and carefully consider the propositions of my synthesis on their merits. I also hope you will see this statement as a work-in-process, as I do. In this regard I will be highly appreciative of our suggestions, your criticisms and, of course, of your help in identifying factual errors. If you can think of research studies, examples, propositions or have any other ideas that would help support, extend or refute the ideas I have advanced, I would look forward to learning about them.

This book, in my mind, represents, at best, only a way station in the ongoing effort of humans, past, present and future, to comprehend our behavior as humans. As I emphasize throughout, the hypotheses in the book need to be tested and confirmed (or disconfirmed) before they are used as a basis for action. The manuscript is in this sense, primarily an invitation for others to test the book's hypotheses and, more broadly, join me in seeking ways to advance the search for a unified theory of human behavior.

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BEING HUMAN:

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INTRODUCTION

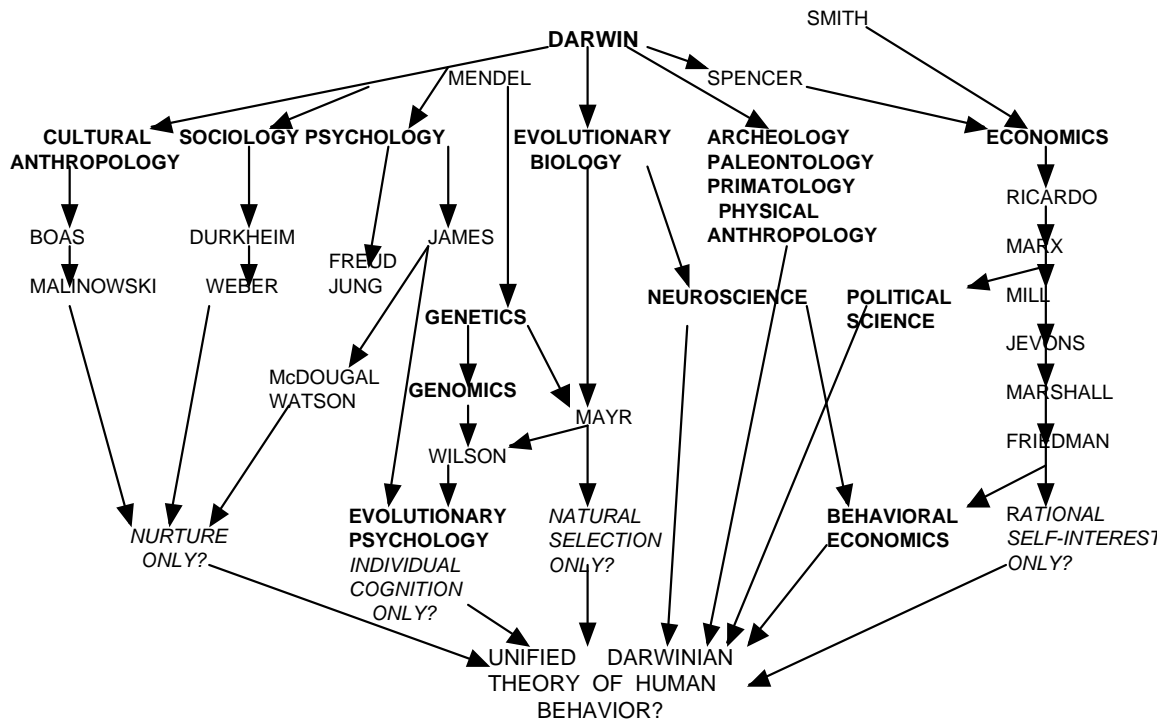
What is involved in being human? How is the behavior of members of the species *Homo sapiens* clearly different from that of members of other closely related species? What do all humans have in common over distance and history—not just the question of what makes us different from one another that has been the preoccupation of the social sciences. This book attempts to address these questions by integrating the latest findings of the many disciplines that bear on human behavior with older findings that draw primarily on Darwin's long-neglected insights on human behavior. Darwin's insights actually established a very solid foundation for our understanding of human behavior—hence the subtitle of this book.

Ideally, a unified theory would characterize and largely explain the ways that humans behave now and have behaved throughout history. Such a theory could help guide human activity at all levels, from personal to societal, and could identify some dead ends to be avoided. Such Newtonian success I have by no means achieved in this book, but I think I have made a productive contribution. Edward O. Wilson, who had earlier started the field of sociobiology, challenged all the human sciences in his 1998 book, *Consilience: The Unity of Knowledge*, to seek such integration and develop a testable theory by focusing on the human brain. He suggested that the social sciences needed to take the lead in this ambitious task. In this book I have attempted to follow Wilson's advice.

Humans have studied human behavior for as long as we have written records. In the last four centuries or so, the methods of systematic science have been applied to human behavior, at both the individual and collective levels. But as Figure 1 shows, this pursuit has become, over the last 150 years, a story of fragmentation.

FIGURE 1

SCHEMATIC OF THEORY FLOW REGARDING HUMAN BEHAVIOR SINCE DARWIN



Specialization, as illustrated above, is an essential phase in the advancement of knowledge, but it needs to be balanced with continual efforts to integrate across disciplinary lines and unify our ever-growing understanding. This synthesis process has not kept pace with specialization in the study of human behavior, largely, I believe, for institutional and organizational reasons. In the context of the university, disciplines compete for funding, personnel, and attention. A scholar who hopes to advance within a discipline is expected to make noteworthy specialized contributions for his or her “team.” Who can afford to collaborate with the competitive teams? Perhaps a senior professor whose career struggles are over but whose intellectual life is not.

The theory presented in this book is an attempt at such a synthesis. With one important exception, which will be discussed in Chapter 2, none of the research is original. For several reasons, I feel strongly that the time is right for just such a synthesis. We continue to be

mystified by much of our own behavior, both as individuals and as nations, races, and faiths. The historian Norman Davies, summing up the period of the two world wars, wrote:¹

At a time when the instruments of constructive change had outstripped anything previously known, Europeans acquiesced in a string of conflicts which destroyed more human beings than all past convulsions put together. . . . What is more, in the course of those two war-bloodied generations, the two most populous countries of Europe fell into the hands of murderous political regimes whose internal hatred killed even more tens of millions than their wars did. . . . Future historians, therefore, must surely look back on the three decades between August 1914 and May 1945 as the era when Europe took leave of its senses. . . . In the course of the horrors, Europeans threw away their position of world leadership.

In a word: How could such things happen? The human race now faces more than one danger which (a) could end civilization as we know it and (b) is of our own making—nuclear war, environmental collapse, and the spread of pandemics such as AIDS come to mind. Must we remain such a deadly mystery to ourselves forever? I believe not. Surely a theory of human behavior—rooted in individual behavior, but also explaining collective behavior—would generate practical applications, would distinguish the possible from the impossible, and would even point the way toward the possible. Such a theory is surely worth a mighty effort.

Meanwhile, recently developed techniques such as brain imaging are giving us fantastic new insights into what happens in the brain during various kinds of normal human behavior, such as remembering and deciding. Gene analysis has also made tremendous advances recently and can throw a bright light not only on what makes us uniquely human but also on how we became uniquely human through the processes of evolution. Hard data on the wellsprings of human behavior is starting to accumulate.

But most of all, the time is right because a scientific theory which will account for the new findings and provide understanding of the big questions we want to answer—about consciousness, ultimate motives, free will, conscience, morality, the sense of self, complex decision-making, and emotions—*has been available for many years.*

¹ Norman Davies, *Europe: A History* (New York: Oxford University Press, 1996), p. 897-899. His remarks are in contrast to his previous chapter on Europe's political and cultural dominance in the nineteenth century.

Why a Darwinian Unified Theory of Human Behavior?

That theory, as the subtitle of this book must already have made clear, is Darwin's theory of evolution as applied to humans. I argue that Darwinism is already able to provide a unified theory of human behavior *if*:

- All three of Darwin's selection mechanisms are put to use, not only natural selection.
- Darwin's theory is interpreted in the light of modern findings which he did not have.

That's why I call the theory in this book a renewed Darwinian theory. It is not really mine. It is Darwinism unamputated and nourished with new data.

Darwinism is 150 years old. You might ask, why hasn't this been done already? The principal stumbling block, surprisingly enough, has been the idea of natural selection itself. Darwin described three different selection mechanisms, but most people, even some biologists, do not seem to know that. Biologists have focused, understandably, on natural selection, since this process can explain so very much of animal behavior up to the transition to *Homo sapiens*. It is a discovery of pure genius. But the trouble comes because biologists have been so awed by the explanatory power of natural selection that they have tended to minimize Darwin's "sexual" selection process² and have, until very recently, entirely discredited his "group" selection process. These latter two selection mechanisms will provide essential elements of our explanation of the transition to *H. sapiens* and of the emergence of the defining characteristics of the new species.

Ironically, it has been biologists' almost exclusive emphasis on the role of natural selection in human evolution which has biased social scientists against explaining human behavior in evolutionary terms. Most of their misunderstanding of evolutionary theory was perpetrated by Spencer, not Darwin, and misnamed Social Darwinism. I will address this massive muddle of misunderstandings in Chapter 4.

Meanwhile, Darwinism has been grossly misunderstood by the public, partly due to lack of accurate education, partly due to the false impressions created by Social Darwinism, and partly due to the views of religious leaders. Today, this disconnect only seems to be getting worse. As long as the public is not merely ignorant of, or indifferent to, Darwinism, but actively hostile to

² Many biologists recognize sexual selection as being one part of natural selection, but even these biologists tend to underrate its importance in human evolution.

it, the refurbished Darwinian theory proposed here can never deliver the practical benefits it promises. It is mainly for that reason that I have written this book to be accessible to general readers and have included the interpretative and application chapters in Parts III and IV.

A Focus on the Brain

This book leads off in Chapter 1 with an overview of the type of theory that will be developed and of the foundation that Darwin's theory of evolution will provide. It introduces the major parts of the human brain and their respective functions as currently understood by neuroscience. The major parts discussed are: the prefrontal cortex, the executive center of the brain; the neocortex, home of skill sets and the powerful memory that retains the essence of our cultural heritage and the fruits of our personal experience; and finally, the limbic and basal ganglia area, the subconscious two-thirds of the brain that is the locus of our drives and emotions.

The Four Drives

Building a unified theory of any complex phenomenon is a matter of putting together many pieces. But as one sets about assembling the pieces, it is likely that a gap will appear which none of the existing pieces seem to fill. One must now conceptualize, invent if you will, the missing piece and subject it to testing. In fact, as the results of new and old research and theories began to interlock, a major gap in our current knowledge did emerge: What role does the subconscious two-thirds of the brain, the seat of ultimate motives and emotions, play in the conscious life of humans? While scholars such as Freud addressed this issue, it has been long neglected and has not been addressed using the latest tools of brain research. To fill this gap, my colleague, Nitin Nohria, and I developed the theory of four innate subconscious drives, which are manifested in the conscious part of our brain as emotions or intuitive senses. We presented our work on drives in the book, *Driven: How Human Nature Shapes Our Choices*, published in 2002. That work is a vital part of this unified theory. We found it useful to conceptualize the subconscious impulses of humans into four clusters: the drive to acquire (dA) life supporting resources, the drive to bond (dB) in mutually helping relations, the drive to comprehend (dC) and understand all phenomenon, and the drive to defend (dD) one's resources, bonded others, and beliefs. I hasten to add that the alphabetical consecutiveness of these labels is truly coincidental;

all the same, it provides a handy aide mémoire. Each of these drives represents a basic human value that can be roughly summarized as dA prosperity, dB peace, dC knowledge, dD security, and the over-arching 4-way balance as wisdom and justice. I will introduce the four drives in detail in Chapter 2.³

I would also add that these four drives have always been observed to be basic human drives. One has only to open the *Iliad* to find lucid portrayals of the drive to acquire (Agamemnon's claiming of Achilles' prize, despite having more than enough himself, in the opening lines of the poem), the drive to bond (Achilles' devotion to Patroclus, Hector's devotion to his family and to Troy), the drive to defend (the Greeks' defense of their honor, the Trojans' defense of their very existence), and the drive to comprehend (the recitation of personal genealogy so that your host or your enemy understands who you are).

The observant among us have always known that humans are a mysterious bundle of drives which often conflict with each other inside our heads. As the poet Stevie Smith wrote:⁴

Only human beings feel like this,
It is because they are so mixed.

What the renewed Darwinian theory now offers is a list of the specific ingredients of this mixture: our specific drives which are genetically based, which are often in conflict, and which are assisted and kept in balance by other specific segments and capacities of the brain, especially the pre-frontal cortex, some of which have now been identified and will be discussed in Chapter 3.

The need to balance our mixture of drives—an essential element of the renewed Darwinian theory—has also long been recognized; it is vividly discussed in Plato's *Republic*. But only now can we see precisely *what* needs to be balanced (the four specific drives) and *why* (because, as I will explain in Chapter 2, they are innate, that is inherited; independent, one cannot be fulfilled by another; always active, virtually insatiable; and they are often in conflict). I argue that this specification of the drives has the potential to be helpful in explaining human behavior at every level of analysis, from the personal to collectives of all types and sizes.

³ Those who have read *Driven* may wish to skip Chapter 2, where the main points of that book are summarized.

⁴ Stevie Smith (1902-1971), English poet. These lines are from her most famous poem, "Was He Married?"

As a summary of the balancing process, the theory holds that all environmental inputs from the sense organs are evaluated for their potential to gratify or threaten each of the four drives. In this evaluated form the sensory signals are sent on to the pre-frontal cortex where they are read as emotions or intuitive senses and any resulting conflicts are subjected to conscious analysis and deliberate response. The conflicted signals are juggled in the working memory along with relevant cultural and personal memories and skills. The resulting possible action responses are feedback to the drive modules and reviewed for reasonableness before the best available proposal, the satisficing proposal, is chosen and placed in motion. It is this choice process that creates the outstanding capacity of humans to adapt in complex ways to complex environments.

Chapter 4 presents the renewed Darwinian theory of how such a brain evolved from earlier forms. It argues that the drives to bond and to comprehend were established or strengthened to take on a unique form in *Homo sapiens*. The emergence of each of these two newer drives marked the transition to a new hominid species and each was essential to resolve a hominid survival crisis. The history of the bonding drive started with the first mammals whose survival depended on a bond of caring becoming established between the mother and the infant. This circle of bonding next enlarged to include the father, creating the nuclear family. The bonding circle moved on to include the extended family or clan and then the tribe in connection to the emergence of *H. sapiens*. At this same transition the drive to comprehend also arose and equipped humans with the intellect that, alongside the bonding glue, enabled the step-by-step development of modern civilizations.

The Free-Riders

Theory-building can also turn up surprises. One very important surprise for me was the existence of some human beings who are missing the genetic mutation that expresses the innate drive to bond—to form caring long-term relationships with other people and with collectives. This is a genetic deficiency which these individuals can do nothing about. They are rare—estimates run from 1% to 4% of the population—but, if I am right, they have been the cause of untold human misery and violent death throughout recorded history. This stunning issue has, perforce, become the headline story of this book. I know that this sounds a little crazy, but I trust it will make more sense in Chapter 5, after the scientific ground has been prepared.

I call them “free-riders.” This is a somewhat misleading name, but one that has already been adopted in the biological and economic literature. It is helpful to think of these dB-missing individuals as people without a conscience, as totally amoral super-selfish opportunists. Once I am able to introduce the free-riders, they will be one of the main themes of the book. We will observe their prehistoric transition from the norm among earlier hominid species to a relatively marginalized minority among hunter-gatherer tribes, then note their rise to powerful social positions, a rise made possible by the rise of large-scale ancient civilizations. I will argue that these people frequently became the political despots, the all-powerful heads-of-state of the Dark Ages. I will cite the important role of the U.S. Constitution in offering the first political structure that has been largely successful in protecting a large society from despotic rulers, and the role of free-riders in the serious abuses of some business corporations. In tracking the free-rider story, I have found myself in the role of an historical detective. I hope readers will join me in that role as the free-rider story unfolds. One of my follow-up discoveries in this detective mode was of the existence of a larger set of people whose predispositions, all within the normal range of four-drive humans, make them especially vulnerable to the manipulations of free-riders. Such people are much more likely to become the followers of free-rider leaders. The discovery of these “submissive authoritarians” will also be discussed in Chapter 5.

Chapter 5 not only introduces free-riders, but also the closely related issue of morality. After all, the absence of a moral conscience is what defines free-riders. I will build upon Darwin’s own theory of morality as a skill set derived from the human drive to bond. Darwin summarized this neglected part of his work as follows: “Any animal whatever, endowed with well-marked social instincts...would inevitably acquire a moral sense of conscience, as soon as its intellectual powers had become as well, or nearly as well developed, as in man.” And later: “A moral being is one who is capable of reflecting on his past actions and their motives—of approving of some and disapproving of others, and the fact that man is the one being who certainly deserves this designation, is the greatest of all distinctions between him and the lower animals.”⁵

⁵ C. Darwin, *The Descent of Man* (New York: Prometheus Books, 1998), p. 633.

Testing and Application

At present, this renewed Darwinian theory is a synthesis primarily pieced together from experiments and studies that were conducted for other purposes. It therefore needs explicit testing to fulfill the necessary scientific processes of confirmation or disconfirmation. This is essential to avoid the possibility of doing harm through premature application. The shorter-term goal of this book is to trigger extensive multidisciplinary scientific testing of the theory. I am fully aware that to do so, I need to loosen some well-established professional positions held by biologists and social scientists, particularly towards Darwinism. In fact, the renewed Darwinian theory requires all of the established disciplines from which I have drawn to make some changes in their underlying paradigms. For example:

- Biologists would have to question their choice of natural selection as the primary—for some the only—Darwinian evolutionary selection mechanism needed to explain the evolution of humans from earlier hominids.
- Economists would have to seriously question their discipline’s axiom that rational self-interest is the one and only ultimate motive needed to account for human behavior. This questioning is actually well under way by a group known as ‘behavioral economists.’
- Sociologists would have to question a key maxim of one of their founding fathers, Emile Durkheim, that human behavior can be explained by social facts alone, not by anything innate. In Durkheim’s own words: “Individual natures are merely the indeterminate material that the social factor molds and transforms.”⁶ Durkheim had excellent reasons behind this maxim at the time, but they no longer hold.
- Psychologists would need to give up the remaining traces of the “blank slate” thinking about the brain and their current, almost exclusive, focus on the cognitive aspects of the brain by using their investigative tools to develop new knowledge about the motivational and emotional elements of the brain.
- Neuroscientists would need to avoid the methodological assumption (that seems to work well for physicists) that conclusive discoveries down to the smallest particles must precede making useful generalizations at higher levers of analysis. Such extreme reductionism often seems to work for the inorganic sciences but does not hold in the

⁶ E. Durkheim, *The Rules of the Sociological Method* (New York: Free Press, 1962). Originally published 1895.

organic sciences. Otherwise how could Darwin have come up with such powerful biological generalizations while knowing nothing about the genes, etc. (See Chapter 4)?

I will address these issues throughout Part I, but particularly in Part II, Chapter 6. This chapter will also conclude Part II's presentation of the renewed Darwinian theory by reviewing the entire RD theory.

Part III of the book (Chapters 7 to 9) will provide a fresh interpretation of the human historic period in the light of the renewed Darwinian theory. The focus will be on the three institutional streams that culturally carried forward the evolving behavior codes guiding collective life along with its various socially defined roles. These chapters can help us understand James Joyce's enigmatic observation, from the mouth of Stephen Dedalus, that "history is a nightmare from which we are trying to awake."⁷ Part III runs a great risk of offending credentialed historians (and I clearly am not one) by presuming to reinterpret big chunks of history with an unfamiliar version of Darwinian theory. Yet Darwin himself used the history of species as an absolutely essential scientific tool to build his great theory. He showed how systematic historical analysis is a vital scientific tool (see discussion in Chapter 4). He has armed historians against the skeptics who claim that history is not "real" science but only anecdotal stories without scientific rigor. In this spirit, I welcome critical analysis of my major historical points by historians who are vastly better informed.

Part IV (Chapters 10 to 12) will address the "so what" question. If the theory is validated, what good will it do? What are its action implications? I offer some suggestions all through the book, but reserve the more important ideas for the last three chapters. This is the most speculative and provocative part of the book. I offer my suggestions because many of the theory's action implications are not at all obvious. But, to repeat, I strongly urge that none of these suggestions be acted upon unless the theory is confirmed by further research. I will not cite any of the suggestions now, when the reader has not yet been introduced to the theory itself. In Chapter 12 I will also discuss recently proposed theories that, like this book, are efforts to unify our understanding of human behavior. This will provide readers with an opportunity to compare the renewed Darwinian theory with other theories and judge their relative merits.

⁷ J. Joyce, *Ulysses*, (New York: Vintage, 1961, p, 34,)

The Author and the Book

Readers will probably be curious as to the scientific career that has led me to undertake such an ambitious task of theory-building. As a high school senior I decided to focus my further studies on understanding human behavior, particularly its record of violence. Throughout my higher-level education and subsequent academic career, I have consistently been a multidisciplinary student of human behavior, with no disciplinary modifiers. That is, my interest has never been *economic* behavior or *political* behavior or *criminal* behavior or even *social* behavior—it has always been *human* behavior. As an undergraduate, I focused on sociology, economics, and psychology. I chose to enter a doctoral program which was the best available for continuing to study these same three disciplines, with the addition of some anthropology and human biology. This was the newly emerging field of Human Behavior in Organizations at the Harvard Business School that, since it was launched in the mid-20s by Dean Donham, has been dedicated to such a multidisciplinary approach. As it happened, Harvard Business School was also an excellent setting for my pursuing a multidisciplinary line of research on human behavior as a career, and I have profited greatly from that fact over many years. It has provided me with the opportunity to study human behavior at close range in many different types of organizations in many different environmental contexts. My teaching there has focused on training prospective business executives how to use their brains to improve their ability to make wise decisions in highly complex circumstances. What I have learned about this process is reflected in this book. Thus, I brought to the challenge of writing this book a lifelong passion for developing a unified understanding of human behavior.

During my academic career it gradually dawned on me that no unified theory of human behavior would be possible without addressing four big roadblocks or intellectual puzzles:

1. The puzzle posed by Descartes's mind/brain dichotomy: How can the process of conscious choice in the human mind be accomplished by a biological-physical brain?
2. E. O. Wilson's mystery: How could humans have evolved a brain able to create civilizations by Darwin's natural selection mechanism before civilization existed?

3. The central puzzle of my discipline, human behavior in organizations: How can the uniformities of the behavior of people at the collective level of institutions and societies be reconciled with the individual behavior level, the psychology of motivated choice?
4. The conflict between religion and science: How can consilience ever be achieved between the core belief of science, that all phenomena have a natural explanation, and the core belief of religion, that there is a supernatural Creator?

By drawing on the work of many others, I believe I have found a way, albeit tentative, to deal with these persistent puzzles. In the process, I have had to study theories and findings well beyond my home base in the social sciences and to accept the inevitable risk of error.

Readers will note that I use more extended quotations than is customary in scientific books. This is an honest indication of my great dependence on the work of many others and it also allows readers to judge for themselves the accuracy of my summaries and interpretations. I will also be using “we” to refer to a wide variety of collective institutions that people identify with, such as “we Americans.” Frequently “we” will mean *all* humans, a collective with which more people need to develop an important identification for the good of us all.

Although I must and do take personal responsibility for the conclusions I present in this book, I want to conclude by restating one point that is very important to me. On the whole, this is not my theory. It is truly Darwin’s, with a few assists from myself as a synthesist who has the advantage of 150 more years of research by scientists in many fields. I am not trying to hide behind Darwin’s prestige—he simply should have the credit he deserves, which is significantly more than he has already been given. As preliminary evidence of this, I offer just one of his more provocative insights: “The small strength and speed of man, his want of natural weapons, etc., are more than counterbalanced by his intellectual powers, through which he has formed himself weapons, tools, etc, and secondly by his social qualities which lead him to give and receive aid from his fellow-men.”⁸

⁸ C. Darwin, *The Descent of Man* (New York: Prometheus Books, 1998), p. 65. The reader should note that the key insights of Darwin’s about human behavior are in his “Descent” book, not his earlier “The Origins of Species” book that established his theory of natural selection and his worldwide reputation. I did not read “Descent” until I was an emeritus professor. Perhaps similar reading habits have led contemporary biologists to largely ignore Darwin’s insights about humans.

