

Preface

It's been an unusual experience for me to write a series of loosely interconnected essays on human evolution and related subjects. When one writes a conventional book, one inevitably follows a predetermined progression, with its own logic and sequence. Essays, on the other hand, don't impose that kind of discipline; they take you where they will, and do not necessarily lead on inexorably from one to the next. This has made the process of writing this book both more interesting and more frustrating than I had expected; and it has led to what for me was an unexpected discovery—although I realize in hindsight it shouldn't have come as a surprise. For, just as all roads used to lead to Rome, it seems that it is impossible to write about anything in human biology without some explicit reference to the process of evolution itself. The

great geneticist Theodosius Dobzhansky knew this decades ago, when he wrote that “nothing in biology makes sense except in the light of evolution.” But nowadays we tend to be mesmerized by the *results* of four billion years of evolutionary history on Earth, and to take for granted the process by which those results came about. I had thought that one essay on the evolutionary process would be ample to convey the basics of evolution—at least as I see it—to my readers; but instead I found myself coming back to the subject over and over again, throughout the book. Whether the topic was how we came to stand upright; or placing human beings in the context of our closest living relatives; or trying to explain how *Homo sapiens* made that last fateful step to becoming human; or examining whether it is indeed possible to blame our “hunting/gathering” genes for our often bizarre behaviors; or even evaluating the prospects for the human future—I inevitably found myself drawn back to the much-misunderstood process that lies behind all of these things. I hope, then, that readers will forgive me for a small amount of repetition, and for what may look like a mildly obsessive concern with process at the expense of product. The two really are related, and neither can be understood in isolation from the other.

Because much of what I say in this book is at odds with the 1950s-era beliefs about evolution that are still

widely accepted, I should also reveal right away exactly where it is that I am coming from. I started my paleoanthropological studies in the early 1960s, a time when it was taken for granted that human evolution had consisted of little more than a long, singleminded trudge from primitiveness to perfection. This prevailing view was supremely linear: Over the eons *Australopithecus* gave rise to *Homo erectus* gave rise to *Homo sapiens*—all under the beneficent eye of natural selection. Quite apart from the fact that this story is not only extremely boring but seriously misrepresents what typically happens in the course of evolution, accepting this schema involved (even then) sweeping under the rug a huge amount of evidence of diversity in the human fossil record. It was fortunate, then, that at an early stage of my career I was sidetracked into the study of Madagascar's lemurs, perhaps the loveliest and most charismatic of all human relatives (they/we are all primates). There is only one kind of human being on Earth today, and from our insular standpoint we seem to feel that it is somehow inevitable, or even appropriate, that we are alone in the world. But among the lemurs it was impossible to ignore diversity. Madagascar is home to fifty different kinds of lemur, and until quite recently to perhaps as many as twenty more. Wherever you look in this unfortunately devastated island you are confronted with evidence for diversity. Nobody studying its attractive

denizens could possibly wish to arrange them in a linear order; instead, the obvious question is: How did they diversify so remarkably in their isolated outpost? What's more, the question is essentially the same when you turn from the lemurs to other primate, even mammal, groups. The living world *is* diverse, and wherever you look the predominant signal is one of variety rather than of continuity. Human beings are distinctly unusual in their stately isolation. Well, there's no denying that this does imply there is something special about *Homo sapiens*. Perhaps we are playing the evolutionary game today by a new set of rules. But whether the same thing applied to the predecessors of our species is another question, and I strongly suggest that it did not. We will never properly understand our antecedents, and how we ourselves became as we are, without placing hominids in a normal biological context. By isolating ourselves on a pedestal, we forfeit the opportunity to do this.

The period from the mid-1970s to the mid-1980s was a difficult era—politically, bureaucratically, and economically—in much of the developing world. An adequate account of my many field misadventures during this time, especially in Madagascar and the Comoro Islands, would take another book. The upshot of this period of upheaval, though, was that I was eventually forced to abandon my study of lemurs in the only places where

they existed in the wild. I was greatly distressed by this, for I would have been happy to devote my entire career to the contemplation of these wonderful animals. But in retrospect I certainly cannot complain about the outcome, for I was obliged to switch my attention back to hominid evolution. And I returned to this preoccupation with a changed perspective. The lemurs had told me a tale of diversity; and looking at the human fossil record, which had been steadily expanding over this period, taught me the same thing about hominids. There are a lot of different hominids out there in the record, and they certainly don't all fall into a single straight line. In fact, the hominid story is just like that of most other groups of organisms: a tale of continual evolutionary experimentation, with constant origination of new species, triage among those species by competition, and the extinction of the unfortunate—very often without any reference at all to traditional notions of adaptation and natural selection.

If there is one unifying theme in this also rather diverse work, then, it is this: What do we know about diversity in our family, living and extinct, and—very importantly—how do we know about it? From the beginning I have been encouraged to pursue this interest by my editor at Harcourt, Jane Isay, without whose encouragement I would never have presumed to undertake this book, and without whose insights it would not have been

as good as it is. I would like to thank Beth Harrison for her sensitive copyediting, and Jennifer Aziz for keeping things on track. Among those many colleagues from whose wisdom and experience I have particularly benefited over the years, Niles Eldredge, Jeff Schwartz, and Bob Sussman occupy a special place. Ken Mowbray, as always, contributed valuable practical help, and my wife, Jeanne Kelly, was endlessly supportive and forbearing. Finally, I would like to take this opportunity to thank all those members of the reading public who read and enjoyed my previous books, and who wrote to tell me of their reactions. Science is of little broader use if it remains the exclusive province of scientists, and it is a great encouragement to individuals like me to know that there are smart people out there who care about the research we do.