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# HUMAN VARIATION

A Genetic Perspective on Diversity, Race, and Medicine

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# HUMAN VARIATION

A Genetic Perspective on Diversity, Race, and Medicine

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## Preface

WHAT INSANITY COMPELS A MAN TO CONTEMPLATE composing a book on genetics *and* race? To be sure, the content of this matter is more than science and an area of interest to many more than scholars in genetics. Moreover, one need not be a scholar of anything to have an opinion on both subjects, and, indeed, people all over the world have strong opinions on genetics and race, one way or another. We all know of such people among our relatives, neighbors, and colleagues. In one way, this is a distinct advantage because it assures us of a large audience for this book; it is also a planned disadvantage because it invites immediate and vociferous criticism from a great diversity of experts and nonexperts alike. No doubt much ink has been spilled on this topic, so why try again? My reason for this book is simply that the science of genetics has changed in the past 10 to 20 years in such a major and fundamental way that we need to recount and explain what we understand, *and do not know*, of human history, diversity, and race from this new vantage point. My reason for asking some of the noted scholars of today to do the majority of this retelling in this volume is not to deflect blame, or to dilute criticism directed at me, but to have real experts tell their own stories that have appeared through their own research. My role has been one of synthesis and editing.

This book, unfortunately, has had a very long gestation. But the idea of this retelling goes much further back. As a graduate student, I was one of very few in the 1970s who was interested and trained in the triple areas of human genetics, molecular biology, and human disease biology, largely as a result of some farsighted mentors. From this perspective, there was no way to avoid questions of genes and race, an age-old topic in the United States. Like many, I have wrestled with the same question that exists till today: What does genetics have to say about human differences? Attempts to answer this very broad query, in the context of human disease, have been a part and parcel of my academic life and research. Fortunately, for me, these attempts at understanding have fundamentally changed my ideas and views on this topic over time. It is not merely one more fossil, one more piece of the genetic puzzle, or the genetic features of one more disease that has changed my previously deeply held views. It is, rather, that my that knowledge of genes and genomes, how they function, and how they have led to a revision of the manner and timescale of human evolution and the intensity of natural selection and adaptation has changed in modern genetics. In turn, this has had a major impact on my thinking about how human diversity impacts the genetic architecture of human trait and disease differences. I am sure I am not alone in this discovery nor in changing my views. This is a second reason for me to recruit other scientists to tell of this transformation.

Our cumulative knowledge of human prehistory has been altered by advances in the science of genetics and contemporary studies of human diversity. Our cumulative knowledge of the nature of genetic inheritance of complex traits, natural selection, and adaptation has also changed. Finally, the nature of society in which the old debates of race and genes took place has also changed, for better or for worse. Scientists who have contributed to this store of knowledge deserve to tell this story in their own words. We have, for a long time, relied mostly on reporters and commentators outside the academy to tell this story on our behalf. It is about time that we did so ourselves, with greater clarity and with more nuance as our science dictates. Ignoring scientific details for the beauty of storytelling is precisely why genetics is often in hot water over questions about human diversity.

This book contains contributions by geneticists, biomedical scientists, social scientists, and a historian. I thank each of them for their care in exposition and for their patience during multiple

## Preface

revisions. Each has given their perspective on human diversity and history, with some speaking directly to the genetic bases of human trait and disease differences where they are understood. My role as an editor has not been to vet their views but to ensure that these essays are eminently readable by nongeneticists without sacrificing scientific rigor or details. The book could have been longer, and surely taken much longer, but the essential story of human diversity and history and the genetic meanings of race or ethnicity or any other human division are all there. It is clear today that humans differ much more in their languages, cultures, and societies than they do in their genes. This does not mean that the effects of genes can be sidestepped or ignored: quite the contrary, they can be invaluable tools to help us to understand the broad causes of human disease.

The reality of this publication is almost all due to my coauthors and the editorial staff at Cold Spring Harbor Laboratory Press. I wish to particularly thank Barbara Acosta for her extreme patience and great disposition and Richard Sever for being indulgent to my calendar. I hope that you find the book and its essays thought-provoking and fresh. The science is no longer controversial but its implications are astounding: despite our genetic diversity, we are truly one human race.

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