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Introduction

By all accounts, no one expected it.

In the summer of 1991, leading population geneticists and evolutionary biologists from the United States proposed a project to sample and archive the world's human genetic diversity (Cavalli-Sforza et al., 1991).¹ The proposed survey, they argued, promised “enormous leaps” in our understanding of “who we are as a species and how we came to be” (ibid., 491; Human Genome Diversity Project 1992a,1). To realize these promised advances in knowledge, proponents urged the scientific community to act swiftly. Social changes that facilitated the mixing of populations, they warned, threatened the identity of groups of greatest importance for understanding human evolutionary history—“isolated indigenous populations” (Cavalli-Sforza et al., 1991). To unravel the mysteries of human origins and migrations, these valuable gene pools would need to be sampled before they “vanished” (ibid.). The resulting time pressure, and the tens of millions of dollars it would take to conduct the survey, posed substantial challenges. Proponents recognized these constraints. It crossed nobody's mind that the project might one day be accused of inventing a new form of colonialism.

Initially, the proposal captured the imaginations of leaders in the human genomics community worldwide. The Human Genome Organization (HUGO), an international body responsible for coordinating activities within the Human Genome Project, formed a committee to investigate how to carry the initiative forward. The National Science Foundation (NSF), the National Human Genome Research Center (NHGRC), the National Institute of General Medical Sciences (NIGMS) and the Depart-

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ment of Energy (DOE) provided funds for three planning workshops. With this support in place, by the end of 1992 organizers had every reason to believe that what had become known as the Human Genome Diversity Project would begin operation by 1994.²

Their expectations, however, were disappointed. Far from winning support, in a series of events that many organizers have found inexplicable and even bizarre, the Diversity Project became the target of vociferous outrage and opposition shortly after the initiative's second planning workshop in October 1992.³ In May 1993 some physical anthropologists accused the initiative of using twenty-first-century technology to propagate the concepts of nineteenth-century racist biology (Lewin 1993). In June of that year, indigenous leaders from fourteen United Nations member states drafted a declaration calling for an immediate halt to the initiative. In July the Third World Network charged the Project with violating the human rights of indigenous peoples by turning them into objects of scientific research and "material for patenting" (Native-L 1993a). And in December the World Congress of Indigenous Peoples dubbed the initiative the "Vampire Project," a project more interested in collecting the blood of indigenous peoples than in their well-being (Indigenous Peoples Council on Biocolonialism 1998). By 1998 over a hundred groups advocating for the rights of tribes in the United States and indigenous groups worldwide had signed declarations condemning the Project (*ibid.*).

In the aftermath of these events, the puzzle for many scientists, ethicists, and government officials who seek to study human genetic differences is how this seemingly beneficent and well-intentioned initiative came to be so stigmatized.⁴ The Project's leaders included some of biology's most respected, socially conscious scientists—scientists who had devoted significant energy over many decades to fighting racism and promoting human rights. Mary-Claire King, a medical and population geneticist, used genetic techniques to assist the *Abuelas de Plaza de Mayo* (Grandmothers of the May Plaza) in their effort to identify grandchildren kidnapped during Argentina's Dirty War.⁵ Luca Cavalli-Sforza, a human population geneticist, debated William Shockley, a Stanford physicist who called for the sterilization of women from "inferior races," during the race and IQ debates of the 1970s. Robert Cook-Deegan, a physician and geneticist, worked for Physicians for Human Rights. These were not self-seeking researchers who sought to extract the blood of indigenous peoples for the sake of financial and political gain. They were scientists who sincerely hoped to create a project that would deepen the stores of human knowledge while fighting racism and countering Eurocentrism (Bowcock and Cavalli-Sforza 1991, Cavalli-Sforza 1994). It would be historically inaccurate, and morally insensitive, to understand the Diversity Project as an extension of older racist practices by labeling the initiative the prod-

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uct of white scientists wielding the power of science to objectify and exploit marginalized groups. The story of the Project is more complicated. It raises questions that cannot be resolved so easily.

I argue in this book that, far from being a straightforward story about the powerful exploiting the powerless, the Diversity Project debates raise fundamental questions about how to understand the very constitution of power and its relationship to science in an age when scientific claims about the human—in particular, its genomes—increasingly influence decisions about how humans should regulate and conduct their lives. Dominant analytic frameworks in the social sciences assume power distorts science and the work of scientists—leading them, for example, to produce racist ideologies. Science, in reverse, is the antidote to power; it produces truth that counters ideologies. In the case of the Diversity Project, however, this understanding of the oppositions between science and power, or truth and ideology, proved inadequate. Claims that the Project would lead to the end of racism by producing reliable scientific knowledge were just as unconvincing as some of the critics' claims that the Project would propagate racism and colonialism by exploiting the genes of indigenous peoples.

In order to understand the Diversity Project debates, a different understanding of science and its relation to power is needed. In place of a framework that casts science and power as already-formed entities that oppose each other, the simultaneous emergence of novel forms of knowing, and of governing the human, evident in this initiative, challenges us to find conceptual tools that will draw into view the ways in which knowledge and power form together. The Diversity Project raised fundamental questions about how to characterize human genetic diversity for the purpose of understanding human evolution and history. Yet, these questions about how to order and classify an aspect of nature to advance human understanding proved inseparable from an allied set of questions about how to organize human differences for the purposes of creating credible and legitimate systems of governance. The conceptions of science and power upon which many Project organizers relied did not bring these entanglements into sharp focus. Thus, organizers were continually caught off guard when questions about power—for example, questions about how to make authoritative claims about human diversity—turned out to be embedded in what they viewed as merely a scientific, humanistic, and anti-racist endeavor to understand the history and evolution of the human species.

Although the Diversity Project has ceased to move forward in its original form, the contentious questions it raised endure in their importance. Human genetic-variation research now tops the agendas of both private and public research institutions. In October 2002, the National Human

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Genome Research Institute (NHGRI) announced the launching of a \$100 million public-private effort to map human genetic variation, the International Haplotype Map (HapMap) Project (<http://genome.gov/10005336>). Countless other initiatives speckle the life sciences landscape as researchers interested not just in human evolution, but also in medicine and public health, seek to understand the human—its diseases, health, and potential—using the new powerful tools of the genomic revolution. Far from transcending the problems raised by the Diversity Project, these current efforts have only generated similar troubling questions (Couzin 2002).⁶ By returning to the Diversity Project debates, this book seeks to bring into view and clarify the underlying contestations over the nature of knowledge, power, and expertise that were at stake in this effort to catalog human genetic diversity, and that continue to create discomfort today.

Race, Expertise, and Power

At the center of these contestations is a broader struggle over the meaning of race in science, medicine, and the modern state. As the last millennium ended, efforts to use racial categories in biomedical research and public health generated fundamental questions. Is race an obsolete concept that should be left behind by the operations of liberal democratic societies and scientific and medical research, insofar as this is possible, as some cultural and scientific critics have argued (Appiah 1990, Freeman 1998, Gilroy 2000, Wilson et al, 2001)? Or should race be understood as a positive category that designates both cultural and national belonging, and contributes to public health efforts to reduce the burden of disease (Du Bois 1961 [1903], Cruse 1968, NIH 1994, Risch 2002)? Can past misconduct and inequities in government, including the provision of health services, be overcome by transcending the concept of race, or, conversely, must this concept be actively employed to overcome those racial structures that continue to oppress?

Diversity Project organizers found themselves in a peculiarly ambiguous and paradoxical position with respect to these questions. On the one hand, they claimed that the Diversity Project would help “combat the scourge of racism” by demonstrating that “there is no absolute ‘purity’” and no “documented biological superiority of any race, however defined” (Cavalli-Sforza 1994, 1, 10). Rather than promote racial division, Project organizers promised the initiative would demonstrate “humanity’s diversity and its deep and underlying unity” (Cavalli-Sforza, 1994, 1). As one step toward these goals, one of the Project’s main scientific leaders, the human population geneticist Luca Cavalli-Sforza, advocated abandoning

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the category of ‘race’ in favor of the categories ‘group’ and ‘population’ (Cavalli-Sforza 1994, 11).*

Yet, as we will see, at the same time that proposers of the Project disavowed the use of the category of race, they found themselves being accused by many of reinscribing old racial categories, and even of being racist. Some physical anthropologists argued that the Project employed categories that carried forward notions of racial purity (Lewin 1993, Marks 1995). Numerous indigenous rights groups charged Diversity Project organizers with continuing a long tradition of the West’s use of racial science to justify its exploitation of the powerless (Mead 1996, Indigenous Peoples Council on Biocolonialism 1998). In an ironic turn, in the face of these critiques, some Project organizers began to explicitly employ racial categories. Representing what appeared to be a turnaround from the earlier disavowal of race, some leaders of the initiative now argued that the Project would include the genomes of African Americans and other “major ethnic groups,” and in this way would serve as an “affirmative action” response to the Human Genome Project (Weiss 1993).

As the chapters that follow illustrate, underlying these debates about race were fundamental questions about how knowledge of the human should be produced in a genomic age, and who possesses the expertise needed to participate in this pursuit. How could human beings come to know their own species—its history and evolution—in an age when novel technologies enabled a purportedly molecular vision of human existence? What role, if any, could studies of human genetic differences play? How should such studies be designed? Which of the human sciences, if any, could provide the organizing concepts and methods? Human population genetics? Physical anthropology? Cultural anthropology? All of them?

These questions about the constitution of the right kind of knowledge were connected to questions about the nature of power. As Michel Foucault demonstrated through his studies of madness, the clinic, and the prison, the human sciences play central roles in constituting techniques and procedures for directing human behavior in the modern epoch (Foucault 1973, 1975, 1976). This modern age witnessed the entanglement of rules that govern what can count as knowledge with rules that determine which human lives can be lived. The result was the emergence of a new kind of power, what Foucault named *biopower* (ibid., 1976).

* In this book I use single quotation marks to indicate categories (like ‘race,’ ‘population,’ and ‘group’) and objects of study (like ‘human genetic diversity’). To keep the use of quotation marks to a minimum, I often write out “the concept of” or “the category of” instead of using quotation marks. When introducing new concepts and categories I might use both methods (for example, in this case, “the categories of ‘group’ and ‘population’ ”). Double quotation marks are reserved for direct quotes and in place of “so-called.”

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This close relationship between the rules that structure power and knowledge (a relationship Foucault highlighted through use of the contraction *power-knowledge*) was tellingly revealed in the attempts to plan the Diversity Project. Not surprisingly, a scientific endeavor that promised “enormous leaps in our grasps of human origins, evolution, prehistory, and potential” provoked questions about the role the initiative might play in producing human subjects who could be governed in novel, and potentially oppressive, ways (Cavalli-Sforza et al., 1991, 491). Would Diversity Project organizers’ seemingly benevolent efforts to include groups in the design and the regulation of the sampling initiative facilitate their inclusion in an ethical manner, or would these efforts only threaten the sovereignty rights of tribes in the United States and marginalize other minority groups? Would the sampling and potential patenting of indigenous DNA bring benefits to indigenous groups through royalty sharing and medical advances, or would it merely enable their further objectification and exploitation? And who, if anyone, could speak for tribes and major ethnic groups in the United States, and indigenous groups across the globe, on these novel issues raised by a global survey of human genetic diversity? As these questions would make clear, at stake in the struggles over the Diversity Project were not only the validation of a research project, but also the resolution of some of the central social debates in an age defined by the emergence of genomics, globalization, deepening tensions between the (global) North and South, and a renewed struggle over the status and definition of race in the United States.

Co-Production: A Framework for Studying Emergence

To address these connections more directly, this book tells the story of the Project from within an analytic framework in science and technology studies that seeks to understand how scientific knowledge and social order are produced simultaneously—or, in a word, co-produced (Jasanoff 2004).⁷ By linking critical studies of scientific knowledge and analyses of political institutions and social structures, I along with other scholars working within this analytic framework am attempting to clarify the ways in which bringing technoscientific phenomena or objects into being (objects, for instance, like ‘human genetic diversity’) require the simultaneous production of scientific ideas and practices *and* other social practices—such as norms of ethical research and credible systems of governance—that support them.

The resulting fine-grained portrayals of the mutual constitution of natural and political order have done much to undo grand narratives that have either celebrated science as an ideal polity (Merton 1973), or condemned

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it for reinscribing hegemonic and oppressive political orders (Habermas 1975). In the place of totalizing broad-stroked accounts, we have gained richer, more useful pictures of science and technology (S&T) that neither simply sanctify nor condemn, but rather bring to light the locally contingent and often ambivalent roles the creation of S&T plays in the ongoing human struggle to produce societal arrangements in which humane and meaningful lives can be lived.

On a terrain prone to polarization, the co-production idiom is a particularly valuable resource for countering analyses that too easily celebrate enlightened, objective studies of human genetic diversity, or too readily dismiss them as ideological and racist. It provides a framework that enables us to see that all efforts to organize such studies necessarily entail the production of both conceptual order and societal interests, and that the two domains are inextricably linked—indeed, inseparable. Such critical vision requires that the analyst give causal primacy to neither ‘society’ nor ‘science,’ but rather engage in a “symmetrical probing of the constitutive elements” of both (Jasanoff 2004). The result are accounts that resist both technological and social determinism, and easy pronouncements of right and wrong (Rabinow 1999).

The co-production framework is also appropriate for this study because of its utility for studying emergent phenomena. It is at the point of emergence, when actors are deciding how to recognize, name, investigate, and interpret new objects, that one can most easily view the ways in which scientific ideas and practices and societal arrangements come into being together (Jasanoff 2004, Daston 2000, Latour 1993). This is especially the case when the epistemological and normative implications of the emerging object are contested, and when the effort to establish its legitimacy and meaning spans multiple cultural contexts (Jasanoff 2004). All these conditions hold for ‘human genetic diversity,’ making it an especially rewarding site for analysis.

Scholarship guided by this analytic framework runs against dominant ideas about science in the academy and in society that conventionally have been linked to the Enlightenment. Enlightenment thinkers such as Voltaire, Rousseau, and Thomas Jefferson believed that through science and reason “men” could discover universal truths about Nature. It was on the basis of these truths, they argued, that man could recover from the blinding effects of dogmatic beliefs and uninterrogated traditions and achieve the enlightened stance required to build good and just governments. Later, Marxists would hail “scientific” thinking about political economy and the class struggle as a critical tool for piercing the veil of ideology.⁸ In other words, science and reason, they believed, could be used to work against the corrupting influences of power divorced from truth.

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Organizers of the Diversity Project shared this Enlightenment vision. They believed that their Project would generate scientific data that could oppose racist ideologies in society. Specifically, the first proposers of the Diversity Project joined critical race theorists, American historians, and cultural and biological anthropologists in their belief that population genetics demonstrated the biological meaninglessness of socially meaningful racial categories (Cavalli-Sforza 1989, 1994). Human population genetics, they accordingly argued, was a powerful antidote to the ideologies propagated by the use of these unscientific categories. Data generated by this discipline would lead to the final demise of the category of race in science and its replacement by the scientifically rigorous category population (Cavalli-Sforza 1994).

This analysis of race as an obsolete concept in the life sciences illustrates what might be called a debunking critique of ideology. This form of critique seeks to reveal hidden connections between discourse and social power.⁹ The goal is to problematize the truth claims of a given discourse by demonstrating that these claims are the product of dominant, often reprehensible, social interests—and thus constitute ideology.¹⁰ As noted above, this mode of critique—one that relies upon a clear distinction between power and knowledge—did not prove effective in the case of the Diversity Project. It provided explanations that no one found satisfactory.

Rather than dwelling on the opposition of truth on the one hand and power on the other, co-productionist work demonstrates that scientific knowledge and political order come into being together. Thus, government officials, policy makers, and academics cannot simply turn to scientific research (such as human genetic diversity research) for independent and objective answers to social problems, such as racism; nor can these social actors govern without the aid of science (or systematic knowledge-seeking), for scientific knowledge and ethical and political decisions about human diversity can only be made together. Human genetic diversity simply cannot become an object of study absent social and moral choices about what we want to know and who we want to become. Moral and social choices about the directions of human inquiry are not possible without cognitive frameworks that frame the human and its possible variations.

The story of the Diversity Project, I argue, can be more effectively told in this idiom of simultaneous emergence. This language allows one to step back from uncritical pronouncements about knowledge or assertions about power in order to ask a prior set of questions about how each is implicated in the formation of the other. To draw these processes of formation into focus, in this book I ask specifically about how categories used to classify human diversity in nature and those used to order relevant aspects of social practice shape, entail, and refer to each other: How do

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societal arrangements affect the kinds of categories that scientists can use to characterize human diversity? How do these categories in turn “loop back” to produce new societal arrangements (Hacking 1999)? What deliberative engagements between scientists, policy makers, research subjects, and citizens enable a socially meaningful biological category like population or race to work? As the chapters that follow demonstrate, formulating and answering these questions renders visible the micro-processes by which social life and cognitive understandings gain form and meaning together. The result is a rich, empirically grounded account of the entangled processes through which knowledge and social order sustain each other in contemporary societies.

Such an account promises to bring into view the tensions and paradoxes surrounding race raised by the Diversity Project. Just as co-productionist studies provide a way out of dualistic modes of understanding science (either it produces truth, or it is distorted to produce ideology), so too they provide a way out of the dichotomy that is prevalent in current analyses of race in the academy. Most conventional accounts portray race as either a valid category of research that can help produce legitimate knowledge (Dobzhansky 1937 [1951], UNESCO 1952a, Risch 2002, Burchard et al., 2003), or as a social construct (i.e., ideology) propagated by the powerful (Gates 1986, Fields 1992, Cooper 2003). By adopting a co-productionist approach, this study demonstrates that race defies simple categorization as either the reflection of scientific truth or social ideology. As the chapters that follow demonstrate, a socially important category like race is likely to generate scientific attention. What makes this ordering tool of interest to scientists is precisely what makes it of interest to the law, criminal justice system, and institutions of higher learning—through centuries of use it has become a tool that draws into focus differences between humans deemed meaningful. At the same time, use of a socially meaningful category like race can never be refined so that it acts only to elucidate natural reality. As much as biologists have tried over the last several decades to constrict race to apolitical scientific purposes, the use of race is never neutral.¹¹ It is always tied to questions with political and social salience. Some of these questions—about, for example, resource allocation—are relatively benign. Others, such as questions about the creation of new forms of racism, are of great political significance.

Rather than a category that respects any demarcation between the scientific and social realm, race has traveled vigorously and often across the boundaries of science and society, reality and ideology, throughout the twentieth century. In the process, it has been stabilized and destabilized, made and remade. Analyzing the Diversity Project debates using the co-productionist framework allows us to draw into focus the simultaneously scientific and social dimensions of contemporary attempts to define and

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construct this category, and promises to create new insights into the dilemmas of categorizing human difference that confront us in the genomic age.

At the same time, analyzing race in this manner promises new understandings of the processes by which natural and social order come into being together. In many important senses, struggles over the meaning of race and racism are at once contestations over who has the expertise needed to represent the truth about human diversity in nature, and contestations over who has the authority to create just representations of human diversity in society. This is particularly true in the United States where debates over how to define race and racism are perennially at the center of battles over the nature of truth and justice. Especially in the post–World War II era, to be deemed a racist was to risk losing one’s status as a speaker of truth *and* one’s authority as a credible voice in society (Southern 1971, Baldwin 1998). As we will see in the chapters that follow, at stake in the contestations over what constituted racial categories, and the role—if any—these categories should play in ordering the Diversity Project were not just answers to fundamental questions about what will count as the truth about human nature and its diversity, but also answers to fundamental questions about who will count as legitimate members of particular societies. Who will be represented? Whose voices will be deemed authoritative or at least worth hearing? What structural effects will result? In short, focusing on the debates about race and racism sparked by the Diversity Project enables us to bring into view the processes by which knowledge and social order form together. This book argues that it is only by bringing these processes into view, and making them available for critical debate and understanding, that we will begin to make sense of and meaningfully address debates sparked by the Diversity Project.

Excavating the History of Race and Science

At the same time that this book is an interpretive project concerned with how objects (e.g., ‘human genetic diversity’) gain both scientific and broader social meanings, it is also necessarily a historical one. Objects do not come into being *de novo*. Rather, they are the products of long historical processes that embed past contestations and settlements (Daston 2000). Bringing these historical processes into view is vital to the task of understanding why some phenomena gain the material and intellectual support needed to persist, while others fade away.

This is especially true in the case of ‘human genetic diversity.’ As we will see, the efforts of Project organizers to render this phenomenon an object of sustained scientific inquiry raised historically entrenched ques-

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tions that were in the deepest sense simultaneously scientific and social: What kinds of human diversities matter? Cultural or biological? The diversities of individuals or groups? If biological, how should the biological realm be defined? If groups, how should these groups be defined, by whom and for what purposes? In the interwar and post–World War II era, questions about the role that ideas and practices of race should play in resolving these questions have been at the center of debate. Is race, many have asked, one such grouping category that can be used to order human genetic diversity? Or is this term too confused and/or dangerous to be employed by scientists or any other actors in society?

Discussion and debate of these questions as they connected to the Diversity Project ostensibly began in the context of efforts to organize the Human Genome Project. In October 1990 the United States National Institutes of Health and Department of Energy authorized \$3 billion to be spent over fifteen years to sequence a single human genome.¹² One of the main assumptions underlying this endeavor was that all human genomes were enough alike to create such a record. The initial proponents of the Human Genome Diversity Project challenged this assumption. As the human population geneticist and founding father of the Project, Luca Cavalli-Sforza, explained: “Each group has its differences and each person has differences. If we don’t understand that diversity, we’re missing a lot that’s important” (Cavalli-Sforza quoted in Rensberger 1993). One consequence, he argued, would be the continuation of the “Eurocentric” bias of studies of human genetic diversity, studies that to date had “been made on Caucasoid samples for obvious reasons of expediency” (Cavalli-Sforza and Bowcock 1991, 491).

Yet the question about the value of studying diversity far predated the genomics era. During much of the first half of the twentieth century, it lay at the heart of a debate between experimental and population geneticists about how to study human evolution. Classical experimental geneticists assumed for the purposes of their research that all genomes were essentially the same. Based on this assumption of essential similarity, this group of scientists sought to discover the purportedly universal basic mechanisms that regulated and controlled all life. In contrast, prominent evolutionary biologists interested in genetics—most notably, the population geneticist Theodosius Dobzhansky—began their work and research from the assumption that all individuals are unique. For these scientists, diversity did not constitute deviation; rather, it was a normal and critical part of the natural world that provided the biological material upon which natural selection acted. Far from being a secondary concern, genetic diversity proved central to understanding evolution (Provine and Mayr 1982).

Within the group of scientists who agreed that genetic diversity would be a meaningful object of study, another debate emerged about how this

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diversity should be ordered. As we will see in the first part of this book, at the center of the debate was a struggle over whether and how to use race for the purposes of studying and interpreting human biological differences. This struggle first arose during the interwar period, sparked by the rise of eugenics and Nazi science. Following World War II, the use of the category of race in biology (and throughout the sciences) would be the subject of review by newly emerging international institutions. Most notably the United Nations Educational, Scientific and Cultural Organization (UNESCO) drafted a Statement on Race in 1950 that would be followed by a Second Statement published in 1952 (UNESCO 1952a).¹³

Most historians of biological beliefs about race hold that these UNESCO Statements on Race mark the beginning of the decline of race as a meaningful biological category, and its emergence as a sociological category. On their account, by mid-century scientists had lifted the veil of ideology that previously shrouded biological studies of human diversity. The legitimate science of population genetics eclipsed the ideological science of race biology; population replaced race as the category that biologists believed most usefully organized their analyses of human diversity (Stepan 1982, Barkan 1992).

Yet despite these histories, many, including the well-regarded founding father of population genetics, Dobzhansky, would continue to find race useful (Provine, et al. 1981). “Races,” he argued in his classic *Genetics and the Origin of Species*, “may be defined as Mendelian populations of a species which differ in the frequencies of one or more genetic variants, gene alleles, or chromosomal structures.” He in turn defined a “Mendelian population” as “a reproductive community of individuals which share in a common gene pool” (Dobzhansky, 1951[1937], 138, 15). Dobzhansky argued that anthropologists’ failure to recognize that races were Mendelian populations led to their “endless disagreement” and confusion about the meaning of this term (ibid., 140). Debates on this score would continue between and among population geneticists and physical anthropologists in the coming decades.¹⁴

In many ways, these debates among and between geneticists and anthropologists can be seen as precursors to the Diversity Project debates. Although they were not as drawn out or as formal as the later debates, they did involve not only the carving out of a conceptual order, but also the creation of a social space that could support research on the formation of human races. This effort took place at a time when segregation and race-based lynchings in the American South, eugenics movements, and, above all, World War II had sparked fundamental critiques of purportedly scientific studies of race. In this new environment, it would no longer be permissible to conduct research that might be associated with Nazi race science. Even the term race had started to become taboo. However, far

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from leading to the end of the history of race in science, as many historians on anthropology and biology have claimed, this new environment fostered efforts by geneticists and physical anthropologists to carve out an expert space in which their studies of human diversity and race formation could continue.

To date, however, scholars have largely overlooked these continuing debates. By their account, as noted above, uses of race in science ended at mid-century once progressive scientists revealed the concept's ideological underbelly. This rendering of the history, however, is too simple. Uses of racial categories in science did not come to an end following World War II. To the contrary, scientific debates about race proved just as persistent and contentious as did the parallel social debates. To understand the controversies surrounding the Diversity Project, these debates must be unearthed from the archival records. I undertake this task in the first section of this book.

My goal in conducting this historical analysis, however, is not merely to excavate scientists' continuing debates about the proper definition and uses of race following World War II, debates that shaped the terrain upon which Diversity Project organizers would attempt to build their initiative. Rather, in keeping with the co-production idiom, my aim is to reveal the inextricable links between these debates about race, and broader social debates about the role this category should play in classifying human differences in society. As in the sciences, in post-World War II societies more broadly, debates about how to understand the human encountered tensions between discourses of sameness (most notably, universal humanism), and discourses of difference (race, ethnicity, and nationhood). Discourses of sameness and unity, such as universal humanism, gained strength. Many viewed these discourses as antidotes to the logics of differentiation that led to the slaughter of millions of innocent lives during World War II. Instead of a world divided into superior and inferior individuals and groups, universal humanism imagined the "united family of man" (Haraway 1989, 198). This doctrine became embodied in institutions such as the new international organization, the United Nations, and official documents, such as the Universal Declaration of Human Rights (United Nations 1949 [1948]).

Simultaneously, discourses of difference persisted. Claims about racial and ethnic difference, for example, continued to play primary roles in the reconstruction and maintenance of national and global political orders. Reminiscent of debates about diversity in the natural order, however, efforts to define race for the purposes of creating social order raised many questions. How should race be determined? For what purposes? How, if at all, does race differ from ethnicity? In the wake of the Civil Rights movement and the adoption of "affirmative action" policies in the United

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States, these struggles over the determination of racial and ethnic differences proved to be as much about access to social goods as they were about the denial of these social goods to certain groups. Some discourses of race and ethnicity helped to articulate policies designed to open up education and job opportunities for minorities, while others continued to undergird discriminatory practices (Executive Order 10925: 1961).

These changes were connected to a broader set of political transformations that accompanied the emergence of identity politics in the 1960s. Social and political theorists have celebrated the rise of social movements constructed around claims about identity. This strategic use of identity, they have argued, represented a departure from old models of identity formation in which the state classified and identified people (Melucci 1989). Race in this new era emerged as a powerful resource used by citizens to build civic identities that could be mobilized to make demands against the state.

In order to make sense of the Diversity Project debates, the initiative must be understood in the context of these broader social struggles and transformations. Far from transcending the dilemmas and tensions generated by the liberatory and discriminatory effects of recognizing human differences, today studies of human genetic variation play central roles in negotiating them.¹⁵ Some identify genomics with the liberatory trends of identity politics. In recent years, for example, scholars of biomedicine and genomics have observed that novel genomic and biomedical techniques and ideas enable new identity formations (Epstein 1996, Rabinow 1999, Kaufmann 2001).¹⁶ Some argue this biologization of identity is fundamentally different from older reductionist and eugenic models (Rabinow 1999, 9).¹⁷ For example, the anthropologist of science Paul Rabinow believes that the rigid, oppressive nineteenth-century categories (such as race) have been replaced by categories that are “inherently manipulable and reformable,” and offer new possibilities for life (Rabinow 1999, 1996). Many have heralded the category of population brought into being by population genetics as one such category with liberatory potential (Haraway 1989, Stepan 1982).

Some also believe that defining racial and ethnic groups in genetic terms is a necessary component of progressive affirmative action policies. Specifically, in recent years scientists and public health officials have argued that genetic research on particular ethnic populations will help bring more minorities into science, as well as make it possible for the biomedical sciences to address the medical needs of minority communities (DNA Learning Center 1992, Nickens 1993, Pollack 2003). Some also hope genetics might offer a less contestable method for determining that an individual is “Native American,” thus creating new possibilities for gaining

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access to the resources that come from tribal membership in the United States (Yona 2000).

But others view the rise of human genomics as less liberating. Since the early days of planning the Human Genome Project, many have expressed concern that this new burgeoning field of research could extend discriminatory practices into new realms—such as the provision of health and life insurance—and provide these practices with new, more powerful and impenetrable (i.e., scientific) sources of legitimacy (Billings 1992, Natowicz 1992, Juengst 1995). Others fear that genetic diversity research will lead to a new eugenics (Guerrero 1998). Still others fear that race-based discrimination based on the old biology might be replaced by discrimination based on the new group categories of population genetics—for example, characterizing ‘demes’ might lead to “demic discrimination” (Juengst 1995).¹⁸

Huge investments of venture capital into genomics have also spawned new fears about the commodification of life and the transformation of biology into a tool of global capitalism (Rural Advancement Foundation International 1993). Using the terms “biocolonialism” and “bioprospecting,” scholars and activists alike have observed links between exploitative capitalist practices and the emergence of biological (in particular, genetic) diversity as a site of informational and commercial value (Mead 1996, Whitt 1998). For example, they point to the extraction of the non-Western world’s plant resources as a critical element of colonial expansion since the sixteenth century (Kloppenborg 1988, Shiva 1997). In the contemporary era, many argue that pharmaceutical companies, in conjunction with government-sanctioned research, are extending these practices from the domain of plants to the domain of humans (Hayden 1998, Harry 1995, Rural Advancement Foundation International 1993).

Finally, claims about the distinctness of Native peoples have long been at the center of debates about the extent and legitimacy of their claims to sovereignty rights (Deloria 1985).¹⁹ Some worry that genetic research will not serve to legitimate tribal membership claims, but rather will be used to undermine these claims by highlighting the similarities between Native peoples and other inhabitants of the Americas (Indigenous People Council on Biocolonialism 2000).

As Diversity Project organizers only too slowly began to recognize, the Project was entangled in these broader questions about the role genomics might play in constructing identity and novel forms of governance. To demonstrate this, I describe in the book’s second half three moves that organizers made to respond to critics and stabilize the Project: (1) diversify the experts involved in the planning of the Project; (2) adapt existing tools in Western biomedical ethics to fit the “group” contexts in which the Project would be operating; (3) include “major ethnic groups” in the United States and indigenous groups worldwide in the design and conduct of research.

CHAPTER 1

I demonstrate that each move proved unable to assuage critics as they respectively failed to engage with questions about how the Project's effort to order human diversity in nature for the purposes of scientific research would be inextricably tied to questions about how to classify human differences in society. Instead, these frameworks presumed the prior existence of groups in nature and society. Further, they presupposed the existence of the expertise needed to discern and represent these groups. Finally, they assumed that geneticists, anthropologists, and health workers working with populations possessed this expertise. Thus, they did not draw into sharp enough focus fundamental questions about the existence of groups in nature and society, the role of race in ordering and defining these groups, and the locus of expertise for answering these questions.

In short, these frameworks enabled too much to escape Project organizers' critical attention. Despite their best intentions, in responding to their critics, organizers often inadvertently acted to exclude too many people from the debates—both scientists who held different views, as well as people who had not yet been deemed experts in the official sense, but whose lives were being affected by the genomic revolution, and whose knowledge might have provided important insights into what it meant to interpret and define human diversity using the tools of scientific (genetic) experts. Consequently the debate remained too narrow. Focused primarily on the practical task of organizing a DNA sampling initiative, proponents rarely asked the more fundamental and, I would argue, more compelling and relevant questions generated by the genomic revolution, of which their Project would be a central part: What kind of human is brought into being via genomic analysis? What are this human's possible variations? Who can speak for humanness in this genomic age? Who will decide what kind of lives can be lived and not lived?

This book seeks to re-center scholarly attention upon these questions. In so doing, it provides an opportunity to reflect on what is new and what is old in the realm of the human (Foucault 1966). Rather than determining whether we have moved beyond the old, rigid, state-centered categories of race to new flexible categories for identifying and making sense of ourselves, or are poised, simply, to produce new tools for reinscribing old racial categories and systems of oppression, in the chapters that follow I seek to take a step back and clarify the fundamental issues that underlie contemporary debates about genomic studies of human diversity. My goal is to bring into critical view the heretofore unconscious processes through which human genomic research reconfigures both nature and society. My hope is to generate understandings that can lead to more reflective human futures.