

BIOHISTORY: A BRIEF PROSPECTUS

NELSON ROSIT

Biohistory is the study of history informed by biology. Biohistory understands human biology and the natural environment as agents shaping historical events.¹ While biohistory has not been recognized by the American Historical Association as a separate category within the discipline, the term is used by scholars, including academic historians.

THE ROOTS OF BIOHISTORY

The intellectual roots of biohistory go back to the development of evolutionary biology in the late nineteenth century. Its antecedents can be found in human geography, the Annales School, environmental history, and sociobiology. Traditional nineteenth-century historiography was concerned chiefly with the doings of kings, popes, and generals. But by the early twentieth century, evolutionary theory was influencing the work of many historians, geographers, and social scientists. In 1901 the president of the American Historical Association, Charles Francis Adams (brother of Henry who also served as president of the AHA), declared that knowledge of Darwin's theory "was the dividing line between us [contemporary historians] and the historians of the old school."² Geographers such as Ellsworth Huntington developed ideas on racial and environmental determinism that were later dismissed but never disproved.³ A year after Huntington

¹ A more formal definition of biohistory is: "An approach to human ecology which stresses the interplay between biophysical and cultural processes. Its starting point is the study of the history of life on earth; and the basic principles of evolution, ecology, and physiology, and the sensitivities of humans, the emergence of the human aptitude for culture, and its biological significance. It is particularly concerned with the interplay between cultural processes and biophysical systems such as ecosystems and human populations." Susan Mayhew, "Biohistory," *A Dictionary of Geography* (Oxford: Oxford University Press, 2004), 56.

² Charles Francis Adams, "The Sifted Grain and the Grain Sifters," *American Historical Review* 6 (1901), 199.

³ Ellsworth Huntington, *Civilization and Climate* (New Haven: Yale University Press, 1915). One of Huntington's theories was that over time tropical and subtropi-

published *Civilization and Climate*, Madison Grant came out with his racial history of Europe.⁴ Yet, in the following years the nascent field of biohistory was strangled in the cradle by Boasian anthropology and other intellectual and political forces such as the Frankfurt School.⁵

One anti-liberal counterforce was the Annales School, developed in France during the interwar years. Led by Lucien Febvre and Marc Bloch, the Annalists sought to write what they termed “total history.”⁶ To accomplish this they adopted an interdisciplinary approach that incorporated geography and the social and physical sciences into their work. This was especially true for Fernand Braudel, a student of Febvre, who led the second generation of Annalists after the war. Braudel believed it was necessary for historians to consider humans as living organisms, and not to lose sight of “the biological reality of man.”⁷

Beginning in the 1970s and 80s environmental history grew into a major subfield within the discipline. This helped place historical man within the context of the natural world, and established the environment, both natural and man-made, as an agent of history. At first glance it might appear that environmental historians would likely fall on the environmental side of the environment versus heredity debate. Some have, such as Jared Diamond discussed below. But because the environment is one large factor in the evolutionary equation, it is

cal climes have an enervating effect on those he called “Teutons.”

⁴ Madison Grant, *The Passing of the Great Race, or The Racial Basis of European History* (New York: Charles Scribner’s Sons, 1916).

⁵ “The triumph of the Boasian school of anthropology over Darwinism in the early years of the 20th century was a watershed event in intellectual history of the West—in effect more or less obliterating what had been a thriving Darwinian intellectual milieu.” Kevin MacDonald, “Ben Stein’s *Expelled*: Was Darwinism a Necessary Condition for the Holocaust?,” *The Occidental Observer*, December 1, 2008, <http://www.theoccidentalobserver.net/articles/MacDonald-BenStein.html>.

⁶ Bloch was a Jew who may have had ambivalent feelings about his co-religionists. Many considered him a French patriot. Bloch fled to Vichy territory in 1940 where, as a noted scholar, he continued to teach unmolested. He and his family had opportunities to relocate both to the United States and the French West Indies. He decided to stay in France and in 1943 joined the underground. In 1944 he was captured by the Germans and shot.

⁷ Fernand Braudel, *On History*, trans. Sarah Matthews (Chicago: University of Chicago Press, 1980), 105–6. Braudel also participated in World War II. With the fall of France in 1940 Braudel, then a French army officer, became a prisoner of war and spent five years in German captivity. During this time, without notes or reference materials, he wrote his dissertation on the Mediterranean region.

logical for environmental historians to be receptive to Darwinian theory. As Alfred Crosby, the dean of American environmental historians puts it, "The ideology of environmental history is, at its root, biological."⁸ Still, many historians worry about the dreaded label of "biological determinism." In January, 2001 Edward O. Wilson, founder of sociobiology, addressed the 115th annual conference of the American Historical Association in Boston. He caused quite a stir when he predicted that the next generation of historians would use biological science to answer many of history's most important questions.⁹

Exactly 100 years (1901–2001) separate the pronouncements of Adams and Wilson, both predicting that biology would revolutionize the study of history. Yet progress has been slow. It will come as no surprise to readers of this journal that the reluctance of historians to challenge the ideological orthodoxy of egalitarianism has been an obstacle to integrating biology, especially the study of human variation, into historiography.

BIOHISTORY WITHOUT RACE

Most of the historians who have incorporated biology into their work have also striven to separate the concept of race from the idea of humans as biological entities. One such contortionist is Robert McElvaine, a professor of history at Millsap College.¹⁰ According to McElvaine, "biohistory seeks to illuminate aspects of history through a better understanding of human nature—the fundamental traits and predispositions that all humans share and that make us alike."¹¹ McElvaine limits his consideration to characteristics that all people share. But are not differences at least as interesting and relevant as similarities? If a historian wrote an economic history of the world he might begin by noting characteristics that all economic systems share, but surely this would only serve as a point of departure for a study of how the systems differentiate themselves.

⁸ Alfred W. Crosby, "The Past and Present of Environmental History," *American Historical Review* 100 (1995), 1189.

⁹ Gareth Cook, "Wilson Rattles Historians with 'Bio-History' Theories," *Boston Globe*, January 16, 2001, F3.

¹⁰ McElvaine's major contribution to biohistory is *Eve's Seed: Biology, the Sexes, and the Course of History* (New York: McGraw Hill, 2001), a world history from a feminist perspective.

¹¹ Robert S. McElvaine, "The Relevance of Biohistory," *The Chronicle of Higher Education* 49, October 18, 2002, B11.

Another truncated version of biohistory can be seen in the work of Jared Diamond. Diamond, a Jewish academic non-historian, writes about historic agency and is critical of academic historiography. His criticism is justified to the extent that many academic historians neglect causation in their research. In *Guns, Germs, and Steel* Diamond sets out an egalitarian explanation for Western ascendancy based on environmental determinism.¹² He is concerned that the racist theories that explain Western dominance, though officially discounted, retain their hold of the popular imagination, so that “Westerners continue to accept racist explanations privately or subconsciously.”¹³ Diamond finds such explanations “loathsome,” but in the past he was unable to offer a satisfactory rebuttal. “Until we have some convincing, detailed, agreed-upon explanation for the broad patterns of history, most people will continue to suspect that the racist biological explanation is correct after all. That seems to me the strongest argument for writing this book.”¹⁴ Having presented his arguments, Diamond concludes *Guns, Germs, and Steel* with a suggestion for a major change in historiographic methodology. He calls for the development of “human history as a science, on par with acknowledged historical sciences such as astronomy, geology, and evolutionary biology.”¹⁵

Privately, many academic historians bristle at Diamond’s criticism that their discipline lacks scientific rigor; others dismiss his comments as those of a dilettante who does not understand their field. He is, however, not so easily ignored. His two most recent books on environmental biohistory have become bestsellers. They are advertised in historical journals and sold at history conferences. He is now a public intellectual interviewed on NPR and the like. Ironically, the science that Diamond urges historians to embrace could end up undermining his race-denying ideology.

In his recent book, *Collapse*,¹⁶ Diamond devotes several chapters to the rise and fall of the Greenland Norse, Scandinavians who colonized the island in the late tenth century. For half a millennium they eked out a living on that remote outpost of Western civilization. By the time

¹² Jared Diamond, *Guns, Germs, and Steel: The Fate of Human Societies* (New York: Norton, 1997).

¹³ Diamond, *Guns, Germs, and Steel*, 19.

¹⁴ Diamond, *Guns, Germs, and Steel*, 25.

¹⁵ Diamond, *Guns, Germs, and Steel*, 408.

¹⁶ Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Viking-Penguin, 2005).

of Columbus's voyages the Greenland Norse had vanished. There is no written record of what happened to them, but historians and archaeologists agree that the Little Ice Age (circa 1300–1750) played a role in their demise. Greenland was settled during the Medieval Warm Period (800–1250). The Norse built an economy based on herding, hunting, and trade principally with Iceland and Norway. Once the climate grew colder, raising livestock was no longer possible, and ice choked the shipping lanes, hampering trade. The Norse settlements slowly died out and were replaced by Inuit people (Eskimos). Diamond writes that if the Norse had been flexible enough to adopt the culture of the Inuit, including a diet of fish plus sea mammals, they could have survived. More than anything else, it was the stubborn refusal of the Norse to abandon herding that led to their downfall. If the Norse had integrated physically and culturally with the Inuit, as Diamond proposed, they would have, of course, ceased to be Norse. Apart from this obvious fact, there are strong doubts that such a path was even open to them.

THE RELEVANCE OF RACE

Environmental historians now realize that the demographic expansions and contractions of peoples throughout history have often been shaped by biological and environmental factors.¹⁷ If Diamond had consulted Alfred Crosby's *Ecological Imperialism* before writing *Collapse* he might have come to a different conclusion about the Greenland Norse. Crosby coins the term neo-Europeans to describe European-descended peoples who settled outside their Old World homelands. He suggests that neo-Europeans could not demographically dominate new territory unless and until they were able to modify the physical environment to meet their bio-cultural requirements. To thrive, neo-Europeans needed to establish a mixed agricultural regime. To survive, they needed to at least provide for their domesticated animals. Crosby writes: "Neo-Europeans were descendants, culturally and often genetically, of Indo-Europeans . . . a people who were practicing mixed farming with a heavy emphasis on herding

¹⁷ For a global study see Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York: Cambridge University Press, 1986). For a case study of the same phenomenon in New England see William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983).

4500 years before Columbus.”¹⁸ From the beginning Indo-European societies have been pastoral. It is probable that after 200 generations, European societies could not meet their nutritional needs without their domestic animals.¹⁹ In an earlier book, Crosby noted that even the impoverished Irish peasant needed “a bit of milk,” in addition to potatoes, “to keep a family hearty.”²⁰

Crosby’s contention that Europeans needed their animals to survive is in line with the discovery of the lactose tolerance mutation that permits most Europeans to digest milk as adults, unlike most Asians, Africans, and Amerindians. This mutation arose at approximately the same time that Indo-European culture began on the steppes of southeastern Europe. This is an example of what sociobiologists call gene/culture co-evolution. The availability of dairy products coupled with limited alternative sources of nutrition evolved into the ability to digest milk throughout life. Given the lack of variety in the Greenland Norse diet, dairy products might have become a nutritional imperative. By not even considering the possibility that the Norse could not meet their nutritional requirements without domestic animals, Diamond reveals an analytical blind spot produced by his rigidly egalitarian ideology. Only by ignoring genetic differences between ethnies could Diamond have advocated that the Norse adopt the Inuits’ dairy-free diet.

So what became of the Greenland Norse? It is unlikely that they simply starved to death. Nor is there evidence that they were massacred by the Inuit. It is probable that as conditions deteriorated, the younger and more energetic Norse emigrated back to Iceland and Norway, and the last of the old and decrepit remnant population died out. About 200 years after they abandoned the island, the Norse returned in the form of Danish colonizers. Thus the lesson of the Greenland Norse is not the one Diamond would have us learn (i.e., the benefits of racial/cultural assimilation), but rather that in times of extreme social stress a strategic retreat and in-gathering could be the best course for survival.²¹

¹⁸ Crosby, *Ecological Imperialism*, 172.

¹⁹ Ward H. Goodenough, “The Evolution of Pastoralism and Indo-European Origins,” George Cardona, Henry Hoeningwald, and Alfred Senn, eds., *Indo-Europeans and Indo-European Origins* (Philadelphia: University of Pennsylvania Press, 1970), 252–65.

²⁰ Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, Conn.: Praeger, 2003), 183.

²¹ Diamond’s conclusions about the Greenland Norse echo the arguments of

RACE AND SLAVERY IN THE AMERICAS

Alfred Crosby's work is one example of how genetically-linked biohistory has, over the last several decades, trickled into mainstream historiography. There are other examples. Immunity and resistance to diseases have also been major topics in biohistory. These played a large role in the establishment of African slavery in America. Historians have been particularly interested in how chattel slavery became established in the British colonies many centuries after the institution had died out in the home isles.

During the early seventeenth century the English began colonizing the Caribbean and southern North American mainland. Initially the planters used English and Irish indentured labor on their estates. These laborers were not free, but neither were they chattel slaves. For example, during the 1630s pioneer planter Sir Henry Colt used English laborers to establish his plantations in St. Christopher (now St. Kitts). In 1631 he wrote home requesting "forty more servants" to expand his fields.²² Presumably, if he wanted more English laborers, the ones already present were at least adequate to the task of clearing tropical forests for planting—heavy labor in broiling heat. Yet within fifty years of Colt's letter, the labor force of St. Christopher had been transformed from white to black. In part this was due to a relative scarcity of white labor and the availability of black slaves.²³ There were also, however, biological factors involved in this change.

When Europeans conquered and settled the New World, they found lands rich in resources with relatively low population densities.²⁴ Great wealth could be produced if labor could be found. In

Thomas McGovern who wrote, "We can criticize the Norse for maintaining a conservative, stratified, Eurocentric outlook . . . [that chose] the preservation of ethnic purity at the expense of survival." "The Demise of Norse Greenland," in William Fitzhugh and Elisabeth Ward, eds., *Vikings: The North Atlantic Saga* (Washington, D.C.: Smithsonian Institution Press, 2000), 338.

²² Richard S. Dunn, *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624-1713* (Chapel Hill: University of North Carolina Press, 1972), 9. Although he does not emphasize biological factors, Dunn documents the switch from white laborers to black slaves in the English Caribbean.

²³ The agricultural areas of West Africa had a slave-based economy and an extensive slave trade that predated European exploration. Beginning in the fifteenth century, Europeans plugged into this African slave trade. See John Thornton, *Africa and Africans in the Making of the Atlantic World, 1400-1680* (New York: Cambridge University Press, 1992).

²⁴ The number of pre-contact Amerindians is in dispute. Whatever that number,

tropical and subtropical regions, the laborers were often African slaves. Explanations for this choice have changed over time. In the seventeenth century, Europeans considered Negroes as heathen savages in need of Christian civilization and especially suited for menial labor. By the twentieth century, Marxist historians saw Europeans as particularly bigoted and greedy people who exploited vulnerable Africans. This view was implicit in Kenneth Stampp's *The Peculiar Institution* (1956), a history of American slavery written at the height of the "race is only skin-deep" mindset. According to Stampp, "Negroes are, after all, only white men with black skins, nothing more, nothing less."²⁵ Less than a decade after Stampp's *Peculiar Institution* historian Philip Curtin documented that epidemiological factors were involved in selection of African slave labor.²⁶ By the 1980s at least some historians recognized that the physiological, epidemiological, and nutritional characteristics of blacks from West Africa gave them an adaptive advantage as laborers in the tropics. In a considerable shift from Stampp's pronouncement African American historian Kenneth Kiple argued that, "Blacks and whites in fact do differ innately in many important respects," and that scientifically, "race continues to be a viable concept."²⁷

It is now widely accepted that physical characteristics such as dark skin, large numbers of sweat glands, and other "Negroid traits" are adaptations for physical activity in hot, humid, and sunny environments.²⁸ In addition, "disease inexorably selected the black for labor in the tropics."²⁹ The two main pathogens peculiar to the Old South were yellow fever and falciparum malaria. Two lesser afflictions were yaws and hookworms. These infections are of African origin

the population was greatly reduced by the introduction of Old World diseases into the Americas.

²⁵ Kenneth M. Stampp, *The Peculiar Institution: Slavery in the Ante-Bellum South* (New York: Vintage Books, 1989), vii.

²⁶ Philip D. Curtin, "Epidemiology and the Slave Trade," *Political Science Quarterly* 82 (1967): 190–216. For centuries it was known that blacks were less susceptible to certain diseases than whites. The reason for this could not be explain until the advent of modern medicine and genetics.

²⁷ Kenneth F. Kiple and Virginia Himmelsteib King, *Another Dimension to the Black Diaspora: Diet, Disease, and Racism* (Cambridge: Cambridge University Press, 1981), xii, xiv.

²⁸ Kiple, *Another Dimension*, 5.

²⁹ Kenneth F. Kiple, *The Caribbean Slave: A Biological History* (Cambridge University Press, 1984), 4.

and disproportionately affected Europeans and Amerindians.³⁰ Thus, once African slaves and African diseases had been introduced into the Americas, the latter reinforced the decision to use the former.

Another racial factor that favored the use of African slaves was their lower nutritional requirements. Domestic livestock usually does not thrive in the tropics. This is particularly true for dairy cattle.³¹ This is of little consequence for people of West African descent because after childhood they lack the ability to digest milk due to lactose intolerance.³² In fact, West Africans have traditionally subsisted on a diet very low in protein. Thus, "even the miserable diet of slaves in the Americas was superior to (or at least more protein laden than) that of their African cousins."³³ The Africans' ability to survive on a low-protein diet devoid of dairy products helped them to subsist where indentured white laborers could not. In time, "plantation America became an extension of Africa's disease and nutritional environments."³⁴ Because West Africa is "the home of man's most dangerous diseases and one of the world's most nutritionally impoverished areas," West Africans had the physical adaptations to survive the searing heat along with the "nutritional and epidemiological rigors awaiting them" on American plantations.³⁵

In summary, the process that established African slavery in English-American colonies began with a shortage of white labor that led some planters to import African slaves. These slaves brought with them African diseases that had a disproportionate impact on whites and Indians who had not been previously exposed to them. The West African labor was also able to subsist with less food and clothing than white laborers. In addition, white laborers were loath to toil alongside black slaves. Whites became rebellious and unproductive in mixed labor gangs. Thus, once some planters made the decision to import

³⁰ Albert E. Cowdrey, *This Land, This South: An Environmental History*, rev. ed. (Lexington: University of Kentucky Press, 1996), 83. Kiple, *Caribbean Slave*, 7.

³¹ Cowdrey, *This Land, This South*, 77.

³² "[A] high frequency of lactose intolerance . . . characterizes West Africans and their descendants, leaving them unable to consume much milk" –Kiple, *Another Dimension*, 11.

³³ Kiple, *The Caribbean Slave*, 23.

³⁴ Kenneth Kiple, "A Survey of Recent Literature on the Biological Past of the Black," in Kenneth Kiple, ed., *The African Exchange: Toward a Biological History of Black People* (Durham: Duke University Press, 1988), 8.

³⁵ Kiple, *The Caribbean Slave*, 5.

black labor, environmental, genetic, cultural, and economic factors led to the replacement of whites with blacks as field laborers on English colonial plantations.

PROSPECTS FOR BIOHISTORY

The agency of genetically based epidemiological, nutritional, and other physiological characteristics of ethnies has been at least partially, though reluctantly, accepted by mainstream historiography. But what about psychological characteristics, including intelligence? In *Understanding Human History* Michael Hart interprets the past in terms of just these characteristics.³⁶ His work has not yet attracted much attention, much less acceptance, from academic historians. But though academic historians have avoided the issue of average group intelligence, a recent book by Gregory Clark, *A Farewell to Alms*, suggests that differences in genetically-based behavior can explain the Industrial Revolution that helped increase the knowledge, wealth, and power of the West.³⁷

For Clark, a Scottish-born professor of economics at the University of California, Davis, the Industrial Revolution was the watershed event in human history. All pre-industrial societies were caught in a Malthusian trap in which any gain in productive capacity led to an increase in population that negated the increase in wealth. So while the human population increased, the standard of living for the majority, measured by such indicators as the number of calories consumed, did not rise. With the coming of industrialization, productivity rose much faster than population, thus raising the standard of living for nearly everyone in society. Interestingly, in his preface Clark compares his book to Diamond's *Guns, Germs, and Steel*. Both are big histories that seek to explain the ascendancy of the West (referred to by Clark and others as the "Great Divergence"). While asking somewhat similar questions, Clark and Diamond arrive at very different answers. In contrast to Diamond's environmental/geographical explanation, Clark brings social Darwinism into the twenty-first century with the use of cliometrics.³⁸

³⁶ Michael Hart, *Understanding Human History: An Analysis Including the Effects of Geography and Differential Evolution* (Augusta, Ga.: Washington Summit Publishers, 2007) was reviewed in *TOQ* vol. 7, no. 4.

³⁷ Gregory Clark, *A Farewell to Alms: A Brief Economic History of the World* (Princeton: Princeton University Press, 2007).

³⁸ After making a passing criticism of social Darwinism, Clark goes on to write

Historians have long questioned why the Industrial Revolution began when and where it did: late eighteenth- and early nineteenth-century England. Clark believes that centuries of economic and political stability as well as slow population growth coupled with "the extraordinary fecundity of the rich and economically successful" led to "the embedding of bourgeois values into the culture and perhaps even the genetics of England."³⁹ In relatively stable and peacefully pre-industrial England the hardworking and educated tended to prosper and have large families. Economic opportunities, however, were so limited that most children of the wealthy were downwardly mobile. As a result they extended their cultural and genetic traits into the lower classes. The establishment of a bourgeois society in England is another example of gene/culture co-evolution. In Early Modern England the "characteristics of the population were changing through Darwinian selection." The result was that "middle-class culture spread throughout society through biological mechanisms."⁴⁰ While Clark does not claim that the English were more intelligent than other peoples, he does believe that genetically-based values and behaviors were at the heart of the Industrial Revolution and Western ascendancy. In the popular mind evolution is something that occurred in the distant past, took millennia to complete, and was accomplished by the forces of nature. Clark's research points out that human evolution has continued to occur during historic times, that significant change can take centuries rather than eons, and evolution can be driven by the cultural as well as the natural environment.

In *The 10,000 Year Explosion*, University of Utah anthropologists Gregory Cochran and Henry Harpending have adapted some of Clark's ideas to a global context, and a timeline that spans the entire history of *Homo sapiens*.⁴¹ The authors find that various population

that "Darwin's insight that as long as population was regulated by Malthusian mechanisms, mankind would be subject to natural selection was profoundly correct" (*A Farewell to Alms*, 112). Cliometrics, broadly defined, is the use of statistics in historical research.

³⁹ Clark, *A Farewell to Alms*, 11.

⁴⁰ Clark, *A Farewell to Alms*, 259.

⁴¹ Gregory Cochran and Henry Harpending, *The 10,000 Year Explosion: How Civilization Accelerated Human Evolution* (New York: Basic Books, 2009). Among other findings, Cochran and Harpending supply evidence supporting Crosby's belief, expressed 25 years earlier, that domestic livestock especially dairying, played an integral part in Indo-European expansion.

groups have evolved genetic differences during historical time. Some of these genetic differences have given competitive advantages to the groups that possess them. Thus human “biological change has been a key factor driving history.”⁴² Perhaps Cochran and Harpending’s most interesting thesis is that rather than ending human evolution, modern civilization has actually quickened its pace.

Concepts such as “social Darwinism” and “biological determinism” have been used to censure those who have applied biological theories to history and the social sciences. For decades hostility from the Left has discouraged, obstructed, or obscured scholarly inquiry into what we now call biohistory. Yet with the work of scholars such as Clark, Cochran, and Harpending we may finally be seeing the advances in historiography predicted by Adams and Wilson. It is becoming increasingly clear that the path to greater understanding of our past and present must include the study of human biological diversity.

Nelson Rosit holds a doctorate in history. He writes from the upper Midwest.

⁴² Cochran and Harpending, *The 10,000 Year Explosion*, 67.