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Book Review

Darwin's Duel with Descartes

A review of Nicholas Wade, *A Troublesome Inheritance: Genes, Race, and Human History*. Penguin: New York, 2014, pp. 288, US$20.68, ISBN # 1594204462 (Hardcover).

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Most social scientists explicitly denounce mind-body dualism as an anachronistic theory that was decisively refuted by modern advances in biology and neuroscience. In practice, however, many implicitly harbor dualistic beliefs, especially when theorizing about potentially incendiary topics such as sex or race differences. The physiognomies and physiques of the sexes or races may vary, but their minds do not. This *selective dualism* implicitly assumes that the material inside the skull is impervious to selective forces and that the mind, like Descartes' *res cogitans*, mysteriously transcends the laws of physics. Because this belief is completely at odds with current knowledge about the world, and with the explicit pronouncements of most social scientists, it is difficult not to see it as a manifestation of political ideology. This does not mean that every researcher or scholar who harbors such beliefs does so because of his or her political preferences; rather, it means that selective dualism has achieved near fixation in academia because it coheres with the ideology of egalitarianism[1] that is a prominent component of the worldview of most educated citizens, including professors (see Inglehart and Welzel, 2005; also, many social scientists are liberal, which might compound this problem—see Inbar and Lammers, 2012). Haidt (2013) and others (e.g., Tetlock, 2002) have noted that conscious and unconscious ideologies, like small and imperceptible fluctuations on a superficially smooth surface, can subtly direct the path of science. If these ideologies are wedded to strong political or moral commitments, they can create a "moral tribe" who values ideological consistency more than open and honest inquiry. As indicated by the responses to previous proposals about racial variation in cognitive or temperamental traits (e.g., *The Bell Curve:*

[1] By "egalitarian" we mean the belief that all individuals, population groups, and sexes are absolutely biologically similar on every important trait.

Race, Evolution, and Behavior), the ideology of selective dualism is an integral part of a moral and political vision of a vocal tribe of academics and intellectuals who tolerate little deviance from its basic tenets (Barash, 1995; Graves, 2003). Nicholas Wade's *A Troublesome Inheritance* directly assails this selective dualism, asserting that natural selection differentially shaped the brains of the human races: "...brain genes do not lie in some special category exempt from natural selection. They are as much under evolutionary pressure as any other category of gene" (p. 106). If history is any guide, this book will provoke vociferous debate, as well as a series of lamentable but predictable ad hominem attacks.

Wade's book is, first and foremost, a courageous but flawed attempt to grapple with a politically divisive but scientifically important topic: recent and regional human evolution. To our knowledge, it is the first of its kind: A mainstream book written by a respectable scientific journalist about racial variation in cognition and temperament. Ranging from provocative speculations to cautious equivocations, *A Troublesome Inheritance* is an entertaining, informative, but inconsistent challenge to orthodoxy. Whatever its shortcomings, it is essential reading for anyone who applies evolutionary principles to human behavior. In the first part of this review, we focus exclusively on Wade's book. After that, we briefly address the political concerns and ramifications of speaking candidly about human biological diversity. Last, we connect Wade's book to other recent work, arguing that the standard evolutionary psychology paradigm is no longer consistent with what we know about evolution and that it needs to be revised to allow a role for recent and regional selection.

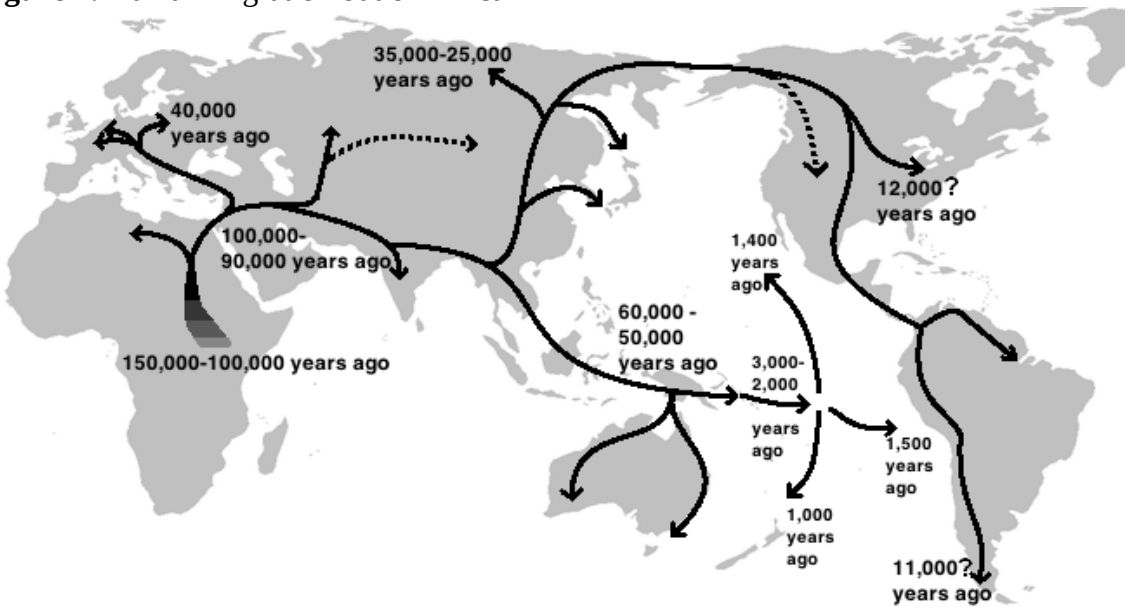
The Reality of Racial Variation

Wade begins by noting that the once standard view of evolution as a slow and plodding process has been refuted by modern theory and data. According to Wade, evolution is "recent, copious, and regional" (p. 7). That is, evolution can shape or tune traits much more rapidly than commonly acknowledged. This new view of evolution has important consequences for our understanding of human population groups. Modern humans first migrated out of Africa between 50,000-125,000 years ago (Armitage et al., 2011; Klein, 2002). The groups that migrated from Africa eventually expanded across the globe, displacing other hominid groups, and forming relatively isolated populations in diverse habitats, from bitterly cold, winter-plagued lands to sun-blasted deserts and lush tropics (see Figure 1). In each climate, different physical traits would have been favored. The most perspicuous example is skin color. In the sun-deprived lands of Northern Eurasia, the protective pigment of dark skin is not necessary and is, in fact, problematic because it interferes with sun absorption, which is necessary for the synthesis of Vitamin D (Jablonski, 2004; Jablonski and Chaplin, 2010). Consequently, there is a strong correlation between skin color and the geography of one's ancestors.

Furthermore, different human populations devised different sociocultural practices to cope with their environments, and these created further selective pressures. For example, agriculture first arose in the Levant approximately 11,000 years ago and eventually spread (or was preserved with conquering migrants) across Northern Europe. It also arose

independently in Asia, Africa, and the Americas (Diamond and Bellwood, 2003). Agriculture dramatically altered how humans interacted with the environment, creating a permanent source of food that supported sedentism, population growth, and hierarchical societies with divisions of labor. Some domesticated animals provided milk, which offered a rich source of calories to those who could digest the lactose. Lactose, however, cannot be digested without the enzyme lactase. The production of lactase declines dramatically at an early age in most mammals because they do not consume milk after weaning. Evidence indicates that our human ancestors were no exception to this rule. Consistent with the argument that evolution has been "recent, copious, and regional," many modern human populations continue to produce lactase throughout their adult lives, allowing them to digest the lactose in dairy milk. This capacity corresponds to the geography of dairy-animal domestication, supporting the contention that it arose in response to the novel selective pressures of dairy farming (Cochran and Harpending, 2009; Holden and Mace, 2009; Swallow, 2003).

Figure 1. Human migration out of Africa



Note. Source: Wikimedia commons

These arguments for modern evolution in human populations, although debated, are not terribly controversial. But Wade argues that we should eschew the selective dualism that has beset modern social science and draw a more radical conclusion: Different environments and sociocultural practices would have favored different cognitive and temperamental traits. Although this conclusion appears a straightforward consequence of applying the principles of natural selection, it has provoked furious resistance among many social scientists, often leading to calumniations and accusations of racism. However, as Wade notes, it would be miraculous if there weren't some cognitive and temperamental differences between human populations for the same mundane reason it would be miraculous if there weren't physical differences: Relatively isolated groups that are

exposed to different selective forces evolve differently.

Wade clearly knows he is walking into potentially dangerous intellectual territory and deserves praise for boldly and consistently applying the principles of natural selection to the human brain. Perhaps to inoculate himself from the anticipated venom of the intellectual community, Wade includes a cautionary chapter about misuses of racial science. He argues that modern interdictions against racism have probably erected an impenetrable barrier against a resurgence of eugenics, but notes that "ideas about race are dangerous when linked to political agendas. It puts responsibility on scientists to test rigorously the scientific ideas that are placed before the public" (p. 37). Readers should not, however, expect Wade to cower to political correctness. He chides Steven Pinker for shying away from the potentially incendiary consequences of recent evolution, arguing that Pinker diverges from a sustained argument about the evolution of self-control because it might lead to unsavory political conclusions (pp. 170-173). He also critiques Jared Diamond for spinning a superficially appealing but ultimately erroneous tale of geographic determinism in his widely praised *Guns, Germs, and Steel* (pp. 221-223). Although these critiques will probably not convert anyone—and they might be slightly unfair[2]—, they are part of Wade's laudable goal of elevating science over ideology.

Readers might be wondering about several prominent arguments that contend that race is an invalid construct with no biological basis. Richard Lewontin, for example, famously argued that the variance within populations dwarfs the variance between populations and that race, therefore, is an antiquated and destructive concept with little scientific utility (Lewontin, 1972). Wade, citing A.W.F. Edwards (2003), dispatches Lewontin's argument, noting that variation at one locus is racially uninformative; however, correlated variation across multiple loci is racially informative. Although not without dissent, research generally shows that it is possible to classify humans into racial groups (also labelled "clusters" or "populations") and that these racial groups correspond to geographic regions. Rosenberg et al. (2002), for example, used 377 genetic markers in a cluster analysis and found that the model produced population clusters that largely corresponded to major geographic regions. Rosenberg et al. (2005) later confirmed this pattern with 993 genetic markers. Tang et al. (2005) found that self-reported ethnicity in the United States corresponded almost perfectly with genetic clusters derived from analyses of 326 microsatellite markers (3,631 of 3,636 self-reported ethnicities matched the genetic cluster; here the geographic regions were ancestral).

Others have argued that races do not exist because there are no essential types of humans: Groups diffuse into each other imperceptibly, and there are no Platonic essences that correspond to our different racial categories (see Sesardic, 2010). As Wade notes, this contention is undoubtedly true. But few, if any, researchers believe that racial categories correspond to unique biological types that are wholly distinct from one another. Some researchers have glommed this fuzziness, arguing that racial divisions are arbitrary and that

[2] We do not think that it is productive, except for in extreme cases, to speculate about the underlying motives of individual scientists. On the other hand, Wade's general point, namely that ideology has played a role in the study of human groups and civilizations, is incontrovertible.

depending upon the criteria one chooses, one can end with very different and often counterintuitive results (Diamond, 1994). But many of the alternative classifications, say those based on antimalarial genes, are absurd because they ignore that racial categories are designed to discriminate between correlated clusters of traits, not single discrete traits. Furthermore, such categories ignore shared ancestry, which is a common criterion of taxonomy.

Wade uses a common classification based on the continent of origin of the population, which therefore includes Caucasians (Europe), East Asians (Asia), Africans (Africa), Native Americans (North/South America), and Australian Aborigines (Australia/New Guinea), and then further subdivides into various ethnicities (e.g., Jewish, Finnish, Basque) (see Wade, pp. 95-122). Perhaps future genetic analyses will compel researchers to adjust these categories, but for Wade's purposes, his classification system appears sound.

Race and Civilization

The first part of Wade's book is a relatively sober and well-written defense of the legitimacy of racial categories and the reality of racial variation. The second part is a speculative extension of this empirical and theoretical base, attempting to explain the variation among human societies. Wade argues that at least some of these differences are caused by the slight cognitive and temperamental differences of the peoples who create them. Wade is forthcoming about the speculative nature of his undertaking, letting readers know that chapters 6 through 10 take place in a "speculative arena" (p. 15). Although Wade preemptively cautions his readers, his decision to tackle such a complicated and controversial subject with a paucity of hard data is problematic. Furthermore, Wade only half-heartedly grapples with the one source of serious data researchers possess on this topic: the global distribution of IQ scores. Of course, the topic of race and IQ is fraught with controversy, and the data are not without problem, but they are much more expansive than data on any other single trait that might explain the variance among human societies.

Since the last half of the 20th century, explanations of cultural and social variation have been almost exclusively environmental (e.g., Diamond, 1997; Morris, 2010). Perhaps the Europeans happened to inhabit a particularly propitious continent that allowed them to develop important institutions and technologies earlier than other peoples. This accident then allowed them to flourish and to conquer vast regions of the globe. Wade contends that this consensus view is only partially correct. Social institutions are not haphazard or random; rather, they are closely connected to the peoples who create them. Different racial groups create different institutions because they have different behavioral propensities. Institutions that flourish among one racial group may flounder among another. In fact, according to Wade, "the most significant feature of human races [is] not that their members differ in physical appearances but that their society's institutions differ because of slight differences in social behavior" (p. 136).

Wade argues that traits such as trust, tribalism, conformity, and aggression are especially important for understanding the variance among human societies (p. 246). For example, Wade suggests that Asian individuals are slightly more conformist than

Europeans and that this slight difference in individuals leads to dramatic differences at the aggregate level. European societies value and foster innovation more than Asian societies, creating dynamic economies and exposing ideas, technologies, and institutions to relentless competition. In fact, according to Wade, the rise of the West is not an historical accident at all, but rather the product of a combination of cultural and behavioral traits (that are at least partially caused by genetics): "The rise of the West is an event not just in history but also in human evolution" (p. 238). This view leads to skepticism about "Nation-building." Wade contends, for example, that the notion that a country can simply export its social and cultural institutions to another country is naive because the people of the other country might have slightly different cognitive and temperamental traits from the people that created the institutions (On page 241, Wade notes that attempts to export Western institutions to Iraq, Haiti, and Afghanistan have had limited success, at best). In a sense, institutions are "extended social phenotypes" (Wade doesn't use this term); peoples are fitted to their institutions because they co-evolved with them in the same way that a beaver is fitted to its dam-altered environment. This might be a bit strong, but it appears to capture the essence of Wade's argument.

The second half of Wade's book illustrates some of its flaws. Wade's hypotheses about the social and institutional effects of racial variation are, of course, perfectly legitimate scientific hypotheses[3]; however, they are undeniably bold, and they confront the heavily fortified garrison of selective dualism that dominates mainstream academic and intellectual discourse. Convincing others that the mainstream position is not only incorrect but also worth challenging probably requires a more impressive armamentarium than Wade provides. The book would have been stronger if Wade had more slowly and carefully built his argument that there are important racial variations in cognitive and temperamental traits before speculating about their role in human history. As it is, Wade's book is fairly impressionistic, which makes it enjoyable to read, but not as rigorous as it probably needed to be.

As noted above, Wade is strangely dismissive of research about the effect of IQ differences among human groups on economic, institutional, and cultural variables (see pp. 189-193). Although the research on IQ differences is controversial and is far from definitive, it is nevertheless more copious and rigorous than research on any of the putative temperamental differences Wade adduces to explain institutional differences among human groups (Jensen, 1998; Lynn 2006; Rushton and Jensen, 2005; but see Nisbett et al., 2012). It is possible that Wade didn't want this contentious issue to overshadow the rest of his book, but this contradicts his explicit goal of speaking candidly about human variation and its effects on social institutions. Furthermore, some of Wade's own speculations are likely to be equally contentious and controversial. Whatever the reason, Wade is selectively skeptical of data that find a relation between institutional quality, work productivity, GDP,

[3] Although standard, scientists should eschew the practice of branding such hypotheses "racist" or "ethnocentric." There is nothing more obviously erroneous about such hypotheses than there is about culture-only hypotheses, which are freely forwarded to explain human differences. Honest empirical hypotheses should be treated equally and should be subjected to rigorous scrutiny.

economic freedom, and IQ (Gottfredson, 1997; Lynn and Vanhanen, 2012). This puts him at odds with what has become a productive research paradigm (Rindermann, 2013). Of course, future research is needed to fully tease out the relative contributions of IQ and other temperamental traits on social institutions, productivity, and GDP (Stolarski, Zajenkowski, and Meisenberg, 2013). Wade may turn out right, but the current data suggest that his dismissal of the explanatory power of IQ is premature.

Brief Comments about Political/Moral Concerns

Before addressing how this book and similar research might guide future evolutionary thinking, we should briefly discuss the political and ethical concerns that candid analyses of group variation might raise. Although Wade includes a succinct chapter on the history of thinking about racial variation that answers some of these concerns, we are skeptical that his assurances will alleviate the fears of many readers. Probably no other topic in the social sciences is so fraught with possibilities for hostility and acrimonious verbal assaults (Hunt and Carlson, 2007). It is understandable that many academics and intellectuals are trepidatious about frankly addressing the possibility that groups vary on socially valued traits such as athleticism, self-control, or intelligence. However, the tendency of some intellectuals to denounce those who study such topics—to besmirch their reputations with accusations of racism—is inexcusable. We cannot possibly allay all concerns about this topic, but we do believe that:

1) It would be remarkable if groups did not vary on some socially valued traits.

2) It does not promote the interests of society or of science to deny such variation simply because it makes some people uncomfortable.

3) It is important for academics to study group differences and to educate responsibly the public about what they mean (see Haidt, 2009).

4) There is no reason why those who embrace and promote cultural diversity cannot also embrace human biological diversity (Crow, 2002).

5) Contrary to widely shared opinion, culture-only hypotheses are not necessarily safer or less costly than genetic-based hypotheses. Social policies based on either hypothesis can be destructive.

From Galileo to Darwin, science has a history of destroying many comforting belief systems. Each challenge has excited moral outrage and earnest concern about the consequences of disseminating new ideas and research. Many Victorians, for example, were certain that widespread knowledge of Darwinism would lead to crude hedonism and immorality. It is easy in retrospect to chuckle at this alarmism, but it is also easy to sympathize. The price of scientific progress is a steadily growing cemetery of once cherished beliefs and myths. We suspect that the study of group variation will become

commonplace and our descendants will wonder what all the clamoring was about. In the meantime, however, we believe that it is important to remain respectful when addressing this sensitive topic, and we especially believe that it is crucial to refrain from questioning the motives of the scientists who find human biological diversity intriguing.

The Future of Human Evolutionary Sciences

Wade's book is the culmination of an efflorescence of research on human diversity. Since at least the 1990's, numerous scholars have examined genetic, evolutionary, psychological, and theoretical evidence that suggests that evolution has been recent, rapid, and regional (e.g., Brown, Dickens, Sear, and Laland, 2011; Cochran and Harpending, 2009; Laland, Odling-Smee, and Myles, 2010; Zuk, 2013). This research appears to contradict a central tenet of what can be called the "standard evolutionary psychology paradigm," namely that the human brain/mind and body evolved primarily in the Pleistocene and that there is a "panhuman" nature. According to this reasoning, researchers can most fruitfully assess human nature by reconstructing the selective forces that would have prevailed during the Pleistocene and deducing the nature of the mental adaptations those forces would have created. (Cosmides and Tooby, 2013; Marlowe, 2005; Pinker, 1997). Perhaps the most valuable aspect of Wade's book to contemporary evolutionary psychologists is that it challenges this view of a panhuman nature.. Below, therefore, we would like briefly to address this challenge.

Evolutionary psychology is primarily a science of universals. Early researchers were interested in universal mental adaptations, adaptations that arose from a complicated organic substrate and therefore required many thousands of years to evolve (Cosmides and Tooby, 2013). Understandably, this early emphasis motivated evolutionary psychologists to minimize group variation. There is nothing wrong with the emphasis on human universals, and it is almost certainly true that complicated mental adaptations take many generations to evolve. However, it does not follow that there are not important differences among human groups. (Some evolutionary psychologists have argued that there are few if any meaningful genetic differences among human groups; see Cosmides, Tooby, and Kurzban, 2003).

Consider an analogy that might make the point clear and simultaneously illustrate the potential importance of group variation. There is a universal car design or "nature." Every car is comprised of an engine, a gas tank, a chassis, tires, bearings, spark plugs, axles, etc. Many of these parts are strikingly similar across cars. However, precise, correlated changes in specific parts can dramatically alter the characteristics of a car. A Dodge Viper, although built from the same abstract plan as other cars, has quite different qualities from a Dodge Neon. Humans, like cars, are built from the same basic body plan. We all have livers, lungs, arms, legs, eyes, and ears. Yet, small changes in the structures of various systems (e.g., neural, cardiovascular) can lead to important functional differences. For example, small changes in the cardiovascular systems of many Tibetans allow them to survive better the rigors of a high altitude environment (Beall, 2007). The brain is no exception. All humans possess a brain that allows them to learn a language, contemplate abstract concepts, speculate about what others are thinking, experience a set of universal emotions, etc. However, subtle alterations in the brain can modulate these capacities.

Because of their socioeconomic niche, natural selection may have slightly dialed up the general intelligence knob on Ashkenazi Jews, who score around 110 on standard intelligence tests (Lynn, 2011). Whether these changes constitute an interesting alteration of some putative panhuman nature probably depends upon our research question. If we want to know why the Ashkenazim prosper in many societies, often despite virulent anti-Semitism, then reference to a universal human nature is not going to benefit our research. On the other hand, if we want to know how humans detect kin (Lieberman, Tooby, and Cosmides, 2007), reference to a universal mental architecture is helpful and necessary.

Putting all of these strands of research and theory together, we suggest that a new Darwinian paradigm is coming together that emphasizes the importance of recent and regional evolution (Cochran, Hardy, and Harpending, 2006; Laland et al., 2010; see also work on gene-culture coevolution, e.g., Boyd and Richerson, 1985). Although it is impossible to predict what this paradigm will look like 10 or 15 years from now, we can lay out some basic tenets:

1) Variation fuels the engine of natural selection and is ubiquitous within and among human populations.

2) Evolution has not stopped and has significantly shaped at least some human traits in the past 50,000 years.

3) Extant hunter-gatherers might be slightly different from other modern populations because of culture *and* evolution. Therefore, using extant hunter-gatherers as a template for a panhuman nature is problematic (Henrich, Heine, and Norenzayan, 2010).

4) It might be more accurate to say that there are human natures rather than a human nature.

5) Selective dualism is untenable. Natural selection does not discriminate between genes for the body and genes for the brain (as Wade points out "brain genes do not lie in some special category exempt from natural selection. They are as much under evolutionary pressure as any other category of gene" p. 106).

6) The concept of a Pleistocene-based EEA (environment of evolutionary adaptedness) is likely unhelpful (Zuk, 2013). Individual traits should be examined phylogenetically and historically. Some human traits were shaped in the Pleistocene and have remained substantially unaltered; some, however, have been further shaped in the past 10,000 years—some possibly as recently as a few hundred years ago (Clark, 2007).

Concluding Thoughts

Wade has written a fascinating, challenging, and provocative book with a simple

message: Evolution is recent, regional, and it doesn't stop at the human neck. For many decades now, social scientists have protected themselves from this nearly inescapable implication by adhering to a form of selective dualism. Wade should be applauded for challenging this flawed but convenient stopgap. A *Troublesome Inheritance* is not a perfect book. We wish it had been a bit more systematic and rigorous, and we fear that Wade's fascinating speculations will be too easily swept away by streams of outrage and indignation because he failed to provide stronger scaffolding. Nevertheless, his book should encourage public conversation about the important and complicated topic of racial variation. The celebration of human diversity should go hand in hand with the honest and rigorous study of such diversity.

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