

logenet history of human races and his use of *r*- and *K*-selection, treats human races as equivalent to species. To some extent, this use mirrors the reemergence of phylogenetic trees in the analysis of human genetic history, with various writers describing and dating the “split” between Africans and non-Africans, between Europeans and Asians, and so forth (see Templeton 1999 for a review of such views). There are many methods now available for statistically analyzing genetic evidence on the relationship of different species over time. The problem with such methods as applied to living humans is that we all belong to a single species, and one cannot draw a tree with a sample size of 1. Many of these methods therefore have no utility for the study of human variation, although they continue to be quite valuable for other organisms. However, the singular nature of the human species has not stopped the application of tree-based methods to humans; since there is only one living hominid species, writers sometimes use races as the unit of analysis, effectively assuming that they can be treated as evolutionarily independent entities by ignoring gene flow between regions or assuming it to be negligible—practices that are clearly in error.

I hope that Lieberman or someone else will more closely examine the current tendency of proponents of racialism to reject the contributions of anthropology because they are “politically correct” and stem from liberal ideologies. This is a dangerous development, since it shifts discussion from the realm of science to the realm of personal beliefs, implying that opposition to political correctness is a valid argument. I wonder whether Lieberman has noticed in his research an increasing backlash against political correctness and whether he feels that this might be a factor in the greater public acceptance of the ideas of Rushton and others. I am no fan of political correctness, but I find the opposite approach (political incorrectness? anti-PC?) equally disturbing.

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Lieberman claims that “race” is an invalid concept, that science is largely a “social construction,” and that Franz Boas disproved the 19th-century idea that races could be “ranked” by average brain size. But if race were an invalid concept it would have little or no predictive power and the findings I summarize would not be found so consistently. Here are the most recent (post-1980) brain-size studies. Readers can check the facts for themselves.

Across a variety of research techniques and in samples from around the world, the brains of East Asians (Koreans, Chinese, Japanese) and their descendants consistently average about 17 cm³ larger than those of Europeans and their descendants and 97 cm³ larger than those of Africans and their descendants. A parallel pattern of differences is also found around the world on 60 other traits including IQ scores, speed of physical maturation,

athletic ability, sex hormones, twinning rate, sexual behavior, personality and temperament, family stability, and rates of violent crime. *Race, Evolution, and Behavior* (2000, now in its third edition) provides an evolutionary explanation based on life-history theory and the recent Out-of-Africa model of human origins for this consistent pattern of race differences.

Lieberman is wrong when he claims that the average correlation between brain size and IQ is only 0.24. Over the past decade, state-of-the-art magnetic resonance imaging (MRI) techniques have created, *in vivo*, three-dimensional images of the brain which show an overall correlation of greater than 0.40. Many of these are listed in Rushton (2000; e.g., Flashman et al. 1998, Gur et al. 1999, Tan et al. 1999, Pennington et al. 2000, Wickett, Vernon, and Lee 2000). They corroborate the lower but still significant correlations ($r = 0.20$) that have been found for over 100 years using external head-size measures.

Four quite different procedures, including MRI, autopsies, endocranial volume, and external head measures, all confirm these racial differences in brain size. Lieberman misinforms when he claims there are no such MRI studies. Using MRI, Harvey et al. (1994) found that 41 Africans and West Indians had a smaller average brain volume than 67 Caucasians. Lieberman misinforms when he claims that no autopsy study has controlled for all the variables mentioned by Tobias (1970). Using brain mass at autopsy, Ho et al. (1980) summarized data for 1,261 individuals and reported a mean brain weight of 1,323 g for white Americans and 1,223 g for black Americans *after carefully controlling for all the variables Tobias mentioned*. Lieberman is wrong when he claims that race cannot explain the endocranial volume data of Beals, Smith, and Dodd (1984), who analyzed 20,000 skulls from around the world. Their data show that East Asians, Europeans, and Africans averaged cranial volumes of 1,415, 1,362, and 1,268 cm³ respectively. Lieberman also misinforms when he claims that I have not carried out original research on brain volume. Rushton (1992), for example, calculated cranial capacities from external head measurements in a stratified random sample of 6,325 U.S. Army personnel and found that Asian Americans, European Americans, and African Americans averaged 1,416, 1,380, and 1,359 cm³, respectively.

Are these findings attributable simply to race differences in body size? The world database from (a) autopsies, (b) endocranial volume, (c) head measurements, and (d) head measurements corrected for body size is summarized by Rushton (2000:126–32, table 6.6). The results in cubic centimeters or equivalents were East Asians and their descendants = 1,351, 1,415, 1,335, 1,356 (mean = 1,364); Europeans and their descendants = 1,356, 1,362, 1,341, 1,329 (mean = 1,347); and Africans and their descendants = 1,223, 1,268, 1,284, and 1,294 (mean = 1,267). The review found the overall mean for Asians to be 17 cm³ more than that for Europeans and 97 cm³ more than that for Africans. Within-race differences, based on methods of estimation, averaged 31 cm³.

Race differences in brain size and intelligence begin

early in life. The National Collaborative Perinatal Project followed more than 35,000 American children from birth to age seven. Rushton (1997*d*) analyzed these data and found that at birth, four months, one year, and seven years, Asian Americans averaged larger cranial capacities than whites and whites larger cranial capacities than blacks. In all three races, head circumference and IQ were correlated ($r = 0.20$) at seven years of age; the IQ of Asian American children averaged 110, that of white children 102, and that of black children 90. Moreover, the Asian Americans were the shortest and the lightest in weight, whereas the blacks were the tallest and the heaviest. Once again, the race differences in brain size are not due to body size.

Lieberman claims that IQ tests are culturally biased, but he does not explain how, although IQ tests were invented by whites and standardized on mainly white populations, dozens of studies now show that East Asians, whether tested in North America or in Pacific Rim countries, typically average higher than whites and in the range of 101 to 111. Caucasoid populations in North America and Europe typically average a mean IQ of 100. African populations living south of the Sahara, in North America, in the Caribbean, and in Britain typically have mean IQs of from 70 to 90 (Lynn 1997). Jensen (1998:443) calculated an "ecological" correlation (widely used in epidemiological studies) of +0.99 between median IQ and mean cranial capacity across the three populations of "Mongoloids," "Caucasoids," and "Negroids."

Changes in brain size have cascading effects on other traits, for example, running ability. East Asians have wider hips than whites or blacks, which gives them a less efficient stride. The reason they have wider hips is that they give birth to larger-brained babies. During evolution, increasing cranial size meant that women had to have wider pelvises.

Greater brain growth also relates to slower maturation. White babies are born a week later than black babies, yet they are less mature as measured by bone development. Black babies mature more quickly than white babies, while East Asian babies mature more slowly. Two-day-old African babies placed in a sitting position are often able to keep their heads up and backs straight. White babies often need six to eight *weeks* to do these things.

Lieberman is correct that it was Franz Boas who made the race and brain-size data disappear from the scientific radar screen. Initially, however, even Boas (1894) agreed that races differed in brain size, finding that only 27% of blacks exceeded the white brain-size average rather than the 50% that should have if the races were equal. Arguing that "the greater the central nervous system, the higher the faculty of the race and the greater its aptitude to mental development," Boas concluded: "We might, therefore, anticipate a lack of men of high genius [among blacks]." As Lieberman says, Boas also knew that Eskimos and other Arctic Asians averaged larger brains. Were it not for his ideology, Boas might have discovered

the three-way pattern of correlated traits 60 years earlier than I did.

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Lieberman is one of a few anthropologists who have challenged J. Philippe Rushton in his most recent proselytizing of his racial beliefs. He has done an excellent job of exposing Rushton's so-called science. My comments complement his critique with a few additional observations.

Rushton's major theory on brain size, reproductive behavior, and intelligence rests on some extraordinary assumptions. First, what it amounts to is a new theory of women's reproductive activities—that a woman's fertility is dependent on the size of her mates' sex organs. Where is there evidence of a correlation between the size of a man's penis and the number of children that a woman bears? Such a theory ignores natural variations in women's fertility as well as the existence of well-known sociocultural reasons for a woman's having few or many children. It also ignores some incontrovertible and obviously contradictory facts. The most reproductively successful population in the world is the Chinese, and they got to number over a billion with small penises and presumably little interest in sex. As late as the middle of the 20th century, they had one of the highest fertility rates in the world, which ultimately precipitated well-known government-imposed limits on reproduction.

Rushton's application of *r-K* theory to humans is an unsophisticated echo of some of the myths of the late Middle Ages. Europeans had been fascinated with the sexuality of "savages" for several hundred years before they actually came into contact with Africans (the "wild Irish" were "lewd, lustful, and lascivious," and so were the savages of the Americas). During the late 16th century, several travelers had made references to the "large Propagators" of African men with the assumption that this made them oversexed, sensuous, and lustful (Jordan 1968).

To prove that the Muslim world historically discriminated against black Africans and that Arab writers thought of them as inferior, Rushton relies exclusively on the works of Bernard Lewis, one of the few historians of Islam to have sought evidence of Arab denigration of Africans. None of the more prominent names in Muslim history are cited, nor are the anthropologists who are experts on these cultures. The reality is that many of Islam's great political leaders, artists, writers, and poets were clearly identified as African, and the Moors who conquered Spain originated in the Senegal River valley as Almoravides, gathering followers from many different ethnic groups.

For his ethnographic information on African societies, Rushton uses a notorious book entitled *Race* by John