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INVITED REVIEW

The Evolution of Racial Differences: A Response to M. Lynn

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The following discussions are offered in response to M. Lynn's (1989) critique. First, an evolutionary scenario is presented for the differentiation of the three races. Second, further documentation is provided of the reality of the racial group differences. Third, evidence that sexual restraint constitutes a *K* characteristic on which human populations differ is considered. Finally, data implying that many of the group differences are genetic rather than socioeconomic in origin are reviewed. © 1989 Academic Press, Inc.

INTRODUCTION

M. Lynn's (1989) critique of the work by Anthony Bogaert and me (1987, 1988) is welcome in that it raises wide-ranging points of interest. This response will be structured according to his four demarcated issues. A few preliminary remarks, however, may set the stage, for the study of racial group differences has been deemphasized in recent years. It has been argued that even the use of racial terminology is poorly justified and that the phrase "ethnic group" be substituted, thereby shifting the emphasis away from a "question begging . . . biologistic bias" (Montagu, 1960, p. 697; see also Lewontin, Rose & Kamin, 1984, pp. 119–129).

The above position, however, obfuscates hierarchical order. For example, the rate of dizygotic twinning among Mongoloids is <4 per thousand births; among Caucasoids 8; and among Negroids >16, regardless of

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This response goes beyond the data contained in the critiqued articles and is the responsibility of a single author. I would like to express my appreciation, however, to A. F. Bogaert for his continuing collaboration, and also to A. R. Jensen, J. Mansinha, and K. P. Ossenkopp for useful discussions. This paper was completed while the author was a Fellow of the John Simon Guggenheim Memorial Foundation. The research was supported by The Pioneer Fund and by a University of Western Ontario Faculty of Social Science Research Professorship. Requests for reprints should be sent to J. P. Rushton, Department of Psychology, University of Western Ontario, London, Ontario, Canada N6A 5C2.

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which country the samples are taken from (Bulmer, 1970). This is because the tendency to double ovulate is inherited largely through the race of the mother, independently of the race of the father, as observed in Mongoloid–Caucasoid crosses in Hawaii and Caucasoid–Negroid crosses in Brazil (Bulmer, 1970). Similarly, in sexual restraint, on physical variables (size of penis, vagina, clitoris, breasts, and buttocks), as well as on those more culturally influenced (attitudes, dancing styles, intercourse frequencies), the Japanese are similar to the Chinese and Koreans, whether assessed in their home countries, Hawaii, or the U.S. mainland, but are different from Israelis, Swedes, and white Americans, who are similar to each other but are different from Kenyans, Nigerians, and black Americans (Rushton & Bogaert, 1987). The efficient unit of analysis, therefore, is the higher order concept of race, within which cluster the different ethnic groups and, ultimately, individuals.

Racial differences in gamete production and intercourse frequencies are paralleled by those in brain weight and intelligence (cranial capacity, brain weight, test scores), maturation rate (age to hold head erect, age to walk alone, age of death), personality and temperament (activity level, cautiousness, sociability), and social organization (marital stability, mental disorder, law abidingness). On each of these variables, white populations (hereafter Caucasoids) are observed to fall *between* black and Oriental populations (hereafter Negroids and Mongoloids). Following reviews by Rushton (1988a, 1988b) these are summarized in Table 1.

ORIGIN OF RACIAL DIFFERENCES

That across populations brain size negatively correlates with gamete production and that both covary with a suite of life history attributes, the whole being predicted on the basis of evolutionary theory backed by empirical studies of animals (and plants) is unlikely to be accounted for by invoking artifactual and particularistic explanations. Instead, it attests to the power of the r/K framework.

As M. Lynn points out, Rushton (1985) discussed the ecological view that r-reproductive strategies are selected for in unstable, unpredictable environments while K-reproductive strategies evolve in stable, predictable environments. However he fails to note that I went on to urge the use of r and K as *descriptors of the strategies* involved and to suggest that discussion of the particular selection pressures bringing them about be left in abeyance. It is even possible for evolutionary biologists to discuss the origin of K without recourse to natural selection. They do so by emphasizing an entropic process, the direction of which is a necessary consequence of the organization of biological systems (Brooks & Wiley, 1986). However, accepting that what follows is necessarily conjectural

TABLE 1
RELATIVE RANKING OF POPULATIONS ON r/K ASSOCIATED ATTRIBUTES
(FOLLOWING RUSHTON, 1988a, 1988b)

	Mongoloids	Caucasoids	Negroids
Brain weight and intelligence			
Cranial capacity	1448 cc	1408 cc	1334 cc
Brain weight at autopsy	1351 g	1336 g	1286 g
Millions of "excess neurons"	8900	8650	8550
IQ test scores	107	100	85
Maturation rate			
Gestation time	?	Medium	Fast
Skeletal development	?	Medium	Fast
Age of walking	Slow	Medium	Fast
Age of first intercourse	Slow	Medium	Fast
Age of first pregnancy	Slow	Medium	Fast
Brain weight decline begins	Age 35	Age 25	?
Life-span	Long	Medium	Short
Personality and temperament			
Activity level	Low	Medium	High
Aggressiveness	Low	Medium	High
Cautiousness	High	Medium	Low
Dominance	Low	Medium	High
Impulsivity	Low	Medium	High
Sociability	Low	Medium	High
Reproductive effort			
Multiple birthing rate	Low	Medium	High
Size of genitalia	Small	Medium	Large
Secondary sex characteristics	Small	Medium	Large
Intercourse frequencies	Low	Medium	High
Permissive attitudes	Low	Medium	High
Sexually transmitted diseases	Low	Medium	High
Androgen levels	Low	Medium	High
Social organization			
Law abidingness	High	Medium	Low
Marital stability	High	Medium	Low
Mental health	High	Medium	Low

(but plausible, and accounting for the known facts), I present my current understanding of the evolution of human racial differentiation.

Smith (1984) outlines how 1 million years ago, early *Homo* may have evolved from erect *Australopithecenes* with a social organization somewhat similar to that of chimpanzees, involving a degree of male bonding and female promiscuity. In such a situation, where ejaculates from more than one male occur in the vicinity of ova, sperm competition often leads to enlarged penises and testes to make deeper and more voluminous ejaculations possible. With increased weaponry and individual male command of food resources, female promiscuity could have been supplemented by temporary courtship. This would have been of adaptive value for females in that it leads to access to more resources and to more paternal investment in offspring, and for males in that it leads to higher levels of paternity confidence. Consequent female intrasexual competition led to females who were continuously attractive, with perennial pendulous breasts, ongoing sexual receptivity, and hidden ovulation; and male intrasexual competition selected for those males best able to provide resources and paternal investment. Slowly a move occurred toward pair-bonding.

Lovejoy (1981) describes the consequences of human pair-bonding; more offspring could be successfully raised per unit of time because the female would not have had to be so mobile. The more pair-bonding there was, the fewer male–male agonistic interactions would need to occur in the perpetual competition for mates. This would reduce the need for anterior dentition, heavy musculature, and general robustness, and would make cooperation and wider social bonding possible. In populations taking the process furthest there would be a concomitant reduction in female epigamic displays (breasts, buttocks) and in the size of the male genitalia. Decreased emphasis on sexual competitiveness would also allow for an increase in the complexity of social organization and again increment the number of children successfully raised to reproductive maturity.

Complex social systems lead to selection pressures for larger cortices, more rule following behavior, and the personal restraint that facilitates life in organizational hierarchies. More *K* populations generate centralized systems with regulated communication networks in which individuals initially compete for position but subsequently gain access to resources dependent on their place in the hierarchy. Less *K* populations belong to relatively less centralized organizations in which the important lines of communication are face-to-face and in which personal dominance matters because each time resources become available they are competed for anew, in an opportunistic scrambling fashion. Thus, through a series of feedback loops, the suite of correlated characteristics associated with *r* and *K* in humans came into being.

But why would Mongoloids have ended up the most *K*? The best current evidence is that modern *Homo sapiens* evolved from a single origin from the earlier *Homo* line about 200,000 years ago somewhere in East Africa, from where, about 110,000 years ago, they migrated throughout the rest of the Old World replacing or absorbing other populations as they went (Stringer & Andrews, 1988). Both genetic and fossil evidence support this view. The genetic evidence rests on the facts that (1) genetic variation is greatest within African populations, which is to be expected if they diverged earlier, and (2) genetic distances based on analyses of mtDNA and nuclear DNA show a divergence time of about

110,000 years ago for the Negroid–non-Negroid split and about 41,000 years for the Caucasoid–Mongoloid split (Stringer & Andrews, 1988). The paleontological data are consistent in that the oldest human fossils are to be found in Africa and/or the Middle East (92,000 years ago), which is considered to be the pathway from Africa into Eurasia. (For alternative, multiregional origin models, see Coon, 1962; Wolpoff et al., 1988.)

As portrayed by R. Lynn (1987) those people who remained in Africa were the ancestors of the living Negroids who retained the dark skin that gave protection from strong sunlight. Many of those who migrated northward evolved the pale skin which permitted vitamin D formation in regions of high latitude and seasonal cloudiness. As the ice ages began, natural selection increased in intensity. To survive in such temperatures, much forward planning and social organization would be necessary and these attributes would have been needed most by Mongoloid populations. The people in Northeast Asia would have found themselves boxed in between the encroaching ice from the Himalayas in the south and from the Arctic region in the north. The Siberian cold (−20°F) which existed in this region was more severe than even that experienced by other pale-skinned populations in Northern Europe, who were relatively close to the sea and had no southern ice barrier equivalent to the Himalayas. In response to this extreme cold, distinctive physical adaptations were evolved, including the epicanthic fold and the narrow eyes that afford protection against the cold and the glare of the sunlight on the snow, and the flattened face and shortened limbs that reduce heat loss. Survival under such harsh conditions pushed the Oriental populations furthest in *K*.

Two related questions are raised by this analysis. First, is evolution directional? Second, are some people, in any sense of the term, "more evolved" than others? These are interesting questions and deserve deeper consideration than has been given to date. With respect to directionality, Fig. 1 in Rushton and Bogaert (1987) seems to imply a move from simple *r*-type animals producing thousands of eggs but providing no parental care to more complex *K*-type animals producing very few offspring. Several analyses are now converging on the view that evolution is progressive in that, over time, organisms become more ordered, structured, and complex and that there seems to be only one uniquely correct branching family tree on which a hierarchical taxonomy can be based (Brooks & Wiley, 1986; Dawkins, 1986; Ridley, 1986). Brooks and Wiley (1986) provide the most radical formulation, using the second law of thermodynamics to develop the idea that biological evolution is an entropic process, the direction of which is a necessary consequence of the organization of biological systems. In this, natural selection is primarily a proximal mechanism affecting the speed but not the direction of evolution which is primarily historical. The second law is thus more than the natural law of energy flows; it is the natural law of history, with *r* and *K* representing examples of this universal law. Recently even S. J. Gould, an arch critic of human sociobiology, has endorsed the notion of nature's directionality over time and provided data in favor of this (Gould, Gilinsky & German, 1987; see also commentary by McKinney, 1987).

Although it has become unfashionable to view man as the "most developed" of species, this once traditional view gains novel support from the perspective of an *r/K* dimension. As E. O. Wilson (1975) put it: "In general, higher forms of social evolution should be favored by *K* selection" (p. 101). Some populations may have carried the process further than others. If correct, certain testable consequences may follow. Those populations which are the "most advanced" (e.g., Mongoloids) might be demonstrably more so on characteristics differentiating *Homo sapiens* from *Australopithecenes* and primates. While Table 1 shows the rank ordering of Mongoloids, Caucasoids, and Negroids on a variety of features, what is being suggested is that another ranking be made which includes *Australopithecenes,* or other primates more generally. Such a list would include physical characteristics such as dentition; facial features such as shortness of muzzle; skeletal features such as relative length of various limbs, the curvature of the spine, and the place where the backbone meets the skull; related features such as size of neck muscles (the further back the backbone meets the skull, the more the head needs support, and the larger, stronger, and more highly attached are the muscles to the skull); the numerosity and placement of the apocrine glands; and so on (Baker, 1974; Coon, 1962, 1965; cf. Gould, 1981). In such an undertaking it would be necessary to aggregate across many characteristics in order to ensure a representative estimate of whether "primitive" features were being manifested. If primitive features tended to go together and be found more frequently in some ethnic taxa than others, increased confidence could be placed in theories of human origins. As will be discussed almost immediately, the expected pattern fits the data on brain size. It may also be possible to study this question by examining genetic distances of various human populations from other primates as well as from each other using analyses from mtDNA and nuclear DNA to do so (cf. Stringer & Andrews, 1988).

RACE DIFFERENCES IN BRAIN SIZE AND OTHER ATTRIBUTES

M. Lynn (1989) charges selectivity in the literature review and inappropriate use of "discredited" data on race differences in cranial capacity and brain size. These charges are not acceptable. If racial differences are random they will be distributed around a mean of zero (no difference) with an equal number of negative results for *r*/*K* theory as positive. Instead, most predictions are confirmed, with only a few being null and hardly any going in the opposite direction. For example, Weinberg and Williams (1988) confirmed many of Rushton and Bogaert's (1987, 1988) observations with respect to black–white differences in sexuality. These authors reanalyzed evidence from three independent sources: the original Kinsey data which formed the basis of Rushton and Bogaert's studies; a 1970 National Opinion Research Center poll of sexual attitudes; and a study carried out in San Francisco. All three reanalyses showed the predicted racial effects on sexuality while holding education and social class constant.

The only compelling contradictory datum that Lynn provides is that Mongoloids enter menarche earlier than Caucasoids (although not earlier than Negroids unless nutrition is poor, as often is the case in African samples; see Eveleth & Tanner, 1976). The early menarche in Mongoloids provides an anomaly to the general pattern of speed of Mongoloid maturation which is slower than that of Caucasoids for every other indicator. (Generally, to be *K* is to be motorically delayed.) Mongoloids are motorically less coordinated at birth, slower to sit up, slower to walk, slower to talk, slower to engage in sexual behavior, slower to suffer brain weight decline with age, and slower to die (Rushton, 1988a). Negroids show the opposite rate of development, being faster on all measures than whites. Thus in the United States, black children walk at an average age of 11 months, whites at 12 months, and Orientals at 13 months. And, even if on some measures of puberty (such as menarche) Orientals are maturationally more advanced than whites, on the variable of age at first intercourse (or age of first pregnancy), surveys show they lag at least 1.5 to 2 years behind their Caucasoid counterparts (Asayama, 1975).

With respect to brain size differences, it is unfortunate how widely believed it is that the racial group differences have been "discredited" by S. J. Gould (1978, 1981). It may be an indicator of the intellectual poverty of the Zeitgeist on this issue that this conclusion has been so widely accepted. Consider the data in Table 2. The first column presents Gould's (1978) "corrected" data from a paper alleging "unconscious . . . finagling" of internally measured cranial capacity figures in the work of S. G. Morton, America's great 19th Century contributor to physical anthropology. The second column presents Gould's (1981) update of these figures after he acknowledges that his biases incline him to making directional errors. In both his 1978 and 1981 writings, Gould dismisses the differences in Table 2 as "trivial." In scientific measurement it is usually better to aggregate across a variety of exemplars in order to examine the most stable representation of reality (Rushton, Brainerd, & Pressley, 1983). When this is done to Gould's figures, the results show

TABLE 2
S. J. GOULD'S "CORRECTED" FINAL TABULATION OF MORTON'S ASSESSMENT OF RACIAL DIFFERENCES IN CRANIAL CAPACITY

Population	Cubic inches 1978 Version	 1981 Version
Native Americans	86	86
Mongolians	85	87
Modern Caucasians	85	87
Malays	85	85
Ancient Caucasians	84	84
Africans	83	83

that in size of brain, Mongoloids > Caucasoids > Negroids. After excluding "Malays" due to uncertainty as to their racial category, the figures from column 1, in cubic inches, are 85.5, 84.5, and 83, respectively, and from column 2, 86.5, 85.5, and 83, respectively. (The figures do not change appreciably if Malays are included as either Mongoloids or Caucasoids.) Other data reviewed by Rushton (1988a) are consistent with overall racial averages in brain size of 1448, 1408, and 1334 cc, respectively. Gould's analysis and his conclusions are quite misleading.

Brain size differences of 1.5 in.^3 to 50 cc cannot appropriately be dismissed as "trivial." Using formulas based on brain/body ratios, Tobias (1970, Table 3) estimates the number of "excess neurons" available to different populations for processing information after dealing with body functioning which Rushton (1988b) averaged to find, in millions of excess neurons: Mongoloids = 8900, Caucasoids = 8650, and Negroids = 8550. Estimated racial differences of 100 to 250 million neurons seem sufficient to underlie many of the cultural differences observed. The recent brain *weight* data for 1261 individuals measured from consecutive autopsies over 5 years by Ho, Roessmann, Straumfjord, and Monroe (1980a, 1980b) confirm the reality of the racial differences (see Table 1).

RACE AND REPRODUCTION

M. Lynn (1989) apparently missed the *r/K* argument about reproductive effort. One of the defining features of an *r*-strategy approach is egg production. A general rule might be: The more eggs produced per unit of time, the more *r* the individual (see Fig. 1 of Rushton & Bogaert, 1987). Racial differences in numerous *r/K* attributes were *predicted* on the basis of racial differences in egg production. As mentioned, the frequency of dizygotic twinning (caused by the production of two eggs at once) per thousand births is 4 among Mongoloids, 8 among Caucasoids, and 16 or more in Negroids (Bulmer, 1970). Another way to increase egg production is to increase the speed of the menstrual cycle. As shown in Item 90 of Table 1 in Rushton and Bogaert (1988), the percentage of respondents reporting an average cycle length of "28 days or less" is, for the black college-educated sample, 83%, for the white non-college-educated sample, 72%, and for the white college-educated sample, 68%, all differences being significant. Similarly, in Item 91 with measurement made of the average length of the menstrual flow, the percentage of respondents reporting their flow as "4 days or under" is 54, 40, and 35%, respectively, with all the differences again being significant.

Blacks also appear to be more fecund than whites. Item 301 of Table 3 in Rushton and Bogaert (1987) shows that 23% of black births occur "9–11 months" after marriage, whereas only 12% of white births do. Similarly Zelnik, Kim, and Kantner (1979) show that never-married black females in the United States are more likely to get pregnant after their first coitus than never-married white females. Within 1 month of their first coitus 7% of whites and 13% of blacks become pregnant; within 2 years of first coitus, the figures are 38% of whites, compared to 43% of blacks. Internationally, Third World countries are reproducing so rapidly that in 50 years, if present trends continue, their population will be 10 times that of the West (Wattenberg, 1987). Among these developing nations the birth rate is as expected from r/K theory, with Negroid (Africa) > Caucasoid (India) > Mongoloid (China). While it is impossible to know how much these effects are mediated by the cultural practice of birth control, the data do show that, *in effect,* the races differ in rate of reproduction.

GENETIC VERSUS SES CAUSES OF RACE DIFFERENCES

Currently, most commentators have a preference for attributing any racial group difference that cannot be dismissed as a "stereotype" to the effects of social class (e.g., Lewontin et al., 1984). Any sociobiological approach to human differences, however, must include the possibility of genetic variance; the first premise of evolutionary biology is the existence of genetic variance, both within and between populations. The second premise is that some of this variance is more successful at getting itself replicated. Coming to terms with the evolutionary expectation that human groups will differ, genetically, in the mechanisms underlying their behavior has been a long process.

On the basis of the rate of dizygotic twinning, racial differences can be expected to be larger than even those of social class for, while SES differences in twinning rate exist (with lower SES groups being more *r* than higher SES groups; Rushton, 1987), the racial differences are more pronounced. As just discussed, race differences are also larger than SES differences in length of menstrual cycle. Moreover, Rushton and Bogaert (1988) found that *non*-college-educated whites were more *K* than college-educated blacks on measures such as speed of occurrence of premarital, marital, and extramarital experiences, number of partners, frequency of intercourse, and speed and incidence of pregnancy (although they were not as *K* as the college-educated whites). The black sample, consisting of university students from 1938 to 1963, was atypical in the religiously devout and high SES direction. As such, the data distinctly imply that race is a more powerful predictor of sexual behavior than educational level or social class. Unfortunately M. Lynn (1989) was not impressed by these data, dismissing them in an afterthought, although it should be noted that they have been independently replicated with additional samples by Weinberg and Williams (1988).

In other domains too race has been found to have effects independent of class. With illness, Kessler and Neighbors (1986) demonstrated an interaction between race and class such that the true effect of race was suppressed and the true effect of social class was magnified in models that failed to take the interaction into consideration. With crime, figures show that even at the time when they were lower in socioeconomic status, the Chinese in the United States were more law abiding than the Caucasoids. In the 1920s this led American criminologists to consider the ghetto as a place which *protected* members from the disruptive tendencies of the outside society (Wilson & Herrnstein, 1985). With the Scholastic Aptitude Test, the results from 1984 showed that the median scores of black college applicants from families earning over $50,000 were lower than those of whites from families earning less than $6000, although the scores were monotonically related to income within both races (Gordon, 1987).

Much evidence implies a genetic basis for both SES and racial group differences. As a necessary preliminary many of the variables on which the populations differ in central tendency are found to be substantially heritable within Caucasian samples. These include traits such as intelligence, rate of maturation, life span, sexual attitudes, strength of sex drive, and components of social organization such as family structure and law abidingness (see Rushton, 1988a, for review). Similar heritabilities have been found within both Negroid and Mongoloid populations, although much less often (see Rushton, 1988b, for review). More such studies would be welcome. Since such heritabilities have been found to be generalizable across cultural and racial groups (Rushton, in press-b), it is quite reasonable to assume that some of the between-group differences are genetic in origin.

The heritability of racial differences has also been suggested more directly. With respect to IQ scores, educational achievement, and social deviancy, preliminary evidence indicates that black children adopted into white families are found to *not* resemble the adoptive siblings with whom they were raised for 17 years (Scarr, Weinberg, & Gargiulo, 1987). When the children were 7 years of age the results had shown that black IQ was comparable to white IQ, but a 10-year follow-up has indicated that black IQ and educational achievement significantly declined while social deviance and psychopathology increased. Thus black children have regressed to their population mean on these traits.

That populations reliably differ across a range of circumstances is further supported by data on the remarkable achievements of the Japanese in Brazil. While numbering nearly 1 million of an overall population of 145 million (less than 1%) they account for 16% of the students at the University of Sao Paulo, one of Brazil's most prestigious universities (*New York Times International,* May 8, 1988). Moreover in a country noted for its lax efficiency and widespread corruption in both business and politics, the Japanese have gained a reputation for hard work and for honesty. The original Japanese migrants were laborers, replacing recently freed slaves on coffee plantations in the interior of Brazil. Similar achievements have been noted for the originally low socioeconomic status Oriental populations in both Canada and the United States (Vernon, 1982).

It has become clear from both adoption and twin designs that the crucial environmental variables influencing behavior are those which occur within families, not between them (Plomin & Daniels, 1987). This is one of the most important discoveries yet made using behavior genetic procedures and its full significance is yet to be realized. It implies that since the environmental variables usually proposed to explain racial differences, such as social class, religious beliefs, cultural practices, father absence, and parenting styles account for so little variance *within* race, they are unlikely to *between* races. It implies that, within the constraints allowed by the total spectrum of cultural alternatives, people create environments maximally compatible with their genotypes (Lumsden & Wilson, 1981; Rushton, Littlefield & Lumsden, 1986; Scarr & McCartney, 1983).

Jensen (1980) has described how data from siblings can be used to determine whether relationships between variables are caused by factors "extrinsic" to the family, such as social class. Such factors serve to make family members similar to one another and different from people in other families. Strong social class effects can be presumed operative, therefore, if the covariance structures which emerge from between-family data disappear when using "intrinsic" within-family data. If, however, covariance structures remain constant regardless of whether calculated from within-family or between-family data, then social class is less operative, and genetic and within-family sources of environmental variance are prevailing. Research shows that the general factor of intelligence, *g*, is constant across all three major racial groups from both within-family and between-family analyses (Jensen, 1980; Nagoshi, Phillips, & Johnson, 1987). These results imply that differences in *g* found between the races (Jensen, 1985) are not due primarily to the between-family differences typically discussed in this context, such as cultural background, socioeconomic status, and family value systems.

Even more direct evidence that the racial group differences on cognitive ability tests is genetic in origin has been provided. Jensen (1973) cited a doctoral thesis reporting a correlation of +0.67 between a subtest's heritability (the degree to which it had been genetically influenced) and the degree to which it differentiated whites and blacks. An "environmentality index" (the opposite of a heritability index, based on the degree to which sibling correlations departed from the pure genetic expectation of .5) was computed and shown to be inversely related to the magnitude of the black–white differences on various subtests. Racial differences in regression to the mean from the scores of siblings were also examined. Black and white children matched for high IQ showed sibling regressions approximately halfway to their respective population means rather than to the mean of the combined populations, with the opposite pattern observed with black and white children matched for low IQ. The regression line showed no significant departure from linearity throughout the range from IQ 50 to 150, a phenomenon predicted to occur by genetic theory. Most recently Rushton (in press-a) found that estimates of genetic influence calculated from inbreeding depression scores in Japanese cousin marriages on the WISC in the 1950s predict the magnitude of black–white differences in the United States on the WISC-R in the 1970s. These findings suggest that the genetic contribution to racial differences in cognitive ability is more robust across populations, languages, time periods, and measurement specifics than has been considered to date.

CONCLUSION

Social scientists have expended enormous energy investigating how "stereotypes" are perpetuated but in recent times they have spent very little investigating the veridicality of aggregated perceptions. Many of the differences observed here are not counterintuitive and spring readily to the eyes of the layperson. Psychologists are to be faulted for not studying them more scientifically. While it is understood that racial group differences are generalizable to individuals in only imperfect ways, average group differences do exist and should be more worthy of study than they currently are. The exploration of *all* sources of genetic variance within the human species, and the analysis of the causes of this variance, are of crucial importance to a full understanding of *Homo sapiens*.

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