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Cross-cultural evaluation of predicted associations between race and behavior

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Abstract

Rushton argues that much variation in human behavior is explained by membership in one of only three genetic groups or "races" ("Negroids," "Caucasoids," and "Mongoloids"). Using previously coded data on the 186 society Standard Cross-Cultural Sample, we find no statistical support for the predicted associations between "race" and behavior.

Keywords: Evolutionary psychology; Sociobiology; Cross-cultural research; Behavior

Rushton argues that human behavior correlates so strongly with genetic ancestry in one of three "racial" groups ("Negroids," "Caucasoids," and "Mongoloids") that environment has little effect (Rushton, 1988, 1992; Rushton & Bogaert, 1987).[1] Rushton's ideas have generated intensely negative reactions and critiques (e.g., Gorey & Cryns, 1995; Leiberman, 2001; Lynn, 1989; Zuckerman & Brody, 1988), but it would be a remarkable achievement if Rushton has found a way to reduce human behavior to such a simple causal model. His ideas should not be dismissed because we dislike their implications or because they do not reflect "politically correct" thinking; rather, they should be rigorously evaluated to determine if they have explanatory power. We undertake such an evaluation here.

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[1] We put the terms "racial" and "race" in quotes throughout the paper because we agree with the common belief in physical anthropology that "race" is not a scientifically useful concept when applied to humans.

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Rushton's ideas are rooted in r/K selection theory (MacArthur & Wilson, 1967), which posits that there are two distinct poles to reproductive strategy: to have many offspring and put little energy into raising them (r-selected), or to have few offspring and put considerable energy into raising them (K-selected) (Pianka, 1970). All species fall somewhere on the continuum between an r-selected strategy and a K-selected strategy, and their location on this continuum predicts a great deal of their behavior (Barash, 1982). Sociobiologists have tended to see humans as among the most K-selected species on earth, but in applying r/K selection theory to humans, Rushton argues that different geographic populations of humans developed different strategies along the r/K continuum. He argues that humans initially evolved an r-selected strategy, and it was only after humans left Africa and began to face the challenges of new environments that more K-selected strategies evolved.

According to Rushton, three distinct populations of humans evolved. Africans retained a more r-selected strategy, humans who moved into the "colder" conditions of East Asia evolved a more K-selected strategy, while humans in between (i.e., in Europe) evolved a strategy between the African and East Asian ones. Rushton (1995, pp. 259–262) argues that these strategies are genetic in their basis and that they affect a wide range of human behavior, including social organization, family structure, sexuality, and even technological sophistication.

Table 1 presents testable relationships between "race" and behavior predicted by Rushton. These constitute the dependent variables in our evaluation, which we operationalized using extant data from cross-cultural studies that have explored these or very similar variables. All were coded for either the whole or a subset of the 186 society Standard Cross-Cultural Sample (Murdock & White, 1969), which mostly includes cultures described by ethnographers. The independent variable in our evaluation is "race" as Rushton defines it. Because Rushton (1995, pp. 228–230) argues that three distinct human "races" evolved as adaptations to environmental conditions and were established no later than 40,000 years ago, all the indigenous cultures of Africa should be parts of his "Negroid race," the indigenous cultures of Europe and western Asia should be parts of his "Caucasoid race," and the indigenous cultures of East Asia should be parts of his "Mongoloid race." In addition, it would also seem that the indigenous cultures of Oceania and the Americas must

Table 1
Rushton's predicted relationships between "race" and behavior[a]

	"Negroid"	"Caucasoid"	"Mongoloid"
Marital breakup	frequent	intermediate	infrequent
Sexual precocity	high	medium	low
Infidelity	frequent	intermediate	infrequent
Child neglect/abuse	frequent	intermediate	infrequent
Criminality	high	medium	low
Social stratification	low	medium	high
Technology	low	medium	high

[a] Adapted from Rushton (1995, pp. 5, 264–271, Figs. 1.1 and 13.1).

be "Mongoloid" because those regions were populated from East Asia within the last 40,000 years.[2]

However, Rushton does not consistently use geographic location to define "race." For example, in *Race, Evolution and Behavior*, he says that Filipinos and Malays are "Mongoloid" and includes Malaysia along with the Philippines and Indonesia in comparing crime statistics but excludes all three from his analysis of cranial capacity; that the Indian subcontinent is "Caucasoid" but excludes 26 Indian samples from his analysis of cranial capacity; that Amerindians are "Mongoloid" but excludes 20 Latin American populations (especially Bolivian and Peruvian) on measures of cranial capacity; and includes the Caribbean in crime statistics but excludes Caribbean island states as "European/Negroid" mixtures for the purpose of comparing cranial capacity (Rushton, 1995, pp. 124, 159, 235, 259).

Although we do not support Rushton's division of the world's human populations into three "races," or indeed into any racial classification, it is necessary for our cross-cultural tests to follow Rushton's classification as closely as possible, which is difficult because his procedures are so inconsistent. Accordingly, we have developed three versions of the "race" variable, each representing one of the apparent definitions Rushton used.[3] In our first version of the "race" variable, we use geographic location.[4] We believe this operationalization holds most closely to Rushton's conceptualization of "race." In our second version of the "race" variable, we make subdivisions based on a more refined geography.[5] In our third version, we classify borderline populations based on language.[6]

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[2] It is important to note that the actual diversity in human genes does not break down by geography in the manner Rushton suggests. Human populations have extensively moved and intermarried, and while single traits (e.g., skin color) may have geographic correlations (although even these may be related to environmentally specific adaptations such as exposure to UV radiation — see Jablonski & Chaplin, 2000), the overall pattern of human genetic diversity is not correlated with large geographic regions (Cavalli-Sforza & Feldman, 2003; Hammer & Zegura, 2002).

[3] Raw data for the three "race" variables are available from the first author in either paper or electronic format.

[4] Societies in sub-Saharan Africa (Murdock's, 1967, region A = Africa) were coded as "Negroid"; those in North Africa and Europe (Murdock's, 1967, region C = Circum-Mediterranean) were coded as "Caucasoid"; all others were coded as "Mongoloid." Murdock's (1967) coding of world region for the standard cross-cultural sample is available as Variable 200 in the *World Cultures* data files.

[5] "Mongoloid" includes the Asian mainland east of the Urals, excluding South Asia (which we have taken to mean India, omitting Assam and the islands in the Bay of Bengal, Pakistan, and Bangladesh) and the Amerindian populations of the Americas. Rushton also includes "the Northern and Eastern Pacific," which we have taken to include the islands of southeastern Asia, Micronesia and Polynesia, and aboriginal New Zealand, omitting New Guinea, Melanesia, the Solomon Islands, Fiji, and aboriginal Australia. "Caucasoid" includes Europe, the Middle East (the Arabian peninsula, Israel, Jordan, Syria, Iraq, Iran, as well as the North African countries of Morocco, Algeria, Tunisia, Libya, and Egypt), the Indian subcontinent (which we have taken to mean India, omitting Assam and the islands in the Bay of Bengal), Pakistan, and Bangladesh. "Negroid" includes sub-Saharan Africa (since the borderline is unclear, we have omitted the southern part of the Sahara in Mauritania, Mali, Niger, Chad, and the northern part of the Sudan), but excluding Madagascar and populations in Ethiopia and Somalia; we have omitted the islands of the Caribbean.

Table 2
Tau-b correlation coefficients of "race" with selected behavioral characteristics[a]

Behavior	Variable name (variable codes) [*World Cultures* variable number (source)][b]	Predicted direction	"Race" (1 = "Negroid"; 2 = "Caucasoid"; 3 = "Mongoloid") [Ver. 1]	[Ver. 2]	[Ver. 3]
Marital breakup	Frequency of divorce (1 = universal; 5 = rare) [744 (6)]	+	.023	− .120	− .006
Sexual precocity	Frequency of premarital sex (male) (1 = universal; 4 = uncommon) [166 (3)]	+	− .017	− .077	− .089
	Frequency of premarital sex (female) (1 = universal; 4 = uncommon) [167 (3)]	+	− .007	.015	− .031
	Sexual restraint (young boy) (1 = weak or nonexistent; 9 = extremely strong) [330 (4)]	+	− .071	− .076	− .049
	Sexual restraint (young girl) (1 = weak or nonexistent; 9 = extremely strong) [331 (4)]	+	− .077	− .057	− .057
	Sexual restraint (older boy) (1 = weak or nonexistent; 9 = extremely strong) [332 (4)]	+	− .104	− .078	− .086
	Sexual restraint (older girl) (1 = weak or nonexistent; 9 = extremely strong) [333 (4)]	+	− .162**	− .118	− .149*
	Adolescent sexual behavior (boy) (2 = not approved or admired by parents or authorities; mild forms, e.g., sexual jokes, sometimes approved; 8 = strongly approved and valued, by parents, etc.; high frequency, variety of sexual behavior admired) [827 (7)]	−	.064	.081	.067
	Adolescent sexual behavior (girl) (2 = not approved or admired by parents or authorities; mild forms, e.g., sexual jokes, sometimes approved; 8 = strongly approved and valued, by parents, etc.; high frequency, variety of sexual behavior admired) [828 (7)]	−	.116	.082	.122
Infidelity	Frequency of extramarital sex (male) (1 = universal; 4 = uncommon) [170 (3)]	+	− .241*	− .333*	− .291*
	Frequency of extramarital sex (female) (1 = universal; 4 = uncommon) [171 (3)]	+	− .221	− .282*	− .269*
Child Neglect/ Abuse	General indulgence (infant) (1 = severe; 5 = highly affectionate) [57 (1)]	+	.048	.011	.052

	General indulgence (child) (1 = severe; 5 = highly affectionate) [59 (1)]	+	− .001	− .029	.021
	Affection in child care (2 = rarely; 8 = almost always) [492 (5)]	+	.064	.045	.068
	Aggression in child care (2 = rarely; 8 = almost always) [504 (5)]	−	.020	.042	.050
	Indifference in child care (2 = rarely; 8 = almost always) [516 (5)]	−	− .050	− .072	− .056
	Control in child care (2 = no control; 8 = restrictive) [528 (5)]	+	− .118	− .103	− .124
Criminality	Attitude toward rape (1 = accepted/ignored; 4 = strongly disapproved) [173 (3)]	+	− .403**	− .414**	− .398**
	Frequency of rape (1 = absent; 3 = common) [174 (3)]	−	.088	.212	.074
	Inculcation for honesty (1 = weak or nonexistent; 9 = extremely strong) [336 (4)]	+	.108	.107	.108
	Frequency of homicide (1 = low; 3 = high) [1665 (8)]	−	− .225**	− .149	− .185*
	Frequency of assault (1 = low; 3 = high) [1666 (8)]	−	− .074	− .043	− .012
	Frequency of theft (1 = low; 3 = high) [1667 (8)]	−	− .083	− .022	− .050
Social stratification	Political integration (1 = none; 2 = autonomous local communities; 3 = one level above community; 4 = two levels above community; 5 = three levels above community) [157 (2)]	+	− .222**	− .239**	− .254**
	Social stratification (1 = egalitarian; 2 = hereditary slavery; 3 = two social classes, no castes/slavery; 4 = two social classes, castes/slavery; 5 = three social classes or castes, with or without slavery) [158 (2)]	+	− .241**	− .227**	− .246**
Technology	Technological specialization (1 = none; 2 = pottery only; 3 = loom weaving only; 4 = metalwork only; 5 = smiths, weavers, potters) [153 (2)]	+	− .354**	− .343**	− .351**

[a] A slightly different version of these correlations was presented in Peregrine, P. N., Ember, C. R., and Ember, M. (2000, February) *Anthropology Newsletter, 41*, 29–30.

[b] Variable numbers and values were obtained from *World Cultures* (Vol. 12, 2001); original sources are as follows: (1) Barry and Paxton (1971, columns 16a and 16b); (2) Murdock and Provost (1973, scales 9 and 10); (3) Broude and Greene (1976, columns 8, 9, 12, 13, 15, and 16); (4) Barry, Josephson, Lauer, and Marshall (1976, columns 34, 35, 36, 37, and 44); (5) Rohner and Rohner (1982, columns 12, 24, 36, and 48); (6) Broude and Greene (1983, column 6); (7) Barry and Schlegel (1984, columns 5 and 6); and (8) Ember and Ember (1992, columns 18, 19, and 20).

* Probability less than .05.

** Probability less than .01.

Table 2 summarizes our results. A glance at Table 2 makes it clear that Rushton's predictions do not find much support, regardless of how "race" is operationalized. Indeed, of the 78 correlations in Table 2, only 2 are statistically significant (at less than or equal to the .05 level) in the predicted direction. This is no more confirming a set of results than one would expect by chance. Even if we look at the direction of the correlations, Rushton's predictions are not supported. More of the correlations are in the opposite direction (45 of 78) than in the predicted direction. Rushton's predictions clearly fail our cross-cultural evaluation.

There are at least four possible explanations for why the predicted relationships between "race" and behavior failed. First, the failure could be the result of a biased sample. We would argue, however, that the Standard Cross-Cultural Sample has been proven unbiased in formal statistical evaluations (Gray, 1996), and any sample bias is therefore unlikely to explain the failure to support Rushton's predictions. Second, our use of coded data from other studies may introduce validity problems with some of the variables; that is, we may not be testing the precise relationships Rushton predicts. We would argue, however, that such validity problems would affect only some of the variables being tested, not all 26, as is the case here. Also, the rather obvious face and content validity of some of the variables, which failed (for example, frequency of extramarital sex), decry such an argument. Third, we may have misunderstood Rushton's definition of "race" and hence created an invalid independent variable. However, we would argue that our three versions of the "race" variable capture Rushton's inconsistent definitions. If his predictions were accurate, our results would have supported them.

Our final explanation for why our evaluation failed to support Rushton's predictions is simply that "race" does not predict societal or cultural variation in human behavior. This seems both an obvious and logical conclusion from our cross-cultural tests. There is clearly more variation in cultural behavior than can be explained by a trichotomy of "racial" groups. There is a vast array of research demonstrating clear effects of the environment on human behavior — indeed, entire traditions and subfields within anthropology, biology, ecology, psychology, and sociology focus on the effect of environment on human behavior. In contrast, "race" seems to be irrelevant to the task of explaining cross-cultural differences in behavior.

Indeed, we suggest that Rushton's findings, when viewed from the position of our results, actually support the idea that behavior is strongly influenced by environment. Rushton does marshal some support for a number of his predicted relationships for which

[6] This third version of the "race" variable makes minor changes to the second version based on language data from Grimes (1996). For Northern Pakistan, Kashmir, Assam, Bangladesh, Bhutan, and Nepal, and the islands belonging to India, we placed those populations speaking either an Austro-Asiatic (Nicobarese) or Sino-Tibetan (Lepcha, Garo, and Lakher) language into the "Mongoloid" category and populations speaking languages in the Indo-European and Dravidian families into the "Caucasoid" category (we omitted Burusho and Andamanese because their languages appear unrelated to others). In areas that were part of the southern Sahara (in Mauritania, Mali, Niger, Chad, and the northern part of the Sudan) and opposite the Arabian peninsula (Ethiopia and Somalia), we grouped those populations that spoke languages in the Afro-Asiatic family (also spoken in North Africa and the Middle East) with "Caucasoid" and those that spoke Nilo-Saharan and Niger-Congo languages with "Negroid." In the Americas, we excluded from "Mongoloid" all populations that did not speak an Amerindian language.

we found no support in the cross-cultural data. We suggest the discrepancy has to do with the samples Rushton used. Many of his data come from industrial societies where "race" is a widely employed social category and where there is a history of social discrimination (for example, the United States, Japan, and South Africa). In such societies, as opposed to the broadly representative sample of societies we use, socially defined "race" differences might appear to predict some differences in behavior (Rushton 1995, pp. 266–271). But they do not predict behavior in the world of the ethnographic record in which, for the most part, "racial" discrimination has not affected daily life within the communities studied by anthropologists.

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