

# Re-analyses of J.P. Rushton's crime data

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*Récemment, Rushton affirmait qu'il existe des différences importantes dans les taux de criminalité entre les groupes raciaux. Ses méthodes d'analyse statistique (l'analyse de variance), cependant, ne fait pas ressortir la grandeur de ces différences. Les auteurs ont ré-analysé les données de Rushton et démontrent qu'il n'y a pas de rapports fermes entre les facteurs (le coefficient de corrélation moyen était .24, ce qui laisse supposer que moins de 6% de la variance est commune). Les tendances étaient faibles et contradictoires (70.8% des coefficients sont ou faibles ou sans importance). Les données de Rushton semblent indiquer qu'en se basant sur le facteur racial comme prédicteur de criminalité il en résulterait un taux très élevé (99.9%) de faux-positifs.*

*Rushton recently reported significant racial differences in crime rates. His statistical method (the analysis of variance), however, does not assess the size of these "significant" trends. A re-analysis of his data shows the absence of strong relationships (the average correlation coefficient was .24, suggesting that less than 6% of the variance is shared). The trends were mostly weak and inconsistent (70.8% of the underlying coefficients are classified as low or nonsignificant). Rushton's own data suggest that relying on race as a predictor of crime in individual cases would result in an absurdly high rate (99.9%) of false positives.*

## Introduction

In a recent article in this Journal, Rushton (1990) presented his statistical analyses to document his view that crime frequencies follow his model of racial differences in behaviour. Rushton reports that he collected his data (see Table 1) from international criminal police archives, calculated a one-way analysis of variance (ANOVA), and concluded that "the races differ significantly in crime production".

Rushton's (1990) choice of method, the ANOVA, alone, does not offer information about the *magnitude* of the racial differences. The term "significance" is used differently by statisticians than by laymen. The statistical usage can include minute and practically irrelevant trends as long as the chosen criterion, such as  $p < .05$ , is met. Information about the size of the effect is needed to decide whether a finding is practically relevant, likely to be replicated, and whether it provides solid support for a theory of racial differences. In fact, Rushton's Table 2 (see Table 1 in this paper) shows that most (21 of 24) of his standard deviations exceed the size of the mean rates. This indicates that crime rates within each racial group are extremely unstable: the rates vary excessively from country to country. Thus, even a fleeting visual inspection of Rushton's tabular data by a statistician suggests that race might not be a good predictor of crime rates.

The present paper presents a statistical evaluation of the size of the racial differences in crime rates by re-analyzing Rushton's data (those shown here in Table 1).

**Table 1** <sup>(1)</sup>  
International Crime Rates per 100,000 Population for Countries  
Categorized by Predominant Racial Type

	Homicide		Rape		Serious Assault		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1984								
Mongoloid (N = 9)	8.0	14.1	3.7	2.6	37.1	46.8	48.8	50.3
Caucasoid (N = 40)	4.4	4.3	6.3	6.5	61.6	66.9	72.4	72.5
Negroid (N = 22)	8.7	11.8	12.8	15.3	110.8	124.6	132.3	139.3
F(2.69)		1.92		3.99*		3.16*		3.59*
1986								
Mongoloid (N = 12)	5.8	10.9	3.2	2.7	29.4	40.2	38.4	42.7
Caucasoid (N = 48)	4.5	4.6	6.2	6.3	65.7	91.2	76.4	95.4
Negroid (N = 28)	9.4	10.6	14.4	15.9	129.6	212.4	153.3	223.8
F (2.86)		3.04		7.54*		2.87		3.55*

\*P, 0.05

(1) Data from Rushton (1990)

## Method, results, and interpretation.

Rushton's data were used to calculate t-tests between the racial groups (three separate tests for each of the four variables on the 1984 data and a similar set of tests for the 1986 data). The t-values were subsequently converted into point biserial coefficients (using a conversion formula from Welkowitz, Ewen,

and Cohen 1982), i.e., a special type of the Pearson Correlation Coefficient ( $r$ ). The results are summarized in Table 2.

One-third of the coefficients fail to reach a common criterion of significance ( $p \leq .05$ , 1-tailed). The majority (70.8%) of the coefficients are of *low* size or *nonsignificant*. Two of these have negative signs. Only seven coefficients could be described as of *moderate* size ( $r > .30$ ). No *high* correlations were obtained. This indicates an absence of strong relationships in the direction predicted by Rushton.

When the coefficients are squared to obtain estimates of variance shared by race and crime, the proportions (see Table 3) are remarkably low and fail to sustain Rushton's (1988; 1990) theory.

Since homicide is the most serious crime, Rushton's conclusions about racial difference should be supported by major and consistent trends in homicide data. The correlations between race and homicide, however, are very small and only one is significant. Rushton's theory performs very poorly on this criterion, especially with respect to the Mongoloid/Caucasoid differences.

Using the z-score conversion procedure, the average value was calculated for all 24 coefficients in Table 2: the average was .24 (or .23 when the eight coefficients from the column of the "total" crime frequency were excluded). This average value suggests that the overall association between race and crime rate, in Rushton's data, is weak: only 5.8% of the variance in the two variables is shared. This is not enough to consider using race as a predictor of crime incidence in practical forensic settings or to justify genetic speculations.

**Table 2**  
Size of correlational relationships in Rushton's data

Pearson Point Biserial Coefficients:	Homicide	Rape	Serious Assault	Total	df:
Mongoloid versus Caucasoid					
1984 data	-.11	.27*	.19	.17	47
1986 data	-.05	.31*	.26*	.26*	58
Mongoloid versus Negroid					
1984 data	.02	.45*	.41*	.41*	29
1986 data	.16	.51*	.36*	.39*	58
Caucasoid versus Negroid					
1984 data	.21	.24*	.22*	.24*	60
1986 data	.26*	.29*	.17	.20*	74

\*denotes  $p < .05$ , 1-tailed

**Table 3**  
Variance shared by race and crime (%)

	Homicide	Rape	Serious Assault	Total
Mongoloid versus Caucasoid				
1984 data	1.2	7.4	3.5	2.8
1986 data	0.3	9.8	6.9	6.8
Mongoloid versus Negroid				
1984 data	0.1	20.0	16.5	17.1
1986 data	2.4	25.5	13.1	15.2
Caucasoid versus Negroid				
1984 data	4.3	5.7	4.7	5.6
1986 data	6.8	8.4	3.0	3.9

## Discussion

If Rushton's original data (crime rates for the individual countries rather than racial averages) were available, a global correlation coefficient could directly be calculated between Rushton's racial hierarchy and crime rates. Although this could be of some interest, forensic specialists are more likely to be interested in the differences between pairs of races (e.g., Caucasoids versus Mongoloids only), for each type of crime (e.g., homicide) separately rather than in the more obscure global coefficient.

Rushton's public statements to the media encourage the public to assume that being black implies a high likelihood of committing crimes. Rushton makes no effort to correct this misperception. Actuarial predictions for individual cases on the basis of race are obstructed by too low an incidence of (detected) crime in any race. The average "total" yearly crime rates, suggested by Rushton's data (the average of the 1984 and 1986 rate, from Table 1), for blacks are 0.143% (i.e., only about 14 out of 10,000 persons). Those for whites are about 0.074% (i.e., about 7 out of 10,000). This means that the rate of *false positives* (i.e., of erroneously accusing a person of a crime solely on the basis of race) would be about 99.9% for blacks.

Furthermore, the 2 to 1 Negroid/Caucasoid ratio in Rushton's data for "total" crime can hardly be generalized beyond the types of offenses included by Rushton. Potentially far more dangerous crimes, such as manufacturing or marketing unsafe products (a subcategory of white collar crime), are not included in Rushton's list.

There is a plethora of various technical errors in Rushton's (1988; 1990) procedures and theory (pointed out by Anderson 1991; Cain and Vanderwolf 1990; Cernovsky 1991; Gabor and Roberts 1990; Roberts and Gabor 1990; and Weizmann, Weiner, Wiesenthal, and Ziegler 1990; 1991; Zuckerman and Brody 1988). Their reviews of Rushton's recent writings suggest that his speculations about the  $r/K$  dimension (Rushton, 1988; 1990) as well as his conclusions about racial differences in general are misleading and biased.

Rushton's (1990) article in this journal implied that his theory is supported by empirical studies of various scientists. Often, this seems to be a misunderstanding. For example, he erroneously listed, as supportive, the large scale study by Beals, Smith and Dodd (1984), even though their statistical conclusions are the opposite of his own: brain weight is *not* primarily related to race.

Various reviewers of Rushton's work agree that he selectively reports data confirming his theory. Unfortunately, this renders the data reported in this article (in Table 2) *worthless* for generalizations in the forensic sciences: we do not know whether or not Rushton used reasonably random sampling procedures to select his 1984 and 1986 data or his 3 variables (rape, serious assault, and homicide). The only value of this critical re-analysis of Rushton's data lies in its power to dispel misconceptions about the "racial differences in crime" by documenting their embarrassingly small *size* even in Rushton's own data.

And, of course these small differences need not be genetic. Rushton does not present any viable arguments, for statisticians or psychologists, why these differences must be considered as genetic. The crime rates within the same country, or racial group, vary over time. These variations often exceed those seen in Table 1. Sociocultural trends might satisfactorily account for these variations in the data. Various similar interpretational and methodological issues were, however, already eloquently discussed by Roberts and Gabor (1990) and Gabor and Roberts (1990) and the interested reader is referred to their work for details.

#### Note

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