

CROSS-NATIONAL VARIATION IN HOMICIDES: IS RACE A FACTOR?

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J. P. Rushton has done research indicating that predominantly black nations have higher rates of violent crime than predominantly white nations, which have higher rates than predominantly Asian nations. He attributes these differences to constitutional, inheritable factors on which the races vary. This article discusses the numerous problems with Rushton's use of international crime data and analysis, foremost of which are his use of one-way analysis of variance and lack of consideration of other causes of variation. Regression analysis—including dummy race variables and other relevant explanatory variables—indicates no significant association between race and cross-national homicide rates, the best and probably only valid indicator of cross-national variation in violent crime. This is the case whether reanalyzing Rushton's data or analyzing properly adjusted, inspected, and selected homicide rates.

In their influential book *Crime and Human Nature*, Wilson and Herrnstein (1985) suggest that innate constitutional factors conducive to criminality are differentially distributed by race. They suggest blacks are inherently more prone to crime than whites who are more prone to crime than Asians. Acknowledging that empirical evidence for this proposition is limited, they call for “honest, open, scientific inquiry that results in carefully stated findings” (Wilson and Herrnstein, 1985:468).

J. P. Rushton, who has conducted substantial research on racial differences in constitutional traits, responded to this call by examining the role of race in explaining cross-national variation in violent crime (1990, 1995a). Rushton divided the nations of the world into those predominantly Asian, black, and white. Using one-way analysis of variance, he then showed that these nations differed significantly on various measures of violent crime—homicide, rape, and serious assault—with black nations having higher rates than white, and white higher than Asian. His two studies are virtually identical, differing only in that the first used International Criminal Police Organization (Interpol) *International Crime Statistics* data for 1983—1984 and 1985—1986 and the second 1989—1990 Interpol data.

Rushton (1990, 1995a, 1995b, 1995c) explains the variation in crime rates among Asian, black, and white nations as he does all hierarchical differences among races. His thesis posits that (1) the races have evolved

differently, resulting in differences in brain size (intelligence), sex hormones, and aggression and (2) these differences result in varying amounts of criminal offending. Most of his discussion of these issues involves how blacks differ from other races; less emphasis is given to Asian-white differences.

Rushton has been criticized for using a crude, tripartite classification that lacks scientific basis for dividing humankind into three races and for classifying nations by race (Gabor and Roberts, 1990; Roberts and Gabor, 1990; Yee et al., 1993; Zuckerman, 1990). While I believe race is more a social than biological concept, I accept Rushton's identification scheme for this research.

Rushton has also been criticized for not explaining the very substantial within-race differences across nations and over time within nations (Cernovsky and Litman, 1993; Gabor and Roberts, 1990). Unaddressed to date are the severe problems with Rushton's methodology and use of international crime data, which go beyond his questionable use of racial categories and neglect of within-race variations.

Rushton ignores a fairly substantial body of research on the quality and appropriate use of international crime data. His contention that rape and serious assault are "unambiguous" offenses and suitable for cross-national comparisons is unsupported by the research. Rape rates are particularly influenced by definitional, reporting, and recording variations among nations (Ali, 1986; Kalish, 1988; Mushanga, 1992; United Nations, 1995). Huang and Wellford (1989), in their analysis of cross-national crime data, found both sexual offenses and assaults to be unreliable and ambiguous. The International Victimization Survey indicated great variation among nations in the reporting of assaults and sexual offenses (van Dijk and Mayhew, 1993). The great majority of cross-national crime investigators have avoided using rape or assault rates due to the great variation among nations in legal definitions, reporting of offenses, and how offenses are handled in the criminal justice system.

Homicide is generally considered the most valid and reliable of cross-national crime indicators (Ali, 1986; Bennett and Lynch, 1990; Gartner, 1995; Huang and Wellford, 1989; Kalish, 1988; Lynch, 1995; Wilkins, 1980). However, even when doing analysis using homicide rates, more care must be taken than Rushton has in his research.

Most important, some nations reporting homicide rates to Interpol include attempts, while other nations do not.¹ To make rates comparable, those that include attempts must be adjusted for the percentage that are

1. Interpol uses the term *murder* in its *International Crime Statistics* reports, using the definition "any act performed with the purpose of taking human life, in whatever circumstance" (International Criminal Police Organization, 1992). However, since

attempts. Neapolitan (1996) found that the association of important explanatory variables to Interpol homicide rates differs significantly between samples in which rates have—and have not—been adjusted. Rushton (1990, 1995a) did not adjust Interpol homicide rates for attempts.

Most prior research investigating cross-national variation in homicides has used multiyear averages of approximately five years to reduce the risk of unreliable one-year averages and to adjust for random yearly fluctuations. This also allows for a larger and more representative sample of nations because different nations report to Interpol in different years and data from subsets of years are used when data for all years are not available. Messner (1992) has done research indicating that this procedure is a valid and recommended way to construct cross-national homicide rates. Rushton (1990, 1995a) uses single-year rates in his analysis.

Another advantage of using homicide data from a number of years is that researchers can inspect and validate data looking for that which is likely not to be accurate. The United Nations (1995) has suggested that a variation in rates of greater than 30% between consecutive years is reason to question the accuracy of data. Data of highly questionable accuracy should probably not be included in analyses.

While much of prior research on cross-national crime variation has included nations at all levels of development in the same analysis, many analysts now question whether this is appropriate (Arthur and Marenin, 1995; Fiala and LaFree, 1988; Gartner, 1995; Hartrais, 1996; Kohn, 1987; Neapolitan, 1997). The differing historical and situational contexts of developed, developing, and formerly communist nations in transition may well result in differing associations between crime and various aspects of nations. Rushton (1990, 1995a) simply includes all nations for which he had data in the same analysis.

Perhaps most important, Rushton's (1990, 1995a, 1995b) analysis is flawed because he fails to incorporate known correlates of racial composition, which are likely to affect rates of violent crime. He neither discusses nor considers factors other than race, and he fails to cite a single study addressing cross-national crime variation in any of his articles. There is a substantial body of research indicating that a number of social and economic factors affect cross-national variation in violent crime. Many of these factors are included in my analysis, and some can be interpreted as outcomes of historical developments—such as colonization, balkanization, and exploitation—that are more difficult to measure.

To examine the association of race to cross-national variation in violent crimes, models must be specified that include other relevant variables.

Rushton and virtually all other researchers who have used Interpol crime data use the term *homicide*, so do I.

Rushton (1990, 1995a) uses one-way analysis of variance, with race as the sole independent variable. In this research I will accept Rushton's assumption that nations can be categorized by race, but I specify models that include other relevant variables.

DATA AND METHODS

HOMICIDE RATES

This research focuses exclusively on homicides. For reasons already given, rape and assault rates are not analyzed. In the first analysis, the same homicide rates and sample of nations used by Rushton (1995a) in his most recent study are analyzed. Homicide rates for the subsequent analysis were acquired from Interpol's *International Crime Statistics* for 1988 through 1994.² As in most cross-national research on homicides, the rates are converted to natural logarithms to reduce skewness and induce homogeneity in error variance.

Whenever attempted homicides were included in the data, rates were adjusted for the percentage that were attempts. Rates were inspected for extreme fluctuations among years. Most nations exhibited fairly consistent rates over the time span. Three nations exhibited extreme fluctuations and thus were not included in primary analysis.³

There were 18 nations for which Interpol homicide data were available for only one of the years from 1988 to 1994. Thus, it was not possible to examine these nations for large fluctuations in rates over time. Nations

2. Homicide data reported in the World Health Organization (WHO) *World Health Statistics Annuals* are generally considered to be of better quality than Interpol homicide data. However, even going back as far as 1985, only nine predominantly black and eight predominantly Asian nations have reported homicides to WHO (World Health Organization, 1986–1995). Thus, I—like Rushton (1990, 1995a)—use Interpol data to examine the association of race to cross-national homicides. Regression analysis of the WHO data using the same variables and procedures used on the Interpol data indicate no significant associations of race to cross-national variation in homicides. These results are available from the author.

3. Argentina reported rates that ranged from .05 (the lowest of any nation for any year) to 6.7. The extremely low rates reported by Argentina in some years are much lower than homicide rates reported by WHO in the same years (World Health Organization, 1989–1995), as well as much lower than those for any other Latin American nation. Rwanda reported rates ranging from 2.9 to 15.6 to 12,500 (by far the largest of any nation in any year). Clearly, Rwanda is in some years including deaths related to the ongoing ethnic conflict and “cleansing” in this nation. Mongolia started reporting to Interpol in 1991 after becoming free of Soviet domination. Since then, reported murder rates have ranged from 0.7 to 19.0. These nations are not included in the primary analysis because the variability in rates casts doubt on their accuracy.

reporting in just one year are more likely to have poor quality data. Thus, those nations are not included in the primary analysis.

The Cayman Islands, Kiribati, Northern Ireland, Scotland, and Turks and Caicos are also not included in any analyses due to lack of data on explanatory variables for these nations. This leaves 118 nations for which data on homicides were available from Interpol for at least two of the years from 1988 to 1994.

SAMPLE DIVISIONS

Nations were divided into developing nations, industrial nations, and nations in transition. *In transition* refers to the Eastern European nations formerly dominated by the Soviet Union as well as the nations of the former Soviet Union. The division of nations into industrial and developing is based on classifications used by the United Nations Development Program (UNDP) in the *Human Development Report* for 1991—1993.

RACIAL DIVISIONS

For those nations included by Rushton (1990, 1995a) in his research, I accept his racial classification. For the other nations, I use geographic region as given in the 1995 *Human Development Report* (United Nations Development Program, 1995) and ethnic composition as indicated in *Britannica World Data* (Daume, 1991—1993) and the *World Factbook* (Central Intelligence Agency, 1991—1993). Nations in Asian geographic region were classified as Asian. Nations in the sub-Saharan Africa were classified as black unless the ethnic composition was indicated not to be predominantly African, for example, Mauritius. Nations in the Arab and European regions were classified as white unless the ethnic composition was indicated to be predominantly African, for example, Sudan. Nations in Latin America were classified as white unless the ethnic composition indicated the majority of the population to be of African descent, for example, Jamaica. Of the 118 nations included in the primary analysis, 65 were classified as white, 34 as black, 15 as Asian, and 4 as other/ambiguous.

OTHER EXPLANATORY VARIABLES

The variables most frequently found to be associated with cross-national variation in homicides in prior research are gross national/domestic product, urbanization, youth population, income inequality, household size, and ethnic/linguistic heterogeneity (e.g., Avison and Loring, 1986; Bennett, 1991; Braithwaite and Braithwaite, 1980; Conklin and Simpson, 1985; Hansmann and Quigley, 1982; Kick and LaFree, 1985; Krahn et al., 1986;

Krohn, 1978; Krohn and Wellford, 1977; LaFree and Kick, 1986; MacDonald, 1976; Messner, 1982, 1986, 1989; Neapolitan, 1994; Savage and Vila, 1996).⁴ Gross national product (GNP) in his study is indicated by GNP per person. A natural log transformation was performed on this variable due to a high skewness observed in the univariate distributions.

Urbanization is indicated by the percentage of people living in urban areas. Youth population is indicated by the percentage of the population aged 15 to 29 because this is generally thought to be the peak age category for violent behavior. Household size is indicated by the mean number of people per household.

Income inequality in this research is indicated by the ratio of the percentage of income going to the top 10% of households/people to the percentage going to the bottom 20%. Ethnic heterogeneity is indicated by the measure developed by Blau (1977), wherein heterogeneity is equal to one minus the sum of the squared fractions of the population in each ethnic category.

In the primary analysis, data were available for all 118 nations for GNP per person, youth population, household size, and ethnic heterogeneity. Data were available for 115 nations for urbanization and 78 nations for income inequality.

Sources for data were the *Human Development Report* (United Nations Development Program, 1991—1993), the *World Development Report* (World Bank, 1991—1993), the *World Factbook* (Central Intelligence Agency, 1991—1993), the *Demographic Yearbook* (United Nations, 1991—1993), and *Britannica World Data* (Daume, 1991—1993). Multiple sources were used to maximize coverage of nations. Data circa 1990 were used for the analysis of Rushton's homicide rates and circa 1991 for the homicide rates collected for this study. Income inequality data may actually have been collected up to 15 years earlier, but this is generally a fairly stable attribute of nations over time. The possible measurement error resulting from the time lag could attenuate the effects of income inequality and thus understate its true importance.

ANALYSIS

The preferred method for examining the relative importance of a

4. Divorce has been found to be associated to cross-national homicide variation in several studies, but these have included only industrialized nations (Gartner, 1990; Landau, 1984; Lester, 1987). Because data on divorce are unavailable for a large proportion of developing nations, particularly those of sub-Saharan Africa, divorce is not included in analyses shown. Inclusion of divorce in models did not alter the finding that race has no significant association to cross-national homicide variation.

Table 1. Standardized Coefficients for the Effects of Race and Other Variables on Interpol Homicide Rates as Used by Rushton ($N = 79$)

Variable	Homicide Rates	
Asian	-.52	-.35
	.34	.35
	-.17	-.12
Black	.58	.58
	.26	.31
	.25*	.25
Income Inequality		.10
		.04
		.37*
GNP per Person (log)		-.08
		.14
		-.12
Ethnic Heterogeneity		-.74
		.59
		-.17
Mean Household Size		-.24
		.12
		-.30*
Percent Urban		.00
		.01
		-.03
Percent Young		.02
		.04
		.07
R^2	.114	.254
Adjusted R^2	.090	.170

NOTES: Homicide rates are log transformed. Unstandardized regression coefficients, standard errors, and standardized regression coefficients are reported in descending order.

* $p < .05$.

As noted, Rushton's homicide data were flawed, so the foregoing does not really examine whether race is important in explaining cross-national homicide variation. Table 2 shows regression results for properly adjusted, inspected, averaged, and selected homicide rates. Results are shown for a sample of all nations, a sample excluding nations in transition, and a sample of only developing nations.

number of variables to cross-national crime rates has been multiple regression (e.g., Avison and Loring, 1986; Conklin and Simpson, 1985; Gartner, 1990; Kick and LaFree, 1985; Krahn et al., 1986; LaFree and Kick, 1986; Messner, 1989; Neapolitan, 1994; Shichor, 1990). To examine the role of race in explaining homicide rates with regression analysis, race dummy variables were created. If a nation was classified as predominantly black, a black variable was coded as 1 and all other nations were coded as 0. The same procedure was used to create an Asian dummy variable. Thus, white nations were used as the reference category.

A potential problem in macro-level regression analysis is multicollinearity. The variance inflation factors were examined using the criterion suggested by Fisher and Mason (1981) that a variance inflation factor of greater than 4.0 indicates too high a probability of unstable parameter estimates. No collinearity problems were indicated. Mean substitution was used for missing data for income inequality and urbanization.⁵

Cook's *D* was used to examine if there were any outlier nations that might bias results. Using a cutoff of a Cook's *D* of 1.0, as suggested by Weisberg (1985), no extreme outlier nations were identified in any models.

RESULTS

Table 1 shows regression results using the same homicide rates, sample of nations, and racial classifications used by Rushton (1995a) in his most recent research. The race dummy variables alone explain only a small amount of the variance in homicides, although the association of the black variable is statistically significant. When the other variables are entered into the model, neither race variable exhibits a significant association with homicides. Thus, Rushton's data do not indicate race to be a significant factor in explaining homicides when models are specified that include other relevant variables.

5. Those nations for which data are missing might differ significantly from those for which data are available. To examine this possibility, a dummy variable was created with a value of 1 if data were available and 0 if data were missing for each variable with missing data. Each of these was entered into each model individually. In no model did any of these dummy variables exhibit a significant association with homicides.

Table 2. Standardized Regression Coefficients for the Effects of Race and Other Variables on Interpol Homicide Rates Adjusted for Attempts (1988–1994)

Variable	All Nations (<i>N</i> = 118)		Nations Excepting Those in Transition (<i>N</i> = 103)		Developing Nations (<i>N</i> = 76)	
Asian	-.35	-.15	-.25	-.09	-.57	.24
	.36	.37	.39	.40	.40	.30
	-.09	-.04	-.04	.02	-.18	.10
Black	.52	.50	.67	.65	.25	.29
	.27	.37	.29	.35	.30	.38
	.18	.18	.24*	.23	.10	.12
Income Inequality		.10		.10		.08
		.03		.04		.04
		.29*		.29*		.29*
GNP per Person (log)		-.32		-.21		-.06
		.13		.16		.18
		-.37*		-.24		-.06
Ethnic Heterogeneity		.80		-.91		-.15
		.52		.55		.63
		-.17		-.19		-.03
Mean Household Size		-.09		-.03		-.17
		.11		.12		.13
		-.10		-.04		-.15
Percent Urban		.01		.01		.00
		.01		.01		.01
		.26		.18		.08
Percent Young		.01		.02		.07
		.03		.03		.05
		.04		.07		.18
<i>R</i> ²	.049	.181	.068	.191	.056	.193
Adjusted <i>R</i> ²	.033	.121	.050	.122	.034	.096

NOTES: Homicide rates are log transformed. Unstandardized regression coefficients, standard errors, and standardized regression coefficients are reported in descending order.

* $p < .05$.

The race variables alone explain very little of the variance in homicides in any of the three samples. The Asian variable fails to have a significant association in any of the samples, and the black variable is significant only in the sample that excludes the nations in transition. When the other variables are entered into the models, neither race variable exhibits a significant association with homicides in any of the samples. The standardized

coefficients for the race variables are particularly small in the sample of developing nations, which is arguably the most appropriate for examining the effect of race on cross-national homicide variations. As homicide is the best measure of variation in violent crime across nations, these results fail to support race being a significant factor in explaining cross-national differences in violent crime.

Models shown in Table 2 do not include nations with large fluctuations in homicide rates or nations for which data were available for only one year. Models were also examined including these nations. Models shown use mean substitution for missing values. Models were also examined in which only nations for which data were available for all variables for all nations were included in the analysis. All models were also examined using unlogged homicide rates. Thus, considering different samples and subsamples, logged and unlogged rates and differing ways of handling missing data, 36 models were examined. The race dummy variables did not exhibit a significant association with homicides in any of the models.⁶

In general, little of the variation in homicides was explained by the variables included in this analysis in any of the samples or models. Income inequality was the only variable to exhibit consistently a significant association with homicides. This finding is compatible with prior research in that income inequality having a positive effect on homicides is the most consistent finding in cross-national homicide research (e.g., Avison and Loring, 1986; Kick and LaFree, 1985; Krahn et al., 1986; LaFree, 1997; Messner, 1986; Neapolitan, 1994; Neuman and Berger, 1988). The fact that little variation in homicides was explained does not alter the basic finding that race is not associated with cross-national homicide variation.

DISCUSSION

In his 1996 American Society of Criminology presidential address, Charles Wellford (1997) argues that there needs to be more research addressing justice, particularly racial justice, in criminology. A major obstacle to racial justice is the belief that blacks are inherently more criminal than other races, and thus neither changes in the criminal justice system nor the socioeconomic situation of blacks will much alter their overrepresentation in crime or the criminal justice system. As Roberts and Gabor (1990) have noted, the belief that there is a body of sound scientific research indicating blacks to be generally more criminal than

6. One-way analysis of variance was also performed on the three samples. In each sample, black nations had a higher mean homicide rate than white nations, and white nations had a higher mean rate than Asian nations. However, in none of the samples was the difference statistically significant. These results are available from the author.

other races has great influence on public opinion and social policies. For example, Herrnstein and Murray (1994:663) state in the highly influential *The Bell Curve*, "as science there is nothing wrong with Rushton's work," and they refer to his "detailed and convincing empirical reports of race differences."

The results of this research indicate that the racial composition of nations has only a small association with homicides, which is very small and not significant when social variables are included in models. Many factors that vary with the racial composition of nations—and which might affect homicide rates—are difficult to quantify and thus have not been included in this study nor prior cross-national crime research, such as colonial legacy and balkanization, continuing political interference, economic exploitation, and so forth. The very concept of dividing human beings into three "great" races is a direct consequence of colonial conquest and oppression. While I accepted race as a tripartite biological concept for the purposes of this study, it is in reality a political construction resulting from social conflict. Supportive of the importance of social conditions rather than race is that the "white" nations of Europe had very high rates of violent crime under the social and economic conditions of the middle ages (Johnson and Monkkonen, 1996).

It is surprising that so little of the variance in homicides is explained by the variables included in this analysis. This may be due to this research including more nations in the analysis than prior cross-national crime research. The small amount of variance explained suggests researchers need to expand the factors considered in explaining cross-national variation in violence. Numerous studies of individual, or small numbers of, nations have linked violence and crime in the present to histories of colonization, conquest, and ongoing oppression (e.g., Cooper, 1980; Ferguson and Whitehead, 1992; Haferkamp and Ellis, 1992; Huggins, 1984; Messerschmidt, 1993; van Onselen, 1976). I suggest that future research on larger samples of nations find ways of including these factors in analyses rather than focusing on race, which cannot be disentangled from its socio-cultural correlates and political foundation.

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Appendix 2. Univariate Statistics for Sample of All 118 Nations

	<u>Mean</u>	<u>Standard Deviation</u>
Homicide Rate (ln)	1.11	1.30
Asian	.13	.34
Black	.29	.46
Income Inequality	7.21	4.65
GNP per Person (ln)	7.83	1.51
Ethnic Heterogeneity	.38	.28
Mean Household Size	4.36	1.38
Percent Urban	55.15	24.29
Percent Young	25.76	4.34
